

# **Herschel PACS**

## **DPU OBS Detailed Design Document**

### **Appendix 3**

#### **Reference Manual**

**Document Ref.: PACS-CR-DD-023**

#### **Issue: 3.3**

**Generated by Doxygen 1.5.7**

**Tue Jul 14 10:13:42 2009**



# Contents

<b>1</b>	<b>Data Structure Index</b>	<b>1</b>
1.1	Data Structures . . . . .	1
<b>2</b>	<b>File Index</b>	<b>3</b>
2.1	File List . . . . .	3
<b>3</b>	<b>Data Structure Documentation</b>	<b>5</b>
3.1	channel Struct Reference . . . . .	5
3.1.1	Field Documentation . . . . .	5
3.1.1.1	ACK_counter . . . . .	5
3.1.1.2	i_state . . . . .	5
3.1.1.3	i_status_Tx . . . . .	5
3.2	CmdWordType Struct Reference . . . . .	6
3.2.1	Field Documentation . . . . .	6
3.2.1.1	b_RTaddr . . . . .	6
3.2.1.2	b_Spare . . . . .	6
3.2.1.3	b_SubAddr . . . . .	6
3.2.1.4	b_TR . . . . .	6
3.2.1.5	b_WordCount . . . . .	6
3.3	ConfigDDCMemStruct Struct Reference . . . . .	7
3.3.1	Field Documentation . . . . .	7
3.3.1.1	j_Broadcast . . . . .	7
3.3.1.2	j_Receive . . . . .	7
3.3.1.3	j_Transmit . . . . .	7
3.4	EepromHeader Struct Reference . . . . .	8
3.4.1	Field Documentation . . . . .	8
3.4.1.1	AswStartAddr . . . . .	8
3.4.1.2	FcsProg . . . . .	8
3.4.1.3	FcsWord . . . . .	8
3.4.1.4	NextEepromSeg . . . . .	8
3.4.1.5	OptWord . . . . .	8
3.4.1.6	PmWord . . . . .	8



3.4.1.7	SegWord	8
3.5	event_field Struct Reference	9
3.5.1	Field Documentation	9
3.5.1.1	id	9
3.5.1.2	sid	9
3.5.1.3	status	9
3.5.1.4	subtype	9
3.6	Frame Struct Reference	10
3.6.1	Field Documentation	10
3.6.1.1	d_FrameStatus	10
3.6.1.2	j_PacketLenght	10
3.6.1.3	pw_InitFrame	10
3.7	FrameElement Struct Reference	11
3.7.1	Field Documentation	11
3.7.1.1	j_MemMng	11
3.7.1.2	j_Sa	11
3.7.1.3	j_Words	11
3.7.1.4	pm_WriteMsg	11
3.7.1.5	pw_CurrMsg	11
3.7.1.6	pw_InitMsg	11
3.7.1.7	pw_NextFrameElement	11
3.8	HK_def Struct Reference	12
3.8.1	Field Documentation	12
3.8.1.1	counter	12
3.8.1.2	counter_for_hl	12
3.8.1.3	hard_lower	12
3.8.1.4	hard_upper	12
3.8.1.5	soft_lower	12
3.8.1.6	soft_upper	12
3.8.1.7	type	12
3.9	MemBlockStruct Struct Reference	13
3.9.1	Field Documentation	13
3.9.1.1	d_Status	13
3.9.1.2	j_Condition	13
3.9.1.3	j_Gp	13
3.9.1.4	j_Size	13
3.9.1.5	m_AbsAddr	13
3.9.1.6	pw_Next	13
3.9.1.7	pw_Prev	13
3.10	memory_header Struct Reference	14



3.10.1	Field Documentation	14
3.10.1.1	length_bytes	14
3.10.1.2	length_SAU	14
3.10.1.3	memory_ID	14
3.10.1.4	RAM_type	14
3.10.1.5	start_address	14
3.10.1.6	subsystem	14
3.11	memory_segment_def Struct Reference	15
3.11.1	Field Documentation	15
3.11.1.1	ID	15
3.11.1.2	is_writeable	15
3.11.1.3	offset	15
3.11.1.4	size	15
3.12	MemoryCell Struct Reference	16
3.12.1	Field Documentation	16
3.12.1.1	d_Byte1	16
3.12.1.2	d_Byte2	16
3.12.1.3	d_Byte3	16
3.12.1.4	d_Byte4	16
3.13	MilConfStruct Struct Reference	17
3.13.1	Field Documentation	18
3.13.1.1	d_AlreadyInit	18
3.13.1.2	d_MilIrqInstalled	18
3.13.1.3	d_MilIrqType	18
3.13.1.4	d_MilIsrEnabled	18
3.13.1.5	d_MilRegType	18
3.13.1.6	j_IrqTestFlag	18
3.13.1.7	j_MilIrq	18
3.13.1.8	j_MilMemoryLength	18
3.13.1.9	m_MilBaseMemAbs	18
3.13.1.10	m_MilRegBaseAbs	18
3.13.1.11	MilUsrHandler	18
3.13.1.12	pm_MilBaseMem	18
3.13.1.13	pm_MilBaseReg	18
3.13.1.14	pw_AceCurrent	18
3.13.1.15	pw_AceListEnd	18
3.13.1.16	pw_AceMemory	18
3.13.1.17	pw_RT	18
3.14	MsgBlockStruct Struct Reference	19
3.14.1	Field Documentation	19



3.14.1.1	j_BlockStatus	19
3.14.1.2	j_DataPtr	19
3.14.1.3	j_MilStackSize	19
3.14.1.4	j_TimeTag	19
3.14.1.5	u_Cw	19
3.15	MsgStruct Struct Reference	20
3.15.1	Field Documentation	21
3.15.1.1	aj_Data	21
3.15.1.2	d_CmdWord1flag	21
3.15.1.3	d_CmdWord2flag	21
3.15.1.4	d_DataLength	21
3.15.1.5	d_LoopBack1flag	21
3.15.1.6	d_LoopBack2flag	21
3.15.1.7	d_Status1flag	21
3.15.1.8	d_Status2flag	21
3.15.1.9	d_Type	21
3.15.1.10	d_WordCount	21
3.15.1.11	j_BlockStatus	21
3.15.1.12	j_CmdWord1	21
3.15.1.13	j_CmdWord2	21
3.15.1.14	j_ControlWord	21
3.15.1.15	j_GapTime	21
3.15.1.16	j_LoopBack1	21
3.15.1.17	j_LoopBack2	21
3.15.1.18	j_Status1	21
3.15.1.19	j_Status2	21
3.15.1.20	j_TimeTag	21
3.16	OBCP_param Struct Reference	22
3.16.1	Field Documentation	22
3.16.1.1	data	22
3.16.1.2	is_SAFE	22
3.16.1.3	n_par	22
3.16.1.4	status	22
3.16.1.5	step	22
3.17	RTStruct Struct Reference	23
3.17.1	Field Documentation	23
3.17.1.1	MilRTLlastMsg	23
3.18	RTWords Union Reference	24
3.18.1	Field Documentation	24
3.18.1.1	j_Word	24



3.18.1.2	w_Cmd	24
3.18.1.3	w_Sacw	24
3.19	RxMsgPointer Struct Reference	25
3.19.1	Field Documentation	25
3.19.1.1	d_MsgStatus	25
3.19.1.2	j_Words	25
3.19.1.3	pm_Msg	25
3.20	RxMsgPointerStruct Struct Reference	26
3.20.1	Field Documentation	26
3.20.1.1	d_Size	26
3.20.1.2	d_TypeOfMng	26
3.20.1.3	pm_CurrWriteMsg	26
3.20.1.4	pm_InitMsg	26
3.21	science_entity Struct Reference	27
3.21.1	Field Documentation	27
3.21.1.1	block_is_not_complete	27
3.21.1.2	expected_packet	27
3.21.1.3	words	27
3.22	SubAddrCtrlWrd Struct Reference	28
3.22.1	Field Documentation	28
3.22.1.1	BcstBuffInt	28
3.22.1.2	BcstEomInt	28
3.22.1.3	BcstMm	28
3.22.1.4	RcvBufferType	28
3.22.1.5	RxBuffInt	28
3.22.1.6	RxEomInt	28
3.22.1.7	RxMm	28
3.22.1.8	Spare	28
3.22.1.9	TxBuffInt	28
3.22.1.10	TxEomInt	28
3.22.1.11	TxMm	28
3.23	TC_packet Struct Reference	29
3.23.1	Field Documentation	29
3.23.1.1	chk_len	29
3.23.1.2	data	29
3.23.1.3	data_field_header	29
3.23.1.4	error_ctrl	29
3.23.1.5	id	29
3.23.1.6	packet_length	29
3.23.1.7	seqctrl	29



3.24	time_struct Struct Reference	30
3.24.1	Field Documentation	30
3.24.1.1	clock_at_sync	30
3.24.1.2	fractions	30
3.24.1.3	seconds	30
3.25	TM_entry Struct Reference	31
3.25.1	Field Documentation	31
3.25.1.1	packet	31
3.25.1.2	ready_to_be_sent	31
3.26	TM_EVentry Struct Reference	32
3.26.1	Field Documentation	32
3.26.1.1	packet	32
3.26.1.2	ready_to_be_sent	32
3.27	TM_EVpacket Struct Reference	33
3.27.1	Field Documentation	33
3.27.1.1	data	33
3.27.1.2	data_field_header	33
3.27.1.3	error_ctrl	33
3.27.1.4	id	33
3.27.1.5	packet_length	33
3.27.1.6	seqctrl	33
3.28	TM_packet Struct Reference	34
3.28.1	Field Documentation	34
3.28.1.1	data	34
3.28.1.2	data_field_header	34
3.28.1.3	error_ctrl	34
3.28.1.4	id	34
3.28.1.5	packet_length	34
3.28.1.6	seqctrl	34
3.29	TM_request Struct Reference	35
3.29.1	Field Documentation	35
3.29.1.1	count	35
3.29.1.2	next	35
3.29.1.3	offset	35
3.29.1.4	status	35
3.29.1.5	tmreq	35
3.30	Word1Type Struct Reference	36
3.30.1	Field Documentation	36
3.30.1.1	m_PmSegLength	36
3.30.1.2	m_PmSegStartAddr	36





3.31	Word2Type Struct Reference	37
3.31.1	Field Documentation	37
3.31.1.1	j_IndexCurrSeg	37
3.31.1.2	j_TotNumOfSeg	37
3.32	Word4Type Struct Reference	38
3.32.1	Field Documentation	38
3.32.1.1	d_AswStartAddrFlags	38
3.32.1.2	d_BootOpt	38
3.32.1.3	d_LoadDmToPmOpt	38
3.32.1.4	d_Reserved	38
3.33	Word6Type Struct Reference	39
3.33.1	Field Documentation	39
3.33.1.1	j_FcsEepromDmSeg	39
3.33.1.2	j_FcsPmSeg	39
3.34	Word7Type Struct Reference	40
3.34.1	Field Documentation	40
3.34.1.1	j_FcsTot	40
3.34.1.2	j_Reserved	40
<b>4</b>	<b>File Documentation</b>	<b>41</b>
4.1	1553_def.h File Reference	41
4.1.1	Define Documentation	42
4.1.1.1	EV_NUM	42
4.1.1.2	EVNT	42
4.1.1.3	HK	42
4.1.1.4	HK_NUM	42
4.1.1.5	SC_NUM	42
4.1.1.6	SCI	42
4.1.1.7	SD_TM_QUEUE_FREE	42
4.1.1.8	TC_packet LENGHT	42
4.2	allnodes.h File Reference	43
4.2.1	Define Documentation	45
4.2.1.1	CALLINIT	45
4.2.1.2	CEILING_PRIO	45
4.2.1.3	DATALEN	45
4.2.1.4	DRIVER_PRIO	45
4.2.1.5	EXE	45
4.2.1.6	FPU	45
4.2.1.7	KERNEL_PRIO	45
4.2.1.8	NODE1	45



4.2.1.9	PACSTASKS	45
4.2.1.10	PROCGROUP	45
4.2.1.11	SEMA_1355_INT	45
4.2.1.12	SEMA_ACK	45
4.2.1.13	SEMA_CONTROLLER	45
4.2.1.14	SEMA_HK	45
4.2.1.15	SEMA_WAIT	45
4.2.1.16	SYS	45
4.2.1.17	T1_INIT	45
4.2.1.18	T2_TMTCIF	45
4.2.1.19	T3_IRQ1SV	45
4.2.1.20	T4_CNTRLR	45
4.2.1.21	T5_HKMON	45
4.2.1.22	T6_MECRX	45
4.2.1.23	T7_SPSRX	45
4.2.1.24	T8_SPLRX	45
4.2.1.25	T9_OBCP	45
4.2.1.26	TASK1355	45
4.2.1.27	TC_QUEUE	45
4.2.1.28	TICKFREQ	45
4.2.1.29	TICKTIME	45
4.2.1.30	TM_BUFFER	45
4.2.1.31	TM_EV_BUFFER	45
4.2.1.32	TX_1355	45
4.3	conf1553.h File Reference	46
4.3.1	Detailed Description	46
4.3.2	Define Documentation	47
4.3.2.1	CONTINUE	47
4.3.2.2	HIFI_CODE	47
4.3.2.3	ISFREE	47
4.3.2.4	MaxCmndDPRAM	47
4.3.2.5	MaxPackDPRAM	47
4.3.2.6	OBSCODE	47
4.3.2.7	OffSet_MASK	47
4.3.2.8	Packet_counter_MASK	47
4.3.2.9	PACS_CODE	47
4.3.2.10	PANIC_NODE_ERROR	48
4.3.2.11	SA_OffSet_MASK	48
4.3.2.12	SPIRE_CODE	48
4.3.2.13	STOP	48



4.3.2.14	TM_PACK_REQUEST_NUM	48
4.3.2.15	TM_req_node_LENGTH	48
4.3.2.16	TM_Seq_count_MASK	48
4.4	DmcCmd.h File Reference	49
4.4.1	Define Documentation	51
4.4.1.1	TRIG_HEADER	51
4.4.1.2	WRITE_HEADER	51
4.4.2	Enumeration Type Documentation	51
4.4.2.1	"@0	51
4.5	DUMMY.c File Reference	55
4.5.1	Function Documentation	55
4.5.1.1	Dummy	55
4.6	Eprm.c File Reference	56
4.6.1	Define Documentation	59
4.6.1.1	__EEPROM_PROTOTYPE__	59
4.6.2	Function Documentation	59
4.6.2.1	ComputeFCS	59
4.6.2.2	ComputeFcsOverall	59
4.6.2.3	ComputeFCSTable	59
4.6.2.4	CopyProgramInEEPROM	59
4.6.2.5	DmEepromComputeFCS	59
4.6.2.6	DPU_wait	59
4.6.2.7	EepromClearCell	59
4.6.2.8	EepromDeleteSegment	59
4.6.2.9	EepromDisableProtBank	59
4.6.2.10	EepromEnableProtBank	59
4.6.2.11	EepromReadCell	59
4.6.2.12	EepromWriteCell	59
4.6.2.13	EepromWriteSegment	59
4.6.2.14	init_eprm_write_interr_prio	59
4.6.2.15	PackPMWordsinEepromPage	59
4.6.2.16	WriteEepromHeader	59
4.6.3	Variable Documentation	59
4.6.3.1	EEPROM_page_Buffer	59
4.6.3.2	HIgh_prio	59
4.6.3.3	interrupt_a	59
4.6.3.4	interrupt_b	59
4.6.3.5	interrupt_c	59
4.6.3.6	saj_FCSTable	59
4.6.3.7	SAve_prio	59



4.6.3.8	sw_EepromHeader	59
4.7	Eprm.h File Reference	60
4.7.1	Define Documentation	62
4.7.1.1	DataProtection	62
4.7.1.2	DM_BASE_ADDRESS	62
4.7.1.3	DM_EEPROM_BANK_1	62
4.7.1.4	DM_EEPROM_BANK_2	62
4.7.1.5	DM_EEPROM_BASE_ADDRESS	62
4.7.1.6	DM_EEPROM_DELETION_SUCCESS	62
4.7.1.7	DM_EEPROM_END_ADDRESS	62
4.7.1.8	DM_EEPROM_END_SEGMENTS	63
4.7.1.9	DM_EEPROM_ERROR_BAD_ADDRESS	63
4.7.1.10	DM_EEPROM_ERROR_BANK_OVERFLOW	63
4.7.1.11	DM_EEPROM_ERROR_COPY_FAILED	63
4.7.1.12	DM_EEPROM_ERROR_COPY_SUCCESS	63
4.7.1.13	DM_EEPROM_ERROR_NOT_CLEARED	63
4.7.1.14	DM_EEPROM_ERROR_OVERFLOW	63
4.7.1.15	DM_EEPROM_ERROR_SEGMENT_NOT_FREE	63
4.7.1.16	DM_EEPROM_ERROR_SEGMENT_OVERFLOW	63
4.7.1.17	DM_EEPROM_ERROR_SUCCESS	63
4.7.1.18	DM_EEPROM_ERROR_WRITE_FAILED	63
4.7.1.19	DM_EEPROM_FIRST_PAGE	63
4.7.1.20	DM_EEPROM_FIRST_SEG	63
4.7.1.21	DM_EEPROM_FREE_VALUE	63
4.7.1.22	DM_EEPROM_LAST_PAGE	63
4.7.1.23	DM_EEPROM_LAST_SEG	63
4.7.1.24	DM_EEPROM_NUMBER_OF_PAGES	65
4.7.1.25	DM_EEPROM_OFFSET	65
4.7.1.26	DM_EEPROM_PAGE_SIZE	65
4.7.1.27	DM_EEPROM_READ_SUCCESS	65
4.7.1.28	DM_EEPROM_SIZE	65
4.7.1.29	DM_EEPROM_START_ADDRESS	65
4.7.1.30	DM_EEPROM_WRITE_FAILED	65
4.7.1.31	DM_EEPROM_WRITE_SUCCESS	65
4.7.1.32	DM_EEPROM_WRITE_SUCCESS	65
4.7.1.33	DM_EEPROMPAGE_SIZE	65
4.7.1.34	DM_END_ADDRESS	65
4.7.1.35	DM_HEADER_SIZE	65
4.7.1.36	DM_SIZE	65
4.7.1.37	DM_START_ADDRESS	65



4.7.1.38	EEPROM_BLOCK_SIZE	65
4.7.1.39	EEPROM_WAIT_TIME	65
4.7.1.40	EEPROM_WRITE_SUCCESS	65
4.7.1.41	FCS_FILTER	65
4.7.1.42	FCS_PRESET_VALUE	65
4.7.1.43	FCS_TABLE_SIZE	65
4.7.1.44	NOT_APPLICABLE	65
4.7.1.45	NUM_OF_EEPROM_BLOCKS	65
4.7.1.46	ON	65
4.7.1.47	PM_BASE_ADDRESS	65
4.7.1.48	PM_END_ADDRESS	65
4.7.1.49	PM_INTERRUPT_VECTORS_TABLE	65
4.7.1.50	PM_NUMBER_OF_PAGES	65
4.7.1.51	PM_PAGE_SIZE	65
4.7.1.52	PM_SIZE	65
4.7.1.53	PM_START_ADDRESS	65
4.7.1.54	WORD_WITH_DMEEPROM_FCS	65
4.7.2	Typedef Documentation	65
4.7.2.1	EepromHeaderType	65
4.7.2.2	MemoryCellType	65
4.7.3	Function Documentation	65
4.7.3.1	ComputeFcsOverall	65
4.7.3.2	ComputeFCSTable	65
4.7.3.3	CopyProgramInEEPROM	65
4.7.3.4	EepromClearCell	65
4.7.3.5	EepromDeleteSegment	65
4.7.3.6	EepromDisableProtBank	65
4.7.3.7	EepromEnableProtBank	65
4.7.3.8	EepromReadCell	65
4.7.3.9	EepromWriteCell	65
4.7.3.10	EepromWriteSegment	65
4.7.3.11	init_eprm_write_interr_prio	65
4.7.3.12	PackPMWordsinEepromPage	65
4.7.3.13	ReadCell	65
4.7.3.14	WriteEepromHeader	65
4.8	HK_def.h File Reference	66
4.8.1	Define Documentation	69
4.8.1.1	ARRAY_BLUE	69
4.8.1.2	ARRAY_BOTH	69
4.8.1.3	ARRAY_RED	69



4.8.1.4	COUNTER_EXTRA_LIMIT	69
4.8.1.5	D_ST_ABC	69
4.8.1.6	D_ST_BMA	69
4.8.1.7	D_ST_BOV	69
4.8.1.8	D_ST_BSP	69
4.8.1.9	D_ST_CFM	69
4.8.1.10	D_ST_EWE	69
4.8.1.11	D_ST_NOM	69
4.8.1.12	D_ST_ORU	69
4.8.1.13	D_ST_RSP	69
4.8.1.14	D_ST_TME	69
4.8.1.15	FUNCTION_1355_LINK_LOST	69
4.8.1.16	FUNCTION_EVENT_BOL_CURRENT_FPU	69
4.8.1.17	FUNCTION_EVENT_BOL_CURRENT_HEAT	69
4.8.1.18	FUNCTION_EVENT_BOL_CURRENT_RO	69
4.8.1.19	FUNCTION_EVENT_BOL_CURRENT_SP	69
4.8.1.20	FUNCTION_EVENT_BOL_CURRENT_SPI	69
4.8.1.21	FUNCTION_EVENT_BOL_CURRENT_SP2	69
4.8.1.22	FUNCTION_EVENT_BOL_POLARIZATION	69
4.8.1.23	FUNCTION_EVENT_BOL_TEMP_FPU	69
4.8.1.24	FUNCTION_EVENT_BOL_TEMP_WE	69
4.8.1.25	FUNCTION_GENERATE_EVENT_DEC	69
4.8.1.26	FUNCTION_GENERATE_EVENT_DEC_SPC	69
4.8.1.27	FUNCTION_GENERATE_EVENT_DPU	69
4.8.1.28	FUNCTION_GENERATE_EVENT_PWR	69
4.8.1.29	FUNCTION_GENERATE_EVENT_SPU	69
4.8.1.30	FUNCTION_MONITOR_COUNTER_DEC	69
4.8.1.31	FUNCTION_MONITOR_COUNTER_PHOT	69
4.8.1.32	FUNCTION_MONITOR_COUNTER_SPEC	69
4.8.1.33	FUNCTION_MONITOR_COUNTER_SPL	69
4.8.1.34	FUNCTION_MONITOR_COUNTER_SPS	69
4.8.1.35	FUNCTION_MONITOR_STABLE_DEC	69
4.8.1.36	FUNCTION_MONITOR_STABLE_SPL	69
4.8.1.37	FUNCTION_MONITOR_STABLE_SPS	69
4.8.1.38	FUNCTION_VERIFY_CHECKSUM	69
4.8.1.39	HK_ALL_PACK	69
4.8.1.40	HK_AUTFN	69
4.8.1.41	HK_BOTH	69
4.8.1.42	HK_DEC_COUNT	69
4.8.1.43	HK_HAS_HL	69



4.8.1.44	HK_INVALID	69
4.8.1.45	HK_INVERT	69
4.8.1.46	HK_NOCHK	69
4.8.1.47	HK_NONP	69
4.8.1.48	HK_PACKET_TIME	69
4.8.1.49	HK_PHOT	69
4.8.1.50	HK_SPAR	69
4.8.1.51	HK_SPEC	69
4.8.1.52	HK_SPL_COUNT	69
4.8.1.53	HK_SPS_COUNT	69
4.8.1.54	MAX_COUNTER_FOR_HL	69
4.8.1.55	NPRI	69
4.8.1.56	PHOT	69
4.8.1.57	SPEC	69
4.8.1.58	SS_DEAD	69
4.8.1.59	SS_ENABLED	69
4.8.1.60	SS_NEW_HK	69
4.8.1.61	SS_OFF	69
4.8.1.62	SS_OLD_HK	69
4.8.1.63	SS_STOPPED	69
4.8.1.64	SS_TOO_LONG	69
4.8.2	Enumeration Type Documentation	69
4.8.2.1	"@1	69
4.8.2.2	"@2	70
4.9	init1553.c File Reference	71
4.9.1	Detailed Description	71
4.9.2	Function Documentation	72
4.9.2.1	dpu_rt_init	72
4.9.2.2	main_1553_exit	72
4.9.2.3	main_1553_init	72
4.10	init1553.h File Reference	74
4.10.1	Detailed Description	77
4.10.2	Define Documentation	77
4.10.2.1	MaxCmndDPRAM	77
4.10.2.2	MaxPackDPRAM	77
4.10.2.3	TCPTD_REPLY_OFFSET	78
4.10.2.4	TM_STATUS_OFFSET	78
4.10.2.5	TMREQ_REPLY_OFFSET	78
4.10.3	Function Documentation	78
4.10.3.1	align_ptr_counter	78



4.10.3.2	andmask	78
4.10.3.3	Download_Packet	78
4.10.3.4	force_1553_reset	78
4.10.3.5	irq2	78
4.10.3.6	isr1553	78
4.10.3.7	main_1553_exit	79
4.10.3.8	main_1553_init	79
4.10.3.9	memcrc16	79
4.10.3.10	miaMilSaWrite	80
4.10.3.11	readCmndDPRAM	80
4.10.3.12	Upload_Packet	80
4.10.4	Variable Documentation	80
4.10.4.1	Bcst_data_han	80
4.10.4.2	Burst_active	80
4.10.4.3	circ_sa_conf	81
4.10.4.4	Current_SubFrame	81
4.10.4.5	Current_time	81
4.10.4.6	Dpu_time	81
4.10.4.7	FreeCmndDPRAM	81
4.10.4.8	FreePackDPRAM	81
4.10.4.9	Ghost_1553_StackPointer	81
4.10.4.10	Isr_1553_event	81
4.10.4.11	MilRTConf	81
4.10.4.12	RT_TMEnable	81
4.10.4.13	RT_TMEnable_prev	81
4.10.4.14	RTAddress	82
4.10.4.15	Rx_data_han	82
4.10.4.16	Rx_data_han10	82
4.10.4.17	Rx_data_han27	82
4.10.4.18	Rx_data_han8	82
4.10.4.19	sa_conf	82
4.10.4.20	SubFrame_Counter	82
4.10.4.21	TM_PACK	82
4.10.4.22	TM_pkt_ctr	82
4.10.4.23	TmReader	82
4.10.4.24	tmreq_reply	82
4.10.4.25	TmWriter	83
4.10.4.26	TRx_data_han30	83
4.10.4.27	Tx_data_han	83
4.10.4.28	Tx_data_han1	83





4.10.4.29 Tx_data_han10	83
4.10.4.30 Tx_data_han27	83
4.10.4.31 Tx_data_han8	83
4.10.4.32 Waiting_TM_packet	83
4.10.4.33 wrap_around_sa_conf	83
4.11 Inttab.h File Reference	84
4.11.1 Define Documentation	84
4.11.1.1 INT_VECT_SIZE	84
4.11.2 Variable Documentation	84
4.11.2.1 aj_DmInttab	84
4.12 isr1553.c File Reference	85
4.12.1 Detailed Description	86
4.12.2 Function Documentation	87
4.12.2.1 checkCmndDPRAM	87
4.12.2.2 checkFreeDPRAM	87
4.12.2.3 force_step_TM_Request	87
4.12.2.4 isr1553	87
4.12.2.5 publish_TM_pointer	88
4.12.2.6 publish_TM_request	88
4.12.2.7 readCmndDPRAM	89
4.12.3 Variable Documentation	89
4.12.3.1 cOffSet	89
4.12.3.2 msg	89
4.12.3.3 SA10	89
4.12.3.4 sa10	89
4.12.3.5 salt	89
4.12.3.6 SA27	89
4.12.3.7 sa27	89
4.12.3.8 tm_req	89
4.13 ivar1553.h File Reference	90
4.13.1 Detailed Description	92
4.13.2 Define Documentation	93
4.13.2.1 TCPTD_REPLY_OFFSET	93
4.13.2.2 TM_PACK_REQUEST_NUM	93
4.13.2.3 TM_STATUS_OFFSET	93
4.13.2.4 TMREQ_REPLY_OFFSET	93
4.13.3 Variable Documentation	93
4.13.3.1 Bcst_data_han	93
4.13.3.2 Burst_active	93
4.13.3.3 circ_sa_conf	94



4.13.3.4	Current_SubFrame	94
4.13.3.5	Current_time	94
4.13.3.6	Dpu_time	94
4.13.3.7	FreeCmndDPRAM	94
4.13.3.8	FreePackDPRAM	94
4.13.3.9	Ghost_1553_StackPointer	94
4.13.3.10	Isr_1553_event	94
4.13.3.11	MilRTConf	94
4.13.3.12	RT_TMEnable	94
4.13.3.13	RT_TMEnable_prev	94
4.13.3.14	RTAddress	95
4.13.3.15	Rx_data_han	95
4.13.3.16	Rx_data_han10	95
4.13.3.17	Rx_data_han27	95
4.13.3.18	Rx_data_han8	95
4.13.3.19	sa_conf	95
4.13.3.20	SubFrame_Counter	95
4.13.3.21	TM_PACK	95
4.13.3.22	TM_pkt_ctr	95
4.13.3.23	TmReader	95
4.13.3.24	tmreq_reply	95
4.13.3.25	TmWriter	96
4.13.3.26	TRx_data_han30	96
4.13.3.27	Tx_data_han	96
4.13.3.28	Tx_data_han1	96
4.13.3.29	Tx_data_han10	96
4.13.3.30	Tx_data_han27	96
4.13.3.31	Tx_data_han8	96
4.13.3.32	Waiting_TM_packet	96
4.13.3.33	wrap_around_sa_conf	96
4.14	L4_FUNC.c File Reference	97
4.14.1	Function Documentation	98
4.14.1.1	copy_OBSW_image	98
4.14.1.2	crc32	98
4.14.1.3	DPU_activity	98
4.14.1.4	DPU_wait	98
4.14.1.5	event_packet	98
4.14.1.6	fill_in_type_subtype	98
4.14.1.7	function_activity	98
4.14.1.8	get_time	98



4.14.1.9	init_1355	98
4.14.1.10	main_1553_exit	98
4.14.1.11	main_1553_init	98
4.14.1.12	memcrc16	98
4.14.1.13	perform_activity	99
4.14.1.14	SEQ_handler	99
4.14.1.15	tx_1355	99
4.14.1.16	update_TM_buffer	99
4.14.2	Variable Documentation	99
4.14.2.1	Burst_active	99
4.14.2.2	Counter_1_8	100
4.14.2.3	Dec_hk	100
4.14.2.4	Dec_values	100
4.14.2.5	Dpu_hk	100
4.14.2.6	Dpu_values	100
4.14.2.7	HEader	100
4.14.2.8	K_TaskList	100
4.14.2.9	Link_through	100
4.14.2.10	Make_reset	100
4.14.2.11	p_DEC_1355	100
4.14.2.12	p_FUNC	100
4.14.2.13	p_SPL_1355	100
4.14.2.14	p_SPS_1355	100
4.14.2.15	Param_for_AF	100
4.14.2.16	Seq_buffer	100
4.14.2.17	Seq_length	100
4.14.2.18	Task_index	100
4.14.2.19	TM	100
4.14.2.20	TM_pkt_ctr	100
4.15	L4_LIB.c File Reference	101
4.15.1	Function Documentation	102
4.15.1.1	acceptance_report	102
4.15.1.2	crc16	102
4.15.1.3	fill_in_type_subtype	102
4.15.1.4	packet_control	102
4.15.1.5	TC_acceptance	102
4.15.1.6	update_TM_buffer	102
4.15.2	Variable Documentation	102
4.15.2.1	ACc_parameter	102
4.15.2.2	ACc_result	102



4.15.2.3	Counter_1_2	102
4.15.2.4	Dpu_values	102
4.15.2.5	Ev_packet_enabled	102
4.15.2.6	PTemp	102
4.15.2.7	Tm_packet_enabled	102
4.15.2.8	TM_report	102
4.16	L4_MEM.c File Reference	103
4.16.1	Function Documentation	103
4.16.1.1	DPU_wait	103
4.16.1.2	fill_in_type_subtype	103
4.16.1.3	mem_service	103
4.16.1.4	memory_for_subsystems	103
4.16.1.5	tx_1355	103
4.16.1.6	update_TM_buffer	103
4.16.2	Variable Documentation	103
4.16.2.1	Counter_1_8	103
4.16.2.2	Words_to_dump	103
4.17	L4_OBCP.c File Reference	104
4.17.1	Function Documentation	105
4.17.1.1	DPU_wait	105
4.17.1.2	fill_in_type_subtype	105
4.17.1.3	list_proc	105
4.17.1.4	load_start_proc	105
4.17.1.5	new_OBCP	105
4.17.1.6	stop_OBCP	105
4.17.1.7	update_TM_buffer	105
4.17.2	Variable Documentation	105
4.17.2.1	Abort_OBCP	105
4.17.2.2	Counter_1_8	105
4.17.2.3	Dpu_values	105
4.17.2.4	K_TaskList	105
4.17.2.5	Link_through	105
4.17.2.6	Obcp_data	105
4.17.2.7	Obcp_data_current	105
4.17.2.8	OBCP_timer	105
4.17.2.9	p_OBCP	105
4.17.2.10	Proc_ID_and_TC_header	105
4.17.2.11	SERVICE	105
4.17.2.12	Task_index	105
4.18	L5_D_AUT.c File Reference	106



4.18.1	Function Documentation	107
4.18.1.1	bol_temp_fpu	107
4.18.1.2	check_checksum	107
4.18.1.3	event_packet	107
4.18.1.4	function_activity	107
4.18.1.5	generate_event_invert	107
4.18.1.6	generate_event_normal_HL	107
4.18.1.7	handle_TM_buffer	107
4.18.1.8	heater_sp	107
4.18.1.9	link_1355_lost	107
4.18.1.10	memcrc32	107
4.18.1.11	monitor_counter_changing	107
4.18.1.12	monitor_counter_stable	107
4.18.1.13	out_range	107
4.18.2	Variable Documentation	107
4.18.2.1	Dec_hk	107
4.18.2.2	Dec_values	107
4.18.2.3	Dpu_hk	107
4.18.2.4	Dpu_time	107
4.18.2.5	Dpu_values	107
4.18.2.6	Param_for_AF	107
4.18.2.7	Save_chksum_T3	107
4.18.2.8	Save_chksum_T5	107
4.18.2.9	seconds_at_last_event	107
4.18.2.10	Spl_hk	107
4.18.2.11	Sps_hk	107
4.19	L9_BOL_P.c File Reference	108
4.19.1	Define Documentation	109
4.19.1.1	PI	109
4.19.2	Function Documentation	109
4.19.2.1	acwe	109
4.19.2.2	DPU_wait	109
4.19.2.3	idle_state	109
4.19.2.4	obmo	109
4.19.2.5	tx_1355	109
4.19.3	Variable Documentation	109
4.19.3.1	Buffer_for_1355_tx	109
4.19.3.2	Obcp_data	109
4.19.3.3	Obcp_data_current	109
4.20	L9_EEPRM.c File Reference	110



4.20.1	Function Documentation	110
4.20.1.1	EEPROM_proc	110
4.20.2	Variable Documentation	110
4.20.2.1	Dpu_values	110
4.20.2.2	Obcp_data_current	110
4.21	L9_GRATP:c File Reference	111
4.21.1	Define Documentation	117
4.21.1.1	chop_def	117
4.21.1.2	chop_def	117
4.21.1.3	chop_def	117
4.21.1.4	chop_def	117
4.21.1.5	chop_def	117
4.21.1.6	chop_pos	117
4.21.1.7	chop_start_position	117
4.21.1.8	chopper_default	117
4.21.1.9	cmp_par_blue	117
4.21.1.10	cmp_par_blue	117
4.21.1.11	cmp_par_blue	117
4.21.1.12	cmp_par_blue	117
4.21.1.13	cmp_par_blue	117
4.21.1.14	cmp_par_blue	117
4.21.1.15	cmp_par_blue	117
4.21.1.16	cmp_par_blue	117
4.21.1.17	cmp_par_red	117
4.21.1.18	cmp_par_red	117
4.21.1.19	cmp_par_red	117
4.21.1.20	cmp_par_red	117
4.21.1.21	cmp_par_red	117
4.21.1.22	cmp_par_red	117
4.21.1.23	cmp_par_red	117
4.21.1.24	cmp_par_red	117
4.21.1.25	detector	117
4.21.1.26	detector	117
4.21.1.27	detector	117
4.21.1.28	detector	117
4.21.1.29	detector	117
4.21.1.30	detector	117
4.21.1.31	detector	117
4.21.1.32	detector	117
4.21.1.33	grat_def	117



4.21.1.34 grat_def	117
4.21.1.35 grat_def	117
4.21.1.36 grat_def	117
4.21.1.37 grat_def	117
4.21.1.38 grat_def	117
4.21.1.39 grat_def	117
4.21.1.40 grat_def_time	117
4.21.1.41 grat_def_time	117
4.21.1.42 grat_def_time	117
4.21.1.43 grat_def_time	117
4.21.1.44 grat_def_time	117
4.21.1.45 grat_def_time	117
4.21.1.46 grat_def_time	117
4.21.1.47 grat_pos	117
4.21.1.48 grat_pos	117
4.21.1.49 grat_pos	117
4.21.1.50 grat_pos	117
4.21.1.51 grat_pos	117
4.21.1.52 grat_pos	117
4.21.1.53 grat_time	117
4.21.1.54 grat_time	117
4.21.1.55 grat_time	117
4.21.1.56 grat_time	117
4.21.1.57 grat_time	117
4.21.1.58 grat_time	117
4.21.1.59 grat_time	117
4.21.1.60 grating_default	117
4.21.1.61 grating_default_time	117
4.21.1.62 grating_position	117
4.21.1.63 grating_time	117
4.21.1.64 max_dith	117
4.21.1.65 Sequence_ID	117
4.21.1.66 Sequence_ID	117
4.21.1.67 Sequence_ID	117
4.21.1.68 Sequence_ID	117
4.21.1.69 Sequence_ID	117
4.21.1.70 Sequence_ID	117
4.21.1.71 Sequence_ID	117
4.21.1.72 Sequence_ID	117
4.21.1.73 Sequence_par_1	117



4.21.1.74 Sequence_par_1	117
4.21.1.75 Sequence_par_1	117
4.21.1.76 Sequence_par_1	117
4.21.1.77 Sequence_par_1	117
4.21.1.78 Sequence_par_1	117
4.21.1.79 Sequence_par_1	117
4.21.1.80 Sequence_par_1	117
4.21.1.81 Sequence_par_10	117
4.21.1.82 Sequence_par_10	117
4.21.1.83 Sequence_par_10	117
4.21.1.84 Sequence_par_10	117
4.21.1.85 Sequence_par_10	117
4.21.1.86 Sequence_par_10	117
4.21.1.87 Sequence_par_10	117
4.21.1.88 Sequence_par_11	117
4.21.1.89 Sequence_par_11	117
4.21.1.90 Sequence_par_11	117
4.21.1.91 Sequence_par_11	117
4.21.1.92 Sequence_par_11	117
4.21.1.93 Sequence_par_11	117
4.21.1.94 Sequence_par_11	117
4.21.1.95 Sequence_par_12	117
4.21.1.96 Sequence_par_12	117
4.21.1.97 Sequence_par_12	117
4.21.1.98 Sequence_par_13	117
4.21.1.99 Sequence_par_14	117
4.21.1.100 Sequence_par_15	117
4.21.1.101 Sequence_par_2	117
4.21.1.102 Sequence_par_2	117
4.21.1.103 Sequence_par_2	117
4.21.1.104 Sequence_par_2	117
4.21.1.105 Sequence_par_2	117
4.21.1.106 Sequence_par_2	117
4.21.1.107 Sequence_par_2	117
4.21.1.108 Sequence_par_2	117
4.21.1.109 Sequence_par_3	117
4.21.1.110 Sequence_par_3	117
4.21.1.111 Sequence_par_3	117
4.21.1.112 Sequence_par_3	117
4.21.1.113 Sequence_par_3	117





4.21.1.114Sequence_par_3	117
4.21.1.115Sequence_par_3	117
4.21.1.116Sequence_par_3	117
4.21.1.117Sequence_par_4	117
4.21.1.118Sequence_par_4	117
4.21.1.119Sequence_par_4	117
4.21.1.120Sequence_par_4	117
4.21.1.121Sequence_par_4	117
4.21.1.122Sequence_par_4	117
4.21.1.123Sequence_par_4	117
4.21.1.124Sequence_par_4	117
4.21.1.125Sequence_par_5	117
4.21.1.126Sequence_par_5	117
4.21.1.127Sequence_par_5	117
4.21.1.128Sequence_par_5	117
4.21.1.129Sequence_par_5	117
4.21.1.130Sequence_par_5	117
4.21.1.131Sequence_par_5	117
4.21.1.132Sequence_par_5	117
4.21.1.133Sequence_par_6	117
4.21.1.134Sequence_par_6	117
4.21.1.135Sequence_par_6	117
4.21.1.136Sequence_par_6	117
4.21.1.137Sequence_par_6	117
4.21.1.138Sequence_par_6	117
4.21.1.139Sequence_par_6	117
4.21.1.140Sequence_par_6	117
4.21.1.141Sequence_par_7	117
4.21.1.142Sequence_par_7	117
4.21.1.143Sequence_par_7	117
4.21.1.144Sequence_par_7	117
4.21.1.145Sequence_par_7	117
4.21.1.146Sequence_par_7	117
4.21.1.147Sequence_par_7	117
4.21.1.148Sequence_par_8	117
4.21.1.149Sequence_par_8	117
4.21.1.150Sequence_par_8	117
4.21.1.151Sequence_par_8	117
4.21.1.152Sequence_par_8	117
4.21.1.153Sequence_par_8	117



4.21.1.154	Sequence_par_8	117
4.21.1.155	Sequence_par_9	117
4.21.1.156	Sequence_par_9	117
4.21.1.157	Sequence_par_9	117
4.21.1.158	Sequence_par_9	117
4.21.1.159	Sequence_par_9	117
4.21.1.160	Sequence_par_9	117
4.21.1.161	Sequence_par_9	117
4.21.1.162	Sequence_time	117
4.21.1.163	Sequence_time	117
4.21.1.164	Sequence_time	117
4.21.1.165	Sequence_time	117
4.21.1.166	Sequence_time	117
4.21.1.167	Sequence_time	117
4.21.1.168	Sequence_time	117
4.21.1.169	Sequence_time	117
4.21.2	Function Documentation	117
4.21.2.1	chopped_spectroscopy	117
4.21.2.2	chopped_spectroscopy_2	117
4.21.2.3	chopped_spectroscopy_3	117
4.21.2.4	chopped_spectroscopy_dither	117
4.21.2.5	chopped_spectroscopy_up_down	117
4.21.2.6	DPU_wait	117
4.21.2.7	get_time	117
4.21.2.8	memcrc32	117
4.21.2.9	no_chopping	117
4.21.2.10	tx_1355	117
4.21.2.11	wave_switch_grating	117
4.21.2.12	wave_switch_grating_2	117
4.21.2.13	write_seq	117
4.21.3	Variable Documentation	117
4.21.3.1	Buffer_for_1355_tx	117
4.21.3.2	Dec_values	117
4.21.3.3	Obcp_data_current	117
4.21.3.4	Time_of_dpu	117
4.22	L9_MISC.c File Reference	118
4.22.1	Define Documentation	120
4.22.1.1	cmp_par_blue	120
4.22.1.2	cmp_par_red	120
4.22.1.3	det_sim	120



4.22.1.4	sim_data_b	120
4.22.1.5	sim_data_b	120
4.22.1.6	sim_data_r	120
4.22.1.7	sim_data_r	120
4.22.2	Function Documentation	120
4.22.2.1	dec_test_mode	120
4.22.2.2	DPU_wait	120
4.22.2.3	fill_in_type_subtype	120
4.22.2.4	get_time	120
4.22.2.5	memcrc32	120
4.22.2.6	science_dummy	120
4.22.2.7	spu_test_phot	120
4.22.2.8	spu_test_spec	120
4.22.2.9	timesync_1	120
4.22.2.10	timesync_2	120
4.22.2.11	timesync_3	120
4.22.2.12	tx_1355	120
4.22.2.13	update_TM_buffer	120
4.22.3	Variable Documentation	120
4.22.3.1	Buffer_for_1355_tx	120
4.22.3.2	Obcp_data_current	120
4.22.3.3	Time_of_dpu	120
4.22.3.4	Tm_packet_enabled	120
4.23	L9_newOB.c File Reference	121
4.23.1	Function Documentation	121
4.23.1.1	new_OBCP	121
4.24	L9_P1355.c File Reference	122
4.24.1	Define Documentation	123
4.24.1.1	LINK_MASTER	123
4.24.1.2	LINK_SLAVE	123
4.24.2	Function Documentation	123
4.24.2.1	proc1355	123
4.24.3	Variable Documentation	123
4.24.3.1	Dpu_values	123
4.24.3.2	Obcp_data_current	123
4.24.3.3	p_DEC_1355	123
4.24.3.4	p_SPL_1355	123
4.24.3.5	p_SPS_1355	123
4.25	L9_PHOTC.c File Reference	124
4.25.1	Define Documentation	127



4.25.1.1	chop_def	127
4.25.1.2	chop_def	127
4.25.1.3	chop_def	127
4.25.1.4	cmp_par_blue	127
4.25.1.5	cmp_par_blue	127
4.25.1.6	cmp_par_blue	127
4.25.1.7	cmp_par_red	127
4.25.1.8	cmp_par_red	127
4.25.1.9	cmp_par_red	127
4.25.1.10	Sequence_ID	127
4.25.1.11	Sequence_ID	127
4.25.1.12	Sequence_ID	127
4.25.1.13	Sequence_par_1	127
4.25.1.14	Sequence_par_1	127
4.25.1.15	Sequence_par_1	127
4.25.1.16	Sequence_par_10	127
4.25.1.17	Sequence_par_2	127
4.25.1.18	Sequence_par_2	127
4.25.1.19	Sequence_par_2	127
4.25.1.20	Sequence_par_3	127
4.25.1.21	Sequence_par_3	127
4.25.1.22	Sequence_par_3	127
4.25.1.23	Sequence_par_4	127
4.25.1.24	Sequence_par_4	127
4.25.1.25	Sequence_par_4	127
4.25.1.26	Sequence_par_5	127
4.25.1.27	Sequence_par_5	127
4.25.1.28	Sequence_par_5	127
4.25.1.29	Sequence_par_6	127
4.25.1.30	Sequence_par_6	127
4.25.1.31	Sequence_par_6	127
4.25.1.32	Sequence_par_7	127
4.25.1.33	Sequence_par_7	127
4.25.1.34	Sequence_par_8	127
4.25.1.35	Sequence_par_8	127
4.25.1.36	Sequence_par_9	127
4.25.1.37	Sequence_time	127
4.25.1.38	Sequence_time	127
4.25.1.39	Sequence_time	127
4.25.2	Function Documentation	127



4.25.2.1	DPU_wait	127
4.25.2.2	get_time	127
4.25.2.3	memcrc32	127
4.25.2.4	photometry_cal_i	127
4.25.2.5	photometry_cal_ii	127
4.25.2.6	photometry_cal_iii	127
4.25.2.7	tx_1355	127
4.25.2.8	write_seq	127
4.25.3	Variable Documentation	127
4.25.3.1	Buffer_for_1355_tx	127
4.25.3.2	Dec_values	127
4.25.3.3	Obcp_data_current	127
4.25.3.4	Time_of_dpu	127
4.26	L9_PHOTP.c File Reference	128
4.26.1	Define Documentation	132
4.26.1.1	chop_def	132
4.26.1.2	chop_def	132
4.26.1.3	chop_def	132
4.26.1.4	chop_def	132
4.26.1.5	chop_start_position	132
4.26.1.6	cmp_par_blue	132
4.26.1.7	cmp_par_blue	132
4.26.1.8	cmp_par_blue	132
4.26.1.9	cmp_par_blue	132
4.26.1.10	cmp_par_blue	132
4.26.1.11	cmp_par_red	132
4.26.1.12	cmp_par_red	132
4.26.1.13	cmp_par_red	132
4.26.1.14	cmp_par_red	132
4.26.1.15	cmp_par_red	132
4.26.1.16	cmp_par_red	132
4.26.1.17	cpm_par_blue	132
4.26.1.18	detector	132
4.26.1.19	max_dith	132
4.26.1.20	Sequence_ID	132
4.26.1.21	Sequence_ID	132
4.26.1.22	Sequence_ID	132
4.26.1.23	Sequence_ID	132
4.26.1.24	Sequence_ID	132
4.26.1.25	Sequence_ID	132



4.26.1.26 Sequence_par_1	132
4.26.1.27 Sequence_par_1	132
4.26.1.28 Sequence_par_1	132
4.26.1.29 Sequence_par_1	132
4.26.1.30 Sequence_par_1	132
4.26.1.31 Sequence_par_1	132
4.26.1.32 Sequence_par_2	132
4.26.1.33 Sequence_par_2	132
4.26.1.34 Sequence_par_2	132
4.26.1.35 Sequence_par_2	132
4.26.1.36 Sequence_par_2	132
4.26.1.37 Sequence_par_3	132
4.26.1.38 Sequence_par_3	132
4.26.1.39 Sequence_par_3	132
4.26.1.40 Sequence_par_3	132
4.26.1.41 Sequence_par_3	132
4.26.1.42 Sequence_par_4	132
4.26.1.43 Sequence_par_4	132
4.26.1.44 Sequence_par_4	132
4.26.1.45 Sequence_par_4	132
4.26.1.46 Sequence_par_4	132
4.26.1.47 Sequence_par_5	132
4.26.1.48 Sequence_par_5	132
4.26.1.49 Sequence_par_5	132
4.26.1.50 Sequence_par_5	132
4.26.1.51 Sequence_par_6	132
4.26.1.52 Sequence_par_6	132
4.26.1.53 Sequence_par_6	132
4.26.1.54 Sequence_par_6	132
4.26.1.55 Sequence_par_7	132
4.26.1.56 Sequence_par_7	132
4.26.1.57 Sequence_par_7	132
4.26.1.58 Sequence_par_8	132
4.26.1.59 Sequence_par_8	132
4.26.1.60 Sequence_par_8	132
4.26.1.61 Sequence_par_9	132
4.26.1.62 Sequence_par_9	132
4.26.1.63 Sequence_time	132
4.26.1.64 Sequence_time	132
4.26.1.65 Sequence_time	132



4.26.1.66	Sequence_time	132
4.26.1.67	Sequence_time	132
4.26.1.68	Sequence_time	132
4.26.2	Function Documentation	132
4.26.2.1	chopped_photometry	132
4.26.2.2	chopped_photometry_dither	132
4.26.2.3	chopped_photometry_up_down	132
4.26.2.4	DPU_wait	132
4.26.2.5	fixed_fixed_chopped_photometry	132
4.26.2.6	freeze_chopped_photometry	132
4.26.2.7	get_time	132
4.26.2.8	memcrc32	132
4.26.2.9	staring_photometry	132
4.26.2.10	tx_1355	132
4.26.2.11	write_seq	132
4.26.3	Variable Documentation	132
4.26.3.1	Buffer_for_1355_tx	132
4.26.3.2	Dec_values	132
4.26.3.3	Obcp_data_current	132
4.26.3.4	Time_of_dpu	132
4.27	L9_SPCMD.c File Reference	133
4.27.1	Function Documentation	134
4.27.1.1	event_packet	134
4.27.1.2	irq1_by_polling	134
4.27.1.3	irq1_to_event	134
4.27.1.4	process_DEC_packet	134
4.27.1.5	process_SPL_packet	134
4.27.1.6	process_SPS_packet	134
4.27.1.7	start_HLSW	134
4.27.2	Variable Documentation	134
4.27.2.1	Dpu_values	134
4.27.2.2	Link_through	134
4.27.2.3	Obcp_data_current	134
4.27.2.4	p_DEC_1355	134
4.27.2.5	p_SPL_1355	134
4.27.2.6	p_SPS_1355	134
4.27.2.7	Save_int_EPR1	134
4.27.2.8	Save_int_EPR2	134
4.27.2.9	Save_int_EPR3	134
4.27.2.10	Save_int_EPS1	134



4.27.2.11	Save_int_EPS2	134
4.27.2.12	Save_int_EPS3	134
4.27.2.13	Save_int_ERR1	134
4.27.2.14	Save_int_ERR2	134
4.27.2.15	Save_int_ERR3	134
4.28	L9_SPECC.c File Reference	135
4.28.1	Define Documentation	137
4.28.1.1	chop_def	137
4.28.1.2	cmp_par_blue	137
4.28.1.3	cmp_par_red	137
4.28.1.4	detector	137
4.28.1.5	grat_def	137
4.28.1.6	grat_def_time	137
4.28.1.7	grat_pos	137
4.28.1.8	grat_time	137
4.28.1.9	Sequence_ID	137
4.28.1.10	Sequence_par_1	137
4.28.1.11	Sequence_par_2	137
4.28.1.12	Sequence_par_3	137
4.28.1.13	Sequence_par_4	137
4.28.1.14	Sequence_par_5	137
4.28.1.15	Sequence_par_6	137
4.28.1.16	Sequence_par_7	137
4.28.1.17	Sequence_par_8	137
4.28.1.18	Sequence_par_9	137
4.28.1.19	Sequence_time	137
4.28.2	Function Documentation	137
4.28.2.1	DPU_wait	137
4.28.2.2	get_time	137
4.28.2.3	memcrc32	137
4.28.2.4	spectroscopy_cal	137
4.28.2.5	tx_1355	137
4.28.2.6	write_seq	137
4.28.3	Variable Documentation	137
4.28.3.1	Buffer_for_1355_tx	137
4.28.3.2	Dec_values	137
4.28.3.3	Obcp_data_current	137
4.28.3.4	Time_of_dpu	137
4.29	L9_SWITC.c File Reference	138
4.29.1	Define Documentation	139





4.29.1.1	grat_def	139
4.29.1.2	TBD	139
4.29.2	Function Documentation	139
4.29.2.1	DPU_wait	139
4.29.2.2	event_packet	139
4.29.2.3	function_activity	139
4.29.2.4	go_SAFE	139
4.29.2.5	go_SAFE2	139
4.29.2.6	set_HK_list	139
4.29.2.7	spec_to_phot	139
4.29.2.8	tx_1355	139
4.29.3	Variable Documentation	139
4.29.3.1	Buffer_for_1355_tx	139
4.29.3.2	Burst_active	139
4.29.3.3	Dpu_values	139
4.29.3.4	Obcp_data_current	139
4.30	LT_1355.c File Reference	140
4.30.1	Function Documentation	141
4.30.1.1	ACK_handling	141
4.30.1.2	DPU_wait	141
4.30.1.3	event_packet	141
4.30.1.4	fill_in_type_subtype	141
4.30.1.5	tx_1355	141
4.30.1.6	update_TM_buffer	141
4.30.2	Variable Documentation	141
4.30.2.1	Abort_OBCP	141
4.30.2.2	Ack	141
4.30.2.3	ACK_timer	141
4.30.2.4	Dpu_values	141
4.30.2.5	K_TaskList	141
4.30.2.6	Link_through	141
4.30.2.7	p_DEC_1355	141
4.30.2.8	p_SPL_1355	141
4.30.2.9	p_SPS_1355	141
4.30.2.10	Task_index	141
4.30.2.11	Tm_packet_enabled	141
4.30.2.12	Words_to_dump	141
4.31	LT_1355.h File Reference	142
4.31.1	Define Documentation	145
4.31.1.1	DEC_LINK	145



4.31.1.2	HK_DIAGNO	145
4.31.1.3	HK_HEADER	145
4.31.1.4	MASTER	145
4.31.1.5	MAX_WORDS_SCIENCE_PACKET	145
4.31.1.6	NO_COMMAND_SENT	145
4.31.1.7	Read1355DPRAM	145
4.31.1.8	ReadRegister	145
4.31.1.9	SCIENCE_P	145
4.31.1.10	SCIENCE_S	145
4.31.1.11	SENT_LINK_USED	145
4.31.1.12	SENT_OFF	145
4.31.1.13	SENT_OK	145
4.31.1.14	SENT_SPC_CMD	145
4.31.1.15	SENT_STOPPED	145
4.31.1.16	SENT_TIMEOUT	145
4.31.1.17	SLAVE	145
4.31.1.18	SPL_LINK	145
4.31.1.19	SPS_LINK	145
4.31.1.20	TIME_ACK_1355	145
4.31.1.21	Write1355DPRAM	145
4.31.1.22	WriteRegister	145
4.31.2	Enumeration Type Documentation	145
4.31.2.1	SPU_science_header	145
4.31.3	Function Documentation	146
4.31.3.1	read_word_DM	146
4.31.3.2	write_word_DM	146
4.32	LT_FUNC.c File Reference	147
4.32.1	Function Documentation	147
4.32.1.1	function_activity	147
4.32.1.2	set_HK_list	147
4.32.2	Variable Documentation	147
4.32.2.1	Dec_hk	147
4.32.2.2	Dec_values	147
4.32.2.3	Dpu_hk	147
4.32.2.4	Dpu_values	147
4.32.2.5	Func_data	147
4.32.2.6	Tm_packet_enabled	147
4.33	LT_FUNC.h File Reference	148
4.33.1	Define Documentation	150
4.33.1.1	ADD_SEQ	150



4.33.1.2	BURST_TOGGLE	150
4.33.1.3	CALL_BOOT	150
4.33.1.4	CHECK_PM	150
4.33.1.5	DEL_SEQ	150
4.33.1.6	DIM_NUMBER_SEQ	150
4.33.1.7	DIM_SEQ_ARRAY	150
4.33.1.8	DPU_RESET	150
4.33.1.9	DPU_TEST_MODE	150
4.33.1.10	FUNC_DEC_ID	150
4.33.1.11	FUNC_DPU_ID	150
4.33.1.12	FUNC_INVALID_ACTID	150
4.33.1.13	FUNC_INVALID_AF	150
4.33.1.14	FUNC_INVALID_ARRAY	150
4.33.1.15	FUNC_INVALID_CMD	150
4.33.1.16	FUNC_INVALID_CRC	150
4.33.1.17	FUNC_INVALID_FUNCID	150
4.33.1.18	FUNC_INVALID_PAR	150
4.33.1.19	FUNC_INVALID_SEQID	150
4.33.1.20	FUNC_INVALID_SID	150
4.33.1.21	FUNC_LINK_USED	150
4.33.1.22	FUNC_NOT_ENOUGH_SPACE	150
4.33.1.23	FUNC_SPL_ID	150
4.33.1.24	FUNC_SPS_ID	150
4.33.1.25	FUNC_SS_STOPPED	150
4.33.1.26	FUNC_STOPPED	150
4.33.1.27	FUNC_TIMEOUT	150
4.33.1.28	FUNCTION_OFF	150
4.33.1.29	FUNCTION_ON	150
4.33.1.30	FUNCTION_STOPPED	150
4.33.1.31	OBSW_IMAGE_CPY	150
4.33.1.32	RESET_1355	150
4.33.1.33	RESET_1553	150
4.33.1.34	SEND_TIME	150
4.33.1.35	SERVICE_OK	150
4.33.1.36	SET_FUNC	150
4.33.1.37	SET_HK_LIST	150
4.33.1.38	START_AF	150
4.33.1.39	UPGRADE_SEQ	150
4.34	LT_HKdef.h File Reference	151
4.34.1	Enumeration Type Documentation	155



4.34.1.1	"@3	155
4.34.1.2	"@4	157
4.34.1.3	"@5	158
4.35	LT_INIT.c File Reference	171
4.35.1	Function Documentation	171
4.35.1.1	DPU_wait	171
4.35.1.2	init_1355	171
4.35.1.3	irq1_to_event	171
4.35.2	Variable Documentation	171
4.35.2.1	Dec_values	171
4.35.2.2	Spl_values	171
4.35.2.3	Sps_values	171
4.36	LT_MEM.h File Reference	172
4.36.1	Define Documentation	173
4.36.1.1	BUS_IF_BOARD_REGISTERS	173
4.36.1.2	BUS_IF_MIL_AND_ANALOG_INP	173
4.36.1.3	DATA_MEMORY_BASE_ADDRESS	173
4.36.1.4	EEPROM_MEMORY_BASE_ADDRESS	173
4.36.1.5	IF_1355_BASE_ADDRESS	173
4.36.1.6	INT_MANAGER_BASE_ADDRESS	173
4.36.1.7	INTERVAL_TIMER_BASE_ADDRESS	173
4.36.1.8	INVALID_ADDRESS	173
4.36.1.9	INVALID_CRC_1ST_CHK	173
4.36.1.10	INVALID_CRC_2ND_CHK	173
4.36.1.11	INVALID_MEMID	173
4.36.1.12	INVALID_MEMLength	173
4.36.1.13	MData_reg	173
4.36.1.14	MEM_LOAD_OK	173
4.36.1.15	MSEL_reg	173
4.36.1.16	SMCS_REGISTERS_BASE_ADDRESS	173
4.36.1.17	START_DM_IN_PM	173
4.36.1.18	WATCHDOG_BASE_ADDRESS	173
4.37	LT_OBCP.h File Reference	174
4.37.1	Define Documentation	176
4.37.1.1	INIT_OBCP_PAR	176
4.37.1.2	MAX_NUMBER_PAR	176
4.37.1.3	MAX_PROC_ID	176
4.37.1.4	MY_BIRTHDAY	176
4.37.1.5	OBCP_ALREADY_RUNNING	176
4.37.1.6	OBCP_COMMAND_NOT_SENT	176



4.37.1.7	OBCP_DEC_SEQ_NOT_COMPLETED	176
4.37.1.8	OBCP_DELETED	176
4.37.1.9	OBCP_FAIL	176
4.37.1.10	OBCP_GENERIC_FAILURE	176
4.37.1.11	OBCP_ILL_PAR_ID	176
4.37.1.12	OBCP_INVALID_DATA	176
4.37.1.13	OBCP_INVALID_DATUM	176
4.37.1.14	OBCP_INVALID_PROCID	176
4.37.1.15	OBCP_LOAD_OK	176
4.37.1.16	OBCP_LOADING_ACTIVE	176
4.37.1.17	OBCP_NOT_COMPLETED	176
4.37.1.18	OBCP_OK	176
4.37.1.19	OBCP_PROC_COMPLETED	176
4.37.1.20	OBCP_PROC_NO_REPORT	176
4.37.1.21	OBCP_REQ_IGNORED	176
4.37.1.22	OBCP_RUNNING	176
4.37.1.23	OBCP_SEQ_NOT_COMPLETED	176
4.37.1.24	OBCP_START_DELETED_PROC	176
4.37.1.25	OBCP_STOPPED	176
4.37.1.26	OBCP_SUSP_TIMEOUT	176
4.37.1.27	OBCP_SUSPENDED	176
4.37.1.28	OBCP_TOO_MUCH_PAR	176
4.37.1.29	OBCP_WRONG_EE_PAR	176
4.37.1.30	OBCP_WRONG_LENGTH	176
4.37.1.31	OBCP_WRONG_SEQ	176
4.37.1.32	OBCP_WRONG_SEQ_ID	176
4.37.1.33	SERVICE_OK	176
4.37.1.34	TIME_TO_SUSPEND	176
4.37.2	Typedef Documentation	176
4.37.2.1	OBCP_pointer	176
4.38	LT_TMdef.h File Reference	177
4.38.1	Define Documentation	179
4.38.1.1	ACCEPTANCE_OK	179
4.38.1.2	ILLEGAL_APIID	179
4.38.1.3	ILLEGAL_DATA	179
4.38.1.4	ILLEGAL_PACKET_SUBTYPE	179
4.38.1.5	ILLEGAL_PACKET_TYPE	179
4.38.1.6	ILLEGAL_STATUS	179
4.38.1.7	INVALID_CRC	179
4.38.1.8	INVALID_LENGTH	179



4.38.1.9	ONE_SECOND	179
4.38.1.10	RESOURCE_FAILURE	179
4.38.1.11	SID_SCIENCE_LOST	179
4.38.1.12	TC_DATA_HEADER_LEN	179
4.38.1.13	TC_DATA_MAX	179
4.38.1.14	TC_FAIL	179
4.38.1.15	TC_OK	179
4.38.1.16	TM_DATA_HEADER_LEN	179
4.38.1.17	TM_DATA_MAX	179
4.38.1.18	TM_DATA_MAX_EV	179
4.38.2	Enumeration Type Documentation	179
4.38.2.1	"@10	179
4.38.2.2	"@11	180
4.38.2.3	"@6	181
4.38.2.4	"@7	181
4.38.2.5	"@8	181
4.38.2.6	"@9	181
4.38.2.7	TM_packets_type	181
4.39	LT_upTMb.c File Reference	183
4.39.1	Function Documentation	184
4.39.1.1	event_packet	184
4.39.1.2	fill_in_type_subtype	184
4.39.1.3	get_APIID	184
4.39.1.4	get_time	184
4.39.1.5	handle_TM_buffer	184
4.39.1.6	IFSI_DIV	184
4.39.1.7	IFSI_MOD	184
4.39.1.8	update_TM_buffer	184
4.39.1.9	update_TM_EVbuffer	184
4.39.2	Variable Documentation	184
4.39.2.1	Current_time	184
4.39.2.2	Dec_values	184
4.39.2.3	Dpu_time	184
4.39.2.4	Dpu_values	184
4.39.2.5	Ev_packet_enabled	184
4.39.2.6	MilRTConf	184
4.39.2.7	Pool_EV_packets	184
4.39.2.8	Pool_HK_packets	184
4.39.2.9	Pool_SC_packets	184
4.39.2.10	RTAddress	184



4.39.2.11	Tm_packet_enabled	185
4.39.2.12	Waiting_TM_packet	185
4.40	MilConf.c File Reference	186
4.40.1	Function Documentation	186
4.40.1.1	IFSI_MOD	186
4.40.1.2	MilBlockFill	188
4.40.1.3	MilBlockRead	188
4.40.1.4	MilBlockWrite	188
4.40.1.5	MilBlockWriteWithBound	188
4.40.1.6	MilClose	188
4.40.1.7	MilInitStructMsg	188
4.40.1.8	MilOpen	188
4.40.1.9	MilReadRam	188
4.40.1.10	MilReadReg	188
4.40.1.11	MilRTInterruptHandler	188
4.40.1.12	MilRTReadStack	188
4.40.1.13	MilWriteRam	188
4.40.1.14	MilWriteReg	188
4.40.2	Variable Documentation	188
4.40.2.1	gbv_RxMessages	188
4.40.2.2	gbv_TxMessages	188
4.40.2.3	gd_SemaModeCode	188
4.40.2.4	gpw_RxMsg	188
4.40.2.5	gpw_RxMsgPointer	188
4.40.2.6	sw_MilConf	188
4.40.2.7	sw_MsgBlock	188
4.40.2.8	UserVar	188
4.41	MilConf.h File Reference	189
4.41.1	Define Documentation	191
4.41.1.1	BC_FRAME_TIME	191
4.41.1.2	BC_FT_REMAIN	191
4.41.1.3	BC_MSG_REMAIN	191
4.41.1.4	CMD_STK	191
4.41.1.5	CNTRL_WORD	191
4.41.1.6	CONFIG_1	191
4.41.1.7	CONFIG_2	191
4.41.1.8	CONFIG_3	191
4.41.1.9	CONFIG_4	191
4.41.1.10	CONFIG_5	191
4.41.1.11	CONTROL	191



4.41.1.12	INTRPT_MASK	191
4.41.1.13	INTRPT_STATUS	191
4.41.1.14	MEM_ENABLE	191
4.41.1.15	MIL_CLOSED	191
4.41.1.16	MIL_LEVEL	191
4.41.1.17	MIL_MEMMAP	191
4.41.1.18	MIL_MSG_FAILED	191
4.41.1.19	MIL_MSG_FREE	191
4.41.1.20	MIL_MSG_READY	191
4.41.1.21	MIL_NOT_DEFINED	191
4.41.1.22	MIL_OPENED	191
4.41.1.23	MIL_OTHER	191
4.41.1.24	MIL_PULSE	194
4.41.1.25	MIL_SA_MESSAGE	194
4.41.1.26	MT_DATA_STK	194
4.41.1.27	MT_TRIGGER_WORD	194
4.41.1.28	RT_BIT_WORD	194
4.41.1.29	RT_LAST_CMD	194
4.41.1.30	RT_STATUS_WORD	194
4.41.1.31	TIMETAG	194
4.41.2	Typedef Documentation	194
4.41.2.1	MemBlockHandle	194
4.41.2.2	MemBlockType	194
4.41.2.3	MilConf_p	194
4.41.2.4	MilConf_t	194
4.41.2.5	RTPtr	194
4.41.2.6	RTType	194
4.41.2.7	RxMsgPointerStructType	194
4.41.2.8	RxMsgPointerType	194
4.41.3	Function Documentation	194
4.41.3.1	MilBlockFill	194
4.41.3.2	MilBlockRead	194
4.41.3.3	MilBlockWrite	194
4.41.3.4	MilClose	194
4.41.3.5	MilOpen	194
4.41.3.6	MilReadRam	194
4.41.3.7	MilReadReg	194
4.41.3.8	MilRTInterruptHandler	194
4.41.3.9	MilRTReadStack	194
4.41.3.10	MilWriteRam	194





4.41.3.11 MilWriteReg . . . . .	194
4.42 MilDef.h File Reference . . . . .	195
4.42.1 Define Documentation . . . . .	195
4.42.1.1 <code>__MILDEF__</code> . . . . .	195
4.42.1.2 <code>FALSE</code> . . . . .	196
4.42.1.3 <code>MilFree</code> . . . . .	196
4.42.1.4 <code>MilMalloc</code> . . . . .	196
4.42.1.5 <code>MilMemCpy</code> . . . . .	196
4.42.1.6 <code>OFF</code> . . . . .	196
4.42.1.7 <code>ON</code> . . . . .	196
4.42.1.8 <code>TRUE</code> . . . . .	196
4.43 MilErr.h File Reference . . . . .	197
4.43.1 Define Documentation . . . . .	199
4.43.1.1 <code>MIL_BAD_SELECTION</code> . . . . .	199
4.43.1.2 <code>MIL_ERR_INT_FORMAT_ERROR</code> . . . . .	199
4.43.1.3 <code>MIL_ERR_INT_STACK_ROLL_OVER</code> . . . . .	199
4.43.1.4 <code>MIL_ERROR_BAD_NUMBER_OF_WORDS</code> . . . . .	199
4.43.1.5 <code>MIL_ERROR_BADBLOCK</code> . . . . .	199
4.43.1.6 <code>MIL_ERROR_BLOCKTOOSMALL</code> . . . . .	199
4.43.1.7 <code>MIL_ERROR_BUFFERTOOSMALL</code> . . . . .	199
4.43.1.8 <code>MIL_ERROR_DEREGISTERCLIENT</code> . . . . .	199
4.43.1.9 <code>MIL_ERROR_DISABLE</code> . . . . .	199
4.43.1.10 <code>MIL_ERROR_ENABLE</code> . . . . .	199
4.43.1.11 <code>MIL_ERROR_ENHANCEDMODEOFF</code> . . . . .	199
4.43.1.12 <code>MIL_ERROR_FRAME_NOT_DEFINED</code> . . . . .	199
4.43.1.13 <code>MIL_ERROR_FRAME_NOT_READY</code> . . . . .	199
4.43.1.14 <code>MIL_ERROR_INVALIDMODECODE</code> . . . . .	199
4.43.1.15 <code>MIL_ERROR_INVALIDIRQ</code> . . . . .	199
4.43.1.16 <code>MIL_ERROR_MSG_ALREADY_DEFINED</code> . . . . .	199
4.43.1.17 <code>MIL_ERROR_MSG_NOT_DEFINED</code> . . . . .	199
4.43.1.18 <code>MIL_ERROR_NO_MILCONF_CLOSE</code> . . . . .	199
4.43.1.19 <code>MIL_ERROR_NOTCONFIGURED</code> . . . . .	199
4.43.1.20 <code>MIL_ERROR_OPEN</code> . . . . .	199
4.43.1.21 <code>MIL_ERROR_OPENING_FILE</code> . . . . .	199
4.43.1.22 <code>MIL_ERROR_OUTOFMEMORY</code> . . . . .	199
4.43.1.23 <code>MIL_ERROR_RAMOUTOFRANGE</code> . . . . .	199
4.43.1.24 <code>MIL_ERROR_REGISTERCLIENT</code> . . . . .	199
4.43.1.25 <code>MIL_ERROR_RESET_ACE</code> . . . . .	199
4.43.1.26 <code>MIL_ERROR_RT_NOMSG</code> . . . . .	199
4.43.1.27 <code>MIL_ERROR_RTDEFMSGILLSA</code> . . . . .	199



4.43.1.28	MIL_ERROR_RTDEFMSGILLTYPE	199
4.43.1.29	MIL_ERROR_RTDEFMSGILLWC	199
4.43.1.30	MIL_ERROR_RTMONNOTOPENED	199
4.43.1.31	MIL_ERROR_RTNOTOPENED	199
4.43.1.32	MIL_ERROR_SA_OVERFLOW	199
4.43.1.33	MIL_ERROR_STACK_NOT_READ	199
4.43.1.34	MIL_ERROR_SUBADDRES_MSG_NOT_DEFINED	199
4.43.1.35	MIL_ERROR_TX_RX_BAD_DEFINED	199
4.43.1.36	MIL_ERROR_UNKNOWN_CARD	199
4.43.1.37	MIL_SUCCESS	199
4.43.2	Typedef Documentation	199
4.43.2.1	MilError_t	199
4.44	MilInit.c File Reference	201
4.44.1	Function Documentation	201
4.44.1.1	Mil1553AModeCd	201
4.44.1.2	MilClockSel	203
4.44.1.3	MilCreateCmdWord	203
4.44.1.4	MilEnhancedMode	203
4.44.1.5	MilParseCmdWord	203
4.44.1.6	MilPreset	203
4.44.1.7	MilRamParityCheck	203
4.44.1.8	MilReadTimeTag	203
4.44.1.9	MilReset	203
4.44.1.10	MilRTSelfTest	203
4.44.1.11	MilSamplingSel	203
4.44.1.12	MilTimeout	203
4.44.1.13	MilTimeTagReset	203
4.44.1.14	MilTimeTagResolution	203
4.44.1.15	MilTimeTagTest	203
4.44.1.16	MilValidBUSYNoData	203
4.44.1.17	MilValidMENoData	203
4.44.1.18	MilWordBoundaries	203
4.45	MilInit.h File Reference	204
4.45.1	Define Documentation	209
4.45.1.1	ACE_BC_FRM_TM_RW_REG	209
4.45.1.2	ACE_BC_TM_NEXT_MSG_R_REG	209
4.45.1.3	ACE_CMD_STK_PNT_R_REG	209
4.45.1.4	ACE_CONF_1_RW_REG	209
4.45.1.5	ACE_CONF_2_RW_REG	209
4.45.1.6	ACE_CONF_3_RW_REG	209



4.45.1.7	ACE_CONF_4_RW_REG	209
4.45.1.8	ACE_CONF_5_RW_REG	209
4.45.1.9	ACE_INT_MASK_RW_REG	209
4.45.1.10	ACE_INT_ST_RW_REG	209
4.45.1.11	ACE_RT_BIT_WD_R_REG	209
4.45.1.12	ACE_RT_DATA_STK_RW_REG	209
4.45.1.13	ACE_RT_LAST_CMD_RW_REG	209
4.45.1.14	ACE_RT_SA_CNT_RW_REG	209
4.45.1.15	ACE_RT_ST_WD_R_REG	209
4.45.1.16	ACE_START_RST_W_REG	209
4.45.1.17	ACE_TEST_MODE_0_REG	209
4.45.1.18	ACE_TEST_MODE_1_REG	209
4.45.1.19	ACE_TEST_MODE_2_REG	209
4.45.1.20	ACE_TEST_MODE_3_REG	209
4.45.1.21	ACE_TEST_MODE_4_REG	209
4.45.1.22	ACE_TEST_MODE_5_REG	209
4.45.1.23	ACE_TEST_MODE_6_REG	209
4.45.1.24	ACE_TEST_MODE_7_REG	209
4.45.1.25	ACE_TIME_TAG_RW_REG	209
4.45.1.26	BCmode	209
4.45.1.27	BCTORT	209
4.45.1.28	BRDCST	209
4.45.1.29	BRDCSTMODEDATA	209
4.45.1.30	BRDCSTMODENODATA	209
4.45.1.31	BRDCSTRTADDRVAL	209
4.45.1.32	BRDCSTRTTORT	209
4.45.1.33	BS_AD_CHIP_SELECT_7	209
4.45.1.34	BS_AD_MIL_1553_DPRAM	212
4.45.1.35	BS_AD_MIL_1553_REG	212
4.45.1.36	CLOCK_12	212
4.45.1.37	CLOCK_16	212
4.45.1.38	DOUBLE_EDGE	212
4.45.1.39	INVALID	212
4.45.1.40	MIL_1553_RAM_SIZE	212
4.45.1.41	MIL_BUSY_BIT_LK_TBL_E	212
4.45.1.42	MIL_BUSY_BIT_LK_TBL_I	212
4.45.1.43	MIL_CMD_ILL_TBL_E	212
4.45.1.44	MIL_CMD_ILL_TBL_I	212
4.45.1.45	MIL_DATA_BLOCK_AREA1_E	212
4.45.1.46	MIL_DATA_BLOCK_AREA1_I	212



4.45.1.47 MIL_DATA_BLOCK_AREA2_E . . . . .	212
4.45.1.48 MIL_DATA_BLOCK_AREA2_I . . . . .	212
4.45.1.49 MIL_ILL_MAP_BCST_RX_E . . . . .	212
4.45.1.50 MIL_ILL_MAP_BCST_RX_I . . . . .	212
4.45.1.51 MIL_ILL_MAP_BCST_TX_E . . . . .	212
4.45.1.52 MIL_ILL_MAP_BCST_TX_I . . . . .	212
4.45.1.53 MIL_ILL_MAP_RX_E . . . . .	212
4.45.1.54 MIL_ILL_MAP_RX_I . . . . .	212
4.45.1.55 MIL_ILL_MAP_TX_E . . . . .	212
4.45.1.56 MIL_ILL_MAP_TX_I . . . . .	212
4.45.1.57 MIL_LK_TBL_A_BCST_SA0 . . . . .	212
4.45.1.58 MIL_LK_TBL_A_BCST_SA31 . . . . .	212
4.45.1.59 MIL_LK_TBL_A_RX_SA0 . . . . .	212
4.45.1.60 MIL_LK_TBL_A_RX_SA31 . . . . .	212
4.45.1.61 MIL_LK_TBL_A_SACW_SA0 . . . . .	212
4.45.1.62 MIL_LK_TBL_A_SACW_SA31 . . . . .	212
4.45.1.63 MIL_LK_TBL_A_TX_SA0 . . . . .	212
4.45.1.64 MIL_LK_TBL_A_TX_SA31 . . . . .	212
4.45.1.65 MIL_LK_TBL_B_BCST_SA0 . . . . .	212
4.45.1.66 MIL_LK_TBL_B_BCST_SA31 . . . . .	212
4.45.1.67 MIL_LK_TBL_B_RX_SA0 . . . . .	212
4.45.1.68 MIL_LK_TBL_B_RX_SA31 . . . . .	212
4.45.1.69 MIL_LK_TBL_B_SACW_SA0 . . . . .	212
4.45.1.70 MIL_LK_TBL_B_SACW_SA31 . . . . .	212
4.45.1.71 MIL_LK_TBL_B_TX_SA0 . . . . .	212
4.45.1.72 MIL_LK_TBL_B_TX_SA31 . . . . .	212
4.45.1.73 MIL_LOOK_UP_TABLE_A_E . . . . .	212
4.45.1.74 MIL_LOOK_UP_TABLE_A_I . . . . .	212
4.45.1.75 MIL_LOOK_UP_TABLE_B_E . . . . .	212
4.45.1.76 MIL_LOOK_UP_TABLE_B_I . . . . .	212
4.45.1.77 MIL_MD_CD_DATA_E . . . . .	212
4.45.1.78 MIL_MD_CD_DATA_I . . . . .	212
4.45.1.79 MIL_MD_CD_SEL_INT_TBL_E . . . . .	212
4.45.1.80 MIL_MD_CD_SEL_INT_TBL_I . . . . .	212
4.45.1.81 MIL_NOT_USER_AREA_E . . . . .	212
4.45.1.82 MIL_NOT_USER_AREA_I . . . . .	212
4.45.1.83 MIL_RESERVED_AREA1_E . . . . .	212
4.45.1.84 MIL_RESERVED_AREA1_I . . . . .	212
4.45.1.85 MIL_RESERVED_AREA2_E . . . . .	212
4.45.1.86 MIL_RESERVED_AREA2_I . . . . .	212



4.45.1.87	MIL_RT_CMD_STK_PNT_A	212
4.45.1.88	MIL_RT_CMD_STK_PNT_B	212
4.45.1.89	MIL_STACK_A_E	212
4.45.1.90	MIL_STACK_A_I	212
4.45.1.91	MIL_STACK_B_E	212
4.45.1.92	MIL_STACK_B_I	212
4.45.1.93	MIL_TIMETAG_16	212
4.45.1.94	MIL_TIMETAG_2	212
4.45.1.95	MIL_TIMETAG_32	212
4.45.1.96	MIL_TIMETAG_4	212
4.45.1.97	MIL_TIMETAG_64	212
4.45.1.98	MIL_TIMETAG_8	212
4.45.1.99	MIL_TIMETAG_EXT_CLOCK	212
4.45.1.100	MIL_TIMETAG_TEST	212
4.45.1.101	MODEDATARX	212
4.45.1.102	MODEDATATX	212
4.45.1.103	MODENODATA	212
4.45.1.104	MODESADDRVAL1	212
4.45.1.105	MODESADDRVAL2	212
4.45.1.106	MsgTypeString	212
4.45.1.107	MTmode	213
4.45.1.108	OFFSET_REG	213
4.45.1.109	RESPONSE_130	213
4.45.1.110	RESPONSE_185	213
4.45.1.111	RESPONSE_225	213
4.45.1.112	RESPONSE_505	213
4.45.1.113	RTmode	213
4.45.1.114	RTTOBC	213
4.45.1.115	RTTORT	213
4.45.1.116	SINGLE_EDGE	213
4.45.2	Typedef Documentation	213
4.45.2.1	MsgType	213
4.45.3	Function Documentation	213
4.45.3.1	Mil1553AModeCd	213
4.45.3.2	MilClockSel	215
4.45.3.3	MilCreateCmdWord	215
4.45.3.4	MilEnhancedMode	215
4.45.3.5	MilParseCmdWord	215
4.45.3.6	MilPreset	215
4.45.3.7	MilRamParityCheck	215



4.45.3.8	MilReadTimeTag	215
4.45.3.9	MilReset	215
4.45.3.10	MilRTSelfTest	215
4.45.3.11	MilSamplingSel	215
4.45.3.12	MilTimeout	215
4.45.3.13	MilTimeTagReset	215
4.45.3.14	MilTimeTagResolution	215
4.45.3.15	MilTimeTagTest	215
4.45.3.16	MilValidBUSYNoData	215
4.45.3.17	MilValidMENoData	215
4.45.3.18	MilWordBoundaries	215
4.46	MilIrq.c File Reference	216
4.46.1	Function Documentation	216
4.46.1.1	MilGetIrqStatus	216
4.46.1.2	MilIrqAutoClear	216
4.46.1.3	MilIrqDisable	217
4.46.1.4	MilIrqEnable	217
4.46.1.5	MilIrqReset	217
4.46.1.6	MilIrqType	217
4.47	MilIrq.h File Reference	218
4.47.1	Define Documentation	218
4.47.1.1	IRQ_ALL	218
4.47.1.2	IRQ_BC_END_OF_FRAME	220
4.47.1.3	IRQ_BC_RETRY	220
4.47.1.4	IRQ_BC_RT_CMD_STK_ROLLOVR	220
4.47.1.5	IRQ_END_OF_MESSAGE	220
4.47.1.6	IRQ_HANDSHAKE_FAILURE	220
4.47.1.7	IRQ_MASTER	220
4.47.1.8	IRQ_MT_CMD_STACK_ROLLOVR	220
4.47.1.9	IRQ_MT_DTA_STACK_ROLLOVR	220
4.47.1.10	IRQ_RAM_PARITY_ERROR	220
4.47.1.11	IRQ_RT_ADDR_PARITY_ERROR	220
4.47.1.12	IRQ_RT_BC_MESSAGE_INT	220
4.47.1.13	IRQ_RT_BC_MT_FORMAT_ERROR	220
4.47.1.14	IRQ_RT_CIRC_BUFFR_ROLLOVR	220
4.47.1.15	IRQ_STATUS_SET_MODE_INT_TRIG	220
4.47.1.16	IRQ_TIMETAG_ROLLOVR	220
4.47.1.17	IRQ_TRANSMITTER_TIMEOUT	220
4.47.1.18	LEVEL	220
4.47.1.19	PULSE	220



4.47.2	Function Documentation	220
4.47.2.1	MilGetIrqStatus	220
4.47.2.2	MilIrqAutoClear	220
4.47.2.3	MilIrqDisable	221
4.47.2.4	MilIrqEnable	221
4.47.2.5	MilIrqReset	221
4.47.2.6	MilIrqType	221
4.48	Milmem.c File Reference	222
4.48.1	Function Documentation	222
4.48.1.1	CreateMemBlockHandle	222
4.48.1.2	CreatePermanentMemBlock	222
4.48.1.3	CreateProtectedMemBlock	222
4.48.1.4	IFSI_MOD	222
4.48.1.5	MemBlockInsert	224
4.48.1.6	MemBlockRemove	224
4.48.1.7	MilAllocateOnBoard	224
4.48.1.8	MilAllocHandle	224
4.48.1.9	MilAllocHandleBoundary	224
4.48.1.10	MilClearBlockList	224
4.48.1.11	MilCloseBlockList	224
4.48.1.12	MilFindSpace	224
4.48.1.13	MilInitBlockList	224
4.48.1.14	MilReadBlk	224
4.48.1.15	MilReleaseHandle	224
4.48.1.16	MilWriteBlk	224
4.48.1.17	SwapMemBlocks	224
4.49	Milmem.h File Reference	225
4.49.1	Define Documentation	226
4.49.1.1	ACTIVE	226
4.49.1.2	CMDSTACK	226
4.49.1.3	MilGetBlkAddress	226
4.49.1.4	MilGetBlkSize	226
4.49.1.5	OFFBOARD	226
4.49.1.6	PERMANENT	226
4.49.1.7	PROTECTED	226
4.49.1.8	UNUSED	226
4.49.1.9	USED	227
4.49.2	Function Documentation	227
4.49.2.1	AllocateOnBoard	227
4.49.2.2	AllocOffBoard	227



4.49.2.3	CreateMemBlockHandle	227
4.49.2.4	CreatePermanentMemBlock	227
4.49.2.5	CreateProtectedMemBlock	227
4.49.2.6	MemBlockInsert	227
4.49.2.7	MemBlockRemove	227
4.49.2.8	MilAllocHandle	227
4.49.2.9	MilAllocHandleBoundary	227
4.49.2.10	MilClearBlockList	227
4.49.2.11	MilCloseBlockList	227
4.49.2.12	MilFindSpace	227
4.49.2.13	MilInitBlockList	227
4.49.2.14	MilReadBlk	227
4.49.2.15	MilReleaseHandle	227
4.49.2.16	MilWriteBlk	227
4.49.2.17	SwapMemBlocks	227
4.50	MilRt.c File Reference	228
4.50.1	Function Documentation	231
4.50.1.1	MilReadParityBit	231
4.50.1.2	MilRTAddMsgtoFrame	231
4.50.1.3	MilRTAddress	231
4.50.1.4	MilRTAllocBlk	231
4.50.1.5	MilRTAltStat	231
4.50.1.6	MilRTAltStatusEna	231
4.50.1.7	MilRTAltStatusRead	231
4.50.1.8	MilRTAltStatusWrite	231
4.50.1.9	MilRTBitInhibit	231
4.50.1.10	MilRTBITRead	231
4.50.1.11	MilRTBrcdst	231
4.50.1.12	MilRTBusyBitDisable	231
4.50.1.13	MilRTBusyBitEnable	231
4.50.1.14	MilRTBusyTableEna	231
4.50.1.15	MilRTBusyValid	231
4.50.1.16	MilRTCclose	231
4.50.1.17	MilRTConfigMemory	231
4.50.1.18	MilRTCcreateFrame	231
4.50.1.19	MilRTCcreateMsgStruct	231
4.50.1.20	MilRTCcreateSingleMsg	231
4.50.1.21	MilRTDefMsgIllegal	231
4.50.1.22	MilRTDefMsgLegal	231
4.50.1.23	MilRTDefSA	231





4.50.1.24	MilRTDeleteFrame	231
4.50.1.25	MilRTDeleteMsgStruct	231
4.50.1.26	MilRTDeleteSingleMsg	231
4.50.1.27	MilRTEnhMM	231
4.50.1.28	MilRTEnhModeCode	231
4.50.1.29	MilRTExtBITWord	231
4.50.1.30	MilRTExtBITWrite	231
4.50.1.31	MilRTFlag	231
4.50.1.32	MilRTFlagWrap	231
4.50.1.33	MilRTFrameRead	231
4.50.1.34	MilRTFrameWrite	231
4.50.1.35	MilRTFreeBlk	231
4.50.1.36	MilRTIllegal	231
4.50.1.37	MilRTIrqMsgSaDisable	231
4.50.1.38	MilRTIrqMsgSaEnable	231
4.50.1.39	MilRTMapBlk	231
4.50.1.40	MilRTModeCode	231
4.50.1.41	MilRTModeIrqDisable	231
4.50.1.42	MilRTModeIrqEnable	231
4.50.1.43	MilRTMsgErrValid	231
4.50.1.44	MilRTMsgOK	231
4.50.1.45	MilRTOpen	231
4.50.1.46	MilRTReadEnhMCDData	231
4.50.1.47	MilRTReadInactive	231
4.50.1.48	MilRTReadMsg	231
4.50.1.49	MilRTReadSingleMsg	231
4.50.1.50	MilRTRun	231
4.50.1.51	MilRTSeparateBcst	231
4.50.1.52	MilRTSetBusy	231
4.50.1.53	MilRTSetDbc	231
4.50.1.54	MilRTSetSSflag	231
4.50.1.55	MilRTSetSvcReq	231
4.50.1.56	MilRTStop	231
4.50.1.57	MilRTWriteEnhMCDData	231
4.50.1.58	MilRTWriteSingleMsg	231
4.50.1.59	Sacw2Word	231
4.50.1.60	Word2Sacw	231
4.50.2	Variable Documentation	231
4.50.2.1	gbv_RxMessages	231
4.50.2.2	gbv_TxMessages	231



4.50.2.3	saw_ConfigDDCMem	231
4.50.2.4	spw_RxFrameID	231
4.50.2.5	spw_TxFrameID	232
4.51	MilRt.h File Reference	233
4.51.1	Define Documentation	239
4.51.1.1	ALL	239
4.51.1.2	BROADCAST	239
4.51.1.3	DOUBLE_MESSAGE	239
4.51.1.4	DOUBLEBUFFER	239
4.51.1.5	ENH_MODE_IRQ_TABLE	239
4.51.1.6	ENH_MODE_TABLE_END	239
4.51.1.7	ENH_MODE_TABLE_START	239
4.51.1.8	ENH_SA_BUSY_TABLE	239
4.51.1.9	ILLEGALIZATION_TABLE	239
4.51.1.10	LAST_MESSAGE	239
4.51.1.11	LOOK_UP_TABLE_BCST_MSG	239
4.51.1.12	LOOK_UP_TABLE_RX_MSG	239
4.51.1.13	LOOK_UP_TABLE_SACW	239
4.51.1.14	LOOK_UP_TABLE_TX_MSG	239
4.51.1.15	LOOKUP_A	239
4.51.1.16	MIL_FRAME_BAD_SETTING	239
4.51.1.17	MIL_FRAME_CREATION_SUCCESS	239
4.51.1.18	MIL_FRAME_NOT_READY	239
4.51.1.19	MIL_FRAME_READ_FAILED	239
4.51.1.20	MIL_FRAME_WRITE_SUCCESS	239
4.51.1.21	MIL_NUM_MESSAGE_SIZE	239
4.51.1.22	MIL_SUCCESS_FRAME_READ	239
4.51.1.23	NO_BUFFER	239
4.51.1.24	RECEIVE	239
4.51.1.25	RT_AltSta_BUSY	239
4.51.1.26	RT_AltSta_DYN_BUS_CTRL	239
4.51.1.27	RT_AltSta_RTFLAG	239
4.51.1.28	RT_AltSta_S00	239
4.51.1.29	RT_AltSta_S01	242
4.51.1.30	RT_AltSta_S02	242
4.51.1.31	RT_AltSta_S03	242
4.51.1.32	RT_AltSta_S04	242
4.51.1.33	RT_AltSta_S05	242
4.51.1.34	RT_AltSta_SRVC_REQST	242
4.51.1.35	RT_AltSta_SUBSYS_FLAG	242



4.51.1.36	RT_CIRCULAR_BUFFER	242
4.51.1.37	RT_DISABLE	242
4.51.1.38	RT_ENABLE	242
4.51.1.39	RT_END_OF_MESSAGE	242
4.51.1.40	RT_ENH_BIT_WORD_ADDR	242
4.51.1.41	RT_MODE_DYN_BUS_CTRL	242
4.51.1.42	RT_MODE_INH_TERM_FLAG	242
4.51.1.43	RT_MODE_INIT_SELF_TST	242
4.51.1.44	RT_MODE_OVER_INH_TERM_FLAG	242
4.51.1.45	RT_MODE_OVER_SEL_TRANS_SHUTDOWN	242
4.51.1.46	RT_MODE_OVER_TXS_SHUTDOWN	242
4.51.1.47	RT_MODE_RESET_REMOTE_TERM	242
4.51.1.48	RT_MODE_SEL_TRANS_SHUTDOWN	242
4.51.1.49	RT_MODE_SYNCHRONIZE	242
4.51.1.50	RT_MODE_SYNCHRONIZE_DATA	242
4.51.1.51	RT_MODE_TX_BIT_WORD	242
4.51.1.52	RT_MODE_TX_LAST_COMMAND	242
4.51.1.53	RT_MODE_TX_STAT_WORD	242
4.51.1.54	RT_MODE_TXS_SHUTDOWN	242
4.51.1.55	RT_MODE_TXS_VECTOR_WORD	242
4.51.1.56	RtBitwd_CHANN_B_CHANN_A	242
4.51.1.57	RtBitwd_CMD_WRD_CONTENTS_ERR	242
4.51.1.58	RtBitwd_HANDSHAKE_FAILURE	242
4.51.1.59	RtBitwd_HIGH_WORD_COUNT	242
4.51.1.60	RtBitwd_INCORRECT_SYNC_RXD	242
4.51.1.61	RtBitwd_LOOP_TEST_FAILURE_A	242
4.51.1.62	RtBitwd_LOOP_TEST_FAILURE_B	242
4.51.1.63	RtBitwd_LOW_WORD_COUNT	242
4.51.1.64	RtBitwd_PAR_MAN_ERR_WD_RXD	242
4.51.1.65	RtBitwd_RT_RT_2ND_CMD_WD_ERR	242
4.51.1.66	RtBitwd_RT_RT_GP_SYNC_ADR_ER	242
4.51.1.67	RtBitwd_RT_RT_NO_RESPONS_ERR	242
4.51.1.68	RtBitwd_TERMINAL_FLAG_INHD	242
4.51.1.69	RtBitwd_TRANSMITTER_TIMEOUT	242
4.51.1.70	RtBitwd_TXTTR_SHUTDOWN_A	242
4.51.1.71	RtBitwd_TXTTR_SHUTDOWN_B	242
4.51.1.72	RTBUFFER1024	242
4.51.1.73	RTBUFFER128	242
4.51.1.74	RTBUFFER2048	242
4.51.1.75	RTBUFFER256	242



4.51.1.76	RTBUFFER4096	242
4.51.1.77	RTBUFFER512	242
4.51.1.78	RTBUFFER8192	242
4.51.1.79	RtEmod_BCST_OVER_SEL_TXM_SHUT	242
4.51.1.80	RtEmod_BCST_SEL_TXM_SHUT	242
4.51.1.81	RtEmod_BCST_SYNC_WITH_DATA	242
4.51.1.82	RtEmod_OVER_SEL_TXM_SHUT	242
4.51.1.83	RtEmod_SEL_TXM_SHUT	242
4.51.1.84	RtEmod_SYNC_WITH_DATA	242
4.51.1.85	RtEmod_TRANSMIT_BIT_WORD	242
4.51.1.86	RtEmod_TRANSMIT_LAST_COMMAND	242
4.51.1.87	RtEmod_TRANSMIT_VECTOR_WORD	242
4.51.1.88	RTMIRQ_DYNAMIC_BUS_CONTROL	242
4.51.1.89	RTMIRQ_INHIBIT_TERMINAL_FLAG	242
4.51.1.90	RTMIRQ_INITIATE_SELF_TEST	242
4.51.1.91	RTMIRQ_OVERRIDE_INHIBIT_TF	242
4.51.1.92	RTMIRQ_OVERRIDE_TX_SHUTDOWN	242
4.51.1.93	RTMIRQ_RESET_REMOTE_TERMINAL	242
4.51.1.94	RTMIRQ_SYNCHRONIZE	242
4.51.1.95	RTMIRQ_TRANSMIT_STATUS	242
4.51.1.96	RTMIRQ_TRANSMITTER_SHUTDOWN	242
4.51.1.97	RX_CMD	242
4.51.1.98	SINGLE_MESSAGE	242
4.51.1.99	SINGLEBUFFER	242
4.51.1.100	STACK_A	242
4.51.1.101	STACK_POINTER_A	242
4.51.1.102	TRANSMIT	242
4.51.1.103	TX_CMD	242
4.51.2	Typedef Documentation	242
4.51.2.1	ConfigDDCMemType	242
4.51.2.2	FrameElementType	242
4.51.2.3	FrameType	242
4.51.2.4	MsgBlockStructType	242
4.51.2.5	RTBlkHandle	242
4.51.2.6	RTBlkType	242
4.51.3	Function Documentation	242
4.51.3.1	MilReadParityBit	242
4.51.3.2	MilRTAddMsgtoFrame	242
4.51.3.3	MilRTAddress	242
4.51.3.4	MilRTAllocBlk	242



4.51.3.5	MilRTAltStat	242
4.51.3.6	MilRTAltStatusEna	242
4.51.3.7	MilRTAltStatusRead	242
4.51.3.8	MilRTAltStatusWrite	242
4.51.3.9	MilRTBitInhibit	242
4.51.3.10	MilRTBITRead	242
4.51.3.11	MilRTBrdcst	242
4.51.3.12	MilRTBusyBitDisable	242
4.51.3.13	MilRTBusyBitEnable	242
4.51.3.14	MilRTBusyTableEna	242
4.51.3.15	MilRTBusyValid	242
4.51.3.16	MilRTCclose	242
4.51.3.17	MilRTConfigMemory	242
4.51.3.18	MilRTCreateFrame	242
4.51.3.19	MilRTCreateMsgStruct	242
4.51.3.20	MilRTCreateSingleMsg	242
4.51.3.21	MilRTDefMsgIllegal	242
4.51.3.22	MilRTDefMsgLegal	242
4.51.3.23	MilRTDefSA	242
4.51.3.24	MilRTDeleteFrame	242
4.51.3.25	MilRTDeleteMsgStruct	242
4.51.3.26	MilRTDeleteSingleMsg	242
4.51.3.27	MilRTEnhMM	242
4.51.3.28	MilRTEnhModeCode	242
4.51.3.29	MilRTExtBITWord	242
4.51.3.30	MilRTExtBITWrite	242
4.51.3.31	MilRTFlag	242
4.51.3.32	MilRTFlagWrap	242
4.51.3.33	MilRTFrameRead	242
4.51.3.34	MilRTFrameWrite	242
4.51.3.35	MilRTFreeBlk	242
4.51.3.36	MilRTIllegal	242
4.51.3.37	MilRTIrqMsgSaDisable	242
4.51.3.38	MilRTIrqMsgSaEnable	242
4.51.3.39	MilRTMapBlk	242
4.51.3.40	MilRTModeCode	242
4.51.3.41	MilRTModeIrqDisable	242
4.51.3.42	MilRTModeIrqEnable	242
4.51.3.43	MilRTMsgErrValid	242
4.51.3.44	MilRTMsgOK	242



4.51.3.45	MilRTOpen	242
4.51.3.46	MilRTReadEnhMCData	242
4.51.3.47	MilRTReadInactive	242
4.51.3.48	MilRTReadMsg	242
4.51.3.49	MilRTReadSingleMsg	242
4.51.3.50	MilRTRun	242
4.51.3.51	MilRTSeparateBcst	242
4.51.3.52	MilRTSetBusy	242
4.51.3.53	MilRTSetDbA	242
4.51.3.54	MilRTSetSSflag	242
4.51.3.55	MilRTSetSvcReq	242
4.51.3.56	MilRTStop	242
4.51.3.57	MilRTWriteEnhMCData	242
4.51.3.58	MilRTWriteSingleMsg	242
4.51.3.59	Sacw2Word	242
4.51.3.60	Word2Sacw	242
4.52	MM_21020.h File Reference	243
4.52.1	Function Documentation	243
4.52.1.1	adicy	243
4.52.1.2	adicyMask	243
4.52.1.3	adicyPM	243
4.52.1.4	copyPatched_AndReset	243
4.52.1.5	from_1DM_to_2DM	243
4.52.1.6	from_2DM_to_1DM	243
4.52.1.7	from_DM_to_PM	243
4.52.1.8	from_PM_to_DM	243
4.52.1.9	one_PM_to_DM	243
4.53	MM_crc.c File Reference	244
4.53.1	Function Documentation	244
4.53.1.1	crc16	244
4.53.1.2	crc32	244
4.53.1.3	crc8	244
4.53.1.4	memcrc16	244
4.53.1.5	memcrc32	244
4.53.1.6	memcrc32_pm	244
4.53.1.7	memcrc8	244
4.53.2	Variable Documentation	244
4.53.2.1	CRc_table	244
4.54	MM_crc.h File Reference	245
4.54.1	Function Documentation	245



4.54.1.1	crc16	245
4.54.1.2	crc32	245
4.54.1.3	crc8	245
4.54.1.4	memcrc16	245
4.54.1.5	memcrc32	245
4.54.1.6	memcrc32_pm	245
4.54.1.7	memcrc8	245
4.55	MM_lib.c File Reference	246
4.55.1	Enumeration Type Documentation	247
4.55.1.1	"@12	247
4.55.2	Function Documentation	247
4.55.2.1	add_memory_segment	247
4.55.2.2	copy_OBSW_image	247
4.55.2.3	create_memory_header	247
4.55.2.4	delete_memory_segments	247
4.55.2.5	IFSI_DIV	247
4.55.2.6	IFSI_MOD	247
4.55.2.7	memory_check	248
4.55.2.8	memory_dump	248
4.55.2.9	memory_load	248
4.55.3	Variable Documentation	248
4.55.3.1	adcopy_len	248
4.55.3.2	Make_reset	248
4.55.3.3	MEemory_map	248
4.55.3.4	NUmber_of_mem_segment	248
4.56	MM_lib.h File Reference	249
4.56.1	Define Documentation	251
4.56.1.1	BUS_IF_BOARD_REGISTERS	251
4.56.1.2	BUS_IF_MIL_AND_ANALOG_INP	251
4.56.1.3	COPY_OBSW_IMAGE_OK	251
4.56.1.4	DATA_MEMORY_BASE_ADDRESS	251
4.56.1.5	EEPROM_MEMORY_BASE_ADDRESS	251
4.56.1.6	HIGH_PM2LOW_PM	251
4.56.1.7	IF_1355_BASE_ADDRESS	251
4.56.1.8	ILLEGAL_DIRECTION	251
4.56.1.9	INT_MANAGER_BASE_ADDRESS	251
4.56.1.10	INTERVAL_TIMER_BASE_ADDRESS	251
4.56.1.11	INVALID_ADDRESS	251
4.56.1.12	INVALID_CRC_1ST_CHK	251
4.56.1.13	INVALID_CRC_2ND_CHK	251



4.56.1.14	INVALID_MEMID	251
4.56.1.15	INVALID_MEMLength	251
4.56.1.16	LOW_PM2HIGH_PM	251
4.56.1.17	MAX_NUMBER_DM_WORDS_TC	251
4.56.1.18	MAX_NUMBER_DM_WORDS_TM	251
4.56.1.19	MAX_NUMBER_PM_WORDS_TC	251
4.56.1.20	MAX_NUMBER_PM_WORDS_TM	251
4.56.1.21	MAX_SUBSYSTEM	251
4.56.1.22	MDATA_reg	251
4.56.1.23	MEM_LOAD_OK	251
4.56.1.24	MSEL_reg	251
4.56.1.25	NUM_OF_WORDS_WRONG	251
4.56.1.26	SMCS_REGISTERS_BASE_ADDRESS	251
4.56.1.27	START_DM_IN_PM	251
4.56.1.28	WATCHDOG_BASE_ADDRESS	251
4.56.2	Function Documentation	251
4.56.2.1	add_memory_segment	251
4.56.2.2	copy_OBSW_image	251
4.56.2.3	create_memory_header	251
4.56.2.4	delete_memory_segments	251
4.56.2.5	memory_check	251
4.56.2.6	memory_dump	251
4.56.2.7	memory_load	251
4.57	MM_MISC.c File Reference	252
4.57.1	Function Documentation	252
4.57.1.1	IFSI_DIV	252
4.57.1.2	IFSI_MOD	252
4.57.1.3	is_even	253
4.57.1.4	read_BSW_counters	253
4.58	MM_MISC.h File Reference	254
4.58.1	Define Documentation	255
4.58.1.1	BOOT_EVENT_51	255
4.58.1.2	BOOT_EVENT_52	255
4.58.1.3	BOOT_EVENT_54	255
4.58.1.4	BOOT_SEQ_COUNTER	255
4.58.1.5	MASK_FOR_APID_SSC	255
4.58.1.6	OBSW_APID_2	255
4.58.1.7	OBSW_APID_3	255
4.58.1.8	OBSW_APID_4	255
4.58.1.9	OBSW_APID_5	255





4.58.1.10	OBSW_APIID_6	255
4.58.2	Function Documentation	255
4.58.2.1	IFSI_DIV	255
4.58.2.2	IFSI_MOD	255
4.58.2.3	is_even	256
4.58.2.4	read_BSW_counters	256
4.59	NODE1.c File Reference	257
4.59.1	Typedef Documentation	260
4.59.1.1	taskabortfunction	260
4.59.1.2	taskstartfunction	260
4.59.2	Function Documentation	260
4.59.2.1	init_drivers	260
4.59.2.2	init_node	260
4.59.2.3	main	260
4.59.3	Variable Documentation	260
4.59.3.1	_minik_func	260
4.59.3.2	EVENTS	260
4.59.3.3	K_ArgsNall	260
4.59.3.4	K_DataNall	260
4.59.3.5	K_DataSize	260
4.59.3.6	K_DriverPrio	260
4.59.3.7	K_KernelPrio	260
4.59.3.8	K_MapCount	260
4.59.3.9	K_MapList	260
4.59.3.10	K_max_eventnr	260
4.59.3.11	K_MbxCount	260
4.59.3.12	K_MbxList	260
4.59.3.13	K_NodeCount	260
4.59.3.14	K_PoolCount	260
4.59.3.15	K_PoolList	260
4.59.3.16	K_PrioCeiling	260
4.59.3.17	K_PrioCount	260
4.59.3.18	K_PrioList	260
4.59.3.19	K_QueueCount	260
4.59.3.20	K_QueueList	260
4.59.3.21	K_ResCount	261
4.59.3.22	K_ResList	261
4.59.3.23	K_SemCount	261
4.59.3.24	K_SemList	261
4.59.3.25	K_StackSize	261



4.59.3.26	K_TaskCount	261
4.59.3.27	K_TaskList	261
4.59.3.28	K_ThisNode	261
4.59.3.29	K_TimerNall	261
4.59.3.30	RouteInd	261
4.59.3.31	ticktime	261
4.59.3.32	tickunit	261
4.60	NODE1.h File Reference	262
4.60.1	Define Documentation	263
4.60.1.1	INT_DEC	263
4.60.1.2	INT_SPL	263
4.60.1.3	INT_SPS	263
4.60.1.4	ISR_1553_EVENT	263
4.60.1.5	STARTPROC	263
4.60.2	Function Documentation	263
4.60.2.1	answered_prayers	263
4.60.2.2	Francesco	263
4.60.2.3	Ginevra	263
4.60.2.4	Hunahpu	263
4.60.2.5	Iside	263
4.60.2.6	Ixbalamque	263
4.60.2.7	ma_cgig	263
4.60.2.8	mumon	263
4.60.2.9	thoth	263
4.60.3	Variable Documentation	263
4.60.3.1	EVENTS	263
4.60.3.2	K_max_eventnr	263
4.61	pload.h File Reference	264
4.61.1	Function Documentation	264
4.61.1.1	PmRead16Bits	264
4.61.1.2	PmRead32Bits	264
4.62	SEQ_BUFF.h File Reference	265
4.62.1	Variable Documentation	266
4.62.1.1	DMC_SEQ_ARG_1	266
4.62.1.2	DMC_SEQ_ARG_10	266
4.62.1.3	DMC_SEQ_ARG_11	266
4.62.1.4	DMC_SEQ_ARG_12	266
4.62.1.5	DMC_SEQ_ARG_13	266
4.62.1.6	DMC_SEQ_ARG_14	266
4.62.1.7	DMC_SEQ_ARG_15	266



4.62.1.8	DMC_SEQ_ARG_2	266
4.62.1.9	DMC_SEQ_ARG_3	266
4.62.1.10	DMC_SEQ_ARG_4	266
4.62.1.11	DMC_SEQ_ARG_5	266
4.62.1.12	DMC_SEQ_ARG_6	266
4.62.1.13	DMC_SEQ_ARG_7	266
4.62.1.14	DMC_SEQ_ARG_8	266
4.62.1.15	DMC_SEQ_ARG_9	266
4.62.1.16	END_LOOP	266
4.62.1.17	END_SEQUENCE	266
4.62.1.18	LABEL	266
4.62.1.19	LOOP	266
4.62.1.20	MOVE_CHOP_ABS	266
4.62.1.21	MOVE_CHOP_ABS_DITHER	266
4.62.1.22	MOVE_CHOP_REL	266
4.62.1.23	MOVE_GRAT_ABS	266
4.62.1.24	MOVE_GRAT_REL	266
4.62.1.25	WAIT	266
4.63	SPUCmd.h File Reference	267
4.63.1	Define Documentation	268
4.63.1.1	TRIG_HEADER	268
4.63.1.2	WRITE_HEADER	268
4.63.2	Enumeration Type Documentation	268
4.63.2.1	"@13	268
4.64	spwdef.H File Reference	270
4.64.1	Define Documentation	275
4.64.1.1	ABORT	275
4.64.1.2	BASE_ADDRESS	275
4.64.1.3	BLOCK_RX1_DIM	275
4.64.1.4	BLOCK_RX2_DIM	275
4.64.1.5	BLOCK_RX3_DIM	275
4.64.1.6	BLOCK_TX_DIM	275
4.64.1.7	CHI_ADDR	275
4.64.1.8	CHI_CNTRL1	275
4.64.1.9	CHI_CNTRL2	275
4.64.1.10	CHI_COMICFG	275
4.64.1.11	CHI_DSM_CMDR	275
4.64.1.12	CHI_DSM_MODR	275
4.64.1.13	CHI_DSM_STAR	275
4.64.1.14	CHI_DSM_TSTR	275



4.64.1.15 CH1_ESR1	275
4.64.1.16 CH1_ESR2	275
4.64.1.17 CH1_HCNTRL	275
4.64.1.18 CH1_HTID	275
4.64.1.19 CH1_PR_STAR	275
4.64.1.20 CH1_RT_ADDR	275
4.64.1.21 CH1_RX_CAR	275
4.64.1.22 CH1_RX_EAR	275
4.64.1.23 CH1_RX_FIFO	275
4.64.1.24 CH1_RX_SAR	275
4.64.1.25 CH1_STAR	275
4.64.1.26 CH1_TX_CAR	275
4.64.1.27 CH1_TX_EAR	275
4.64.1.28 CH1_TX_EOPB	275
4.64.1.29 CH1_TX_FIFO	275
4.64.1.30 CH1_TX_SAR	275
4.64.1.31 CH2_ADDR	275
4.64.1.32 CH2_CNTRL1	275
4.64.1.33 CH2_CNTRL2	275
4.64.1.34 CH2_COMICFG	275
4.64.1.35 CH2_DSM_CMDR	275
4.64.1.36 CH2_DSM_MODR	275
4.64.1.37 CH2_DSM_STAR	275
4.64.1.38 CH2_DSM_TSTR	275
4.64.1.39 CH2_ESR1	275
4.64.1.40 CH2_ESR2	275
4.64.1.41 CH2_HCNTRL	275
4.64.1.42 CH2_HTID	275
4.64.1.43 CH2_PR_STAR	275
4.64.1.44 CH2_RT_ADDR	275
4.64.1.45 CH2_RX_CAR	275
4.64.1.46 CH2_RX_EAR	275
4.64.1.47 CH2_RX_FIFO	275
4.64.1.48 CH2_RX_SAR	275
4.64.1.49 CH2_STAR	275
4.64.1.50 CH2_TX_CAR	275
4.64.1.51 CH2_TX_EAR	275
4.64.1.52 CH2_TX_EOPB	275
4.64.1.53 CH2_TX_FIFO	275
4.64.1.54 CH2_TX_SAR	275



4.64.1.55	CH3_ADDR	275
4.64.1.56	CH3_CNTRL1	275
4.64.1.57	CH3_CNTRL2	275
4.64.1.58	CH3_COMICFG	275
4.64.1.59	CH3_DSM_CMDR	275
4.64.1.60	CH3_DSM_MODR	275
4.64.1.61	CH3_DSM_STAR	275
4.64.1.62	CH3_DSM_TSTR	275
4.64.1.63	CH3_ESR1	275
4.64.1.64	CH3_ESR2	275
4.64.1.65	CH3_HCNTRL	275
4.64.1.66	CH3_HTID	275
4.64.1.67	CH3_PR_STAR	275
4.64.1.68	CH3_RT_ADDR	275
4.64.1.69	CH3_RX_CAR	275
4.64.1.70	CH3_RX_EAR	275
4.64.1.71	CH3_RX_FIFO	275
4.64.1.72	CH3_RX_SAR	275
4.64.1.73	CH3_STAR	275
4.64.1.74	CH3_TX_CAR	275
4.64.1.75	CH3_TX_EAR	275
4.64.1.76	CH3_TX_EOPB	275
4.64.1.77	CH3_TX_FIFO	275
4.64.1.78	CH3_TX_SAR	275
4.64.1.79	CHIP_SELECT_8K	275
4.64.1.80	CLOSE	275
4.64.1.81	CNTRL1_MASK	275
4.64.1.82	CNTRL2_MASK	275
4.64.1.83	COMI_ACR	275
4.64.1.84	COMI_CS0R	275
4.64.1.85	COMI_MASK	275
4.64.1.86	DELTA_CHx	275
4.64.1.87	DELTA_IMR	275
4.64.1.88	DPRAM_BASE_ADDR	275
4.64.1.89	DPRAM_RX1_MAX	275
4.64.1.90	DPRAM_RX1_MIN	275
4.64.1.91	DPRAM_RX2_MAX	275
4.64.1.92	DPRAM_RX2_MIN	275
4.64.1.93	DPRAM_RX3_MAX	275
4.64.1.94	DPRAM_RX3_MIN	275



4.64.1.95	DPRAM_TX_MAX	275
4.64.1.96	DPRAM_TX_MIN	275
4.64.1.97	DSM_CMDR_MASTER_MASK	275
4.64.1.98	DSM_CMDR_RESET_MASK	275
4.64.1.99	DSM_CMDR_SLAVE_MASK	275
4.64.1.100	DSM_CMDR_STOP_MASK	275
4.64.1.101	ERROR_DISCONNECT	275
4.64.1.102	ERROR_PARITY	275
4.64.1.103	G_1355_DMY_ADDRESS	275
4.64.1.104	IMR	275
4.64.1.105	IMR_NO_IRQ	275
4.64.1.106	INT_MASK_REG	275
4.64.1.107	INTERRUPT_NOTHING_TO_DO	275
4.64.1.108	ISR	275
4.64.1.109	LINK_1	275
4.64.1.110	LINK_2	275
4.64.1.111	LINK_3	275
4.64.1.112	MASK_DSM_STAR	275
4.64.1.113	MASK_DSM_STAR_FCT	275
4.64.1.114	MASK_DSM_STAR_GO	275
4.64.1.115	MASK_DSM_STAR_NULL	275
4.64.1.116	MASK_EOP_REC_LINK_1	275
4.64.1.117	MASK_EOP_REC_LINK_2	275
4.64.1.118	MASK_EOP_REC_LINK_3	275
4.64.1.119	MASK_EOP_SENT_LINK_1	275
4.64.1.120	MASK_EOP_SENT_LINK_2	275
4.64.1.121	MASK_EOP_SENT_LINK_3	275
4.64.1.122	MASK_ERROR_LINK_1	275
4.64.1.123	MASK_ERROR_LINK_2	275
4.64.1.124	MASK_ERROR_LINK_3	275
4.64.1.125	MASK_LINK	275
4.64.1.126	MASK_LINK_1	275
4.64.1.127	MASK_LINK_2	275
4.64.1.128	MASK_LINK_3	275
4.64.1.129	MAX_NUM_LINK	275
4.64.1.130	NOT_OK	275
4.64.1.131	OK	275
4.64.1.132	OPEN	275
4.64.1.133	OPERATION_AS_32_BITS	275
4.64.1.134	PRCIR	275



4.64.1.135	RESET	275
4.64.1.136	RESET_OFF	275
4.64.1.137	RESET_ON	275
4.64.1.138	RESET_REGISTER	275
4.64.1.139	RT_CTRL	275
4.64.1.140	SET_160_MEGABITS	275
4.64.1.141	SICR	275
4.64.1.142	TRANSFER_DONE	275
4.64.1.143	TRANSFER_ERROR_DISCONNECT	275
4.64.1.144	TRANSFER_ERROR_LINK_NOT_STARTED	275
4.64.1.145	TRANSFER_ERROR_PARITY	275
4.64.1.146	TRANSFER_ERROR_TIMEOUT	275
4.64.1.147	TRANSFER_NOT_STARTED	275
4.64.1.148	TRANSFER_OVERFLOW	275
4.64.1.149	TRANSFER_STARTED	275
4.64.1.150	TRS_CTRL	275
4.64.2	Typedef Documentation	275
4.64.2.1	LINK	275
4.65	T1_INIT.c File Reference	276
4.65.1	Function Documentation	277
4.65.1.1	adicy	277
4.65.1.2	align_ptr_counter	277
4.65.1.3	DPU_wait	277
4.65.1.4	Francesco	277
4.65.1.5	function_activity	277
4.65.1.6	init_1355	277
4.65.1.7	irq3_timer	277
4.65.1.8	main_1553_init	277
4.65.2	Variable Documentation	277
4.65.2.1	ACK_timer	277
4.65.2.2	Controller_timer	277
4.65.2.3	Current_time	277
4.65.2.4	Dpu_time	277
4.65.2.5	Dpu_values	277
4.65.2.6	Func_data	278
4.65.2.7	HK_timer	278
4.65.2.8	K_TaskList	278
4.65.2.9	OBCP_timer	278
4.65.2.10	Pool_EV_packets	278
4.65.2.11	Pool_HK_packets	278



4.65.2.12	Pool_SC_packets	278
4.65.2.13	RTAddress	278
4.65.2.14	Task_index	278
4.66	T1_INIT.h File Reference	279
4.66.1	Variable Documentation	279
4.66.1.1	Abort_OBCP	279
4.66.1.2	ArrayOfDMFail	279
4.66.1.3	board_1355	279
4.66.1.4	Buffer_Of_Fault_Address	280
4.66.1.5	Counter_1_2	280
4.66.1.6	Counter_1_8	280
4.66.1.7	Dec_hk	280
4.66.1.8	Dec_hk_red	280
4.66.1.9	Dpu_hk	280
4.66.1.10	Elapsed_time	280
4.66.1.11	Ev_packet_enabled	280
4.66.1.12	Isr_1355_sema	280
4.66.1.13	Link_through	280
4.66.1.14	NewCellToCheck	280
4.66.1.15	NumOfDMCelltoTest	280
4.66.1.16	OffsetDMFail	280
4.66.1.17	p_DEC_1355	280
4.66.1.18	p_SPL_1355	280
4.66.1.19	p_SPS_1355	280
4.66.1.20	Seq_buffer	280
4.66.1.21	Seq_length	280
4.66.1.22	Spl_hk	281
4.66.1.23	Sps_hk	281
4.66.1.24	Tm_packet_enabled	281
4.67	T2TMTCIF.c File Reference	283
4.67.1	Function Documentation	284
4.67.1.1	drop_packet	284
4.67.1.2	event_packet	284
4.67.1.3	prepare_packet	284
4.67.1.4	thoth	284
4.67.2	Variable Documentation	284
4.67.2.1	APid_counters	284
4.67.2.2	Dpu_values	284
4.67.2.3	K_TaskList	284
4.67.2.4	Pool_EV_packets	284





4.67.2.5	Pool_HK_packets	284
4.67.2.6	Pool_SC_packets	284
4.67.2.7	T4_running	284
4.67.2.8	Task_index	284
4.68	T3IRQ1SV.c File Reference	285
4.68.1	Function Documentation	287
4.68.1.1	crc32	287
4.68.1.2	event_packet	287
4.68.1.3	function_activity	287
4.68.1.4	Ginevra	287
4.68.1.5	link_1355_lost	287
4.68.1.6	process_DEC_packet	287
4.68.1.7	process_SPL_packet	287
4.68.1.8	process_SPS_packet	287
4.68.2	Variable Documentation	287
4.68.2.1	Dec_values	287
4.68.2.2	Dpu_values	287
4.68.2.3	p_DEC_1355	287
4.68.2.4	p_SPL_1355	287
4.68.2.5	p_SPS_1355	287
4.68.2.6	Param_for_AF	287
4.68.2.7	Save_chksum_T3	287
4.68.2.8	Save_int_EPR1	287
4.68.2.9	Save_int_EPR2	287
4.68.2.10	Save_int_EPR3	287
4.68.2.11	Save_int_EPS1	287
4.68.2.12	Save_int_EPS2	287
4.68.2.13	Save_int_EPS3	287
4.68.2.14	Save_int_ERR1	287
4.68.2.15	Save_int_ERR2	287
4.68.2.16	Save_int_ERR3	287
4.68.2.17	Spl_values	287
4.68.2.18	Sps_values	287
4.69	T4CNTRLR.c File Reference	288
4.69.1	Function Documentation	289
4.69.1.1	crc16	289
4.69.1.2	crc32	289
4.69.1.3	fill_in_type_subtype	289
4.69.1.4	Iside	289
4.69.1.5	load_start_proc	289



4.69.1.6	mem_service	289
4.69.1.7	perform_activity	289
4.69.1.8	TC_acceptance	289
4.69.1.9	update_TM_buffer	289
4.69.2	Variable Documentation	289
4.69.2.1	Counter_1_8	289
4.69.2.2	Dpu_time	289
4.69.2.3	T4_running	289
4.70	T5_HKMON.c File Reference	290
4.70.1	Function Documentation	291
4.70.1.1	cpy_HK_values	291
4.70.1.2	event_packet	291
4.70.1.3	fill_in_type_subtype	291
4.70.1.4	function_activity	291
4.70.1.5	handle_TM_buffer	291
4.70.1.6	HK_pack	291
4.70.1.7	ma_cgig	291
4.70.1.8	memcrc32	291
4.70.1.9	MilReadRam	291
4.70.1.10	update_TM_buffer	291
4.70.2	Variable Documentation	291
4.70.2.1	Buffer_Of_Fault_Address	291
4.70.2.2	Burst_active	291
4.70.2.3	Counter_1_2	292
4.70.2.4	Counter_1_8	292
4.70.2.5	Dec_hk	292
4.70.2.6	Dec_values	292
4.70.2.7	Dpu_hk	292
4.70.2.8	Dpu_values	292
4.70.2.9	FRee_bit	292
4.70.2.10	HK_timer	292
4.70.2.11	INdex	292
4.70.2.12	K_TaskList	292
4.70.2.13	LAst_address	292
4.70.2.14	LAst_offset	292
4.70.2.15	MilRTConf	292
4.70.2.16	MOde_id	292
4.70.2.17	NewCellToCheck	292
4.70.2.18	p_FUNC	292
4.70.2.19	Param_for_AF	292



4.70.2.20 Proc_ID_and_TC_header . . . . .	292
4.70.2.21 RTAddress . . . . .	292
4.70.2.22 Save_chksum_T3 . . . . .	293
4.70.2.23 Save_chksum_T5 . . . . .	293
4.70.2.24 Spl_hk . . . . .	293
4.70.2.25 Spl_values . . . . .	293
4.70.2.26 Sps_hk . . . . .	293
4.70.2.27 Sps_values . . . . .	293
4.70.2.28 Task_index . . . . .	293
4.70.2.29 TM_hk . . . . .	293
4.70.2.30 TM_hk_extra . . . . .	293
4.70.2.31 Tm_packet_enabled . . . . .	293
4.71 T6_MECRX.c File Reference . . . . .	294
4.71.1 Function Documentation . . . . .	294
4.71.1.1 ACK_handling . . . . .	294
4.71.1.2 event_packet . . . . .	294
4.71.1.3 fill_in_type_subtype . . . . .	294
4.71.1.4 mumon . . . . .	294
4.71.1.5 update_TM_buffer . . . . .	294
4.71.2 Variable Documentation . . . . .	294
4.71.2.1 Burst_active . . . . .	294
4.71.2.2 p_DEC_1355 . . . . .	294
4.71.2.3 Tm_packet_enabled . . . . .	294
4.72 T7_SPSRX.c File Reference . . . . .	295
4.72.1 Function Documentation . . . . .	295
4.72.1.1 ACK_handling . . . . .	295
4.72.1.2 event_packet . . . . .	295
4.72.1.3 fill_in_type_subtype . . . . .	295
4.72.1.4 Hunahpu . . . . .	295
4.72.1.5 update_TM_buffer . . . . .	295
4.72.2 Variable Documentation . . . . .	295
4.72.2.1 Burst_active . . . . .	295
4.72.2.2 p_SPS_1355 . . . . .	296
4.72.2.3 Sps_values . . . . .	296
4.72.2.4 Tm_packet_enabled . . . . .	296
4.73 T8_SPLRX.c File Reference . . . . .	297
4.73.1 Function Documentation . . . . .	297
4.73.1.1 ACK_handling . . . . .	297
4.73.1.2 event_packet . . . . .	297
4.73.1.3 fill_in_type_subtype . . . . .	297



4.73.1.4	Ixbalamque	297
4.73.1.5	update_TM_buffer	297
4.73.2	Variable Documentation	297
4.73.2.1	Burst_active	297
4.73.2.2	p_SPL_1355	298
4.73.2.3	Spl_values	298
4.73.2.4	Tm_packet_enabled	298
4.74	T9_OBCP.c File Reference	299
4.74.1	Function Documentation	302
4.74.1.1	acwe	302
4.74.1.2	answered_prayers	302
4.74.1.3	bol_temp_ev	302
4.74.1.4	bol_temp_fpu	302
4.74.1.5	chopped_photometry	302
4.74.1.6	chopped_photometry_dither	302
4.74.1.7	chopped_photometry_up_down	302
4.74.1.8	chopped_spectroscopy	302
4.74.1.9	chopped_spectroscopy_2	302
4.74.1.10	chopped_spectroscopy_3	302
4.74.1.11	chopped_spectroscopy_dither	302
4.74.1.12	chopped_spectroscopy_up_down	302
4.74.1.13	dec_test_mode	302
4.74.1.14	DPU_wait	302
4.74.1.15	EEPROM_proc	302
4.74.1.16	event_packet	302
4.74.1.17	fill_in_type_subtype	302
4.74.1.18	fixed_fixed_chopped_photometry	302
4.74.1.19	freeze_chopped_photometry	302
4.74.1.20	generate_event_invert	302
4.74.1.21	generate_event_normal_HL	302
4.74.1.22	go_SAFE	302
4.74.1.23	go_SAFE2	302
4.74.1.24	heater_sp	302
4.74.1.25	idle_state	302
4.74.1.26	is_even	302
4.74.1.27	link_1355_lost	302
4.74.1.28	monitor_counter_changing	302
4.74.1.29	monitor_counter_stable	302
4.74.1.30	no_chopping	302
4.74.1.31	obmo	302



4.74.1.32	photometry_cal_i	302
4.74.1.33	photometry_cal_ii	302
4.74.1.34	photometry_cal_iii	302
4.74.1.35	proc1355	302
4.74.1.36	science_dummy	302
4.74.1.37	spec_to_phot	302
4.74.1.38	spectroscopy_cal	302
4.74.1.39	spu_test_phot	302
4.74.1.40	spu_test_spec	302
4.74.1.41	staring_photometry	302
4.74.1.42	start_HLSW	302
4.74.1.43	timesync_1	302
4.74.1.44	timesync_2	302
4.74.1.45	timesync_3	302
4.74.1.46	update_TM_buffer	302
4.74.1.47	wave_switch_grating	302
4.74.1.48	wave_switch_grating_2	302
4.74.1.49	write_seq	302
4.74.2	Variable Documentation	302
4.74.2.1	Abort_OBCP	302
4.74.2.2	Buffer_for_1355_tx	302
4.74.2.3	Controller_timer	302
4.74.2.4	Counter_1_8	302
4.74.2.5	Dec_values	302
4.74.2.6	Dpu_values	302
4.74.2.7	Func_data	302
4.74.2.8	K_TaskList	302
4.74.2.9	Obcp_data	302
4.74.2.10	Obcp_data_current	302
4.74.2.11	OBCP_timer	302
4.74.2.12	p_FUNC	302
4.74.2.13	p_OBCP	303
4.74.2.14	Param_for_AF	303
4.74.2.15	Proc_ID_and_TC_header	303
4.74.2.16	Seq_buffer	303
4.74.2.17	Seq_length	303
4.74.2.18	Task_index	303
4.74.2.19	Time_of_dpu	303
4.75	util1553.c File Reference	304
4.75.1	Detailed Description	305



4.75.2	Define Documentation	305
4.75.2.1	M1553_CONF_1__CURRENT_AREA	305
4.75.2.2	M1553_SA10_AREA_A_OFFSET	305
4.75.2.3	M1553_SA10_AREA_B_OFFSET	306
4.75.3	Function Documentation	306
4.75.3.1	align_ptr_counter	306
4.75.3.2	DownLoad_Packet	306
4.75.3.3	force_1553_reset	306
4.75.3.4	miaMilSaWrite	306
4.75.3.5	TmRequestGenerator	307
4.75.3.6	UpLoad_Packet	307

# Chapter 1

## Data Structure Index

### 1.1 Data Structures

Here are the data structures with brief descriptions:

channel	5
CmdWordType	6
ConfigDDCMemStruct	7
EepromHeader	8
event_field	9
Frame	10
FrameElement	11
HK_def	12
MemBlockStruct	13
memory_header	14
memory_segment_def	15
MemoryCell	16
MilConfStruct	17
MsgBlockStruct	19
MsgStruct	20
OBCP_param	22
RTStruct	23
RTWords	24
RxMsgPointer	25
RxMsgPointerStruct	26
science_entity	27
SubAddrCtrlWrd	28
TC_packet	29
time_struct	30
TM_entry	31
TM_EVentry	32
TM_EVpacket	33
TM_packet	34
TM_request	35
Word1Type	36
Word2Type	37
Word4Type	38
Word6Type	39
Word7Type	40



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 2 of [307](#)



# Chapter 2

## File Index

### 2.1 File List

Here is a list of all files with brief descriptions:

1553_def.h	41
allnodes.h	43
conf1553.h ([DONE] com1553 - MIL-1553 Communication Library for Herschel - System Configuration )	46
DmcCmd.h	49
DUMMY.c	55
Eprm.c	56
Eprm.h	60
HK_def.h	66
init1553.c ([DONE] com1553 - MIL-1553 Communication Library for Herschel - Initialization of RT )	71
init1553.h ([DONE] com1553 - MIL-1553 Communication Library for Herschel - Initialization of RT ( header ))	74
Inttab.h	84
isr1553.c ([DONE] com1553 - MIL-1553 Communication Library for Herschel - Interrupt Service Routine )	85
ivar1553.h ([DONE] com1553 - MIL-1553 Communication Library for Herschel - ModuleVariable Definition )	90
L4_FUNC.c	97
L4_LIB.c	101
L4_MEM.c	103
L4_OBCP.c	104
L5_D_AUT.c	106
L9_BOL_P.c	108
L9_EEPRM.c	110
L9_GRATP.c	111
L9_MISC.c	118
L9_newOB.c	121
L9_P1355.c	122
L9_PHOTC.c	124
L9_PHOTP.c	128
L9_SPCMD.c	133
L9_SPECC.c	135
L9_SWITC.c	138
LT_1355.c	140
LT_1355.h	142
LT_FUNC.c	147
LT_FUNC.h	148
LT_HKdef.h	151
LT_INIT.c	171
LT_MEM.h	172
LT_OBCPh	174



LT_TMdef.h	177
LT_upTMb.c	183
MilConf.c	186
MilConf.h	189
MilDef.h	195
MilErr.h	197
MilInit.c	201
MilInit.h	204
MilIrq.c	216
MilIrq.h	218
Milmem.c	222
Milmem.h	225
MilRt.c	228
MilRt.h	233
MM_21020.h	243
MM_crc.c	244
MM_crc.h	245
MM_lib.c	246
MM_lib.h	249
MM_MISC.c	252
MM_MISC.h	254
NODE1.c	257
NODE1.h	262
pload.h	264
SEQ_BUFF.h	265
SPUCmd.h	267
spwdef.H	270
T1_INIT.c	276
T1_INIT.h	279
T2TMTCIF.c	283
T3IRQ1SV.c	285
T4CNTRLR.c	288
T5_HKMON.c	290
T6_MECRX.c	294
T7_SPSRX.c	295
T8_SPLRX.c	297
T9_OBCP.c	299
util1553.c ([DONE] com1553 - MIL-1553 Communication Library for Herschel - Low Level Interface Management )	304

## Chapter 3

# Data Structure Documentation

### 3.1 channel Struct Reference

```
#include <spwdef.H>
```

#### Data Fields

- [int i\\_status\\_Tx](#)
- [int i\\_state](#)
- [long int ACK\\_counter](#)

#### 3.1.1 Field Documentation

**3.1.1.1** [long int channel::ACK\\_counter](#)

**3.1.1.2** [int channel::i\\_state](#)

**3.1.1.3** [int channel::i\\_status\\_Tx](#)

The documentation for this struct was generated from the following file:

- [spwdef.H](#)

## 3.2 CmdWordType Struct Reference

```
#include <MilRt.h>
```

### Data Fields

- unsigned int [b\\_Spare](#):16
- unsigned int [b\\_RTaddr](#):5
- unsigned int [b\\_TR](#):1
- unsigned int [b\\_SubAddr](#):5
- unsigned int [b\\_WordCount](#):5

### 3.2.1 Field Documentation

**3.2.1.1 unsigned int CmdWordType::b\_RTaddr**

**3.2.1.2 unsigned int CmdWordType::b\_Spare**

**3.2.1.3 unsigned int CmdWordType::b\_SubAddr**

**3.2.1.4 unsigned int CmdWordType::b\_TR**

**3.2.1.5 unsigned int CmdWordType::b\_WordCount**

The documentation for this struct was generated from the following file:

- [MilRt.h](#)



## 3.3 ConfigDDCMemStruct Struct Reference

```
#include <MilRt.h>
```

### Data Fields

- unsigned int [j\\_Broadcast](#)
- unsigned int [j\\_Transmit](#)
- unsigned int [j\\_Receive](#)

### 3.3.1 Field Documentation

3.3.1.1 unsigned int `ConfigDDCMemStruct::j_Broadcast`

3.3.1.2 unsigned int `ConfigDDCMemStruct::j_Receive`

3.3.1.3 unsigned int `ConfigDDCMemStruct::j_Transmit`

The documentation for this struct was generated from the following file:

- [MilRt.h](#)

## 3.4 EepromHeader Struct Reference

```
#include <Eprm.h>
```

Collaboration diagram for EepromHeader:

### Data Fields

- [Word1Type PmWord](#)
- [Word2Type SegWord](#)
- unsigned long [NextEepromSeg](#)
- [Word4Type OptWord](#)
- unsigned long [AswStartAddr](#)
- [Word6Type FcsWord](#)
- [Word7Type FcsProg](#)

### 3.4.1 Field Documentation

**3.4.1.1 unsigned long EepromHeader::AswStartAddr**

**3.4.1.2 Word7Type EepromHeader::FcsProg**

**3.4.1.3 Word6Type EepromHeader::FcsWord**

**3.4.1.4 unsigned long EepromHeader::NextEepromSeg**

**3.4.1.5 Word4Type EepromHeader::OptWord**

**3.4.1.6 Word1Type EepromHeader::PmWord**

**3.4.1.7 Word2Type EepromHeader::SegWord**

The documentation for this struct was generated from the following file:

- [Eprm.h](#)



## 3.5 event\_field Struct Reference

```
#include <LT_TMdef.h>
```

### Data Fields

- unsigned [status](#): 8
- unsigned [sid](#): 8
- unsigned [subtype](#): 8
- unsigned [id](#): 8

### 3.5.1 Field Documentation

3.5.1.1 unsigned event\_field::id

3.5.1.2 unsigned event\_field::sid

3.5.1.3 unsigned event\_field::status

3.5.1.4 unsigned event\_field::subtype

The documentation for this struct was generated from the following file:

- [LT\\_TMdef.h](#)

## 3.6 Frame Struct Reference

```
#include <MilRt.h>
```

Collaboration diagram for Frame:

### Data Fields

- [FrameElementType](#) \* [pw\\_InitFrame](#)
- unsigned char [d\\_FrameStatus](#)
- unsigned char [j\\_PacketLenght](#)

### 3.6.1 Field Documentation

**3.6.1.1** unsigned char [Frame::d\\_FrameStatus](#)

**3.6.1.2** unsigned char [Frame::j\\_PacketLenght](#)

**3.6.1.3** [FrameElementType](#)\* [Frame::pw\\_InitFrame](#)

The documentation for this struct was generated from the following file:

- [MilRt.h](#)



## 3.7 FrameElement Struct Reference

```
#include <MilRt.h>
```

Collaboration diagram for FrameElement:

### Data Fields

- struct [FrameElement](#) \* [pw\\_NextFrameElement](#)
- [RxMsgPointerType](#) \* [pw\\_CurrMsg](#)
- [RxMsgPointerType](#) \* [pw\\_InitMsg](#)
- unsigned int [pm\\_WriteMsg](#)
- unsigned int [j\\_Words](#)
- unsigned int [j\\_Sa](#)
- unsigned int [j\\_MemMng](#)

### 3.7.1 Field Documentation

**3.7.1.1** unsigned int [FrameElement::j\\_MemMng](#)

**3.7.1.2** unsigned int [FrameElement::j\\_Sa](#)

**3.7.1.3** unsigned int [FrameElement::j\\_Words](#)

**3.7.1.4** unsigned int [FrameElement::pm\\_WriteMsg](#)

**3.7.1.5** [RxMsgPointerType](#)\* [FrameElement::pw\\_CurrMsg](#)

**3.7.1.6** [RxMsgPointerType](#)\* [FrameElement::pw\\_InitMsg](#)

**3.7.1.7** struct [FrameElement](#)\* [FrameElement::pw\\_NextFrameElement](#) [[read](#)]

The documentation for this struct was generated from the following file:

- [MilRt.h](#)

## 3.8 HK\_def Struct Reference

```
#include <HK_def.h>
```

### Data Fields

- unsigned int [hard\\_upper](#)
- unsigned int [hard\\_lower](#)
- unsigned int [soft\\_upper](#)
- unsigned int [soft\\_lower](#)
- unsigned int [type](#)
- unsigned int [counter](#)
- unsigned int [counter\\_for\\_hl](#)

### 3.8.1 Field Documentation

**3.8.1.1** unsigned int [HK\\_def::counter](#)

**3.8.1.2** unsigned int [HK\\_def::counter\\_for\\_hl](#)

**3.8.1.3** unsigned int [HK\\_def::hard\\_lower](#)

**3.8.1.4** unsigned int [HK\\_def::hard\\_upper](#)

**3.8.1.5** unsigned int [HK\\_def::soft\\_lower](#)

**3.8.1.6** unsigned int [HK\\_def::soft\\_upper](#)

**3.8.1.7** unsigned int [HK\\_def::type](#)

The documentation for this struct was generated from the following file:

- [HK\\_def.h](#)

## 3.9 MemBlockStruct Struct Reference

```
#include <MilConf.h>
```

Collaboration diagram for MemBlockStruct:

### Data Fields

- unsigned long [m\\_AbsAddr](#)
- unsigned char [d\\_Status](#)
- unsigned int [j\\_Size](#)
- unsigned int [j\\_Gp](#)
- unsigned int [j\\_Condition](#)
- struct [MemBlockStruct](#) \* [pw\\_Next](#)
- struct [MemBlockStruct](#) \* [pw\\_Prev](#)

### 3.9.1 Field Documentation

**3.9.1.1 unsigned char MemBlockStruct::d\_Status**

**3.9.1.2 unsigned int MemBlockStruct::j\_Condition**

**3.9.1.3 unsigned int MemBlockStruct::j\_Gp**

**3.9.1.4 unsigned int MemBlockStruct::j\_Size**

**3.9.1.5 unsigned long MemBlockStruct::m\_AbsAddr**

**3.9.1.6 struct MemBlockStruct\* MemBlockStruct::pw\_Next** [read]

**3.9.1.7 struct MemBlockStruct \* MemBlockStruct::pw\_Prev** [read]

The documentation for this struct was generated from the following file:

- [MilConf.h](#)

## 3.10 memory\_header Struct Reference

```
#include <MM_lib.h>
```

### Data Fields

- unsigned int [subsystem](#)
- unsigned int [RAM\\_type](#)
- unsigned int [memory\\_ID](#)
- unsigned int [start\\_address](#)
- unsigned int [length\\_SAU](#)
- unsigned int [length\\_bytes](#)

### 3.10.1 Field Documentation

**3.10.1.1 unsigned int memory\_header::length\_bytes**

**3.10.1.2 unsigned int memory\_header::length\_SAU**

**3.10.1.3 unsigned int memory\_header::memory\_ID**

**3.10.1.4 unsigned int memory\_header::RAM\_type**

**3.10.1.5 unsigned int memory\_header::start\_address**

**3.10.1.6 unsigned int memory\_header::subsystem**

The documentation for this struct was generated from the following file:

- [MM\\_lib.h](#)



## 3.11 memory\_segment\_def Struct Reference

### Data Fields

- unsigned int [ID](#)
- unsigned int [offset](#)
- unsigned int [size](#)
- int [is\\_writeable](#)

### 3.11.1 Field Documentation

3.11.1.1 unsigned int memory\_segment\_def::ID

3.11.1.2 int memory\_segment\_def::is\_writeable

3.11.1.3 unsigned int memory\_segment\_def::offset

3.11.1.4 unsigned int memory\_segment\_def::size

The documentation for this struct was generated from the following file:

- [MM\\_lib.c](#)

## 3.12 MemoryCell Struct Reference

```
#include <Eprm.h>
```

### Data Fields

- unsigned long [d\\_Byte4](#):8
- unsigned long [d\\_Byte3](#):8
- unsigned long [d\\_Byte2](#):8
- unsigned long [d\\_Byte1](#):8

### 3.12.1 Field Documentation

**3.12.1.1** unsigned long `MemoryCell::d_Byte1`

**3.12.1.2** unsigned long `MemoryCell::d_Byte2`

**3.12.1.3** unsigned long `MemoryCell::d_Byte3`

**3.12.1.4** unsigned long `MemoryCell::d_Byte4`

The documentation for this struct was generated from the following file:

- [Eprm.h](#)

### 3.13 MilConfStruct Struct Reference

```
#include <MilConf.h>
```

Collaboration diagram for MilConfStruct:

#### Data Fields

- unsigned long [m\\_MilBaseMemAbs](#)
- unsigned long [m\\_MilRegBaseAbs](#)
- unsigned long \* [pm\\_MilBaseMem](#)
- unsigned long \* [pm\\_MilBaseReg](#)
- unsigned int [j\\_MilIrq](#)
- unsigned int [j\\_MilMemoryLength](#)
- unsigned char [d\\_MilIsrEnabled](#)
- unsigned char [d\\_MilIrqType](#)
- unsigned char [d\\_MilRegType](#)
- unsigned char [d\\_MilIrqInstalled](#)
- unsigned int [j\\_IrqTestFlag](#)
- unsigned char [d\\_AlreadyInit](#)
- [MemBlockHandle](#) [pw\\_AceMemory](#)
- [MemBlockHandle](#) [pw\\_AceListEnd](#)
- [MemBlockHandle](#) [pw\\_AceCurrent](#)
- [RTPtr](#) [pw\\_RT](#)
- void(\* [MilUsrHandler](#))(int i\_MilError)

### 3.13.1 Field Documentation

- 3.13.1.1 unsigned char MilConfStruct::d\_AlreadyInit
- 3.13.1.2 unsigned char MilConfStruct::d\_MilIrqInstalled
- 3.13.1.3 unsigned char MilConfStruct::d\_MilIrqType
- 3.13.1.4 unsigned char MilConfStruct::d\_MilIsrEnabled
- 3.13.1.5 unsigned char MilConfStruct::d\_MilRegType
- 3.13.1.6 unsigned int MilConfStruct::j\_IrqTestFlag
- 3.13.1.7 unsigned int MilConfStruct::j\_MilIrq
- 3.13.1.8 unsigned int MilConfStruct::j\_MilMemoryLength
- 3.13.1.9 unsigned long MilConfStruct::m\_MilBaseMemAbs
- 3.13.1.10 unsigned long MilConfStruct::m\_MilRegBaseAbs
- 3.13.1.11 void(\* MilConfStruct::MilUsrHandler)(int i\_MilError)
- 3.13.1.12 unsigned long\* MilConfStruct::pm\_MilBaseMem
- 3.13.1.13 unsigned long\* MilConfStruct::pm\_MilBaseReg
- 3.13.1.14 MemBlockHandle MilConfStruct::pw\_AceCurrent
- 3.13.1.15 MemBlockHandle MilConfStruct::pw\_AceListEnd
- 3.13.1.16 MemBlockHandle MilConfStruct::pw\_AceMemory
- 3.13.1.17 RTPtr MilConfStruct::pw\_RT

The documentation for this struct was generated from the following file:

- [MilConf.h](#)



## 3.14 MsgBlockStruct Struct Reference

```
#include <MilRt.h>
```

Collaboration diagram for MsgBlockStruct:

### Data Fields

- unsigned int [j\\_BlockStatus](#)
- unsigned int [j\\_TimeTag](#)
- unsigned int [j\\_DataPtr](#)
- RTWords [u\\_Cw](#)
- unsigned int [j\\_MilStackSize](#)

### 3.14.1 Field Documentation

**3.14.1.1 unsigned int MsgBlockStruct::j\_BlockStatus**

**3.14.1.2 unsigned int MsgBlockStruct::j\_DataPtr**

**3.14.1.3 unsigned int MsgBlockStruct::j\_MilStackSize**

**3.14.1.4 unsigned int MsgBlockStruct::j\_TimeTag**

**3.14.1.5 RTWords MsgBlockStruct::u\_Cw**

The documentation for this struct was generated from the following file:

- [MilRt.h](#)

## 3.15 MsgStruct Struct Reference

```
#include <MilInit.h>
```

### Data Fields

- unsigned char [d\\_Type](#)
- unsigned char [d\\_DataLength](#)
- unsigned char [d\\_WordCount](#)
- unsigned char [d\\_CmdWord1flag](#)
- unsigned char [d\\_CmdWord2flag](#)
- unsigned char [d\\_Status1flag](#)
- unsigned char [d\\_Status2flag](#)
- unsigned char [d\\_LoopBack1flag](#)
- unsigned char [d\\_LoopBack2flag](#)
- unsigned int [j\\_TimeTag](#)
- unsigned int [j\\_GapTime](#)
- unsigned int [j\\_BlockStatus](#)
- unsigned int [j\\_CmdWord1](#)
- unsigned int [j\\_CmdWord2](#)
- unsigned int [j\\_Status1](#)
- unsigned int [j\\_Status2](#)
- unsigned int [j\\_LoopBack1](#)
- unsigned int [j\\_LoopBack2](#)
- unsigned int [j\\_ControlWord](#)
- unsigned int [aj\\_Data](#) [32]



### 3.15.1 Field Documentation

- 3.15.1.1 unsigned int MsgStruct::aj\_Data[32]
- 3.15.1.2 unsigned char MsgStruct::d\_CmdWord1flag
- 3.15.1.3 unsigned char MsgStruct::d\_CmdWord2flag
- 3.15.1.4 unsigned char MsgStruct::d\_DataLength
- 3.15.1.5 unsigned char MsgStruct::d\_LoopBack1flag
- 3.15.1.6 unsigned char MsgStruct::d\_LoopBack2flag
- 3.15.1.7 unsigned char MsgStruct::d\_Status1flag
- 3.15.1.8 unsigned char MsgStruct::d\_Status2flag
- 3.15.1.9 unsigned char MsgStruct::d\_Type
- 3.15.1.10 unsigned char MsgStruct::d\_WordCount
- 3.15.1.11 unsigned int MsgStruct::j\_BlockStatus
- 3.15.1.12 unsigned int MsgStruct::j\_CmdWord1
- 3.15.1.13 unsigned int MsgStruct::j\_CmdWord2
- 3.15.1.14 unsigned int MsgStruct::j\_ControlWord
- 3.15.1.15 unsigned int MsgStruct::j\_GapTime
- 3.15.1.16 unsigned int MsgStruct::j\_LoopBack1
- 3.15.1.17 unsigned int MsgStruct::j\_LoopBack2
- 3.15.1.18 unsigned int MsgStruct::j\_Status1
- 3.15.1.19 unsigned int MsgStruct::j\_Status2
- 3.15.1.20 unsigned int MsgStruct::j\_TimeTag

The documentation for this struct was generated from the following file:

- [Millnit.h](#)

## 3.16 OBCP\_param Struct Reference

```
#include <LT_OBCP.h>
```

### Data Fields

- unsigned [is\\_SAFE](#):1
- unsigned [n\\_par](#):15
- unsigned [status](#):8
- unsigned [step](#):8
- unsigned int [data](#) [MAX\_NUMBER\_PAR]

### 3.16.1 Field Documentation

**3.16.1.1** unsigned int OBCP\_param::data[MAX\_NUMBER\_PAR]

**3.16.1.2** unsigned OBCP\_param::is\_SAFE

**3.16.1.3** unsigned OBCP\_param::n\_par

**3.16.1.4** unsigned OBCP\_param::status

**3.16.1.5** unsigned OBCP\_param::step

The documentation for this struct was generated from the following file:

- [LT\\_OBCPh](#)



## 3.17 RTStruct Struct Reference

```
#include <MilConf.h>
```

### Data Fields

- unsigned int [MilRTLastMsg](#)

### 3.17.1 Field Documentation

#### 3.17.1.1 unsigned int RTStruct::MilRTLastMsg

The documentation for this struct was generated from the following file:

- [MilConf.h](#)

## 3.18 RTWords Union Reference

```
#include <MilRt.h>
```

Collaboration diagram for RTWords:

### Data Fields

- [unsigned int j\\_Word](#)
- [SubAddrCtrlWrd w\\_Sacw](#)
- [CmdWordType w\\_Cmd](#)

### 3.18.1 Field Documentation

3.18.1.1 [unsigned int RTWords::j\\_Word](#)

3.18.1.2 [CmdWordType RTWords::w\\_Cmd](#)

3.18.1.3 [SubAddrCtrlWrd RTWords::w\\_Sacw](#)

The documentation for this union was generated from the following file:

- [MilRt.h](#)



## 3.19 RxMsgPointer Struct Reference

```
#include <MilConf.h>
```

### Data Fields

- unsigned long [pm\\_Msg](#)
- unsigned char [d\\_MsgStatus](#)
- unsigned int [j\\_Words](#)

### 3.19.1 Field Documentation

3.19.1.1 unsigned char RxMsgPointer::d\_MsgStatus

3.19.1.2 unsigned int RxMsgPointer::j\_Words

3.19.1.3 unsigned long RxMsgPointer::pm\_Msg

The documentation for this struct was generated from the following file:

- [MilConf.h](#)

## 3.20 RxMsgPointerStruct Struct Reference

```
#include <MilConf.h>
```

Collaboration diagram for RxMsgPointerStruct:

### Data Fields

- [RxMsgPointerType](#)\* [pm\\_CurrWriteMsg](#)
- [RxMsgPointerType](#)\* [pm\\_InitMsg](#)
- unsigned char [d\\_Size](#)
- unsigned char [d\\_TypeOfMng](#)

### 3.20.1 Field Documentation

**3.20.1.1** unsigned char RxMsgPointerStruct::d\_Size

**3.20.1.2** unsigned char RxMsgPointerStruct::d\_TypeOfMng

**3.20.1.3** [RxMsgPointerType](#)\* RxMsgPointerStruct::pm\_CurrWriteMsg

**3.20.1.4** [RxMsgPointerType](#)\* RxMsgPointerStruct::pm\_InitMsg

The documentation for this struct was generated from the following file:

- [MilConf.h](#)





## 3.21 science\_entity Struct Reference

```
#include <LT_1355.h>
```

### Data Fields

- unsigned int [words](#)
- unsigned int [expected\\_packet](#)
- unsigned int [block\\_is\\_not\\_complete](#)

### 3.21.1 Field Documentation

3.21.1.1 unsigned int science\_entity::block\_is\_not\_complete

3.21.1.2 unsigned int science\_entity::expected\_packet

3.21.1.3 unsigned int science\_entity::words

The documentation for this struct was generated from the following file:

- [LT\\_1355.h](#)

## 3.22 SubAddrCtrlWrd Struct Reference

```
#include <MilRt.h>
```

### Data Fields

- unsigned [BcstMm](#):3
- unsigned [BcstBuffInt](#):1
- unsigned [BcstEomInt](#):1
- unsigned [RxMm](#):3
- unsigned [RxBuffInt](#):1
- unsigned [RxEomInt](#):1
- unsigned [TxMm](#):3
- unsigned [TxBuffInt](#):1
- unsigned [TxEomInt](#):1
- unsigned [RcvBufferType](#):1
- unsigned [Spare](#):16

### 3.22.1 Field Documentation

3.22.1.1 unsigned SubAddrCtrlWrd::BestBuffInt

3.22.1.2 unsigned SubAddrCtrlWrd::BestEomInt

3.22.1.3 unsigned SubAddrCtrlWrd::BestMm

3.22.1.4 unsigned SubAddrCtrlWrd::RcvBufferType

3.22.1.5 unsigned SubAddrCtrlWrd::RxBuffInt

3.22.1.6 unsigned SubAddrCtrlWrd::RxEomInt

3.22.1.7 unsigned SubAddrCtrlWrd::RxMm

3.22.1.8 unsigned SubAddrCtrlWrd::Spare

3.22.1.9 unsigned SubAddrCtrlWrd::TxBuffInt

3.22.1.10 unsigned SubAddrCtrlWrd::TxEomInt

3.22.1.11 unsigned SubAddrCtrlWrd::TxMm

The documentation for this struct was generated from the following file:

- [MilRt.h](#)

## 3.23 TC\_packet Struct Reference

```
#include <LT_TMdef.h>
```

### Data Fields

- unsigned int [id](#)
- unsigned int [seqctrl](#)
- unsigned int [packet\\_length](#)
- unsigned int [data\\_field\\_header](#) [TC\_DATA\_HEADER\_LEN]
- unsigned int [data](#) [TC\_DATA\_MAX]
- unsigned int [error\\_ctrl](#)
- unsigned int [chk\\_len](#)

### 3.23.1 Field Documentation

3.23.1.1 unsigned int TC\_packet::chk\_len

3.23.1.2 unsigned int TC\_packet::data[TC\_DATA\_MAX]

3.23.1.3 unsigned int TC\_packet::data\_field\_header[TC\_DATA\_HEADER\_LEN]

3.23.1.4 unsigned int TC\_packet::error\_ctrl

3.23.1.5 unsigned int TC\_packet::id

3.23.1.6 unsigned int TC\_packet::packet\_length

3.23.1.7 unsigned int TC\_packet::seqctrl

The documentation for this struct was generated from the following file:

- [LT\\_TMdef.h](#)



## 3.24 time\_struct Struct Reference

```
#include <LT_TMdef.h>
```

### Data Fields

- int [clock\\_at\\_sync](#)
- unsigned int [seconds](#)
- unsigned int [fractions](#)

### 3.24.1 Field Documentation

3.24.1.1 int time\_struct::clock\_at\_sync

3.24.1.2 unsigned int time\_struct::fractions

3.24.1.3 unsigned int time\_struct::seconds

The documentation for this struct was generated from the following file:

- [LT\\_TMdef.h](#)



## 3.25 TM\_entry Struct Reference

```
#include <LT_TMdef.h>
```

Collaboration diagram for TM\_entry:

### Data Fields

- unsigned int [ready\\_to\\_be\\_sent](#)
- struct [TM\\_packet](#) packet

### 3.25.1 Field Documentation

3.25.1.1 struct [TM\\_packet](#) [TM\\_entry::packet](#) [read]

3.25.1.2 unsigned int [TM\\_entry::ready\\_to\\_be\\_sent](#)

The documentation for this struct was generated from the following file:

- [LT\\_TMdef.h](#)



## 3.26 TM\_EVentry Struct Reference

```
#include <LT_TMdef.h>
```

Collaboration diagram for TM\_EVentry:

### Data Fields

- unsigned int [ready\\_to\\_be\\_sent](#)
- struct [TM\\_EVpacket](#) packet

### 3.26.1 Field Documentation

**3.26.1.1** struct [TM\\_EVpacket](#) [TM\\_EVentry::packet](#) [read]

**3.26.1.2** unsigned int [TM\\_EVentry::ready\\_to\\_be\\_sent](#)

The documentation for this struct was generated from the following file:

- [LT\\_TMdef.h](#)

## 3.27 TM\_EVpacket Struct Reference

```
#include <LT_TMdef.h>
```

### Data Fields

- unsigned int [id](#)
- unsigned int [seqctrl](#)
- unsigned int [packet\\_length](#)
- unsigned int [data\\_field\\_header](#) [TM\_DATA\_HEADER\_LEN]
- unsigned int [data](#) [TM\_DATA\_MAX\_EV]
- unsigned int [error\\_ctrl](#)

### 3.27.1 Field Documentation

3.27.1.1 unsigned int TM\_EVpacket::data[TM\_DATA\_MAX\_EV]

3.27.1.2 unsigned int TM\_EVpacket::data\_field\_header[TM\_DATA\_HEADER\_LEN]

3.27.1.3 unsigned int TM\_EVpacket::error\_ctrl

3.27.1.4 unsigned int TM\_EVpacket::id

3.27.1.5 unsigned int TM\_EVpacket::packet\_length

3.27.1.6 unsigned int TM\_EVpacket::seqctrl

The documentation for this struct was generated from the following file:

- [LT\\_TMdef.h](#)

## 3.28 TM\_packet Struct Reference

```
#include <LT_TMdef.h>
```

### Data Fields

- unsigned int [id](#)
- unsigned int [seqctrl](#)
- unsigned int [packet\\_length](#)
- unsigned int [data\\_field\\_header](#) [TM\_DATA\_HEADER\_LEN]
- unsigned int [data](#) [TM\_DATA\_MAX]
- unsigned int [error\\_ctrl](#)

### 3.28.1 Field Documentation

**3.28.1.1** unsigned int `TM_packet::data`[TM\_DATA\_MAX]

**3.28.1.2** unsigned int `TM_packet::data_field_header`[TM\_DATA\_HEADER\_LEN]

**3.28.1.3** unsigned int `TM_packet::error_ctrl`

**3.28.1.4** unsigned int `TM_packet::id`

**3.28.1.5** unsigned int `TM_packet::packet_length`

**3.28.1.6** unsigned int `TM_packet::seqctrl`

The documentation for this struct was generated from the following file:

- [LT\\_TMdef.h](#)



## 3.29 TM\_request Struct Reference

```
#include <conf1553.h>
```

Collaboration diagram for TM\_request:

### Data Fields

- int [status](#)
- struct [TM\\_request](#) \* [next](#)
- int [tmreq](#)
- int [count](#)
- int [offset](#) [16]

### 3.29.1 Field Documentation

**3.29.1.1** int TM\_request::count

**3.29.1.2** struct TM\_request\* TM\_request::next [read]

**3.29.1.3** int TM\_request::offset[16]

**3.29.1.4** int TM\_request::status

**3.29.1.5** int TM\_request::tmreq

The documentation for this struct was generated from the following file:

- [conf1553.h](#)



## 3.30 Word1Type Struct Reference

```
#include <Eprm.h>
```

### Data Fields

- unsigned long [m\\_PmSegStartAddr](#):20
- unsigned long [m\\_PmSegLength](#):12

### 3.30.1 Field Documentation

3.30.1.1 unsigned long Word1Type::m\_PmSegLength

3.30.1.2 unsigned long Word1Type::m\_PmSegStartAddr

The documentation for this struct was generated from the following file:

- [Eprm.h](#)



## 3.31 Word2Type Struct Reference

```
#include <Eprm.h>
```

### Data Fields

- unsigned long [j\\_IndexCurrSeg](#):16
- unsigned long [j\\_TotNumOfSeg](#):16

### 3.31.1 Field Documentation

3.31.1.1 unsigned long Word2Type::j\_IndexCurrSeg

3.31.1.2 unsigned long Word2Type::j\_TotNumOfSeg

The documentation for this struct was generated from the following file:

- [Eprm.h](#)



## 3.32 Word4Type Struct Reference

```
#include <Eprm.h>
```

### Data Fields

- unsigned long [d\\_AswStartAddrFlags](#):8
- unsigned long [d\\_LoadDmToPmOpt](#):8
- unsigned long [d\\_BootOpt](#):8
- unsigned long [d\\_Reserved](#):8

### 3.32.1 Field Documentation

**3.32.1.1 unsigned long Word4Type::d\_AswStartAddrFlags**

**3.32.1.2 unsigned long Word4Type::d\_BootOpt**

**3.32.1.3 unsigned long Word4Type::d\_LoadDmToPmOpt**

**3.32.1.4 unsigned long Word4Type::d\_Reserved**

The documentation for this struct was generated from the following file:

- [Eprm.h](#)

### 3.33 Word6Type Struct Reference

```
#include <Eprm.h>
```

#### Data Fields

- unsigned long [j\\_FcsPmSeg](#):16
- unsigned long [j\\_FcsEepromDmSeg](#):16

#### 3.33.1 Field Documentation

3.33.1.1 unsigned long Word6Type::j\_FcsEepromDmSeg

3.33.1.2 unsigned long Word6Type::j\_FcsPmSeg

The documentation for this struct was generated from the following file:

- [Eprm.h](#)



## 3.34 Word7Type Struct Reference

```
#include <Eprm.h>
```

### Data Fields

- unsigned long [j\\_Reserved](#):16
- unsigned long [j\\_FcsTot](#):16

### 3.34.1 Field Documentation

3.34.1.1 unsigned long Word7Type::j\_FcsTot

3.34.1.2 unsigned long Word7Type::j\_Reserved

The documentation for this struct was generated from the following file:

- [Eprm.h](#)

# Chapter 4

## File Documentation

### 4.1 1553\_def.h File Reference

```
#include "MilDef.h"
```

Include dependency graph for 1553\_def.h:

This graph shows which files directly or indirectly include this file:

#### Defines

- #define [SCI](#) 0
- #define [HK](#) 1
- #define [EVNT](#) 2
- #define [TC\\_packet LENGHT](#) 0x0000007D
- #define [EV\\_NUM](#) 32
- #define [HK\\_NUM](#) 64
- #define [SC\\_NUM](#) 400
- #define [SD\\_TM\\_QUEUE\\_FREE](#) 300

#### 4.1.1 Define Documentation

**4.1.1.1 #define EV\_NUM 32**

**4.1.1.2 #define EVNT 2**

**4.1.1.3 #define HK 1**

**4.1.1.4 #define HK\_NUM 64**

**4.1.1.5 #define SC\_NUM 400**

**4.1.1.6 #define SCI 0**

**4.1.1.7 #define SD\_TM\_QUEUE\_FREE 300**

**4.1.1.8 #define TC\_packet LENGHT 0x0000007D**

## 4.2 allnodes.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define EXE 0x00000001
- #define SYS 0x00000002
- #define FPU 0x00000004
- #define PACSTASKS 0x00000008
- #define PROCGROUP 0x00000010
- #define TASK1355 0x00000020
- #define NODE1 0x00010000
- #define T1\_INIT 0x00010000
- #define T4\_CNTRLR 0x00010001
- #define T9\_OBCP 0x00010002
- #define T2\_TMTCIF 0x00010003
- #define T5\_HKMON 0x00010004
- #define T6\_MECRX 0x00010005
- #define T7\_SPSRX 0x00010006
- #define T8\_SPLRX 0x00010007
- #define T3\_IRQ1SV 0x00010008
- #define TC\_QUEUE 0x00010000
- #define CALLINIT 0x00010001
- #define SEMA\_1355\_INT 0x00010000
- #define SEMA\_WAIT 0x00010001
- #define SEMA\_HK 0x00010002
- #define SEMA\_ACK 0x00010003
- #define SEMA\_CONTROLLER 0x00010004
- #define TM\_BUFFER 0x00010000
- #define TM\_EV\_BUFFER 0x00010001
- #define TX\_1355 0x00010002
- #define TICKFREQ 1000
- #define DATALEN 16384
- #define CEILING\_Prio 5
- #define KERNEL\_Prio 0
- #define DRIVER\_Prio 0
- #define TICKTIME 1000





**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 43 of [307](#)



## 4.2.1 Define Documentation

4.2.1.1 #define CALLINIT 0x00010001

4.2.1.2 #define CEILING\_PRIO 5

4.2.1.3 #define DATALEN 16384

4.2.1.4 #define DRIVER\_PRIO 0

4.2.1.5 #define EXE 0x00000001

4.2.1.6 #define FPU 0x00000004

4.2.1.7 #define KERNEL\_PRIO 0

4.2.1.8 #define NODE1 0x00010000

4.2.1.9 #define PACSTASKS 0x00000008

4.2.1.10 #define PROCGROUP 0x00000010

4.2.1.11 #define SEMA\_1355\_INT 0x00010000

4.2.1.12 #define SEMA\_ACK 0x00010003

4.2.1.13 #define SEMA\_CONTROLLER 0x00010004

4.2.1.14 #define SEMA\_HK 0x00010002

4.2.1.15 #define SEMA\_WAIT 0x00010001

4.2.1.16 #define SYS 0x00000002

4.2.1.17 #define T1\_INIT 0x00010000

4.2.1.18 #define T2\_TMTCIF 0x00010003

4.2.1.19 #define T3\_IRQ1SV 0x00010008

4.2.1.20 #define T4\_CNTRLR 0x00010001

4.2.1.21 #define T5\_HKMON 0x00010004

4.2.1.22 #define T6\_MECRX 0x00010005

4.2.1.23 #define T7\_SPSRX 0x00010006

4.2.1.24 #define T8\_SPLRX 0x00010007

4.2.1.25 #define T9\_OBCP 0x00010002

4.2.1.26 #define TASK1355 0x00000020

4.2.1.27 #define TC\_QUEUE 0x00010000

4.2.1.28 #define TICKFREQ 1000

4.2.1.29 #define TICKTIME 1000

4.2.1.30 #define TM\_BUFFER 0x00010000

## 4.3 conf1553.h File Reference

[DONE] com1553 - MIL-1553 Communication Library for Herschel - System Configuration.

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [TM\\_request](#)

### Defines

- #define [HIFI\\_CODE](#) 16  
*Remote Terminal Address for HIFI.*
- #define [SPIRE\\_CODE](#) 21  
*Remote Terminal Address for SPIRE.*
- #define [PACS\\_CODE](#) 25  
*Remote Terminal Address for PACS.*
- #define [OBSCODE](#) PACS\_CODE
- #define [TM\\_Seq\\_count\\_MASK](#) 0x00003fff
- #define [TM\\_PACK\\_REQUEST\\_NUM](#) 0x00000010
- #define [TM\\_req\\_node LENGHT](#) 0x00000004
- #define [OffSet\\_MASK](#) 0x007f
- #define [SA\\_OffSet\\_MASK](#) 0x0000000F
- #define [MaxPackDPRAM](#) 4
- #define [MaxCmndDPRAM](#) 1
- #define [Packet\\_counter\\_MASK](#) 0x000000ff
- #define [STOP](#) 0x00000000
- #define [CONTINUE](#) 0x00000001
- #define [ISFREE](#) 0xFFFFFFFF
- #define [PANIC\\_NODE\\_ERROR](#) 0xFFFFFFFF

### 4.3.1 Detailed Description

[DONE] com1553 - MIL-1553 Communication Library for Herschel - System Configuration.

com1553 - MIL-1553 Communication Library for Herschel - System Configuration.

Filename :

Purposes : Logical Task : in Spire - INIT : in Pacs - TBW - TODO : in HIFI - TBW - TODO :

Author : Scige

Last Developer :

#### Author

scige

Revision : \$Revision: 1.3

Checkout Tag :

#### Name



Last Modification :

**Date**

2006/10/16 14:19:53

Location :

**RCSfile**

[conf1553.h,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/1553\_consolidated/conf1553.h,v 1.10 2006/10/16 14:19:53 scige Exp

### 4.3.2 Define Documentation

4.3.2.1 **#define CONTINUE 0x00000001**

4.3.2.2 **#define HIFI\_CODE 16**

Remote Terminal Address for HIFI.

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.

4.3.2.3 **#define ISFREE 0xFFFFFFFF**

4.3.2.4 **#define MaxCmndDPRAM 1**

4.3.2.5 **#define MaxPackDPRAM 4**

4.3.2.6 **#define OBSCODE PACS\_CODE**

4.3.2.7 **#define OffSet\_MASK 0x007f**

4.3.2.8 **#define Packet\_counter\_MASK 0x000000ff**

4.3.2.9 **#define PACS\_CODE 25**

Remote Terminal Address for PACS.

4.3.2.10 **#define PANIC\_NODE\_ERROR 0xFFFFFFFF**

4.3.2.11 **#define SA\_Offset\_MASK 0x0000000F**

4.3.2.12 **#define SPIRE\_CODE 21**

Remote Terminal Address for SPIRE.



**4.3.2.13 #define STOP 0x00000000**

**4.3.2.14 #define TM\_PACK\_REQUEST\_NUM 0x00000010**

**4.3.2.15 #define TM\_req\_node\_LENGTH 0x00000004**

**4.3.2.16 #define TM\_Seq\_count\_MASK 0x00003fff**

How to use the IF statement

```
if OBSCODE == HIFI_CODE
```

```
elif OBSCODE == SPIRE_CODE
```

```
elif OBSCODE == PACS_CODE
```

```
endif
```



## 4.4 DmcCmd.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define TRIG\_HEADER 0x00040000
- #define WRITE\_HEADER 0x00060000

### Enumerations

- enum {  
LOOP = 0x00000001, END\_LOOP = 0x00010000, WAIT = 0x00020001, END\_SEQUENCE = 0x00030000,  
LABEL = 0x00040001, START\_SEQUENCE = 0x00050000, ABORT\_SEQUENCE = 0x00060000, SET\_TIME  
= 0x00070000,  
SET\_OBSID = 0x00080001, SET\_BBID = 0x00090001, SYNCHRONIZE\_ON\_DETECTOR = 0x000A0001,  
SET\_TIMING\_FPGA\_PARAMETERS = 0x000B0000,  
SWON\_B\_DEC = 0x000C0000, SWOF\_B\_DEC = 0x000D0000, SWON\_B\_SPEC = 0x000E0000, SWOF\_B\_  
SPEC = 0x000F0000,  
SET\_PAR\_B\_SPEC = 0x00100000, SET\_B\_SPEC\_HEAT\_C = 0x00110001, SET\_B\_SPEC\_FLASH\_C =  
0x00120001, SWON\_R\_DEC = 0x00130000,  
SWOF\_R\_DEC = 0x00140000, SWON\_R\_SPEC = 0x00150000, SWOF\_R\_SPEC = 0x00160000, SET\_PAR\_  
R\_SPEC = 0x00170000,  
SET\_PAR\_BOTH\_SPEC = 0x00180000, VAL\_SCI\_DATA\_B = 0x00190000, VAL\_SCI\_DATA\_R =  
0x001A0000, VAL\_SCI\_DATA\_BOTH = 0x001B0000,  
INVAL\_SCI\_DATA\_B = 0x001C0000, INVAL\_SCI\_DATA\_R = 0x001D0000, INVAL\_SCI\_DATA\_BOTH =  
0x001E0000, START\_DET\_SIMULATOR = 0x001F0001,  
STOP\_DET\_SIMULATOR = 0x00200000, SEND\_COMMAND\_TO\_BOLC = 0x00210001, SET\_R\_SPEC\_  
HEAT\_C = 0x00220001, SET\_R\_SPEC\_FLASH\_C = 0x00230001,  
SPARE = 0x00240001, RESET\_BOL\_READOUT\_C = 0x00250000, SWON\_GRAT\_CONT = 0x00260000,  
SWOF\_GRAT\_CONT = 0x00270000,  
ENABLE\_GRAT\_CONT = 0x00280000, DISABLE\_GRAT\_CONT = 0x00290000, MOVE\_GRAT\_ABS =  
0x002A0001, MOVE\_GRAT\_REL = 0x002B0001,  
HOME\_GRAT = 0x002C0001, ENTER\_GRAT\_CONT\_DEG = 0x002D0001, EXIT\_GRAT\_CONT\_DEG =  
0x002E0000, LOCK\_GRAT = 0x002F0001,  
UNLOCK\_GRAT = 0x00300001, SWON\_CHOP\_CONT = 0x00310000, SWOF\_CHOP\_CONT = 0x00320000,  
ENABLE\_CHOP\_CONT = 0x00330000,  
DISABLE\_CHOP\_CONT = 0x00340000, MOVE\_CHOP\_ABS = 0x00350001, MOVE\_CHOP\_REL =  
0x00360001, MOVE\_CHOP\_ABS\_DITHER = 0x00370001,  
MOVE\_CHOP\_REL\_DITHER = 0x00380001, SET\_CHOP\_COIL\_DRIVE = 0x00390001, SWON\_FW\_SPEC  
= 0x003A0000, SWON\_FW\_PHOTO = 0x003B0000,  
SWON\_BD\_HEATER = 0x003C0000, SWOF\_BD\_HEATER = 0x003D0000, SWON\_BD\_FLASHER =  
0x003E0000, SWOF\_BD\_FLASHER = 0x003F0000,  
MOVE\_SPEC\_FW\_LOC = 0x00400001, MOVE\_SPEC\_FW\_STEP = 0x00410001, MOVE\_PHOTO\_FW\_LOC  
= 0x00420001, MOVE\_PHOTO\_FW\_STEP = 0x00430001,  
SWON\_BB\_1\_CONT = 0x00440000, SWOF\_BB\_1\_CONT = 0x00450000, SET\_TEMP\_BB\_1 = 0x00460001,  
SET\_BB\_1\_VOLTAGE = 0x00470001,  
SWON\_BB\_2\_CONT = 0x00480000, SWOF\_BB\_2\_CONT = 0x00490000, SET\_TEMP\_BB\_2 = 0x004A0001,  
SET\_BB\_2\_VOLTAGE = 0x004B0001,  
START\_DIAG\_HK = 0x004C0001, STOP\_DIAG\_HK = 0x004D0000, START\_HK = 0x004E0000, SWON\_  
RD\_HEATER = 0x004F0000,



```
SWOF_RD_HEATER = 0x00500000, SWON_RD_FLASHER = 0x00510000, SWOF_RD_FLASHER =  
0x00520000, SPARE_CMD_2 = 0x00530001,  
SPARE_CMD_3 = 0x00540001, SEND_COMMAND_TO_BLUE_DEC = 0x00550001, START_RED_SPU_  
LINK = 0x00560001, START_BLUE_SPU_LINK = 0x00570001,  
COPY_OBS_TO_EEPROM = 0x00580000, RESET_SMCS_CHIP_2 = 0x00590000, SELECT_MEC_CTRL_  
MODE = 0x005A0001, ENABLE_BB_1_CONT = 0x005B0000,  
DISABLE_BB_1_CONT = 0x005C0000, ENABLE_BB_2_CONT = 0x005D0000, DISABLE_BB_2_CONT =  
0x005E0000, SWON_TEMP_SENSOR = 0x005F0000,  
SWOFF_TEMP_SENSOR = 0x00600000, LOAD_DEC_ASW_FROM_EEPROM = 0x00650005, RUN_DEC_  
ASW = 0x00660002, DEC_LLSW_WARM_RESET = 0x00680000,  
DMC_SEQ_ARG_0 = 0xF0000000, DMC_SEQ_ARG_1 = 0xF0000001, DMC_SEQ_ARG_2 = 0xF0000002,  
DMC_SEQ_ARG_3 = 0xF0000003,  
DMC_SEQ_ARG_4 = 0xF0000004, DMC_SEQ_ARG_5 = 0xF0000005, DMC_SEQ_ARG_6 = 0xF0000006,  
DMC_SEQ_ARG_7 = 0xF0000007,  
DMC_SEQ_ARG_8 = 0xF0000008, DMC_SEQ_ARG_9 = 0xF0000009, DMC_SEQ_ARG_10 = 0xF000000A,  
DMC_SEQ_ARG_11 = 0xF000000B,  
DMC_SEQ_ARG_12 = 0xF000000C, DMC_SEQ_ARG_13 = 0xF000000D, DMC_SEQ_ARG_14 =  
0xF000000E, DMC_SEQ_ARG_15 = 0xF000000F,  
DMC_WRT_TIME = 0x00000002, DMC_WRT_SEQ_BUFFER = 0x00010000, DMC_WRT_SEQ_BUFFER_0  
= 0x00020000, DMC_WRT_SEQ_BUFFER_1 = 0x00030000,  
DMC_WRT_SEQ_BUFFER_2 = 0x00040000, DMC_WRT_SEQ_BUFFER_3 = 0x00050000, DMC_WRT_  
SEQ_BUFFER_4 = 0x00060000, DMC_WRT_SEQ_BUFFER_5 = 0x00070000,  
DMC_WRT_SEQ_BUFFER_6 = 0x00080000, DMC_WRT_SEQ_BUFFER_7 = 0x00090000, DMC_WRT_  
SEQ_BUFFER_8 = 0x000A0000, DMC_WRT_SEQ_BUFFER_9 = 0x000B0000,  
DMC_WRT_NOT_USED_1 = 0x000C0001, DMC_WRT_DIAG_HK_LIST = 0x000D0000, DMC_WRT_  
DIAG_HK_CONF_TAB = 0x000E0000, DMC_WRT_GRAT_CONF_PAR = 0x000F0009,  
DMC_WRT_CHOP_CONF_PAR = 0x00100015, DMC_WRT_FW_SPEC_CONF_PAR = 0x00110006, DMC_  
WRT_FW_PHOT_CONF_PAR = 0x00120006, DMC_WRT_CS1_CONF_PAR = 0x00130007,  
DMC_WRT_CS2_CONF_PAR = 0x00140007, DMC_WRT_NOT_USED_2 = 0x00150001, DMC_WRT_  
BOL_REC_OPT = 0x00160001, DMC_WRT_B_DEC_REC_OPT = 0x00170001,  
DMC_WRT_R_DEC_REC_OPT = 0x00180001, DMC_WRT_MAX_DITHER = 0x00190001, DMC_WRT_R_  
SPEC_PAR = 0x001A0006, DMC_WRT_B_SPEC_PAR = 0x001B0006,  
DMC_WRT_SPU_TRAN_MODE = 0x001C0002, DMC_WRT_TIMING_FPGA_PAR = 0x001D0000, DMC_  
WRT_B_PACKT_ENC_LINK = 0x001E0001, DMC_WRT_R_PACKT_ENC_LINK = 0x001F0001,  
DMC_WRT_GRAT_INDUCT_AMPL = 0x00200001, DMC_WRT_GRAT_RANGE = 0x00210001, DMC_  
WRT_GRAT_HAL_OFFSET = 0x00220001, DMC_WRT_GRAT_DEG_MODE_PARAM = 0x00230002,  
DMC_WRT_GRAT_CONF_FILT = 0x00240005 }
```

#### 4.4.1 Define Documentation

4.4.1.1 #define TRIG\_HEADER 0x00040000

4.4.1.2 #define WRITE\_HEADER 0x00060000

#### 4.4.2 Enumeration Type Documentation

4.4.2.1 anonymous enum

Enumerator:

*LOOP*

*END\_LOOP*



*WAIT*  
*END\_SEQUENCE*  
*LABEL*  
*START\_SEQUENCE*  
*ABORT\_SEQUENCE*  
*SET\_TIME*  
*SET\_OBSID*  
*SET\_BBID*  
*SYNCHRONIZE\_ON\_DETECTOR*  
*SET\_TIMING\_FPGA\_PARAMETERS*  
*SWON\_B\_DEC*  
*SWOF\_B\_DEC*  
*SWON\_B\_SPEC*  
*SWOF\_B\_SPEC*  
*SET\_PAR\_B\_SPEC*  
*SET\_B\_SPEC\_HEAT\_C*  
*SET\_B\_SPEC\_FLASH\_C*  
*SWON\_R\_DEC*  
*SWOF\_R\_DEC*  
*SWON\_R\_SPEC*  
*SWOF\_R\_SPEC*  
*SET\_PAR\_R\_SPEC*  
*SET\_PAR\_BOTH\_SPEC*  
*VAL\_SCI\_DATA\_B*  
*VAL\_SCI\_DATA\_R*  
*VAL\_SCI\_DATA\_BOTH*  
*INVAL\_SCI\_DATA\_B*  
*INVAL\_SCI\_DATA\_R*  
*INVAL\_SCI\_DATA\_BOTH*  
*START\_DET\_SIMULATOR*  
*STOP\_DET\_SIMULATOR*  
*SEND\_COMMAND\_TO\_BOLC*  
*SET\_R\_SPEC\_HEAT\_C*  
*SET\_R\_SPEC\_FLASH\_C*  
*SPARE*  
*RESET\_BOL\_READOUT\_C*  
*SWON\_GRAT\_CONT*  
*SWOF\_GRAT\_CONT*  
*ENABLE\_GRAT\_CONT*  
*DISABLE\_GRAT\_CONT*  
*MOVE\_GRAT\_ABS*  
*MOVE\_GRAT\_REL*  
*HOME\_GRAT*  
*ENTER\_GRAT\_CONT\_DEG*  
*EXIT\_GRAT\_CONT\_DEG*





*LOCK\_GRAT*  
*UNLOCK\_GRAT*  
*SWON\_CHOP\_CONT*  
*SWOF\_CHOP\_CONT*  
*ENABLE\_CHOP\_CONT*  
*DISABLE\_CHOP\_CONT*  
*MOVE\_CHOP\_ABS*  
*MOVE\_CHOP\_REL*  
*MOVE\_CHOP\_ABS\_DITHER*  
*MOVE\_CHOP\_REL\_DITHER*  
*SET\_CHOP\_COIL\_DRIVE*  
*SWON\_FW\_SPEC*  
*SWON\_FW\_PHOTO*  
*SWON\_BD\_HEATER*  
*SWOF\_BD\_HEATER*  
*SWON\_BD\_FLASHER*  
*SWOF\_BD\_FLASHER*  
*MOVE\_SPEC\_FW\_LOC*  
*MOVE\_SPEC\_FW\_STEP*  
*MOVE\_PHOTO\_FW\_LOC*  
*MOVE\_PHOTO\_FW\_STEP*  
*SWON\_BB\_1\_CONT*  
*SWOF\_BB\_1\_CONT*  
*SET\_TEMP\_BB\_1*  
*SET\_BB\_1\_VOLTAGE*  
*SWON\_BB\_2\_CONT*  
*SWOF\_BB\_2\_CONT*  
*SET\_TEMP\_BB\_2*  
*SET\_BB\_2\_VOLTAGE*  
*START\_DIAG\_HK*  
*STOP\_DIAG\_HK*  
*START\_HK*  
*SWON\_RD\_HEATER*  
*SWOF\_RD\_HEATER*  
*SWON\_RD\_FLASHER*  
*SWOF\_RD\_FLASHER*  
*SPARE\_CMD\_2*  
*SPARE\_CMD\_3*  
*SEND\_COMMAND\_TO\_BLUE\_DEC*  
*START\_RED\_SPU\_LINK*  
*START\_BLUE\_SPU\_LINK*  
*COPY\_OBS\_TO\_EEPROM*  
*RESET\_SMCS\_CHIP\_2*  
*SELECT\_MEC\_CTRL\_MODE*  
*ENABLE\_BB\_1\_CONT*



*DISABLE\_BB\_1\_CONT*  
*ENABLE\_BB\_2\_CONT*  
*DISABLE\_BB\_2\_CONT*  
*SWON\_TEMP\_SENSOR*  
*SWOFF\_TEMP\_SENSOR*  
*LOAD\_DEC\_ASW\_FROM\_EEPROM*  
*RUN\_DEC\_ASW*  
*DEC\_LLSW\_WARM\_RESET*  
*DMC\_SEQ\_ARG\_0*  
*DMC\_SEQ\_ARG\_1*  
*DMC\_SEQ\_ARG\_2*  
*DMC\_SEQ\_ARG\_3*  
*DMC\_SEQ\_ARG\_4*  
*DMC\_SEQ\_ARG\_5*  
*DMC\_SEQ\_ARG\_6*  
*DMC\_SEQ\_ARG\_7*  
*DMC\_SEQ\_ARG\_8*  
*DMC\_SEQ\_ARG\_9*  
*DMC\_SEQ\_ARG\_10*  
*DMC\_SEQ\_ARG\_11*  
*DMC\_SEQ\_ARG\_12*  
*DMC\_SEQ\_ARG\_13*  
*DMC\_SEQ\_ARG\_14*  
*DMC\_SEQ\_ARG\_15*  
*DMC\_WRT\_TIME*  
*DMC\_WRT\_SEQ\_BUFFER*  
*DMC\_WRT\_SEQ\_BUFFER\_0*  
*DMC\_WRT\_SEQ\_BUFFER\_1*  
*DMC\_WRT\_SEQ\_BUFFER\_2*  
*DMC\_WRT\_SEQ\_BUFFER\_3*  
*DMC\_WRT\_SEQ\_BUFFER\_4*  
*DMC\_WRT\_SEQ\_BUFFER\_5*  
*DMC\_WRT\_SEQ\_BUFFER\_6*  
*DMC\_WRT\_SEQ\_BUFFER\_7*  
*DMC\_WRT\_SEQ\_BUFFER\_8*  
*DMC\_WRT\_SEQ\_BUFFER\_9*  
*DMC\_WRT\_NOT\_USED\_1*  
*DMC\_WRT\_DIAG\_HK\_LIST*  
*DMC\_WRT\_DIAG\_HK\_CONF\_TAB*  
*DMC\_WRT\_GRAT\_CONF\_PAR*  
*DMC\_WRT\_CHOP\_CONF\_PAR*  
*DMC\_WRT\_FW\_SPEC\_CONF\_PAR*  
*DMC\_WRT\_FW\_PHOT\_CONF\_PAR*  
*DMC\_WRT\_CSI\_CONF\_PAR*  
*DMC\_WRT\_CS2\_CONF\_PAR*



*DMC\_WRT\_NOT\_USED\_2*  
*DMC\_WRT\_BOL\_REC\_OPT*  
*DMC\_WRT\_B\_DEC\_REC\_OPT*  
*DMC\_WRT\_R\_DEC\_REC\_OPT*  
*DMC\_WRT\_MAX\_DITHER*  
*DMC\_WRT\_R\_SPEC\_PAR*  
*DMC\_WRT\_B\_SPEC\_PAR*  
*DMC\_WRT\_SPU\_TRAN\_MODE*  
*DMC\_WRT\_TIMING\_FPGA\_PAR*  
*DMC\_WRT\_B\_PACKT\_ENC\_LINK*  
*DMC\_WRT\_R\_PACKT\_ENC\_LINK*  
*DMC\_WRT\_GRAT\_INDUCT\_AMPL*  
*DMC\_WRT\_GRAT\_RANGE*  
*DMC\_WRT\_GRAT\_HAL\_OFFSET*  
*DMC\_WRT\_GRAT\_DEG\_MODE\_PARAM*  
*DMC\_WRT\_GRAT\_CONF\_FILT*



## 4.5 DUMMY.c File Reference

```
#include "Node1.h"
```

Include dependency graph for DUMMY.c:

### Functions

- void [Dummy](#) (void)

#### 4.5.1 Function Documentation

##### 4.5.1.1 void [Dummy](#) (void)

## 4.6 Eprm.c File Reference

```
#include <string.h>
#include "NODE1.h"
#include "Eprm.h"
#include "pload.h"
#include "MM_MISC.h"
```

Include dependency graph for Eprm.c:

### Defines

- #define [\\_\\_EEPROM\\_PROTOTYPE\\_\\_](#)

### Functions

- void [DPU\\_wait](#) (unsigned int)
- static unsigned int [DmEepromComputeFCS](#) ([MemoryCellType](#) \*pd\_Buffer, unsigned int j\_StartWords, unsigned int j\_NumberOfWords)
- void [ComputeFCSTable](#) (void)
- static unsigned int [ComputeFCS](#) (unsigned char d\_Byte, unsigned int j\_PartialFcs)
- unsigned char [EepromWriteSegment](#) ([EepromHeaderType](#) \*pw\_EepromHeader, unsigned long \*pm\_buffer, unsigned int j\_NumberOfSegment)
- [EepromHeaderType](#) \* [WriteEepromHeader](#) (unsigned int j\_IndexCurrSeg, unsigned int j\_TotNumofSeg, unsigned char d\_AswStartAddrFlags, unsigned char d\_BootOpt, unsigned char d\_LoadDmToPmOpt, unsigned char d\_Reserved, unsigned long m\_AswStartAddr, unsigned long m\_PmSegStartAddr, unsigned long m\_PmSegLength, unsigned long m\_NextEepromSeg, unsigned int j\_j\_FcsEepromDmSeg, unsigned int j\_FcsPmSeg, unsigned int j\_FcsTot)
- unsigned char [EepromWriteCell](#) (unsigned long m\_Address, unsigned long m\_Data)
- unsigned char [EepromReadCell](#) (unsigned long m\_Address, unsigned long \*pm\_Data)
- unsigned char [EepromClearCell](#) (unsigned long m\_Address)
- unsigned char [EepromDeleteSegment](#) (unsigned int j\_NumberOfSegment)
- unsigned char [EepromDisableProtBank](#) (unsigned char d\_Bank)
- unsigned char [EepromEnableProtBank](#) (unsigned char d\_Bank, unsigned int j\_DummyOffsetCell)
- unsigned char [CopyProgramInEEPROM](#) (unsigned long m\_PmStartAddress, unsigned long m\_PmEndAddress, unsigned long m\_FlagPartition, unsigned int \*pj\_PageToAvoid, unsigned int j\_FcsPmTotal)
- unsigned int [ComputeFcsOverall](#) (unsigned long m\_PmStartAddress, unsigned long m\_PmEndAddress)
- void [init\\_eprm\\_write\\_interr\\_prio](#) (int int\_a, int int\_b, int int\_c, int high\_prio)
- unsigned int [PackPMWordsinEepromPage](#) (unsigned long m\_PmEndAddress, unsigned long \*p\_PmAddress, unsigned int limit)

### Variables

- static unsigned int [saj\\_FCSTable](#) [FCS\_TABLE\_SIZE]
- static [EepromHeaderType](#) [sw\\_EepromHeader](#)
- static unsigned int [SAve\\_prio](#)
- static unsigned long [EEPROM\\_page\\_Buffer](#) [DM\_EEPROMPAGE\_SIZE]
- static int [interrupt\\_a](#) = 5
- static int [interrupt\\_b](#) = 6
- static int [interrupt\\_c](#) = 7
- static unsigned int [Hlgh\\_prio](#) = 4



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 56 of [307](#)



## 4.6.1 Define Documentation

4.6.1.1 `#define __EEPROM_PROTOTYPE__`

## 4.6.2 Function Documentation

4.6.2.1 `unsigned int ComputeFCS (unsigned char d_Byte, unsigned int j_PartialFcs) [static]`

4.6.2.2 `unsigned int ComputeFcsOverall (unsigned long m_PmStartAddress, unsigned long m_PmEndAddress)`

4.6.2.3 `void ComputeFCSTable (void)`

4.6.2.4 `unsigned char CopyProgramInEEPROM (unsigned long m_PmStartAddress, unsigned long m_PmEndAddress, unsigned long m_FlagPartition, unsigned int * pj_PageToAvoid, unsigned int j_FcsPmTotal)`

4.6.2.5 `unsigned int DmEepromComputeFCS (MemoryCellType * pd_Buffer, unsigned int j_StartWords, unsigned int j_NumberOfWords) [static]`

4.6.2.6 `void DPU_wait (unsigned int)`

4.6.2.7 `unsigned char EepromClearCell (unsigned long m_Address)`

4.6.2.8 `unsigned char EepromDeleteSegment (unsigned int j_NumberOfSegment)`

4.6.2.9 `unsigned char EepromDisableProtBank (unsigned char d_Bank)`

4.6.2.10 `unsigned char EepromEnableProtBank (unsigned char d_Bank, unsigned int j_DummyOffsetCell)`

4.6.2.11 `unsigned char EepromReadCell (unsigned long m_Address, unsigned long * pm_Data)`

4.6.2.12 `unsigned char EepromWriteCell (unsigned long m_Address, unsigned long m_Data)`

4.6.2.13 `unsigned char EepromWriteSegment (EepromHeaderType * pw_EepromHeader, unsigned long * pm_buffer, unsigned int j_NumberOfSegment)`

4.6.2.14 `void init_eprm_write_interr_prio (int int_a, int int_b, int int_c, int high_prio)`

4.6.2.15 `unsigned int PackPMWordsinEepromPage (unsigned long m_PmEndAddress, unsigned long * p_PmAddress, unsigned int limit)`

4.6.2.16 `EepromHeaderType* WriteEepromHeader (unsigned int j_IndexCurrSeg, unsigned int j_TotNumofSeg, unsigned char d_AswStartAddrFlags, unsigned char d_BootOpt, unsigned char d_LoadDmToPmOpt, unsigned char d_Reserved, unsigned long m_AswStartAddr, unsigned long m_PmSegStartAddr, unsigned long m_PmSegLength, unsigned long m_NextEepromSeg, unsigned int j_j_FcsEepromDmSeg, unsigned int j_FcsPmSeg, unsigned int j_FcsTot)`

## 4.6.3 Variable Documentation

4.6.3.1 `unsigned long EEPROM_page_Buffer[DM_EEPROM_PAGESIZE] [static]`

4.6.3.2 `unsigned int High_prio = 4 [static]`

4.6.3.3 `int interrupt_a = 5 [static]`

4.6.3.4 `int interrupt_b = 6 [static]`

4.6.3.5 `int interrupt_c = 7 [static]`

4.6.3.6 `unsigned int saj_FcSTable[FCS_TABLE_SIZE] [static]`

## 4.7 Eprm.h File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [Word1Type](#)
- struct [Word2Type](#)
- struct [Word4Type](#)
- struct [Word6Type](#)
- struct [Word7Type](#)
- struct [EepromHeader](#)
- struct [MemoryCell](#)

### Defines

- #define [PM\\_BASE\\_ADDRESS](#) 0x000000
- #define [PM\\_START\\_ADDRESS](#) PM\_BASE\_ADDRESS
- #define [PM\\_SIZE](#) 0x080000
- #define [PM\\_END\\_ADDRESS](#) PM\_START\_ADDRESS + PM\_SIZE - 1
- #define [PM\\_PAGE\\_SIZE](#) 0x400
- #define [PM\\_NUMBER\\_OF\\_PAGES](#) PM\_SIZE/PM\_PAGE\_SIZE
- #define [DM\\_BASE\\_ADDRESS](#) 0x00000000
- #define [DM\\_START\\_ADDRESS](#) DM\_BASE\_ADDRESS
- #define [DM\\_SIZE](#) 0x00080000
- #define [DM\\_END\\_ADDRESS](#) DM\_START\_ADDRESS + DM\_SIZE - 1
- #define [DM\\_EEPROM\\_BASE\\_ADDRESS](#) 0x80000000
- #define [DM\\_EEPROM\\_START\\_ADDRESS](#) DM\_EEPROM\_BASE\_ADDRESS
- #define [DM\\_EEPROM\\_SIZE](#) 0x00040000
- #define [DM\\_EEPROM\\_END\\_ADDRESS](#)
- #define [DM\\_EEPROM\\_PAGE\\_SIZE](#) 0x400
- #define [DM\\_EEPROM\\_NUMBER\\_OF\\_PAGES](#) DM\_EEPROM\_SIZE/DM\_EEPROM\_PAGE\_SIZE
- #define [FCS\\_PRESET\\_VALUE](#) 0xFFFF
- #define [NOT\\_APPLICABLE](#) 0xFF
- #define [ON](#) 1
- #define [DM\\_EEPROM\\_OFFSET](#) DM\_EEPROM\_START\_ADDRESS
- #define [DM\\_EEPROM\\_FIRST\\_SEG](#) DM\_EEPROM\_OFFSET
- #define [DM\\_EEPROM\\_LAST\\_SEG](#)
- #define [DM\\_EEPROM\\_FIRST\\_PAGE](#) 0
- #define [DM\\_EEPROM\\_LAST\\_PAGE](#) DM\_EEPROM\_NUMBER\_OF\_PAGES - 1
- #define [FCS\\_TABLE\\_SIZE](#) 256
- #define [FCS\\_FILTER](#) 0x0000FFFF
- #define [WORD\\_WITH\\_DMEEPROM\\_FCS](#) 5
- #define [DM\\_EEPROM\\_FREE\\_VALUE](#) 0x00000000
- #define [NUM\\_OF\\_EEPROM\\_BLOCKS](#) 8
- #define [EEPROM\\_BLOCK\\_SIZE](#) 128
- #define [DM\\_HEADER\\_SIZE](#) 7
- #define [DM\\_EEPROMPAGE\\_SIZE](#) DM\_EEPROM\_PAGE\_SIZE - DM\_HEADER\_SIZE
- #define [PM\\_INTERRUPT\\_VECTORS\\_TABLE](#) 256
- #define [DM\\_EEPROM\\_END\\_SEGMENTS](#) 0x00000000
- #define [EEPROM\\_WRITE\\_SUCCESS](#) 0
- #define [DM\\_EEPROM\\_WRITE\\_SUCCESS](#) 0
- #define [DM\\_EEPROM\\_READ\\_SUCCESS](#) 0
- #define [DM\\_EEPROM\\_DELETION\\_SUCCESS](#) 0



- #define `DM_EEPROM_ERROR_COPY_SUCCESS` 0
- #define `DM_EEPROM_WRITE_SUCCESS` 0
- #define `DM_EEPROM_ERROR_SUCCESS` 0
- #define `DM_EEPROM_ERROR_SEGMENT_NOT_FREE` 1
- #define `DM_EEPROM_ERROR_BAD_ADDRESS` 2
- #define `DM_EEPROM_ERROR_SEGMENT_OVERFLOW` 3
- #define `DM_EEPROM_ERROR_COPY_FAILED` 4
- #define `DM_EEPROM_ERROR_WRITE_FAILED` 5
- #define `DM_EEPROM_ERROR_BANK_OVERFLOW` 6
- #define `DM_EEPROM_WRITE_FAILED` 7
- #define `DM_EEPROM_ERROR_NOT_CLEARED` 8
- #define `DM_EEPROM_ERROR_OVERFLOW` 9
- #define `DM_EEPROM_BANK_1` 0
- #define `DM_EEPROM_BANK_2` 1
- #define `EEPROM_WAIT_TIME` 12
- #define `DataProtection(m_EepromAddress)`

## Typedefs

- typedef struct `EepromHeader` `EepromHeaderType`
- typedef struct `MemoryCell` `MemoryCellType`

## Functions

- unsigned char `EepromWriteCell` (unsigned long m\_Address, unsigned long m\_Data)
- unsigned char `EepromClearCell` (unsigned long m\_Address)
- unsigned char `EepromReadCell` (unsigned long m\_Address, unsigned long \*pm\_Data)
- unsigned char `EepromWriteSegment` (`EepromHeaderType` \*pw\_EepromHeader, unsigned long \*pj\_buffer, unsigned int j\_NumberOfSegment)
- unsigned char `EepromDeleteSegment` (unsigned int j\_NumberOfSegment)
- `EepromHeaderType` \* `WriteEepromHeader` (unsigned int j\_IndexCurrSeg, unsigned int j\_TotNumofSeg, unsigned char d\_AswStartAddrFlags, unsigned char d\_BootOpt, unsigned char d\_LoadDmToPmOpt, unsigned char d\_Reserved, unsigned long m\_AswStartAddr, unsigned long m\_PmSegStartAddr, unsigned long m\_PmSegLength, unsigned long m\_NextEepromSeg, unsigned int j\_j\_FcsEepromDmSeg, unsigned int j\_FcsPmSeg, unsigned int j\_FcsTot)
- void `ComputeFCSTable` (void)
- unsigned char `CopyProgramInEEPROM` (unsigned long m\_PmStartAddress, unsigned long m\_PmEndAddress, unsigned long m\_FlagPartition, unsigned int \*pj\_PageToAvoid, unsigned int j\_FcsPmTotal)
- unsigned char `EepromEnableProtBank` (unsigned char d\_Bank, unsigned int j\_DummyOffsetCell)
- unsigned char `EepromDisableProtBank` (unsigned char d\_Bank)
- unsigned int `ComputeFcsOverall` (unsigned long m\_PmStartAddress, unsigned long m\_PmEndAddress)
- void `ReadCell` (void)
- void `init_eprm_write_interr_prio` (int, int, int, int)
- unsigned int `PackPMWordsinEepromPage` (unsigned long, unsigned long \*, unsigned int)

### 4.7.1 Define Documentation

#### 4.7.1.1 #define `DataProtection(m_EepromAddress)`

##### Value:



```
{\n    unsigned long m_EepromOffset;\n    if ((m_EepromAddress < DM_EEPROM_BASE_ADDRESS + 0x20000) &&\n        (m_EepromAddress >= DM_EEPROM_BASE_ADDRESS))\n        m_EepromOffset = 0;\n    else\n        m_EepromOffset = 0x20000;\n    *(unsigned long *) (DM_EEPROM_BASE_ADDRESS + m_EepromOffset + 0x5555) = 0xAAAAAAAA;\n    *(unsigned long *) (DM_EEPROM_BASE_ADDRESS + m_EepromOffset + 0x2AAA) = 0x55555555;\n    *(unsigned long *) (DM_EEPROM_BASE_ADDRESS + m_EepromOffset + 0x5555) = 0xA0A0A0A0;\n}\n
```

**4.7.1.2 #define DM\_BASE\_ADDRESS 0x00000000**

**4.7.1.3 #define DM\_EEPROM\_BANK\_1 0**

**4.7.1.4 #define DM\_EEPROM\_BANK\_2 1**

**4.7.1.5 #define DM\_EEPROM\_BASE\_ADDRESS 0x80000000**

**4.7.1.6 #define DM\_EEPROM\_DELETION\_SUCCESS 0**

**4.7.1.7 #define DM\_EEPROM\_END\_ADDRESS**

**Value:**

DM\_EEPROM\_START\_ADDRESS +\n

DM\_EEPROM\_SIZE - 1



- 4.7.1.8 **#define DM\_EEPROM\_END\_SEGMENTS 0x00000000**
- 4.7.1.9 **#define DM\_EEPROM\_ERROR\_BAD\_ADDRESS 2**
- 4.7.1.10 **#define DM\_EEPROM\_ERROR\_BANK\_OVERFLOW 6**
- 4.7.1.11 **#define DM\_EEPROM\_ERROR\_COPY\_FAILED 4**
- 4.7.1.12 **#define DM\_EEPROM\_ERROR\_COPY\_SUCCESS 0**
- 4.7.1.13 **#define DM\_EEPROM\_ERROR\_NOT\_CLEARED 8**
- 4.7.1.14 **#define DM\_EEPROM\_ERROR\_OVERFLOW 9**
- 4.7.1.15 **#define DM\_EEPROM\_ERROR\_SEGMENT\_NOT\_FREE 1**
- 4.7.1.16 **#define DM\_EEPROM\_ERROR\_SEGMENT\_OVERFLOW 3**
- 4.7.1.17 **#define DM\_EEPROM\_ERROR\_SUCCESS 0**
- 4.7.1.18 **#define DM\_EEPROM\_ERROR\_WRITE\_FAILED 5**
- 4.7.1.19 **#define DM\_EEPROM\_FIRST\_PAGE 0**
- 4.7.1.20 **#define DM\_EEPROM\_FIRST\_SEG DM\_EEPROM\_OFFSET**
- 4.7.1.21 **#define DM\_EEPROM\_FREE\_VALUE 0x00000000**
- 4.7.1.22 **#define DM\_EEPROM\_LAST\_PAGE DM\_EEPROM\_NUMBER\_OF\_PAGES - 1**
- 4.7.1.23 **#define DM\_EEPROM\_LAST\_SEG**

**Value:**

DM\_EEPROM\_END\_ADDRESS -\

DM\_EEPROM\_PAGE\_SIZE



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 62 of [307](#)



4.7.1.24 #define DM\_EEPROM\_NUMBER\_OF\_PAGES DM\_EEPROM\_SIZE/DM\_EEPROM\_PAGE\_SIZE

4.7.1.25 #define DM\_EEPROM\_OFFSET DM\_EEPROM\_START\_ADDRESS

4.7.1.26 #define DM\_EEPROM\_PAGE\_SIZE 0x400

4.7.1.27 #define DM\_EEPROM\_READ\_SUCCESS 0

4.7.1.28 #define DM\_EEPROM\_SIZE 0x00040000

4.7.1.29 #define DM\_EEPROM\_START\_ADDRESS DM\_EEPROM\_BASE\_ADDRESS

4.7.1.30 #define DM\_EEPROM\_WRITE\_FAILED 7

4.7.1.31 #define DM\_EEPROM\_WRITE\_SUCCESS 0

4.7.1.32 #define DM\_EEPROM\_WRITE\_SUCCESS 0

4.7.1.33 #define DM\_EEPROM\_PAGESIZE DM\_EEPROM\_PAGE\_SIZE - DM\_HEADER\_SIZE

4.7.1.34 #define DM\_END\_ADDRESS DM\_START\_ADDRESS + DM\_SIZE - 1

4.7.1.35 #define DM\_HEADER\_SIZE 7

4.7.1.36 #define DM\_SIZE 0x00080000

4.7.1.37 #define DM\_START\_ADDRESS DM\_BASE\_ADDRESS

4.7.1.38 #define EEPROM\_BLOCK\_SIZE 128

4.7.1.39 #define EEPROM\_WAIT\_TIME 12

4.7.1.40 #define EEPROM\_WRITE\_SUCCESS 0

4.7.1.41 #define FCS\_FILTER 0x0000FFFF

4.7.1.42 #define FCS\_PRESET\_VALUE 0xFFFF

4.7.1.43 #define FCS\_TABLE\_SIZE 256

4.7.1.44 #define NOT\_APPLICABLE 0xFF

4.7.1.45 #define NUM\_OF\_EEPROM\_BLOCKS 8

4.7.1.46 #define ON 1

4.7.1.47 #define PM\_BASE\_ADDRESS 0x000000

4.7.1.48 #define PM\_END\_ADDRESS PM\_START\_ADDRESS + PM\_SIZE - 1

4.7.1.49 #define PM\_INTERRUPT\_VECTORS\_TABLE 256

4.7.1.50 #define PM\_NUMBER\_OF\_PAGES PM\_SIZE/PM\_PAGE\_SIZE

4.7.1.51 #define PM\_PAGE\_SIZE 0x400

4.7.1.52 #define PM\_SIZE 0x080000

4.7.1.53 #define PM\_START\_ADDRESS PM\_BASE\_ADDRESS



## 4.8 HK\_def.h File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [HK\\_def](#)

### Defines

- #define [SPEC](#) 1
- #define [PHOT](#) 2
- #define [NPRI](#) 4
- #define [ARRAY\\_BOTH](#) 1
- #define [ARRAY\\_BLUE](#) 2
- #define [ARRAY\\_RED](#) 3
- #define [HK\\_SPEC](#) 0x01000000
- #define [HK\\_PHOT](#) 0x02000000
- #define [HK\\_BOTH](#) 0x03000000
- #define [HK\\_NONP](#) 0x04000000
- #define [HK\\_SPAR](#) 0x08000000
- #define [HK\\_ALL\\_PACK](#) (HK\_BOTH | HK\_NONP)
- #define [HK\\_NOCHK](#) 0x00000100
- #define [HK\\_HAS\\_HL](#) 0x00000200
- #define [HK\\_AUTFN](#) 0x00000400
- #define [HK\\_INVERT](#) 0x00000800
- #define [HK\\_INVALID](#) 0xFFFFFFFF
- #define [FUNCTION\\_GENERATE\\_EVENT\\_SPU](#) 0x00010000
- #define [FUNCTION\\_GENERATE\\_EVENT\\_DEC](#) 0x00020000
- #define [FUNCTION\\_MONITOR\\_STABLE\\_DEC](#) 0x00030000
- #define [FUNCTION\\_MONITOR\\_COUNTER\\_DEC](#) 0x00040000
- #define [FUNCTION\\_MONITOR\\_COUNTER\\_SPEC](#) 0x00050000
- #define [FUNCTION\\_MONITOR\\_COUNTER\\_PHOT](#) 0x00060000
- #define [FUNCTION\\_MONITOR\\_COUNTER\\_SPS](#) 0x00070000
- #define [FUNCTION\\_MONITOR\\_STABLE\\_SPS](#) 0x00080000
- #define [FUNCTION\\_MONITOR\\_COUNTER\\_SPL](#) 0x00090000
- #define [FUNCTION\\_MONITOR\\_STABLE\\_SPL](#) 0x000A0000
- #define [FUNCTION\\_GENERATE\\_EVENT\\_DPU](#) 0x000B0000
- #define [FUNCTION\\_EVENT\\_BOL\\_POLARIZATION](#) 0x000C0000
- #define [FUNCTION\\_EVENT\\_BOL\\_TEMP\\_WE](#) 0x000D0000
- #define [FUNCTION\\_EVENT\\_BOL\\_TEMP\\_FPU](#) 0x000E0000
- #define [FUNCTION\\_EVENT\\_BOL\\_CURRENT\\_RO](#) 0x000F0000
- #define [FUNCTION\\_EVENT\\_BOL\\_CURRENT\\_HEAT](#) 0x00100000
- #define [FUNCTION\\_GENERATE\\_EVENT\\_PWR](#) 0x00110000
- #define [FUNCTION\\_EVENT\\_BOL\\_CURRENT\\_SP2](#) 0x00120000
- #define [FUNCTION\\_EVENT\\_BOL\\_CURRENT\\_FPU](#) 0x00130000
- #define [FUNCTION\\_GENERATE\\_EVENT\\_DEC\\_SPC](#) 0x00140000
- #define [FUNCTION\\_EVENT\\_BOL\\_CURRENT\\_SP1](#) 0x00150000
- #define [FUNCTION\\_VERIFY\\_CHECKSUM](#) 0x00160000
- #define [FUNCTION\\_1355\\_LINK\\_LOST](#) 0x00170000
- #define [FUNCTION\\_EVENT\\_BOL\\_CURRENT\\_SP](#) 0x00630000
- #define [MAX\\_COUNTER\\_FOR\\_HL](#) 3
- #define [D\\_ST\\_NOM](#) 0x0001
- #define [D\\_ST\\_BOV](#) 0x0002



- #define D\_ST\_BSP 0x0004
- #define D\_ST\_RSP 0x0008
- #define D\_ST\_ABC 0x0010
- #define D\_ST\_BMA 0x0020
- #define D\_ST\_ORU 0x0040
- #define D\_ST\_EWE 0x0080
- #define D\_ST\_TME 0x0100
- #define D\_ST\_CFM 0x0200
- #define HK\_PACKET\_TIME 2000
- #define HK\_DEC\_COUNT 5
- #define HK\_SPS\_COUNT 5
- #define HK\_SPL\_COUNT 5
- #define COUNTER\_EXTRA\_LIMIT 4
- #define SS\_OFF 0x00
- #define SS\_ENABLED 0x01
- #define SS\_STOPPED 0x02
- #define SS\_DEAD 0x03
- #define SS\_NEW\_HK 0x01
- #define SS\_OLD\_HK 0x02
- #define SS\_TOO\_LONG 0x03

## Enumerations

- enum {  
  
MUMON\_ID, ANSWEREDPRAYERS\_ID, ISIDE\_ID, HUNAHPU\_ID,  
  
FRANCESCO\_ID, GINEVRA\_ID, MACGIG\_ID, IXBALAMQUE\_ID,  
  
THOTH\_ID, N\_ELEMENTS\_ID }  
  
• enum {  
  
TASK\_RUNNING, TASK\_STOPPED, TASK\_ABORTED, TASK\_SLEEPING,  
  
TASK\_EVENTW, TASK\_FIFOW, TASK\_SEMAW, TASK\_RESW,  
  
TASK\_UNKNOWN\_STATUS }



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 66 of [307](#)





## 4.8.1 Define Documentation

4.8.1.1 #define ARRAY\_BLUE 2

4.8.1.2 #define ARRAY\_BOTH 1

4.8.1.3 #define ARRAY\_RED 3

4.8.1.4 #define COUNTER\_EXTRA\_LIMIT 4

4.8.1.5 #define D\_ST\_ABC 0x0010

4.8.1.6 #define D\_ST\_BMA 0x0020

4.8.1.7 #define D\_ST\_BOV 0x0002

4.8.1.8 #define D\_ST\_BSP 0x0004

4.8.1.9 #define D\_ST\_CFM 0x0200

4.8.1.10 #define D\_ST\_EWE 0x0080

4.8.1.11 #define D\_ST\_NOM 0x0001

4.8.1.12 #define D\_ST\_ORU 0x0040

4.8.1.13 #define D\_ST\_RSP 0x0008

4.8.1.14 #define D\_ST\_TME 0x0100

4.8.1.15 #define FUNCTION\_1355\_LINK\_LOST 0x00170000

4.8.1.16 #define FUNCTION\_EVENT\_BOL\_CURRENT\_FPU 0x00130000

4.8.1.17 #define FUNCTION\_EVENT\_BOL\_CURRENT\_HEAT 0x00100000

4.8.1.18 #define FUNCTION\_EVENT\_BOL\_CURRENT\_RO 0x000F0000

4.8.1.19 #define FUNCTION\_EVENT\_BOL\_CURRENT\_SP 0x00630000

4.8.1.20 #define FUNCTION\_EVENT\_BOL\_CURRENT\_SP1 0x00150000

4.8.1.21 #define FUNCTION\_EVENT\_BOL\_CURRENT\_SP2 0x00120000

4.8.1.22 #define FUNCTION\_EVENT\_BOL\_POLARIZATION 0x000C0000

4.8.1.23 #define FUNCTION\_EVENT\_BOL\_TEMP\_FPU 0x000E0000

4.8.1.24 #define FUNCTION\_EVENT\_BOL\_TEMP\_WE 0x000D0000

4.8.1.25 #define FUNCTION\_GENERATE\_EVENT\_DEC 0x00020000

4.8.1.26 #define FUNCTION\_GENERATE\_EVENT\_DEC\_SPC 0x00140000

4.8.1.27 #define FUNCTION\_GENERATE\_EVENT\_DPU 0x000B0000

4.8.1.28 #define FUNCTION\_GENERATE\_EVENT\_PWR 0x00110000

4.8.1.29 #define FUNCTION\_GENERATE\_EVENT\_SPU 0x00010000



*ANSWEREDPRAYERS\_ID*

*ISIDE\_ID*

*HUNAHPU\_ID*

*FRANCESCO\_ID*

*GINEVRA\_ID*

*MACGIG\_ID*

*IXBALAMQUE\_ID*

*THOTH\_ID*

*N\_ELEMENTS\_ID*

#### 4.8.2.2 anonymous enum

Enumerator:

*TASK\_RUNNING*

*TASK\_STOPPED*

*TASK\_ABORTED*

*TASK\_SLEEPING*

*TASK\_EVENTW*

*TASK\_FIFO*

*TASK\_SEMAW*

*TASK\_RESW*

*TASK\_UNKNOWN\_STATUS*

## 4.9 init1553.c File Reference

[DONE] com1553 - MIL-1553 Communication Library for Herschel - Initialization of RT.

```
#include <string.h>
#include "conf1553.h"
#include "1553_def.h"
#include "LT_TMdef.h"
#include "init1553.h"
#include "ivar1553.h"
#include "MilConf.h"
#include "MilInit.h"
```

Include dependency graph for init1553.c:

### Functions

- void [main\\_1553\\_init](#) (void)  
*Initialize Packet Transfer Request Queue.*
- void [main\\_1553\\_exit](#) (void)  
*UNUSED - Clean up Communication Software Structures and DDC1553 Hardware Chip.*
- static void [dpu\\_rt\\_init](#) (void)  
*DDC1553 Hardware Chip Initialization and Configuration of Communication Structures.*

### 4.9.1 Detailed Description

[DONE] com1553 - MIL-1553 Communication Library for Herschel - Initialization of RT.

com1553 - MIL-1553 Communication Library for Herschel - Initialization of RT.

Filename :

Purposes : Logical Task : in Spire - INIT : in Pacs - TBW - TODO : in HIFI - TBW - TODO :

Author : Scige

Last Developer :

#### Author

lorenzo

Revision :

#### Revision

1.7

Checkout Tag :

#### Name

Last Modification :



**Date**

2006/07/04 10:08:08

Location :

**RCSfile**

[init1553.c,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/1553\_consolidated/init1553.c,v 1.7 2006/07/04 10:08:08 lorenzo Exp

## 4.9.2 Function Documentation

### 4.9.2.1 static void dpu\_rt\_init (void) [static]

DDC1553 Hardware Chip Initialization and Configuration of Communication Structures.

static void dpu\_rt\_init ( void )

**Actual Configuration in the three systems:**

- Configure as REMOTE TERMINAL
- Configure Sub Addresses [01-31][Tx/Rx] as Single Message no Circular buffer or Double Buffer.
- Configure Sub Addresses [11-27][Tx/\_\_\_] used for Telemetry as Circular buffer, of 128 Word.
- Configure Sub Addresses [30 ][Tx/Rx] as LoopBack In DPRAM.
- Configure Mode Command allowing Synchronize with and without data-word.

Here is the call graph for this function:

### 4.9.2.2 void main\_1553\_exit (void)

UNUSED - Clean up Communication Software Structures and DDC1553 Hardware Chip.

void main\_1553\_exit ( void )

Here is the call graph for this function:

### 4.9.2.3 void main\_1553\_init (void)

Initialize Packet Transfer Request Queue.

.

void main\_1553\_init ( void ); Initialize DDC1553 Hardware Chip.

Nest Interrupt Activation Chain in Virtuoso Environment.

**Note:**

- In Spire mode there is no Interrupt Activation Chain Nesting.
- In Spire mode there is no registration of event handler.
- In Spire mode there is no activation of event handler.
- In Spire mode there is no registration of interrupt service.



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 71 of 307

DDC 1553 - Forcing a soft reset.

Start RT Operations

Here is the call graph for this function:

## 4.10 init1553.h File Reference

[DONE] com1553 - MIL-1553 Communication Library for Herschel - Initialization of RT ( header ).

```
#include "MilDef.h"
```

Include dependency graph for init1553.h:

This graph shows which files directly or indirectly include this file:

### Defines

- #define [MaxPackDPRAM](#) 4  
*Maximum packet of TM storable on DDC 1553 DPRAM.*
- #define [MaxCmndDPRAM](#) 1  
*Maximum packet of TC storable on DDC 1553 DPRAM.*
- #define [TM\\_STATUS\\_OFFSET](#) 0
- #define [TMREQ\\_REPLY\\_OFFSET](#) 2
- #define [TCPTD\\_REPLY\\_OFFSET](#) 4

### Functions

- unsigned int [memcrc16](#) (unsigned int \*, unsigned int, unsigned int)
- int [isr1553](#) (int status)  
*Virtuoso's Event Handle - Manage Low Level Messages, Handshake Network Layer Packet and Activate Interface Manager Task [TMTC/TOTH/TMTC].*
- void [readCmndDPRAM](#) (void)  
*Copy Content of the TeleCommand Packet Transfer Descriptor [SubAddress 27 RX] in SA27.*
- void [irq2](#) (void)
- void [main\\_1553\\_init](#) (void)
- void [main\\_1553\\_exit](#) (void)
- void [UpLoad\\_Packet](#) (int \*cBuffer)  
*Writes a Telemetry Packet into DPRAM.*
- void [DownLoad\\_Packet](#) (TC\_packet \*)  
*Read a TeleCommand packet.*
- unsigned int [andmask](#) (unsigned int \*, unsigned int, unsigned int)
- void [align\\_ptr\\_counter](#) (void)  
*Read Last Telemetry Packet Transfer Request Sent, and align local Telemetry Packet Request Counter.*
- void [force\\_1553\\_reset](#) (void)  
*Hardware Reset of DDC1553 Chip.*
- void [miaMilSaWrite](#) (MilConf\_p pw\_MilConf, MemBlockHandle pw\_BlockHdl, unsigned int \*j\_Offset, unsigned int \*pj\_Ptr, unsigned int j\_Length)  
*Copy data to a DDC1553 SubAddress. If SubAddress is Circular Buffered copy data circularly.*



## Variables

- [MilConf\\_p MilRTConf](#)  
*Remote Terminal Configuration Holder - General Configuration.*
- [RTBlkHandle Tx\\_data\\_han](#) [16]  
*Remote Terminal Configuration Holder - TeleMetry Data SubAddress Configuration.*
- [RTBlkHandle Tx\\_data\\_han27](#)  
*Remote Terminal Configuration Holder - TeleCommand Descriptor SubAddress Configuration. RT -> BC.*
- [RTBlkHandle Rx\\_data\\_han27](#)  
*Remote Terminal Configuration Holder - TeleCommand Descriptor SubAddress Configuration. RT <- BC.*
- [RTBlkHandle Rx\\_data\\_han](#) [4]  
*Remote Terminal Configuration Holder - TeleCommand Data SubAddress Configuration.*
- [RTBlkHandle Tx\\_data\\_han1](#)  
*Remote Terminal Configuration Holder - RT Status - Low Level Control.*
- [RTBlkHandle Tx\\_data\\_han8](#)  
*Remote Terminal Configuration Holder - Timing Confirmation RT -> BC.*
- [RTBlkHandle Rx\\_data\\_han8](#)  
*Remote Terminal Configuration Holder - Timing Update RT <- BC.*
- [RTBlkHandle TRx\\_data\\_han30](#)  
*Remote Terminal Configuration Holder - Circular Loop.*
- [RTBlkHandle Rx\\_data\\_han10](#)  
*Remote Terminal Configuration Holder - TeleMetry Descriptor SubAddress Configuration. RT <- BC.*
- [RTBlkHandle Tx\\_data\\_han10](#)  
*Remote Terminal Configuration Holder - TeleMetry Descriptor SubAddress Configuration. RT -> BC.*
- [RTBlkHandle Bcst\\_data\\_han](#)  
*Remote Terminal Configuration Holder - BroadCast Commanding - Unused.*
- [int FreePackDPRAM](#)  
*com1553 - Counter of free telemetry packet in the circular buffer in the DDC1553 Memory*
- [int FreeCmndDPRAM](#)  
*com1553 - Counter of free telecommand packet in the buffer in the DDC1553 Memory*
- [SubAddrCtrlWrd sa\\_conf](#)  
*Remote Terminal Configuration Holder - DualPortRam Memory Management - Base Configuration. Simple 32 Word (16bit) Slot.*
- [SubAddrCtrlWrd circ\\_sa\\_conf](#)  
*Remote Terminal Configuration Holder - DualPortRam Memory Management - Circular Buffer for SA11-16 TX.*
- [SubAddrCtrlWrd wrap\\_around\\_sa\\_conf](#)  
*Remote Terminal Configuration Holder - DualPortRam Memory Management - For SA30.*
- [int Ghost\\_1553\\_StackPointer](#)



*com1553 - Interchange Variable pointing actual Low Level DDC1553 Transaction*

- struct [TM\\_request](#) \* [TmWriter](#)  
*com1553 - Pointer to the next writing location in the Telemetry Packet Transfer Request Circular queue. [TM\\_PACK](#) .*
- struct [TM\\_request](#) \* [TmReader](#)  
*com1553 - Pointer to the next reading location in the Telemetry Packet Transfer Request Circular queue. [TM\\_PACK](#) .*
- struct [TM\\_request](#) [TM\\_PACK](#) []  
*com1553 - Telemetry Packet Transfer Request Circular queue from the tmtc to the [isr1553](#) .*
- int [Waiting\\_TM\\_packet](#)
- int [RTAddress](#)  
*com1553 - DPU Remote Terminal.*
- int [Current\\_time](#)  
*com1553 - For Esa enhanced directive use only. Internal High resolution time.*
- int [SubFrame\\_Counter](#)  
*com1553 - For Esa enhanced directive use only. SubFrame Counter*
- int [Current\\_SubFrame](#)  
*com1553 - For Esa enhanced directive use only. Current Subframe Number.*
- int [RT\\_TMEnable](#)  
*com1553 - For Esa enhanced directive use only. The Remote Terminal able to transfer telemetry.*
- int [RT\\_TMEnable\\_prev](#)  
*com1553 - For Esa enhanced directive use only. The Remote Terminal able to transfer telemetry ath the previous SubFrame.*
- volatile unsigned int [Burst\\_active](#)  
*com1553 - Burst Mode Activation Flag*
- int [Isr\\_1553\\_event](#)  
*com1553 - Reflection of the [ISR\\_1553\\_EVENT](#)*
- int [TM\\_pkt\\_ctr](#)  
*com1553 - Telemetry Packet Counter used in the Telemetry Packet Transfer Request.*
- int [tmreq\\_reply](#) [3]  
*com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 4 - Temporary buffer to write into SAI*
- unsigned int [Dpu\\_time](#) []

#### 4.10.1 Detailed Description

[DONE] com1553 - MIL-1553 Communication Library for Herschel - Initialization of RT ( header ).

com1553 - MIL-1553 Communication Library for Herschel - Initialization of RT ( header ).

Filename :

Purposes : Logical Task : in Spire - INIT : in Pacs - TBW - TODO : in HIFI - TBW - TODO :

Author : Scige

Last Developer :





**Author**

scige

Revision :

**Revision**

1.6

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/10/16 14:19:53

Location :

**RCSfile**

[init1553.h,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/1553\_consolidated/init1553.h,v 1.6 2006/10/16 14:19:53 scige Exp

## 4.10.2 Define Documentation

### 4.10.2.1 #define MaxCmndDPRAM 1

Maximum packet of TC storable on DDC 1553 DPRAM.

### 4.10.2.2 #define MaxPackDPRAM 4

Maximum packet of TM storable on DDC 1553 DPRAM.

### 4.10.2.3 #define TCPTD\_REPLY\_OFFSET 4

### 4.10.2.4 #define TM\_STATUS\_OFFSET 0

### 4.10.2.5 #define TMREQ\_REPLY\_OFFSET 2

## 4.10.3 Function Documentation

### 4.10.3.1 void align\_ptr\_counter (void) [inline]

Read Last Telemetry Packet Transfer Request Sent, and align local Telemetry Packet Request Counter.

inline void align\_ptr\_counter ( void )



**Effect on:**

[TM\\_pkt\\_ctr](#) - Telemetry Packet Request Counter.

**Architectural Definition (Hardware Related):**

[BS\\_AD\\_MIL\\_1553\\_DPRAM M1553\\_SA10\\_AREA\\_A\\_OFFSET M1553\\_SA10\\_AREA\\_B\\_OFFSET](#)

**4.10.3.2 unsigned int andmask (unsigned int \*, unsigned int, unsigned int)**

**4.10.3.3 void Download\_Packet (TC\_packet \* tpacket)**

Read a TeleCommand packet.

void [Download\\_Packet](#)( TC\_packet \* tpacket )

**Parameters:**

*tpacket* Pointer to a memory area dedicated to host a TeleCommand Packet

**Note:**

In some Implementation could be NULL. Check [OBSCODE](#) Value.

Here is the call graph for this function:

**4.10.3.4 void force\_1553\_reset (void) [inline]**

Hardware Reset of DDC1553 Chip.

inline void [force\\_1553\\_reset](#) ( void )

**4.10.3.5 void irq2 (void)**

**4.10.3.6 int isr1553 (int status)**

Virtuoso's Event Handle - Manage Low Level Messages, Handshake Network Layer Packet and Activate Interface Manager Task [TMTC/TOTH/TMTC].

**Internal:**

the Activation flow follows the following order: 1- Hardware Interrupt 2 -> irq2 2 - irq2 -> isr1553 3 - isr1553 -> tmtc 3 - the activation of tmtc occurs only if the message read is : 3 - a sync command and there are packets transactions. int [isr1553](#) ( int status );

**Parameters:**

*status* ignored

**Return values:**

**TRUE** If there is a TeleCommand to be read or there is a request to upload a Telemetry packet

**FALSE** Otherwise

**Note:**

This routine is called a Virtuoso Event Handler.

Its return value has a semantical propagation to the related Event.

A TRUE return value allows the event to be raised and awake any related waiting task.



#### Inter-Process Communication - Low Level :

The lowest level Interrupt Service Routine `isr2` is called by the Hardware Interrupt coming from DDC1553 Chip [ `thsi` follows a netwide Synchronize Message ], via the Virtuoso event `ISR_1553_EVENT`.

The lowest level Interrupt Service Routine `isr2` also keeps the current Synchronize Message stack position in `Ghost_1553_StackPointer`.

The Virtuoso Event Daemon activate this routine.

#### Inter-Process Communication - Mid Level :

If a Telemetry transfer is pending the SubAddress Offset pointer are Updated into SubAddress Lookup Table, `publish_TM_pointer`, and in any case a correct Packet Transfer Request ( even a request to no transfer ) is posted into SubAddress 10TX, `publish_TM_request`. In these communication `TmReader` and related Structures are used as tokenized queue.

#### Inter-Process Communication - High Level :

If there is Space in the circular Buffers and at least a Telemetry Packet Transfer is Pending ( condition bypassed by HIFI ), the DDC1553 Listener Task is awoken.

If there is a TeleCommand Packet Transfer Pending the DDC1553 Listener Task is awoken.

In these communication `FreeCmndDPRAM` and `FreePackDPRAM` are used as discrete semaphore.

Here is the call graph for this function:

**4.10.3.7 void main\_1553\_exit (void)**

**4.10.3.8 void main\_1553\_init (void)**

**4.10.3.9 unsigned int memcrc16 (unsigned int \*, unsigned int, unsigned int)**

Commitments History : As reported in Main cvs Documentation ( <https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102> ) The Modification Log has been posted at End Of File.

**4.10.3.10 void miaMilSaWrite (MilConf\_p pw\_MilConf, MemBlockHandle pw\_BlockHdl, unsigned int \* j\_Offset, unsigned int \* pj\_Ptr, unsigned int j\_Length)**

Copy data to a DDC1553 SubAddress. If SubAddress is Circular Buffered copy data circularly.

`void miaMilSaWrite ( MilConf_p pw_MilConf, MemBlockHandle pw_BlockHdl, unsigned int *j_Offset, unsigned int *pj_Ptr, unsigned int j_Length )`

#### Parameters:

*pw\_MilConf* DDC1553 Hardware Configuration Descriptor.

*pw\_BlockHdl* DDC1553 SubAddress Memory Map Descriptor.

*j\_Offset* Offset in SubAddress.

*pj\_Ptr* Pointer to data.

*j\_Length* Number of word to copy.

Here is the call graph for this function:

**4.10.3.11 void readCmndDPRAM (void)**

Copy Content of the TeleCommand Packet Transfer Descriptor [SubAddress 27 RX] in SA27.

`void readCmndDPRAM ( void )` Used as First Initialization.

Here is the call graph for this function:



#### 4.10.3.12 void UpLoad\_Packet (int \* cBuffer)

Writes a Telemetry Packet into DPRAM.

void UpLoad\_Packet ( int \* cBuffer )

It presumes that there's place on DDC1553 Memory. Check done by calling [checkFreeDPRAM\(\)](#).

**cBuffer Raw Packet Data Already Formatted and Aligned in memory.**

Here is the call graph for this function:

### 4.10.4 Variable Documentation

#### 4.10.4.1 RTBlkHandle Bcst\_data\_han

Remote Terminal Configuration Holder - BroadCast Commanding - Unused.

#### 4.10.4.2 volatile unsigned int Burst\_active

com1553 - Burst Mode Activation Flag

#### 4.10.4.3 SubAddrCtrlWrd circ\_sa\_conf

Remote Terminal Configuration Holder - DualPortRam Memory Management - Circular Buffer for SA11-16 TX.

#### 4.10.4.4 int Current\_SubFrame

com1553 - For Esa enhanced directive use only. Current Subframe Number.

#### 4.10.4.5 int Current\_time

com1553 - For Esa enhanced directive use only. Internal High resolution time.

#### 4.10.4.6 unsigned int Dpu\_time[ ]

#### 4.10.4.7 int FreeCmndDPRAM

com1553 - Counter of free telecommand packet in the buffer in the DDC1553 Memory

#### 4.10.4.8 int FreePackDPRAM

com1553 - Counter of free telemetry packet in the circular buffer in the DDC1553 Memory

#### 4.10.4.9 int Ghost\_1553\_StackPointer

com1553 - Interchange Variable pointing actual Low Level DDC1553 Transaction

#### 4.10.4.10 int Isr\_1553\_event

com1553 - Reflection of the ISR\_1553\_EVENT



#### 4.10.4.11 MilConf\_p MilRTConf

Remote Terminal Configuration Holder - General Configuration.

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.2.html#SEC102>) The Modification Log has been posted at End Of File.

#### 4.10.4.12 int RT\_TMEnable

com1553 - For Esa enhanced directive use only. The Remote Terminal able to transfer telemetry.

#### 4.10.4.13 int RT\_TMEnable\_prev

com1553 - For Esa enhanced directive use only. The Remote Terminal able to transfer telemetry ath the previous SubFrame.

#### 4.10.4.14 int RTAddress

com1553 - DPU Remote Terminal.

#### 4.10.4.15 RTBlkHandle Rx\_data\_han[4]

Remote Terminal Configuration Holder - TeleCommand Data SubAddress Configuration.

#### 4.10.4.16 RTBlkHandle Rx\_data\_han10

Remote Terminal Configuration Holder - TeleMetry Descriptor SubAddress Configuration. RT <- BC.

#### 4.10.4.17 RTBlkHandle Rx\_data\_han27

Remote Terminal Configuration Holder - TeleCommand Descriptor SubAddress Configuration. RT <- BC.

#### 4.10.4.18 RTBlkHandle Rx\_data\_han8

Remote Terminal Configuration Holder - Timing Update RT <- BC.

#### 4.10.4.19 SubAddrCtrlWrd sa\_conf

Remote Terminal Configuration Holder - DualPortRam Memory Management - Base Configuration. Simple 32 Word (16bit) Slot.

#### 4.10.4.20 int SubFrame\_Counter

com1553 - For Esa enhanced directive use only. SubFrame Counter

#### 4.10.4.21 struct TM\_request TM\_PACK[ ]

com1553 - Telemetry Packet Transfer Request Circular queue from the tmtc to the [isr1553](#) .

#### 4.10.4.22 int TM\_pkt\_ctr

com1553 - Telemetry Packet Counter used in the Telemetry Packet Transfer Request.



#### 4.10.4.23 struct TM\_request \* TmReader

com1553 - Pointer to the next reading location in the Telemetry Packet Transfer Request Circular queue. [TM\\_PACK](#).

#### 4.10.4.24 int tmreq\_reply[3]

com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 4 - Temporary buffer to write into SA1

#### 4.10.4.25 struct TM\_request\* TmWriter

com1553 - Pointer to the next writing location in the Telemetry Packet Transfer Request Circular queue. [TM\\_PACK](#).

#### 4.10.4.26 RTBlkHandle TRx\_data\_han30

Remote Terminal Configuration Holder - Circular Loop.

#### 4.10.4.27 RTBlkHandle Tx\_data\_han[16]

Remote Terminal Configuration Holder - TeleMetry Data SubAddress Configuration.

#### 4.10.4.28 RTBlkHandle Tx\_data\_han1

Remote Terminal Configuration Holder - RT Status - Low Level Control.

#### 4.10.4.29 RTBlkHandle Tx\_data\_han10

Remote Terminal Configuration Holder - TeleMetry Descriptor SubAddress Configuration. RT -> BC.

#### 4.10.4.30 RTBlkHandle Tx\_data\_han27

Remote Terminal Configuration Holder - TeleCommand Descriptor SubAddress Configuration. RT -> BC.

#### 4.10.4.31 RTBlkHandle Tx\_data\_han8

Remote Terminal Configuration Holder - Timing Confirmation RT -> BC.

#### 4.10.4.32 int Waiting\_TM\_packet

#### 4.10.4.33 SubAddrCtrlWrd wrap\_around\_sa\_conf

Remote Terminal Configuration Holder - DualPortRam Memory Management - For SA30.



## 4.11 Inttab.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define [INT\\_VECT\\_SIZE](#) 744

### Variables

- unsigned int [aj\\_DmInttab](#) [INT\_VECT\_SIZE]

#### 4.11.1 Define Documentation

4.11.1.1 #define INT\_VECT\_SIZE 744

#### 4.11.2 Variable Documentation

4.11.2.1 unsigned int [aj\\_DmInttab](#)[INT\_VECT\_SIZE]

## 4.12 isr1553.c File Reference

[DONE] com1553 - MIL-1553 Communication Library for Herschel - Interrupt Service Routine

```
#include "conf1553.h"  
#include "LT_TMdef.h"  
#include "MM_21020.h"  
#include "init1553.h"
```

Include dependency graph for isr1553.c:

### Functions

- int [isr1553](#) (int status)  
*Virtuoso's Event Handle - Manage Low Level Messages, Handshake Network Layer Packet and Activate Interface Manager Task [TMTC/TOTH/TMTC].*
- static void [checkFreeDPRAM](#) (void)  
*Check for TeleMetry Packet Transfer Confirmation [SubAddress 10 RX].*
- void [readCmndDPRAM](#) (void)  
*Copy Content of the TeleCommand Packet Transfer Descriptor [SubAddress 27 RX] in SA27.*
- static void [checkCmndDPRAM](#) (void)  
*Check if a new TeleCommand Packet Transfer Descriptor [SubAddress 27 RX] is arrived.*
- static void [force\\_step\\_TM\\_Request](#) (void)  
*Updates TeleMetry Packet Transfer Request Queue to point to the next request.*
- static void [publish\\_TM\\_request](#) (void)  
*Updates TeleMetry Packet Transfer Request [SubAddress 10 TX].*
- static void [publish\\_TM\\_pointer](#) (void)  
*Updates TeleMetry Packet Pointers to Circular Buffers [SubAddress 11-27 TX].*

### Variables

- static [MsgType](#) [msg](#)  
*com1553 - Holder of low level (network level) DDC1553 Message Token.*
- static int [sa10](#) [2] = {0,0}  
*com1553 - Current content of the SubAddress 10 RX - Telemetry Packet Transfer Confirmation.*
- static int [SA10](#) [2] = {0,0}  
*com1553 - Previous content of the SubAddress 10 TX - Telemetry Packet Transfer Request.*
- static int [sa27](#) [2] = {0,0}  
*com1553 - Current content of the SubAddress 27 RX - Telemetry Packet Transfer Descriptor.*
- static int [SA27](#) [2] = {0,0}  
*com1553 - Previous content of the SubAddress 27 RX - Telemetry Packet Transfer Descriptor.*





- static int [salt](#) [2]  
*com1553 - Current content of the SubAddress 1 TX - Remote Terminal Status and Information*
- static int [cOffSet](#) [16]  
*com1553 - Transient content of the Lookup pointer for SubAddress [11-27][TX] - Telemetry Packet*
- static int [tm\\_\\_req](#) [2]  
*com1553 - Transient content of the SubAddress 10 TX - Telemetry Packet Transfer Request.*

#### 4.12.1 Detailed Description

[DONE] com1553 - MIL-1553 Communication Library for Herschel - Interrupt Service Routine

com1553 - MIL-1553 Communication Library for Herschel - Interrupt Service Routine

Filename :

Purposes : Logical Task : in Spire - TMTC : in Pacs - TOTM : in HIFI - TMTC :

Author : Scige

Last Developer :

##### Author

scige

Revision :

##### Revision

1.15

Checkout Tag :

##### Name

Last Modification :

##### Date

2006/10/16 14:19:53

Location :

##### RCSfile

[isr1553.c,v](#)

##### Version:

:

##### Header

/usr/local/cvsrep/1553\_consolidated/isr1553.c,v 1.15 2006/10/16 14:19:53 scige Exp

## 4.12.2 Function Documentation

### 4.12.2.1 void checkCmndDPRAM (void) [static]

Check if a new TeleCommand Packet Transfer Descriptor [SubAddress 27 RX] is arrived.

void checkCmndDPRAM ( void ) If TRUE updates [FreeCmndDPRAM](#);

Here is the call graph for this function:

### 4.12.2.2 static void checkFreeDPRAM (void) [static]

Check for TeleMetry Packet Transfer Confirmation [SubAddress 10 RX].

.

void checkFreeDPRAM ( void )

If Confirmed Updates PacketTransfer Request Queue to point to the next request.

**See also:**

[TmReader](#)

Here is the call graph for this function:

### 4.12.2.3 static void force\_step\_TM\_Request (void) [static]

Updates TeleMetry Packet Transfer Request Queue to point to the next request.

void force\_step\_TM\_Request ( void )

**See also:**

[TmReader](#)

### 4.12.2.4 int isr1553 (int status)

Virtuoso's Event Handle - Manage Low Level Messages, Handshake Network Layer Packet and Activate Interface Manager Task [TMTC/TOTH/TMTC].

**Internal:**

the Activation flow follows the following order: 1- Hardware Interrupt 2 -> irq2 2 - irq2 -> isr1553 3 - 1sr1553 -> tmtc 3 - the activation of tmtc occurs only if the message read is : 3 - a sync command and there are packets transactions. int isr1553 ( int status );

**Parameters:**

*status* ignored

**Return values:**

**TRUE** If there is a TeleCommand to be read or there is a request to upload a Telemetry packet

**FALSE** Otherwise

**Note:**

This routine is called a Virtuoso Event Handler.

Its return value has a semantical propagation to the related Event.

A TRUE return value allows the event to be raised and awake any related waiting task.



#### Inter-Process Communication - Low Level :

The lowest level Interrupt Service Routine isr2 is called by the Hardware Interrupt coming from DDC1553 Chip [ thsi follows a netwide Synchronize Message ], via the Virtuoso event [ISR\\_1553\\_EVENT](#).

The lowest level Interrupt Service Routine isr2 also keeps the current Synchronize Message stack position in [Ghost\\_1553\\_StackPointer](#).

The Virtuoso Event Daemon activate this routine.

#### Inter-Process Communication - Mid Level :

If a Telemetry transfer is pending the SubAddress Offset pointer are Updated into SubAddress Lookup Table, [publish\\_TM\\_pointer](#), and in any case a correct Packet Transfer Request ( even a request to no transfer ) is posted into SubAddress 10TX, [publish\\_TM\\_request](#). In these communication [TmReader](#) and related Structures are used as tokenized queue.

#### Inter-Process Communication - High Level :

If there is Space in the circular Buffers and at least a Telemetry Packet Transfer is Pending ( condition bypassed by HIFI ), the DDC1553 Listener Task is awaken.

If there is a TeleCommand Packet Transfer Pending the DDC1553 Listener Task is awaken.

In these communication [FreeCmndDPRAM](#) and [FreePackDPRAM](#) are used as discrete sempahore.

##### 4.12.2.5 static void publish\_TM\_pointer (void) [static]

Updates TeleMetry Packet Pointers to Circular Buffers [SubAddress 11-27 TX].

void publish\_TM\_pointer ( void )

Here is the call graph for this function:

##### 4.12.2.6 static void publish\_TM\_request (void) [static]

Updates TeleMetry Packet Transfer Request [SubAddress 10 TX].

void publish\_TM\_request ( void )

Here is the call graph for this function:

##### 4.12.2.7 void readCmndDPRAM (void)

Copy Content of the TeleCommand Packet Transfer Descriptor [SubAddress 27 RX] in SA27.

.

void readCmndDPRAM ( void ) Used as First Initialization.

#### 4.12.3 Variable Documentation

##### 4.12.3.1 int cOffSet[16] [static]

com1553 - Transient content of the Lookup pointer for SubAddress [11-27][TX] - Telemetry Packet

##### 4.12.3.2 MsgType msg [static]

com1553 - Holder of low level (network level) DDC1553 Message Token.

##### 4.12.3.3 int SA10[2] = {0,0} [static]

com1553 - Previous content of the SubAddress 10 TX - Telemetry Packet Transfer Request.



**4.12.3.4** `int sa10[2] = {0,0}` [static]

com1553 - Current content of the SubAddress 10 RX - Telemetry Packet Transfer Confirmation.

**4.12.3.5** `int sa1t[2]` [static]

com1553 - Current content of the SubAddress 1 TX - Remote Terminal Status and Information

**4.12.3.6** `int SA27[2] = {0,0}` [static]

com1553 - Previous content of the SubAddress 27 RX - Telemetry Packet Transfer Descriptor.

**4.12.3.7** `int sa27[2] = {0,0}` [static]

com1553 - Current content of the SubAddress 27 RX - Telemetry Packet Transfer Descriptor.

**4.12.3.8** `int tm_req[2]` [static]

com1553 - Transient content of the SubAddress 10 TX - Telemetry Packet Transfer Request.

## 4.13 ivar1553.h File Reference

[DONE] com1553 - MIL-1553 Communication Library for Herschel - ModuleVariable Definition

```
#include "MilDef.h"
```

Include dependency graph for ivar1553.h:

This graph shows which files directly or indirectly include this file:

### Defines

- #define [TM\\_PACK\\_REQUEST\\_NUM](#) 0x00000010  
*com1553 - Telemetry Packet Transfer Request Circular queue size. See [TM\\_PACK](#) .*
- #define [TM\\_STATUS\\_OFFSET](#) 0  
*com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 1*
- #define [TMREQ\\_REPLY\\_OFFSET](#) 2  
*com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 2*
- #define [TCPTD\\_REPLY\\_OFFSET](#) 4  
*com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 3*

### Variables

- [MilConf\\_p MiRTConf](#)  
*Remote Terminal Configuration Holder - General Configuration.*
- [RTBlkHandle Tx\\_data\\_han](#) [16]  
*Remote Terminal Configuration Holder - TeleMetry Data SubAddress Configuration.*
- [RTBlkHandle Rx\\_data\\_han10](#)  
*Remote Terminal Configuration Holder - TeleMetry Descriptor SubAddress Configuration. RT <- BC.*
- [RTBlkHandle Tx\\_data\\_han10](#)  
*Remote Terminal Configuration Holder - TeleMetry Descriptor SubAddress Configuration. RT -> BC.*
- [RTBlkHandle Rx\\_data\\_han](#) [4]  
*Remote Terminal Configuration Holder - TeleCommand Data SubAddress Configuration.*
- [RTBlkHandle Tx\\_data\\_han27](#)  
*Remote Terminal Configuration Holder - TeleCommand Descriptor SubAddress Configuration. RT -> BC.*
- [RTBlkHandle Rx\\_data\\_han27](#)  
*Remote Terminal Configuration Holder - TeleCommand Descriptor SubAddress Configuration. RT <- BC.*
- [RTBlkHandle Tx\\_data\\_han1](#)  
*Remote Terminal Configuration Holder - RT Status - Low Level Control.*
- [RTBlkHandle Tx\\_data\\_han8](#)  
*Remote Terminal Configuration Holder - Timing Confirmation RT -> BC.*
- [RTBlkHandle Rx\\_data\\_han8](#)



*Remote Terminal Configuration Holder - Timing Update RT <- BC.*

- [RTBlkHandle TRx\\_data\\_han30](#)

*Remote Terminal Configuration Holder - Circular Loop.*

- [RTBlkHandle Bcst\\_data\\_han](#)

*Remote Terminal Configuration Holder - BroadCast Commanding - Unused.*

- [SubAddrCtrlWrd sa\\_conf](#)

*Remote Terminal Configuration Holder - DualPortRam Memory Management - Base Configuration. Simple 32 Word (16bit) Slot.*

- [SubAddrCtrlWrd circ\\_sa\\_conf](#)

*Remote Terminal Configuration Holder - DualPortRam Memory Management - Circular Buffer for SA11-16 TX.*

- [SubAddrCtrlWrd wrap\\_around\\_sa\\_conf](#)

*Remote Terminal Configuration Holder - DualPortRam Memory Management - For SA30.*

- int [FreePackDPRAM](#)

*com1553 - Counter of free telemetry packet in the circular buffer in the DDC1553 Memory*

- int [FreeCmndDPRAM](#)

*com1553 - Counter of free telecommand packet in the buffer in the DDC1553 Memory*

- int [Ghost\\_1553\\_StackPointer](#)

*com1553 - Interchange Variable pointing actual Low Level DDC1553 Transaction*

- struct [TM\\_request](#) \* [TmWriter](#)

*com1553 - Pointer to the next writing location in the Telemetry Packet Transfer Request Circular queue. [TM\\_PACK](#).*

- struct [TM\\_request](#) \* [TmReader](#)

*com1553 - Pointer to the next reading location in the Telemetry Packet Transfer Request Circular queue. [TM\\_PACK](#).*

- struct [TM\\_request](#) [TM\\_PACK](#) [[TM\\_PACK\\_REQUEST\\_NUM](#)]

*com1553 - Telemetry Packet Transfer Request Circular queue from the tmtc to the [isr1553](#).*

- int [Waiting\\_TM\\_packet](#)

- int [RTAddress](#)

*com1553 - DPU Remote Terminal.*

- int [Current\\_time](#)

*com1553 - For Esa enhanced directive use only. Internal High resolution time.*

- int [SubFrame\\_Counter](#)

*com1553 - For Esa enhanced directive use only. SubFrame Counter*

- int [Current\\_SubFrame](#)

*com1553 - For Esa enhanced directive use only. Current Subframe Number.*

- int [RT\\_TMEnable](#)

*com1553 - For Esa enhanced directive use only. The Remote Terminal able to transfer telemetry.*

- int [RT\\_TMEnable\\_prev](#)

*com1553 - For Esa enhanced directive use only. The Remote Terminal able to transfer telemetry ath the previous SubFrame.*



- volatile unsigned int `Burst_active` = 0  
*com1553 - Burst Mode Activation Flag*
- int `Isr_1553_event` = `ISR_1553_EVENT`  
*com1553 - Reflection of the ISR\_1553\_EVENT*
- int `TM_pkt_ctr`  
*com1553 - Telemetry Packet Counter used in the Telemetry Packet Transfer Request.*
- int `tmreq_reply` [3]  
*com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 4 - Temporary buffer to write into SAI*
- unsigned int `Dpu_time` [4] = {0,0x8000,0,0}

### 4.13.1 Detailed Description

[DONE] com1553 - MIL-1553 Communication Library for Herschel - ModuleVariable Definition

com1553 - MIL-1553 Communication Library for Herschel - Module Variable Definition

Filename :

Purposes : Logical Task : in Spire - TMTC : in Pacs - TOTH : in HIFI - TMTC :

Author : Scige

Last Developer :

#### Author

scige

Revision :

#### Revision

1.8

Checkout Tag :

#### Name

Last Modification :

#### Date

2006/10/16 14:19:53

Location :

#### RCSfile

[ivar1553.h,v](#)

#### Version:

:

#### Header

/usr/local/cvsrep/1553\_consolidated/ivar1553.h,v 1.8 2006/10/16 14:19:53 scige Exp



## 4.13.2 Define Documentation

### 4.13.2.1 #define TCPTD\_REPLY\_OFFSET 4

com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 3

### 4.13.2.2 #define TM\_PACK\_REQUEST\_NUM 0x00000010

com1553 - Telemetry Packet Transfer Request Circular queue size. See [TM\\_PACK](#) .

### 4.13.2.3 #define TM\_STATUS\_OFFSET 0

com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 1

### 4.13.2.4 #define TMREQ\_REPLY\_OFFSET 2

com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 2

## 4.13.3 Variable Documentation

### 4.13.3.1 RTBlkHandle Bcst\_data\_han

Remote Terminal Configuration Holder - BroadCast Commanding - Unused.

### 4.13.3.2 volatile unsigned int Burst\_active = 0

com1553 - Burst Mode Activation Flag

### 4.13.3.3 SubAddrCtrlWrd circ\_sa\_conf

Remote Terminal Configuration Holder - DualPortRam Memory Management - Circular Buffer for SA11-16 TX.

### 4.13.3.4 int Current\_SubFrame

com1553 - For Esa enhanced directive use only. Current Subframe Number.

### 4.13.3.5 int Current\_time

com1553 - For Esa enhanced directive use only. Internal High resolution time.

### 4.13.3.6 unsigned int Dpu\_time[4] = {0,0x8000,0,0}

### 4.13.3.7 int FreeCmndDPRAM

com1553 - Counter of free telecommand packet in the buffer in the DDC1553 Memory

### 4.13.3.8 int FreePackDPRAM

com1553 - Counter of free telemetry packet in the circular buffer in the DDC1553 Memory





#### 4.13.3.9 int Ghost\_1553\_StackPointer

com1553 - Interchange Variable pointing actual Low Level DDC1553 Transaction

#### 4.13.3.10 int Isr\_1553\_event = ISR\_1553\_EVENT

com1553 - Reflection of the ISR\_1553\_EVENT

#### 4.13.3.11 MilConf\_p MilRTConf

Remote Terminal Configuration Holder - General Configuration.

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102>) The Modification Log has been posted at End Of File.

#### 4.13.3.12 int RT\_TMEnable

com1553 - For Esa enhanced directive use only. The Remote Terminal able to transfer telemetry.

#### 4.13.3.13 int RT\_TMEnable\_prev

com1553 - For Esa enhanced directive use only. The Remote Terminal able to transfer telemetry ath the previous SubFrame.

#### 4.13.3.14 int RTAddress

com1553 - DPU Remote Terminal.

#### 4.13.3.15 RTBlkHandle Rx\_data\_han[4]

Remote Terminal Configuration Holder - TeleCommand Data SubAddress Configuration.

#### 4.13.3.16 RTBlkHandle Rx\_data\_han10

Remote Terminal Configuration Holder - TeleMetry Descriptor SubAddress Configuration. RT <- BC.

#### 4.13.3.17 RTBlkHandle Rx\_data\_han27

Remote Terminal Configuration Holder - TeleCommand Descriptor SubAddress Configuration. RT <- BC.

#### 4.13.3.18 RTBlkHandle Rx\_data\_han8

Remote Terminal Configuration Holder - Timing Update RT <- BC.

#### 4.13.3.19 SubAddrCtrlWrd sa\_conf

Remote Terminal Configuration Holder - DualPortRam Memory Management - Base Configuration. Simple 32 Word (16bit) Slot.

#### 4.13.3.20 int SubFrame\_Counter

com1553 - For Esa enhanced directive use only. SubFrame Counter



#### 4.13.3.21 struct TM\_request TM\_PACK[TM\_PACK\_REQUEST\_NUM]

com1553 - Telemetry Packet Transfer Request Circular queue from the tmtc to the [isr1553](#) .

#### 4.13.3.22 int TM\_pkt\_ctr

com1553 - Telemetry Packet Counter used in the Telemetry Packet Transfer Request.

#### 4.13.3.23 struct TM\_request\* TmReader

com1553 - Pointer to the next reading location in the Telemetry Packet Transfer Request Circular queue. [TM\\_PACK](#) .

#### 4.13.3.24 int tmreq\_reply[3]

com1553 - Low Level Diagnostic Statistic Offset in SubAddress 1 - Part 4 - Temporary buffer to write into SA1

#### 4.13.3.25 struct TM\_request\* TmWriter

com1553 - Pointer to the next writing location in the Telemetry Packet Transfer Request Circular queue. [TM\\_PACK](#) .

#### 4.13.3.26 RTBlkHandle TRx\_data\_han30

Remote Terminal Configuration Holder - Circular Loop.

#### 4.13.3.27 RTBlkHandle Tx\_data\_han[16]

Remote Terminal Configuration Holder - TeleMetry Data SubAddress Configuration.

#### 4.13.3.28 RTBlkHandle Tx\_data\_han1

Remote Terminal Configuration Holder - RT Status - Low Level Control.

#### 4.13.3.29 RTBlkHandle Tx\_data\_han10

Remote Terminal Configuration Holder - TeleMetry Descriptor SubAddress Configuration. RT -> BC.

#### 4.13.3.30 RTBlkHandle Tx\_data\_han27

Remote Terminal Configuration Holder - TeleCommand Descriptor SubAddress Configuration. RT -> BC.

#### 4.13.3.31 RTBlkHandle Tx\_data\_han8

Remote Terminal Configuration Holder - Timing Confirmation RT -> BC.

#### 4.13.3.32 int Waiting\_TM\_packet

#### 4.13.3.33 SubAddrCtrlWrd wrap\_around\_sa\_conf

Remote Terminal Configuration Holder - DualPortRam Memory Management - For SA30.

## 4.14 L4\_FUNC.c File Reference

```
#include <stdlib.h>
#include <string.h>
#include "LT_1355.h"
#include "LT_FUNC.h"
#include "LT_OBCP.h"
#include "LT_TMdef.h"
#include "MM_lib.h"
#include "MM_21020.h"
#include "LT_HKdef.h"
#include "DmcCmd.h"
#include "LT_MEM.h"
#include "Inttab.h"
```

Include dependency graph for L4\_FUNC.c:

### Functions

- int [tx\\_1355](#) (unsigned int \*, unsigned int, unsigned int)
- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- unsigned int [crc32](#) (unsigned int, unsigned int)
- void [event\\_packet](#) (unsigned int, unsigned int \*)
- unsigned int [memcrc16](#) (unsigned int \*, unsigned int, unsigned int)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- void [get\\_time](#) (struct [time\\_struct](#) \*)
- void [DPU\\_wait](#) (unsigned int)
- void [init\\_1355](#) ()
- void [main\\_1553\\_init](#) (void)
- void [main\\_1553\\_exit](#) (void)
- unsigned int [copy\\_OBSW\\_image](#) (unsigned int, unsigned int, unsigned int)
- unsigned int [function\\_activity](#) (unsigned int, unsigned int)
- void [perform\\_activity](#) ([TC\\_packet](#) \*p\_TC)
- void [SEQ\\_handler](#) ([TC\\_packet](#) \*p\_TC)
- void [DPU\\_activity](#) ([TC\\_packet](#) \*p\_TC)

### Variables

- [OBCP\\_pointer](#) [p\\_FUNC](#) []
- unsigned int [Seq\\_buffer](#) []
- unsigned int [Seq\\_length](#) []
- unsigned int [Dpu\\_values](#) []
- unsigned int [Dec\\_values](#) []
- struct [HK\\_def](#) [Dpu\\_hk](#) []
- struct [HK\\_def](#) [Dec\\_hk](#) []
- unsigned int [Counter\\_1\\_8](#)
- unsigned int [Link\\_through](#)
- volatile unsigned int [Burst\\_active](#)  
*com1553 - Burst Mode Activation Flag*



- [LINK \\* p\\_DEC\\_1355](#)
- [LINK \\* p\\_SPS\\_1355](#)
- [LINK \\* p\\_SPL\\_1355](#)
- unsigned int [Task\\_index](#) []
- K\_PROC [K\\_TaskList](#) []
- int [TM\\_pkt\\_ctr](#)

*com1553 - Telemetry Packet Counter used in the Telemetry Packet Transfer Request.*

- unsigned int [Param\\_for\\_AF](#) []
- unsigned int [Make\\_reset](#)
- static struct [TM\\_packet](#) [TM](#)
- static unsigned int [HEader](#)

## 4.14.1 Function Documentation

4.14.1.1 unsigned int [copy\\_OBSW\\_image](#) (unsigned int, unsigned int, unsigned int)

4.14.1.2 unsigned int [crc32](#) (unsigned int, unsigned int)

4.14.1.3 void [DPU\\_activity](#) (TC\_packet \* *p\_TC*)

4.14.1.4 void [DPU\\_wait](#) (unsigned int)

4.14.1.5 void [event\\_packet](#) (unsigned int, unsigned int \*)

4.14.1.6 unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)

4.14.1.7 unsigned int [function\\_activity](#) (unsigned int, unsigned int)

4.14.1.8 void [get\\_time](#) (struct [time\\_struct](#) \* *p\_time*)

4.14.1.9 void [init\\_1355](#) ()

4.14.1.10 void [main\\_1553\\_exit](#) (void)

4.14.1.11 void [main\\_1553\\_init](#) (void)

4.14.1.12 unsigned int [memcrc16](#) (unsigned int \*, unsigned int, unsigned int)

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.

4.14.1.13 void [perform\\_activity](#) (TC\_packet \* *p\_TC*)

4.14.1.14 void [SEQ\\_handler](#) (TC\_packet \* *p\_TC*)

4.14.1.15 int [tx\\_1355](#) (unsigned int \*, unsigned int, unsigned int)

4.14.1.16 void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)

## 4.14.2 Variable Documentation

4.14.2.1 volatile unsigned int [Burst\\_active](#)

*com1553 - Burst Mode Activation Flag*



- 4.14.2.2 unsigned int Counter\_1\_8
- 4.14.2.3 struct HK\_def Dec\_hk[]
- 4.14.2.4 unsigned int Dec\_values[]
- 4.14.2.5 struct HK\_def Dpu\_hk[]
- 4.14.2.6 unsigned int Dpu\_values[]
- 4.14.2.7 unsigned int HHeader [static]
- 4.14.2.8 K\_PROC K\_TaskList[]
- 4.14.2.9 unsigned int Link\_through
- 4.14.2.10 unsigned int Make\_reset
- 4.14.2.11 LINK\* p\_DEC\_1355
- 4.14.2.12 OBCP\_pointer p\_FUNC[]
- 4.14.2.13 LINK\* p\_SPL\_1355
- 4.14.2.14 LINK\* p\_SPS\_1355
- 4.14.2.15 unsigned int Param\_for\_AF[]
- 4.14.2.16 unsigned int Seq\_buffer[]
- 4.14.2.17 unsigned int Seq\_length[]
- 4.14.2.18 unsigned int Task\_index[]
- 4.14.2.19 struct TM\_packet TM [static]
- 4.14.2.20 int TM\_pkt\_ctr

com1553 - Telemetry Packet Counter used in the Telemetry Packet Transfer Request.

## 4.15 L4\_LIB.c File Reference

```
#include "LT_TMdef.h"
```

```
#include "LT_HKdef.h"
```

Include dependency graph for L4\_LIB.c:

### Functions

- unsigned int [crc16](#) (unsigned int, unsigned int)
- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- void [acceptance\\_report](#) ()
- int [TC\\_acceptance](#) ([TC\\_packet](#) \*p\_packet)
- void [packet\\_control](#) (struct [TM\\_packet](#) \*p\_tm, [TC\\_packet](#) \*p\_tc)

### Variables

- unsigned int [Dpu\\_values](#) []
- unsigned int [Tm\\_packet\\_enabled](#) []
- unsigned int [Counter\\_1\\_2](#)
- [event\\_field](#) [Ev\\_packet\\_enabled](#) []
- static struct [TM\\_packet](#) [TM\\_report](#)
- static unsigned int [ACc\\_parameter](#) = 0
- static unsigned int [ACc\\_result](#) = 0
- static unsigned int [PTemp](#) = 0



#### 4.15.1 Function Documentation

4.15.1.1 void acceptance\_report ()

4.15.1.2 unsigned int crc16 (unsigned int, unsigned int)

4.15.1.3 unsigned int fill\_in\_type\_subtype (struct TM\_packet \*, int)

4.15.1.4 void packet\_control (struct TM\_packet \* p\_tm, TC\_packet \* p\_tc)

4.15.1.5 int TC\_acceptance (TC\_packet \* p\_packet)

4.15.1.6 void update\_TM\_buffer (struct TM\_packet \*)

#### 4.15.2 Variable Documentation

4.15.2.1 unsigned int ACc\_parameter = 0 [static]

4.15.2.2 unsigned int ACc\_result = 0 [static]

4.15.2.3 unsigned int Counter\_1\_2

4.15.2.4 unsigned int Dpu\_values[ ]

4.15.2.5 event\_field Ev\_packet\_enabled[ ]

4.15.2.6 unsigned int PTemp = 0 [static]

4.15.2.7 unsigned int Tm\_packet\_enabled[ ]

4.15.2.8 struct TM\_packet TM\_report [static]

## 4.16 L4\_MEM.c File Reference

```
#include <stdlib.h>
#include "LT_TMdef.h"
#include "LT_MEM.h"
#include "MM_lib.h"
#include "MM_21020.h"
#include "LT_1355.h"
```

Include dependency graph for L4\_MEM.c:

### Functions

- int [tx\\_1355](#) (unsigned int \*, unsigned int, unsigned int)
- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- void [DPU\\_wait](#) (unsigned int)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- void [mem\\_service](#) ([TC\\_packet](#) \**p\_tc*)
- void [memory\\_for\\_subsystems](#) ([TC\\_packet](#) \**p\_tc*, [memory\\_header](#) \**p\_head*)

### Variables

- unsigned int [Counter\\_1\\_8](#)
- int [Words\\_to\\_dump](#)

#### 4.16.1 Function Documentation

4.16.1.1 void [DPU\\_wait](#) (unsigned *int*)

4.16.1.2 unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)

4.16.1.3 void [mem\\_service](#) ([TC\\_packet](#) \* *p\_tc*)

4.16.1.4 void [memory\\_for\\_subsystems](#) ([TC\\_packet](#) \* *p\_tc*, [memory\\_header](#) \* *p\_head*)

4.16.1.5 int [tx\\_1355](#) (unsigned int \*, unsigned *int*, unsigned *int*)

4.16.1.6 void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)

#### 4.16.2 Variable Documentation

4.16.2.1 unsigned int [Counter\\_1\\_8](#)

4.16.2.2 int [Words\\_to\\_dump](#)



## 4.17 L4\_OBCP.c File Reference

```
#include <stddef.h>
#include "LT_TMdef.h"
#include "LT_OBCP.h"
#include "LT_HKdef.h"
#include "LT_1355.h"
#include "MM_21020.h"
```

Include dependency graph for L4\_OBCP.c:

### Functions

- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- void [DPU\\_wait](#) (unsigned int)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- void [new\\_OBCP](#) ()
- unsigned int [load\\_start\\_proc](#) ([TC\\_packet](#) \*p\_tc, struct [TM\\_packet](#) \*p\_tm)
- unsigned int [list\\_proc](#) ()
- void [stop\\_OBCP](#) ()

### Variables

- [OBCP\\_pointer](#) [p\\_OBCP](#) []
- struct [OBCP\\_param](#) [Obcp\\_data](#) []
- unsigned int [Obcp\\_data\\_current](#) []
- unsigned int [Dpu\\_values](#) []
- unsigned int [Link\\_through](#)
- unsigned int [Proc\\_ID\\_and\\_TC\\_header](#) []
- unsigned int [Counter\\_1\\_8](#)
- [K\\_TIMER](#) \* [OBCP\\_timer](#)
- [K\\_PROC](#) [K\\_TaskList](#) []
- unsigned int [Task\\_index](#) []
- unsigned int [Abort\\_OBCP](#)
- static unsigned int [Service](#)



#### 4.17.1 Function Documentation

- 4.17.1.1 void DPU\_wait (unsigned *int*)
- 4.17.1.2 unsigned int fill\_in\_type\_subtype (struct TM\_packet \*, int)
- 4.17.1.3 unsigned int list\_proc ()
- 4.17.1.4 unsigned int load\_start\_proc (TC\_packet \* *p\_tc*, struct TM\_packet \* *p\_tm*)
- 4.17.1.5 void new\_OBCP ()
- 4.17.1.6 void stop\_OBCP ()
- 4.17.1.7 void update\_TM\_buffer (struct TM\_packet \*)

#### 4.17.2 Variable Documentation

- 4.17.2.1 unsigned int Abort\_OBCP
- 4.17.2.2 unsigned int Counter\_1\_8
- 4.17.2.3 unsigned int Dpu\_values[ ]
- 4.17.2.4 K\_PROC K\_TaskList[ ]
- 4.17.2.5 unsigned int Link\_through
- 4.17.2.6 struct OBCP\_param Obcp\_data[ ]
- 4.17.2.7 unsigned int Obcp\_data\_current[ ]
- 4.17.2.8 K\_TIMER\* OBCP\_timer
- 4.17.2.9 OBCP\_pointer p\_OBCP[ ]
- 4.17.2.10 unsigned int Proc\_ID\_and\_TC\_header[ ]
- 4.17.2.11 unsigned int SService [static]
- 4.17.2.12 unsigned int Task\_index[ ]

## 4.18 L5\_D\_AUT.c File Reference

```
#include "LT_TMdef.h"  
#include "LT_HKdef.h"  
#include "LT_FUNC.h"  
#include "LT_1355.h"  
#include "MM_21020.h"
```

Include dependency graph for L5\_D\_AUT.c:

### Functions

- void [event\\_packet](#) (unsigned int, unsigned int \*)
- unsigned int [function\\_activity](#) (unsigned int, unsigned int)
- unsigned int [memcrc32](#) (unsigned int \*, unsigned int, unsigned int)
- unsigned int [out\\_range](#) (unsigned int value, unsigned int lower\_limit, unsigned int upper\_limit)
- unsigned int [check\\_checksum](#) ()
- void [handle\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*p\_tm)
- void [generate\\_event\\_normal\\_HL](#) ()
- void [generate\\_event\\_invert](#) ()
- void [monitor\\_counter\\_stable](#) ()
- void [monitor\\_counter\\_changing](#) ()
- void [bol\\_temp\\_fpu](#) ()
- void [heater\\_sp](#) ()
- void [link\\_1355\\_lost](#) ()

### Variables

- unsigned int [Dpu\\_values](#) []
- unsigned int [Dec\\_values](#) []
- struct [HK\\_def](#) [Dpu\\_hk](#) []
- struct [HK\\_def](#) [Dec\\_hk](#) []
- struct [HK\\_def](#) [Spl\\_hk](#) []
- struct [HK\\_def](#) [Sps\\_hk](#) []
- unsigned int [Dpu\\_time](#) []
- unsigned int [Param\\_for\\_AF](#) []
- unsigned int pm [Save\\_checksum\\_T3](#)
- unsigned int pm [Save\\_checksum\\_T5](#)
- static unsigned int [seconds\\_at\\_last\\_event](#) = 0



## 4.18.1 Function Documentation

4.18.1.1 void bol\_temp\_fpu ()

4.18.1.2 unsigned int check\_checksum ()

4.18.1.3 void event\_packet (unsigned int, unsigned int \*)

4.18.1.4 unsigned int function\_activity (unsigned int, unsigned int)

4.18.1.5 void generate\_event\_invert ()

4.18.1.6 void generate\_event\_normal\_HL ()

4.18.1.7 void handle\_TM\_buffer (struct TM\_packet \* p\_tm)

4.18.1.8 void heater\_sp ()

4.18.1.9 void link\_1355\_lost ()

4.18.1.10 unsigned int memcrc32 (unsigned int \*, unsigned int, unsigned int)

4.18.1.11 void monitor\_counter\_changing ()

4.18.1.12 void monitor\_counter\_stable ()

4.18.1.13 unsigned int out\_range (unsigned int value, unsigned int lower\_limit, unsigned int upper\_limit)

## 4.18.2 Variable Documentation

4.18.2.1 struct HK\_def Dec\_hk[]

4.18.2.2 unsigned int Dec\_values[]

4.18.2.3 struct HK\_def Dpu\_hk[]

4.18.2.4 unsigned int Dpu\_time[]

4.18.2.5 unsigned int Dpu\_values[]

4.18.2.6 unsigned int Param\_for\_AF[]

4.18.2.7 unsigned int pm Save\_chksum\_T3

4.18.2.8 unsigned int pm Save\_chksum\_T5

4.18.2.9 unsigned int seconds\_at\_last\_event = 0 [static]

4.18.2.10 struct HK\_def Spl\_hk[]

4.18.2.11 struct HK\_def Sps\_hk[]

## 4.19 L9\_BOL\_P.c File Reference

```
#include "LT_1355.h"  
#include "LT_OBCP.h"  
#include "DmcCmd.h"  
#include "LT_FUNC.h"
```

Include dependency graph for L9\_BOL\_P.c:

### Defines

- #define `P1 Obcp_data_current[0]`

### Functions

- int `tx_1355` (unsigned int \*, unsigned int, unsigned int)
- void `DPU_wait` (unsigned int)
- void `idle_state` ()
- void `obmo` ()
- void `acwe` ()

### Variables

- unsigned int `Obcp_data_current` []
- unsigned int `Buffer_for_1355_tx` []
- struct `OBCP_param Obcp_data` []

#### 4.19.1 Define Documentation

4.19.1.1 #define `P1 Obcp_data_current[0]`

#### 4.19.2 Function Documentation

4.19.2.1 void `acwe` ()

4.19.2.2 void `DPU_wait` (unsigned *int*)

4.19.2.3 void `idle_state` ()

4.19.2.4 void `obmo` ()

4.19.2.5 int `tx_1355` (unsigned int \*, unsigned *int*, unsigned *int*)

#### 4.19.3 Variable Documentation

4.19.3.1 unsigned int `Buffer_for_1355_tx` []

4.19.3.2 struct `OBCP_param Obcp_data` []

4.19.3.3 unsigned int `Obcp_data_current` []

## 4.20 L9\_EEPRM.c File Reference

```
#include "Eprm.h"  
#include "LT_HKdef.h"  
#include "LT_OBCP.h"  
#include "MM_21020.h"
```

Include dependency graph for L9\_EEPRM.c:

### Functions

- void [EEPROM\\_proc](#) ()

### Variables

- unsigned int [Obcp\\_data\\_current](#) []
- unsigned int [Dpu\\_values](#) []

#### 4.20.1 Function Documentation

##### 4.20.1.1 void EEPROM\_proc ()

#### 4.20.2 Variable Documentation

##### 4.20.2.1 unsigned int Dpu\_values[]

##### 4.20.2.2 unsigned int Obcp\_data\_current[]

## 4.21 L9\_GRATP.c File Reference

```
#include "LT_1355.h"  
#include "LT_HKdef.h"  
#include "LT_OBCP.h"  
#include "DmcCmd.h"  
#include "LT_TMdef.h"
```

Include dependency graph for L9\_GRATP.c:

### Defines

- #define [Sequence\\_ID](#) Obcp\_data\_current[0]
- #define [Sequence\\_time](#) Obcp\_data\_current[1]
- #define [Sequence\\_par\\_1](#) Obcp\_data\_current[2]
- #define [Sequence\\_par\\_2](#) Obcp\_data\_current[3]
- #define [Sequence\\_par\\_3](#) Obcp\_data\_current[4]
- #define [Sequence\\_par\\_4](#) Obcp\_data\_current[5]
- #define [Sequence\\_par\\_5](#) Obcp\_data\_current[6]
- #define [Sequence\\_par\\_6](#) Obcp\_data\_current[7]
- #define [Sequence\\_par\\_7](#) Obcp\_data\_current[8]
- #define [Sequence\\_par\\_8](#) Obcp\_data\_current[9]
- #define [Sequence\\_par\\_9](#) Obcp\_data\_current[10]
- #define [Sequence\\_par\\_10](#) Obcp\_data\_current[11]
- #define [Sequence\\_par\\_11](#) Obcp\_data\_current[12]
- #define [Sequence\\_par\\_12](#) Obcp\_data\_current[13]
- #define [detector](#) Obcp\_data\_current[14]
- #define [grat\\_pos](#) Obcp\_data\_current[15]
- #define [grat\\_time](#) Obcp\_data\_current[16]
- #define [cmp\\_par\\_blue](#) Obcp\_data\_current[17]
- #define [cmp\\_par\\_red](#) Obcp\_data\_current[18]
- #define [grat\\_def](#) Obcp\_data\_current[19]
- #define [chop\\_def](#) Obcp\_data\_current[20]
- #define [grat\\_def\\_time](#) Obcp\_data\_current[21]
- #define [Sequence\\_ID](#) Obcp\_data\_current[0]
- #define [Sequence\\_time](#) Obcp\_data\_current[1]
- #define [Sequence\\_par\\_1](#) Obcp\_data\_current[2]
- #define [Sequence\\_par\\_2](#) Obcp\_data\_current[3]
- #define [Sequence\\_par\\_3](#) Obcp\_data\_current[4]
- #define [Sequence\\_par\\_4](#) Obcp\_data\_current[5]
- #define [Sequence\\_par\\_5](#) Obcp\_data\_current[6]
- #define [Sequence\\_par\\_6](#) Obcp\_data\_current[7]
- #define [Sequence\\_par\\_7](#) Obcp\_data\_current[8]
- #define [Sequence\\_par\\_8](#) Obcp\_data\_current[9]
- #define [Sequence\\_par\\_9](#) Obcp\_data\_current[10]
- #define [Sequence\\_par\\_10](#) Obcp\_data\_current[11]
- #define [Sequence\\_par\\_11](#) Obcp\_data\_current[12]
- #define [detector](#) Obcp\_data\_current[13]
- #define [grat\\_pos](#) Obcp\_data\_current[14]
- #define [grat\\_time](#) Obcp\_data\_current[15]
- #define [cmp\\_par\\_blue](#) Obcp\_data\_current[16]
- #define [cmp\\_par\\_red](#) Obcp\_data\_current[17]
- #define [grat\\_def](#) Obcp\_data\_current[18]



- #define chop\_def Obcp\_data\_current[19]
- #define grat\_def\_time Obcp\_data\_current[20]
- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]
- #define Sequence\_par\_2 Obcp\_data\_current[3]
- #define Sequence\_par\_3 Obcp\_data\_current[4]
- #define Sequence\_par\_4 Obcp\_data\_current[5]
- #define Sequence\_par\_5 Obcp\_data\_current[6]
- #define Sequence\_par\_6 Obcp\_data\_current[7]
- #define Sequence\_par\_7 Obcp\_data\_current[8]
- #define Sequence\_par\_8 Obcp\_data\_current[9]
- #define Sequence\_par\_9 Obcp\_data\_current[10]
- #define Sequence\_par\_10 Obcp\_data\_current[11]
- #define Sequence\_par\_11 Obcp\_data\_current[12]
- #define Sequence\_par\_12 Obcp\_data\_current[13]
- #define detector Obcp\_data\_current[14]
- #define grat\_pos Obcp\_data\_current[15]
- #define grat\_time Obcp\_data\_current[16]
- #define cmp\_par\_blue Obcp\_data\_current[17]
- #define cmp\_par\_red Obcp\_data\_current[18]
- #define grat\_def Obcp\_data\_current[19]
- #define chop\_def Obcp\_data\_current[20]
- #define grat\_def\_time Obcp\_data\_current[21]
- #define max\_dith Obcp\_data\_current[22]
- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]
- #define Sequence\_par\_2 Obcp\_data\_current[3]
- #define Sequence\_par\_3 Obcp\_data\_current[4]
- #define Sequence\_par\_4 Obcp\_data\_current[5]
- #define Sequence\_par\_5 Obcp\_data\_current[6]
- #define Sequence\_par\_6 Obcp\_data\_current[7]
- #define Sequence\_par\_7 Obcp\_data\_current[8]
- #define Sequence\_par\_8 Obcp\_data\_current[9]
- #define Sequence\_par\_9 Obcp\_data\_current[10]
- #define Sequence\_par\_10 Obcp\_data\_current[11]
- #define Sequence\_par\_11 Obcp\_data\_current[12]
- #define detector Obcp\_data\_current[13]
- #define grat\_pos Obcp\_data\_current[14]
- #define grat\_time Obcp\_data\_current[15]
- #define cmp\_par\_blue Obcp\_data\_current[16]
- #define cmp\_par\_red Obcp\_data\_current[17]
- #define grat\_def Obcp\_data\_current[18]
- #define grat\_def\_time Obcp\_data\_current[19]
- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]
- #define Sequence\_par\_2 Obcp\_data\_current[3]
- #define Sequence\_par\_3 Obcp\_data\_current[4]
- #define Sequence\_par\_4 Obcp\_data\_current[5]
- #define Sequence\_par\_5 Obcp\_data\_current[6]
- #define Sequence\_par\_6 Obcp\_data\_current[7]
- #define Sequence\_par\_7 Obcp\_data\_current[8]
- #define Sequence\_par\_8 Obcp\_data\_current[9]





- #define Sequence\_par\_9 Obcp\_data\_current[10]
- #define Sequence\_par\_10 Obcp\_data\_current[11]
- #define Sequence\_par\_11 Obcp\_data\_current[12]
- #define detector Obcp\_data\_current[13]
- #define grat\_time Obcp\_data\_current[14]
- #define cmp\_par\_blue Obcp\_data\_current[15]
- #define cmp\_par\_red Obcp\_data\_current[16]
- #define grat\_def Obcp\_data\_current[17]
- #define chop\_def Obcp\_data\_current[18]
- #define grat\_def\_time Obcp\_data\_current[19]
- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]
- #define Sequence\_par\_2 Obcp\_data\_current[3]
- #define Sequence\_par\_3 Obcp\_data\_current[4]
- #define Sequence\_par\_4 Obcp\_data\_current[5]
- #define Sequence\_par\_5 Obcp\_data\_current[6]
- #define Sequence\_par\_6 Obcp\_data\_current[7]
- #define detector Obcp\_data\_current[8]
- #define grating\_position Obcp\_data\_current[9]
- #define chop\_start\_position Obcp\_data\_current[10]
- #define grating\_time Obcp\_data\_current[11]
- #define cmp\_par\_blue Obcp\_data\_current[12]
- #define cmp\_par\_red Obcp\_data\_current[13]
- #define grating\_default Obcp\_data\_current[14]
- #define grating\_default\_time Obcp\_data\_current[15]
- #define chopper\_default Obcp\_data\_current[16]
- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]
- #define Sequence\_par\_2 Obcp\_data\_current[3]
- #define Sequence\_par\_3 Obcp\_data\_current[4]
- #define Sequence\_par\_4 Obcp\_data\_current[5]
- #define Sequence\_par\_5 Obcp\_data\_current[6]
- #define Sequence\_par\_6 Obcp\_data\_current[7]
- #define Sequence\_par\_7 Obcp\_data\_current[8]
- #define Sequence\_par\_8 Obcp\_data\_current[9]
- #define Sequence\_par\_9 Obcp\_data\_current[10]
- #define Sequence\_par\_10 Obcp\_data\_current[11]
- #define Sequence\_par\_11 Obcp\_data\_current[12]
- #define Sequence\_par\_12 Obcp\_data\_current[13]
- #define Sequence\_par\_13 Obcp\_data\_current[14]
- #define Sequence\_par\_14 Obcp\_data\_current[15]
- #define Sequence\_par\_15 Obcp\_data\_current[16]
- #define detector Obcp\_data\_current[17]
- #define cmp\_par\_blue Obcp\_data\_current[18]
- #define cmp\_par\_red Obcp\_data\_current[19]
- #define grat\_pos Obcp\_data\_current[20]
- #define chop\_pos Obcp\_data\_current[21]
- #define grat\_time Obcp\_data\_current[22]
- #define grat\_def Obcp\_data\_current[23]
- #define grat\_def\_time Obcp\_data\_current[24]
- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]



- #define [Sequence\\_par\\_2](#) [Obcp\\_data\\_current](#)[3]
- #define [Sequence\\_par\\_3](#) [Obcp\\_data\\_current](#)[4]
- #define [Sequence\\_par\\_4](#) [Obcp\\_data\\_current](#)[5]
- #define [Sequence\\_par\\_5](#) [Obcp\\_data\\_current](#)[6]
- #define [Sequence\\_par\\_6](#) [Obcp\\_data\\_current](#)[7]
- #define [Sequence\\_par\\_7](#) [Obcp\\_data\\_current](#)[8]
- #define [Sequence\\_par\\_8](#) [Obcp\\_data\\_current](#)[9]
- #define [Sequence\\_par\\_9](#) [Obcp\\_data\\_current](#)[10]
- #define [Sequence\\_par\\_10](#) [Obcp\\_data\\_current](#)[11]
- #define [Sequence\\_par\\_11](#) [Obcp\\_data\\_current](#)[12]
- #define [detector](#) [Obcp\\_data\\_current](#)[13]
- #define [grat\\_pos](#) [Obcp\\_data\\_current](#)[14]
- #define [grat\\_time](#) [Obcp\\_data\\_current](#)[15]
- #define [cmp\\_par\\_blue](#) [Obcp\\_data\\_current](#)[16]
- #define [cmp\\_par\\_red](#) [Obcp\\_data\\_current](#)[17]
- #define [grat\\_def](#) [Obcp\\_data\\_current](#)[18]
- #define [chop\\_def](#) [Obcp\\_data\\_current](#)[19]
- #define [grat\\_def\\_time](#) [Obcp\\_data\\_current](#)[20]

## Functions

- int [tx\\_1355](#) (unsigned int \*, unsigned int, unsigned int)
- unsigned int [memcrc32](#) (unsigned int \*, unsigned int, unsigned int)
- void [DPU\\_wait](#) (unsigned int)
- void [get\\_time](#) (struct [time\\_struct](#) \*)
- unsigned int [write\\_seq](#) (unsigned int)
- void [chopped\\_spectroscopy](#) ()
- void [chopped\\_spectroscopy\\_2](#) ()
- void [chopped\\_spectroscopy\\_dither](#) ()
- void [no\\_chopping](#) ()
- void [wave\\_switch\\_grating](#) ()
- void [chopped\\_spectroscopy\\_up\\_down](#) ()
- void [wave\\_switch\\_grating\\_2](#) ()
- void [chopped\\_spectroscopy\\_3](#) ()

## Variables

- unsigned int [Obcp\\_data\\_current](#) []
- unsigned int [Dec\\_values](#) []
- unsigned int [Buffer\\_for\\_1355\\_tx](#) []
- struct [time\\_struct](#) [Time\\_of\\_dpu](#)



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 109 of [307](#)

## 4.21.1 Define Documentation

- 4.21.1.1 #define chop\_def Obcp\_data\_current[19]
- 4.21.1.2 #define chop\_def Obcp\_data\_current[18]
- 4.21.1.3 #define chop\_def Obcp\_data\_current[20]
- 4.21.1.4 #define chop\_def Obcp\_data\_current[19]
- 4.21.1.5 #define chop\_def Obcp\_data\_current[20]
- 4.21.1.6 #define chop\_pos Obcp\_data\_current[21]
- 4.21.1.7 #define chop\_start\_position Obcp\_data\_current[10]
- 4.21.1.8 #define chopper\_default Obcp\_data\_current[16]
- 4.21.1.9 #define cmp\_par\_blue Obcp\_data\_current[16]
- 4.21.1.10 #define cmp\_par\_blue Obcp\_data\_current[18]
- 4.21.1.11 #define cmp\_par\_blue Obcp\_data\_current[12]
- 4.21.1.12 #define cmp\_par\_blue Obcp\_data\_current[15]
- 4.21.1.13 #define cmp\_par\_blue Obcp\_data\_current[16]
- 4.21.1.14 #define cmp\_par\_blue Obcp\_data\_current[17]
- 4.21.1.15 #define cmp\_par\_blue Obcp\_data\_current[16]
- 4.21.1.16 #define cmp\_par\_blue Obcp\_data\_current[17]
- 4.21.1.17 #define cmp\_par\_red Obcp\_data\_current[17]
- 4.21.1.18 #define cmp\_par\_red Obcp\_data\_current[19]
- 4.21.1.19 #define cmp\_par\_red Obcp\_data\_current[13]
- 4.21.1.20 #define cmp\_par\_red Obcp\_data\_current[16]
- 4.21.1.21 #define cmp\_par\_red Obcp\_data\_current[17]
- 4.21.1.22 #define cmp\_par\_red Obcp\_data\_current[18]
- 4.21.1.23 #define cmp\_par\_red Obcp\_data\_current[17]
- 4.21.1.24 #define cmp\_par\_red Obcp\_data\_current[18]
- 4.21.1.25 #define detector Obcp\_data\_current[13]
- 4.21.1.26 #define detector Obcp\_data\_current[17]
- 4.21.1.27 #define detector Obcp\_data\_current[8]
- 4.21.1.28 #define detector Obcp\_data\_current[13]
- 4.21.1.29 #define detector Obcp\_data\_current[13]
- 4.21.1.30 #define detector Obcp\_data\_current[14]

## 4.22 L9\_MISC.c File Reference

```
#include "LT_1355.h"  
#include "LT_OBCP.h"  
#include "DmcCmd.h"  
#include "SPUCmd.h"  
#include "LT_TMdef.h"
```

Include dependency graph for L9\_MISC.c:

### Defines

- #define `det_sim Obcp_data_current`[0]
- #define `cmp_par_blue Obcp_data_current`[1]
- #define `cmp_par_red Obcp_data_current`[2]
- #define `sim_data_r Obcp_data_current`[0]
- #define `sim_data_b Obcp_data_current`[1]
- #define `sim_data_r Obcp_data_current`[0]
- #define `sim_data_b Obcp_data_current`[1]

### Functions

- int `tx_1355` (unsigned int \*, unsigned int, unsigned int)
- unsigned int `memcrc32` (unsigned int \*, unsigned int, unsigned int)
- void `DPU_wait` (unsigned int)
- void `update_TM_buffer` (struct `TM_packet` \*)
- unsigned int `fill_in_type_subtype` (struct `TM_packet` \*, int)
- void `get_time` (struct `time_struct` \*)
- void `dec_test_mode` ()
- void `spu_test_spec` ()
- void `spu_test_phot` ()
- void `timesync_1` ()
- void `timesync_2` ()
- void `timesync_3` ()
- void `science_dummy` ()

### Variables

- unsigned int `Obcp_data_current` []
- unsigned int `Buffer_for_1355_tx` []
- unsigned int `Tm_packet_enabled` []
- struct `time_struct` `Time_of_dpu`



#### 4.22.1 Define Documentation

4.22.1.1 #define cmp\_par\_blue Obcp\_data\_current[1]

4.22.1.2 #define cmp\_par\_red Obcp\_data\_current[2]

4.22.1.3 #define det\_sim Obcp\_data\_current[0]

4.22.1.4 #define sim\_data\_b Obcp\_data\_current[1]

4.22.1.5 #define sim\_data\_b Obcp\_data\_current[1]

4.22.1.6 #define sim\_data\_r Obcp\_data\_current[0]

4.22.1.7 #define sim\_data\_r Obcp\_data\_current[0]

#### 4.22.2 Function Documentation

4.22.2.1 void dec\_test\_mode ()

4.22.2.2 void DPU\_wait (unsigned *int*)

4.22.2.3 unsigned int fill\_in\_type\_subtype (struct TM\_packet \*, int)

4.22.2.4 void get\_time (struct time\_struct \*)

4.22.2.5 unsigned int memcrc32 (unsigned int \*, unsigned *int*, unsigned *int*)

4.22.2.6 void science\_dummy ()

4.22.2.7 void spu\_test\_phot ()

4.22.2.8 void spu\_test\_spec ()

4.22.2.9 void timesync\_1 ()

4.22.2.10 void timesync\_2 ()

4.22.2.11 void timesync\_3 ()

4.22.2.12 int tx\_1355 (unsigned int \*, unsigned *int*, unsigned *int*)

4.22.2.13 void update\_TM\_buffer (struct TM\_packet \*)

#### 4.22.3 Variable Documentation

4.22.3.1 unsigned int Buffer\_for\_1355\_tx[ ]

4.22.3.2 unsigned int Obcp\_data\_current[ ]

4.22.3.3 struct time\_struct Time\_of\_dpu

4.22.3.4 unsigned int Tm\_packet\_enabled[ ]



## **4.23 L9\_newOB.c File Reference**

### **Functions**

- void [new\\_OBCP](#) ()

#### **4.23.1 Function Documentation**

##### **4.23.1.1 void [new\\_OBCP](#) ()**

## 4.24 L9\_P1355.c File Reference

```
#include <string.h>
#include "LT_1355.h"
#include "LT_OBCP.h"
#include "LT_HKdef.h"
#include "LT_TMdef.h"
#include "NODE1.h"
```

Include dependency graph for L9\_P1355.c:

### Defines

- #define [LINK\\_MASTER](#) 1
- #define [LINK\\_SLAVE](#) 2

### Functions

- void [proc1355](#) ()

### Variables

- [LINK](#) \* [p\\_DEC\\_1355](#)
- [LINK](#) \* [p\\_SPS\\_1355](#)
- [LINK](#) \* [p\\_SPL\\_1355](#)
- unsigned int [Obcp\\_data\\_current](#) []
- unsigned int [Dpu\\_values](#) []

#### 4.24.1 Define Documentation

4.24.1.1 #define [LINK\\_MASTER](#) 1

4.24.1.2 #define [LINK\\_SLAVE](#) 2

#### 4.24.2 Function Documentation

4.24.2.1 void [proc1355](#) ()

#### 4.24.3 Variable Documentation

4.24.3.1 unsigned int [Dpu\\_values](#) []

4.24.3.2 unsigned int [Obcp\\_data\\_current](#) []

4.24.3.3 [LINK](#)\* [p\\_DEC\\_1355](#)

4.24.3.4 [LINK](#)\* [p\\_SPL\\_1355](#)

4.24.3.5 [LINK](#)\* [p\\_SPS\\_1355](#)



## 4.25 L9\_PHOTC.c File Reference

```
#include "LT_1355.h"  
#include "LT_HKdef.h"  
#include "LT_OBCP.h"  
#include "DmcCmd.h"  
#include "LT_TMdef.h"
```

Include dependency graph for L9\_PHOTC.c:

### Defines

- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]
- #define Sequence\_par\_2 Obcp\_data\_current[3]
- #define Sequence\_par\_3 Obcp\_data\_current[4]
- #define Sequence\_par\_4 Obcp\_data\_current[5]
- #define Sequence\_par\_5 Obcp\_data\_current[6]
- #define Sequence\_par\_6 Obcp\_data\_current[7]
- #define cmp\_par\_blue Obcp\_data\_current[8]
- #define cmp\_par\_red Obcp\_data\_current[9]
- #define chop\_def Obcp\_data\_current[10]
- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]
- #define Sequence\_par\_2 Obcp\_data\_current[3]
- #define Sequence\_par\_3 Obcp\_data\_current[4]
- #define Sequence\_par\_4 Obcp\_data\_current[5]
- #define Sequence\_par\_5 Obcp\_data\_current[6]
- #define Sequence\_par\_6 Obcp\_data\_current[7]
- #define Sequence\_par\_7 Obcp\_data\_current[8]
- #define Sequence\_par\_8 Obcp\_data\_current[9]
- #define Sequence\_par\_9 Obcp\_data\_current[10]
- #define Sequence\_par\_10 Obcp\_data\_current[11]
- #define cmp\_par\_blue Obcp\_data\_current[12]
- #define cmp\_par\_red Obcp\_data\_current[13]
- #define chop\_def Obcp\_data\_current[14]
- #define Sequence\_ID Obcp\_data\_current[0]
- #define Sequence\_time Obcp\_data\_current[1]
- #define Sequence\_par\_1 Obcp\_data\_current[2]
- #define Sequence\_par\_2 Obcp\_data\_current[3]
- #define Sequence\_par\_3 Obcp\_data\_current[4]
- #define Sequence\_par\_4 Obcp\_data\_current[5]
- #define Sequence\_par\_5 Obcp\_data\_current[6]
- #define Sequence\_par\_6 Obcp\_data\_current[7]
- #define Sequence\_par\_7 Obcp\_data\_current[8]
- #define Sequence\_par\_8 Obcp\_data\_current[9]
- #define cmp\_par\_blue Obcp\_data\_current[10]
- #define cmp\_par\_red Obcp\_data\_current[11]
- #define chop\_def Obcp\_data\_current[12]

## Functions

- int [tx\\_1355](#) (unsigned int \*, unsigned int, unsigned int)
- unsigned int [memcrc32](#) (unsigned int \*, unsigned int, unsigned int)
- void [DPU\\_wait](#) (unsigned int)
- void [get\\_time](#) (struct [time\\_struct](#) \*)
- unsigned int [write\\_seq](#) (unsigned int)
- void [photometry\\_cal\\_i](#) ()
- void [photometry\\_cal\\_ii](#) ()
- void [photometry\\_cal\\_iii](#) ()

## Variables

- unsigned int [Obcp\\_data\\_current](#) []
- unsigned int [Dec\\_values](#) []
- unsigned int [Buffer\\_for\\_1355\\_tx](#) []
- struct [time\\_struct](#) [Time\\_of\\_dpu](#)



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 117 of [307](#)



## 4.25.1 Define Documentation

- 4.25.1.1 #define chop\_def Obcp\_data\_current[12]
- 4.25.1.2 #define chop\_def Obcp\_data\_current[14]
- 4.25.1.3 #define chop\_def Obcp\_data\_current[10]
- 4.25.1.4 #define cmp\_par\_blue Obcp\_data\_current[10]
- 4.25.1.5 #define cmp\_par\_blue Obcp\_data\_current[12]
- 4.25.1.6 #define cmp\_par\_blue Obcp\_data\_current[8]
- 4.25.1.7 #define cmp\_par\_red Obcp\_data\_current[11]
- 4.25.1.8 #define cmp\_par\_red Obcp\_data\_current[13]
- 4.25.1.9 #define cmp\_par\_red Obcp\_data\_current[9]
- 4.25.1.10 #define Sequence\_ID Obcp\_data\_current[0]
- 4.25.1.11 #define Sequence\_ID Obcp\_data\_current[0]
- 4.25.1.12 #define Sequence\_ID Obcp\_data\_current[0]
- 4.25.1.13 #define Sequence\_par\_1 Obcp\_data\_current[2]
- 4.25.1.14 #define Sequence\_par\_1 Obcp\_data\_current[2]
- 4.25.1.15 #define Sequence\_par\_1 Obcp\_data\_current[2]
- 4.25.1.16 #define Sequence\_par\_10 Obcp\_data\_current[11]
- 4.25.1.17 #define Sequence\_par\_2 Obcp\_data\_current[3]
- 4.25.1.18 #define Sequence\_par\_2 Obcp\_data\_current[3]
- 4.25.1.19 #define Sequence\_par\_2 Obcp\_data\_current[3]
- 4.25.1.20 #define Sequence\_par\_3 Obcp\_data\_current[4]
- 4.25.1.21 #define Sequence\_par\_3 Obcp\_data\_current[4]
- 4.25.1.22 #define Sequence\_par\_3 Obcp\_data\_current[4]
- 4.25.1.23 #define Sequence\_par\_4 Obcp\_data\_current[5]
- 4.25.1.24 #define Sequence\_par\_4 Obcp\_data\_current[5]
- 4.25.1.25 #define Sequence\_par\_4 Obcp\_data\_current[5]
- 4.25.1.26 #define Sequence\_par\_5 Obcp\_data\_current[6]
- 4.25.1.27 #define Sequence\_par\_5 Obcp\_data\_current[6]
- 4.25.1.28 #define Sequence\_par\_5 Obcp\_data\_current[6]
- 4.25.1.29 #define Sequence\_par\_6 Obcp\_data\_current[7]

4.25.1.30 #define Sequence\_par\_6 Obcp\_data\_current[7]

## 4.26 L9\_PHOTP.c File Reference

```
#include "LT_1355.h"  
#include "LT_HKdef.h"  
#include "LT_OBCP.h"  
#include "DmcCmd.h"  
#include "LT_TMdef.h"
```

Include dependency graph for L9\_PHOTP.c:

### Defines

- #define [Sequence\\_ID](#) Obcp\_data\_current[0]
- #define [Sequence\\_time](#) Obcp\_data\_current[1]
- #define [Sequence\\_par\\_1](#) Obcp\_data\_current[2]
- #define [Sequence\\_par\\_2](#) Obcp\_data\_current[3]
- #define [Sequence\\_par\\_3](#) Obcp\_data\_current[4]
- #define [Sequence\\_par\\_4](#) Obcp\_data\_current[5]
- #define [Sequence\\_par\\_5](#) Obcp\_data\_current[6]
- #define [Sequence\\_par\\_6](#) Obcp\_data\_current[7]
- #define [Sequence\\_par\\_7](#) Obcp\_data\_current[8]
- #define [Sequence\\_par\\_8](#) Obcp\_data\_current[9]
- #define [Sequence\\_par\\_9](#) Obcp\_data\_current[10]
- #define [cmp\\_par\\_blue](#) Obcp\_data\_current[11]
- #define [cmp\\_par\\_red](#) Obcp\_data\_current[12]
- #define [chop\\_def](#) Obcp\_data\_current[13]
- #define [Sequence\\_ID](#) Obcp\_data\_current[0]
- #define [Sequence\\_time](#) Obcp\_data\_current[1]
- #define [Sequence\\_par\\_1](#) Obcp\_data\_current[2]
- #define [Sequence\\_par\\_2](#) Obcp\_data\_current[3]
- #define [Sequence\\_par\\_3](#) Obcp\_data\_current[4]
- #define [Sequence\\_par\\_4](#) Obcp\_data\_current[5]
- #define [Sequence\\_par\\_5](#) Obcp\_data\_current[6]
- #define [Sequence\\_par\\_6](#) Obcp\_data\_current[7]
- #define [Sequence\\_par\\_7](#) Obcp\_data\_current[8]
- #define [Sequence\\_par\\_8](#) Obcp\_data\_current[9]
- #define [Sequence\\_par\\_9](#) Obcp\_data\_current[10]
- #define [cpm\\_par\\_blue](#) Obcp\_data\_current[11]
- #define [cmp\\_par\\_red](#) Obcp\_data\_current[12]
- #define [chop\\_def](#) Obcp\_data\_current[13]
- #define [max\\_dith](#) Obcp\_data\_current[14]
- #define [Sequence\\_ID](#) Obcp\_data\_current[0]
- #define [Sequence\\_time](#) Obcp\_data\_current[1]
- #define [Sequence\\_par\\_1](#) Obcp\_data\_current[2]
- #define [Sequence\\_par\\_2](#) Obcp\_data\_current[3]
- #define [Sequence\\_par\\_3](#) Obcp\_data\_current[4]
- #define [Sequence\\_par\\_4](#) Obcp\_data\_current[5]
- #define [cmp\\_par\\_blue](#) Obcp\_data\_current[6]
- #define [cmp\\_par\\_red](#) Obcp\_data\_current[7]
- #define [chop\\_def](#) Obcp\_data\_current[8]
- #define [Sequence\\_ID](#) Obcp\_data\_current[0]
- #define [Sequence\\_time](#) Obcp\_data\_current[1]
- #define [Sequence\\_par\\_1](#) Obcp\_data\_current[2]

- #define `cmp_par_blue` `Obcp_data_current`[3]
- #define `cmp_par_red` `Obcp_data_current`[4]
- #define `Sequence_ID` `Obcp_data_current`[0]
- #define `Sequence_time` `Obcp_data_current`[1]
- #define `Sequence_par_1` `Obcp_data_current`[2]
- #define `Sequence_par_2` `Obcp_data_current`[3]
- #define `Sequence_par_3` `Obcp_data_current`[4]
- #define `Sequence_par_4` `Obcp_data_current`[5]
- #define `Sequence_par_5` `Obcp_data_current`[6]
- #define `Sequence_par_6` `Obcp_data_current`[7]
- #define `Sequence_par_7` `Obcp_data_current`[8]
- #define `Sequence_par_8` `Obcp_data_current`[9]
- #define `cmp_par_blue` `Obcp_data_current`[10]
- #define `cmp_par_red` `Obcp_data_current`[11]
- #define `Sequence_ID` `Obcp_data_current`[0]
- #define `Sequence_time` `Obcp_data_current`[1]
- #define `Sequence_par_1` `Obcp_data_current`[2]
- #define `Sequence_par_2` `Obcp_data_current`[3]
- #define `Sequence_par_3` `Obcp_data_current`[4]
- #define `Sequence_par_4` `Obcp_data_current`[5]
- #define `Sequence_par_5` `Obcp_data_current`[6]
- #define `Sequence_par_6` `Obcp_data_current`[7]
- #define `detector` `Obcp_data_current`[8]
- #define `cmp_par_blue` `Obcp_data_current`[9]
- #define `cmp_par_red` `Obcp_data_current`[10]
- #define `chop_start_position` `Obcp_data_current`[11]
- #define `chop_def` `Obcp_data_current`[12]

## Functions

- int `tx_1355` (unsigned int \*, unsigned int, unsigned int)
- unsigned int `memcrc32` (unsigned int \*, unsigned int, unsigned int)
- void `DPU_wait` (unsigned int)
- void `get_time` (struct `time_struct` \*)
- unsigned int `write_seq` (unsigned int)
- void `chopped_photometry` ()
- void `chopped_photometry_dither` ()
- void `freeze_chopped_photometry` ()
- void `staring_photometry` ()
- void `fixed_fixed_chopped_photometry` ()
- void `chopped_photometry_up_down` ()

## Variables

- unsigned int `Obcp_data_current` []
- unsigned int `Dec_values` []
- unsigned int `Buffer_for_1355_tx` []
- struct `time_struct` `Time_of_dpu`



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 121 of [307](#)



## 4.26.1 Define Documentation

- 4.26.1.1 #define chop\_def Obcp\_data\_current[12]
- 4.26.1.2 #define chop\_def Obcp\_data\_current[8]
- 4.26.1.3 #define chop\_def Obcp\_data\_current[13]
- 4.26.1.4 #define chop\_def Obcp\_data\_current[13]
- 4.26.1.5 #define chop\_start\_position Obcp\_data\_current[11]
- 4.26.1.6 #define cmp\_par\_blue Obcp\_data\_current[9]
- 4.26.1.7 #define cmp\_par\_blue Obcp\_data\_current[10]
- 4.26.1.8 #define cmp\_par\_blue Obcp\_data\_current[3]
- 4.26.1.9 #define cmp\_par\_blue Obcp\_data\_current[6]
- 4.26.1.10 #define cmp\_par\_blue Obcp\_data\_current[11]
- 4.26.1.11 #define cmp\_par\_red Obcp\_data\_current[10]
- 4.26.1.12 #define cmp\_par\_red Obcp\_data\_current[11]
- 4.26.1.13 #define cmp\_par\_red Obcp\_data\_current[4]
- 4.26.1.14 #define cmp\_par\_red Obcp\_data\_current[7]
- 4.26.1.15 #define cmp\_par\_red Obcp\_data\_current[12]
- 4.26.1.16 #define cmp\_par\_red Obcp\_data\_current[12]
- 4.26.1.17 #define cpm\_par\_blue Obcp\_data\_current[11]
- 4.26.1.18 #define detector Obcp\_data\_current[8]
- 4.26.1.19 #define max\_dith Obcp\_data\_current[14]
- 4.26.1.20 #define Sequence\_ID Obcp\_data\_current[0]
- 4.26.1.21 #define Sequence\_ID Obcp\_data\_current[0]
- 4.26.1.22 #define Sequence\_ID Obcp\_data\_current[0]
- 4.26.1.23 #define Sequence\_ID Obcp\_data\_current[0]
- 4.26.1.24 #define Sequence\_ID Obcp\_data\_current[0]
- 4.26.1.25 #define Sequence\_ID Obcp\_data\_current[0]
- 4.26.1.26 #define Sequence\_par\_1 Obcp\_data\_current[2]
- 4.26.1.27 #define Sequence\_par\_1 Obcp\_data\_current[2]
- 4.26.1.28 #define Sequence\_par\_1 Obcp\_data\_current[2]
- 4.26.1.29 #define Sequence\_par\_1 Obcp\_data\_current[2]
- 4.26.1.30 #define Sequence\_par\_1 Obcp\_data\_current[2]



## 4.27 L9\_SPCMD.c File Reference

```
#include "SPUCmd.h"  
#include "LT_1355.h"  
#include "LT_HKdef.h"  
#include "LT_OBCP.h"  
#include "LT_TMdef.h"
```

Include dependency graph for L9\_SPCMD.c:

### Functions

- void [irq1\\_to\\_event](#) (void)
- void [event\\_packet](#) (unsigned int, unsigned int \*)
- void [process\\_DEC\\_packet](#) ()
- void [process\\_SPS\\_packet](#) ()
- void [process\\_SPL\\_packet](#) ()
- static void [irq1\\_by\\_polling](#) ()
- void [start\\_HLSW](#) ()

### Variables

- unsigned int [Obcp\\_data\\_current](#) []
- unsigned int [Dpu\\_values](#) []
- LINK \* [p\\_DEC\\_1355](#)
- LINK \* [p\\_SPS\\_1355](#)
- LINK \* [p\\_SPL\\_1355](#)
- unsigned int [Link\\_through](#)
- unsigned int [Save\\_int\\_ERR1](#)
- unsigned int [Save\\_int\\_ERR2](#)
- unsigned int [Save\\_int\\_ERR3](#)
- unsigned int [Save\\_int\\_EPS1](#)
- unsigned int [Save\\_int\\_EPS2](#)
- unsigned int [Save\\_int\\_EPS3](#)
- unsigned int [Save\\_int\\_EPR1](#)
- unsigned int [Save\\_int\\_EPR2](#)
- unsigned int [Save\\_int\\_EPR3](#)



#### 4.27.1 Function Documentation

4.27.1.1 void event\_packet (unsigned int, unsigned int \*)

4.27.1.2 static void irq1\_by\_polling () [static]

4.27.1.3 void irq1\_to\_event (void)

4.27.1.4 void process\_DEC\_packet ()

4.27.1.5 void process\_SPL\_packet ()

4.27.1.6 void process\_SPS\_packet ()

4.27.1.7 void start\_HLSW ()

#### 4.27.2 Variable Documentation

4.27.2.1 unsigned int Dpu\_values[ ]

4.27.2.2 unsigned int Link\_through

4.27.2.3 unsigned int Obcp\_data\_current[ ]

4.27.2.4 LINK\* p\_DEC\_1355

4.27.2.5 LINK\* p\_SPL\_1355

4.27.2.6 LINK\* p\_SPS\_1355

4.27.2.7 unsigned int Save\_int\_EPR1

4.27.2.8 unsigned int Save\_int\_EPR2

4.27.2.9 unsigned int Save\_int\_EPR3

4.27.2.10 unsigned int Save\_int\_EPS1

4.27.2.11 unsigned int Save\_int\_EPS2

4.27.2.12 unsigned int Save\_int\_EPS3

4.27.2.13 unsigned int Save\_int\_ERR1

4.27.2.14 unsigned int Save\_int\_ERR2

4.27.2.15 unsigned int Save\_int\_ERR3

## 4.28 L9\_SPECC.c File Reference

```
#include "LT_1355.h"  
#include "LT_HKdef.h"  
#include "LT_OBCP.h"  
#include "DmcCmd.h"  
#include "LT_TMdef.h"
```

Include dependency graph for L9\_SPECC.c:

### Defines

- #define [Sequence\\_ID](#) Obcp\_data\_current[0]
- #define [Sequence\\_time](#) Obcp\_data\_current[1]
- #define [Sequence\\_par\\_1](#) Obcp\_data\_current[2]
- #define [Sequence\\_par\\_2](#) Obcp\_data\_current[3]
- #define [Sequence\\_par\\_3](#) Obcp\_data\_current[4]
- #define [Sequence\\_par\\_4](#) Obcp\_data\_current[5]
- #define [Sequence\\_par\\_5](#) Obcp\_data\_current[6]
- #define [Sequence\\_par\\_6](#) Obcp\_data\_current[7]
- #define [Sequence\\_par\\_7](#) Obcp\_data\_current[8]
- #define [Sequence\\_par\\_8](#) Obcp\_data\_current[9]
- #define [Sequence\\_par\\_9](#) Obcp\_data\_current[10]
- #define [detector](#) Obcp\_data\_current[11]
- #define [grat\\_pos](#) Obcp\_data\_current[12]
- #define [grat\\_time](#) Obcp\_data\_current[13]
- #define [cmp\\_par\\_blue](#) Obcp\_data\_current[14]
- #define [cmp\\_par\\_red](#) Obcp\_data\_current[15]
- #define [grat\\_def](#) Obcp\_data\_current[16]
- #define [chop\\_def](#) Obcp\_data\_current[17]
- #define [grat\\_def\\_time](#) Obcp\_data\_current[18]

### Functions

- int [tx\\_1355](#) (unsigned int \*, unsigned int, unsigned int)
- unsigned int [memcrc32](#) (unsigned int \*, unsigned int, unsigned int)
- void [DPU\\_wait](#) (unsigned int)
- void [get\\_time](#) (struct [time\\_struct](#) \*)
- unsigned int [write\\_seq](#) (unsigned int)
- void [spectroscopy\\_cal](#) ()

### Variables

- unsigned int [Obcp\\_data\\_current](#) []
- unsigned int [Dec\\_values](#) []
- unsigned int [Buffer\\_for\\_1355\\_tx](#) []
- struct [time\\_struct](#) [Time\\_of\\_dpu](#)



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 126 of [307](#)



## 4.28.1 Define Documentation

- 4.28.1.1 #define chop\_def Obcp\_data\_current[17]
- 4.28.1.2 #define cmp\_par\_blue Obcp\_data\_current[14]
- 4.28.1.3 #define cmp\_par\_red Obcp\_data\_current[15]
- 4.28.1.4 #define detector Obcp\_data\_current[11]
- 4.28.1.5 #define grat\_def Obcp\_data\_current[16]
- 4.28.1.6 #define grat\_def\_time Obcp\_data\_current[18]
- 4.28.1.7 #define grat\_pos Obcp\_data\_current[12]
- 4.28.1.8 #define grat\_time Obcp\_data\_current[13]
- 4.28.1.9 #define Sequence\_ID Obcp\_data\_current[0]
- 4.28.1.10 #define Sequence\_par\_1 Obcp\_data\_current[2]
- 4.28.1.11 #define Sequence\_par\_2 Obcp\_data\_current[3]
- 4.28.1.12 #define Sequence\_par\_3 Obcp\_data\_current[4]
- 4.28.1.13 #define Sequence\_par\_4 Obcp\_data\_current[5]
- 4.28.1.14 #define Sequence\_par\_5 Obcp\_data\_current[6]
- 4.28.1.15 #define Sequence\_par\_6 Obcp\_data\_current[7]
- 4.28.1.16 #define Sequence\_par\_7 Obcp\_data\_current[8]
- 4.28.1.17 #define Sequence\_par\_8 Obcp\_data\_current[9]
- 4.28.1.18 #define Sequence\_par\_9 Obcp\_data\_current[10]
- 4.28.1.19 #define Sequence\_time Obcp\_data\_current[1]

## 4.28.2 Function Documentation

- 4.28.2.1 void DPU\_wait (unsigned *int*)
- 4.28.2.2 void get\_time (struct time\_struct \*)
- 4.28.2.3 unsigned int memcrc32 (unsigned int \*, unsigned *int*, unsigned *int*)
- 4.28.2.4 void spectroscopy\_cal ()
- 4.28.2.5 int tx\_1355 (unsigned int \*, unsigned *int*, unsigned *int*)
- 4.28.2.6 unsigned int write\_seq (unsigned *int*)

## 4.28.3 Variable Documentation

- 4.28.3.1 unsigned int Buffer\_for\_1355\_tx[ ]

4.28.3.2 unsigned int Dec\_values[ ]

## 4.29 L9\_SWITC.c File Reference

```
#include <string.h>
#include "LT_1355.h"
#include "LT_HKdef.h"
#include "LT_OBCP.h"
#include "DmcCmd.h"
#include "SPUCmd.h"
#include "LT_TMdef.h"
```

Include dependency graph for L9\_SWITC.c:

### Defines

- #define [TBD](#) 10000
- #define [grat\\_def Obcp\\_data\\_current](#)[0]

### Functions

- int [tx\\_1355](#) (unsigned int \*, unsigned int, unsigned int)
- void [DPU\\_wait](#) (unsigned int)
- void [set\\_HK\\_list](#) (unsigned int \*)
- void [event\\_packet](#) (unsigned int, unsigned int \*)
- unsigned int [function\\_activity](#) (unsigned int, unsigned int)
- void [spec\\_to\\_phot](#) ()
- void [go\\_SAFE](#) ()
- void [go\\_SAFE2](#) ()

### Variables

- unsigned int [Obcp\\_data\\_current](#) []
- unsigned int [Buffer\\_for\\_1355\\_tx](#) []
- unsigned int [Dpu\\_values](#) []
- volatile unsigned int [Burst\\_active](#)

*com1553 - Burst Mode Activation Flag*



#### 4.29.1 Define Documentation

4.29.1.1 #define grat\_def Obcp\_data\_current[0]

4.29.1.2 #define TBD 10000

#### 4.29.2 Function Documentation

4.29.2.1 void DPU\_wait (unsigned *int*)

4.29.2.2 void event\_packet (unsigned *int*, unsigned *int* \*)

4.29.2.3 unsigned *int* function\_activity (unsigned *int*, unsigned *int*)

4.29.2.4 void go\_SAFE ()

4.29.2.5 void go\_SAFE2 ()

4.29.2.6 void set\_HK\_list (unsigned *int* \*)

4.29.2.7 void spec\_to\_phot ()

4.29.2.8 *int* tx\_1355 (unsigned *int* \*, unsigned *int*, unsigned *int*)

#### 4.29.3 Variable Documentation

4.29.3.1 unsigned *int* Buffer\_for\_1355\_tx[ ]

4.29.3.2 volatile unsigned *int* Burst\_active

com1553 - Burst Mode Activation Flag

4.29.3.3 unsigned *int* Dpu\_values[ ]

4.29.3.4 unsigned *int* Obcp\_data\_current[ ]

## 4.30 LT\_1355.c File Reference

```
#include "LT_1355.h"  
#include "LT_TMdef.h"  
#include "LT_HKdef.h"  
#include "DmcCmd.h"  
#include "MM_21020.h"  
#include "MM_lib.h"  
#include "NODE1.h"
```

Include dependency graph for LT\_1355.c:

### Functions

- void [event\\_packet](#) (unsigned int, unsigned int \*)
- void [DPU\\_wait](#) (unsigned int)
- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- int [tx\\_1355](#) (unsigned int \*command, unsigned int length, unsigned int link)
- void [ACK\\_handling](#) (unsigned int link, unsigned int \*buffer)

### Variables

- unsigned int [Dpu\\_values](#) []
- [LINK](#) \* [p\\_DEC\\_1355](#)
- [LINK](#) \* [p\\_SPS\\_1355](#)
- [LINK](#) \* [p\\_SPL\\_1355](#)
- [K\\_TIMER](#) \* [ACK\\_timer](#)
- [K\\_PROC](#) [K\\_TaskList](#) []
- unsigned int [Task\\_index](#) []
- unsigned int [Abort\\_OBCP](#)
- int [Words\\_to\\_dump](#) = 0
- unsigned int [Link\\_through](#)
- unsigned int [Tm\\_packet\\_enabled](#) []
- static unsigned int [Ack](#) [2]





#### 4.30.1 Function Documentation

4.30.1.1 void ACK\_handling (unsigned int *link*, unsigned int \* *buffer*)

4.30.1.2 void DPU\_wait (unsigned *int*)

4.30.1.3 void event\_packet (unsigned *int*, unsigned int \*)

4.30.1.4 unsigned int fill\_in\_type\_subtype (struct TM\_packet \*, int)

4.30.1.5 int tx\_1355 (unsigned int \* *command*, unsigned int *length*, unsigned int *link*)

4.30.1.6 void update\_TM\_buffer (struct TM\_packet \*)

#### 4.30.2 Variable Documentation

4.30.2.1 unsigned int Abort\_OBCP

4.30.2.2 unsigned int Ack[2] [static]

4.30.2.3 K\_TIMER\* ACK\_timer

4.30.2.4 unsigned int Dpu\_values[ ]

4.30.2.5 K\_PROC K\_TaskList[ ]

4.30.2.6 unsigned int Link\_through

4.30.2.7 LINK\* p\_DEC\_1355

4.30.2.8 LINK\* p\_SPL\_1355

4.30.2.9 LINK\* p\_SPS\_1355

4.30.2.10 unsigned int Task\_index[ ]

4.30.2.11 unsigned int Tm\_packet\_enabled[ ]

4.30.2.12 int Words\_to\_dump = 0

## 4.31 LT\_1355.h File Reference

```
#include "spwdef.H"
```

```
#include "NODE1.h"
```

Include dependency graph for LT\_1355.h:

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [science\\_entity](#)

### Defines

- #define [MASTER](#) 1
- #define [SLAVE](#) 2
- #define [DEC\\_LINK](#) LINK\_1
- #define [SPS\\_LINK](#) LINK\_2
- #define [SPL\\_LINK](#) LINK\_3
- #define [TIME\\_ACK\\_1355](#) 200
- #define [SENT\\_SPC\\_CMD](#) 1
- #define [SENT\\_TIMEOUT](#) 2
- #define [SENT\\_OFF](#) 3
- #define [SENT\\_STOPPED](#) 4
- #define [SENT\\_LINK\\_USED](#) 5
- #define [SENT\\_OK](#) 0xFF
- #define [NO\\_COMMAND\\_SENT](#) 0xFF
- #define [HK\\_HEADER](#) 0x00870000
- #define [HK\\_DIAGNO](#) 0x00880000
- #define [SCIENCE\\_S](#) 0x008A0000
- #define [SCIENCE\\_P](#) 0x008B0000
- #define [MAX\\_WORDS\\_SCIENCE\\_PACKET](#) 250
- #define [WriteRegister](#)(address, value) (write\_word\_DM(address + BASE\_ADDRESS,value))
- #define [ReadRegister](#)(address, value) (value = read\_word\_DM(address + BASE\_ADDRESS))
- #define [Write1355DPRAM](#)(address, value) (write\_word\_DM(address + DPRAM\_BASE\_ADDR,value))
- #define [Read1355DPRAM](#)(address, value) (value = read\_word\_DM(address + DPRAM\_BASE\_ADDR))

### Enumerations

- enum [SPU\\_science\\_header](#) {  
    [SPU\\_SD\\_HEADER](#), [SPU\\_SD\\_COUNTER](#), [SPU\\_SD\\_BLOCKS](#), [SPU\\_SD\\_TYPE](#),  
    [SPU\\_SD\\_PIX](#), [SPU\\_SD\\_DEC1](#), [SPU\\_SD\\_DEC2](#), [SPU\\_SD\\_DEC3](#),  
    [SPU\\_SD\\_CDHS](#), [SPU\\_SD\\_SCIS](#), [NB\\_SPU\\_SC\\_HEADER](#) }

### Functions

- unsigned int [read\\_word\\_DM](#) (unsigned int)
- void [write\\_word\\_DM](#) (unsigned int, unsigned int)



### 4.31.1 Define Documentation

4.31.1.1 #define DEC\_LINK LINK\_1

4.31.1.2 #define HK\_DIAGNO 0x00880000

4.31.1.3 #define HK\_HEADER 0x00870000

4.31.1.4 #define MASTER 1

4.31.1.5 #define MAX\_WORDS\_SCIENCE\_PACKET 250

4.31.1.6 #define NO\_COMMAND\_SENT 0xFF

4.31.1.7 #define Read1355DPRAM(address, value) (value = read\_word\_DM(address + DPRAM\_BASE\_ADDR))

4.31.1.8 #define ReadRegister(address, value) (value = read\_word\_DM(address + BASE\_ADDRESS))

4.31.1.9 #define SCIENCE\_P 0x008B0000

4.31.1.10 #define SCIENCE\_S 0x008A0000

4.31.1.11 #define SENT\_LINK\_USED 5

4.31.1.12 #define SENT\_OFF 3

4.31.1.13 #define SENT\_OK 0xFF

4.31.1.14 #define SENT\_SPC\_CMD 1

4.31.1.15 #define SENT\_STOPPED 4

4.31.1.16 #define SENT\_TIMEOUT 2

4.31.1.17 #define SLAVE 2

4.31.1.18 #define SPL\_LINK LINK\_3

4.31.1.19 #define SPS\_LINK LINK\_2

4.31.1.20 #define TIME\_ACK\_1355 200

4.31.1.21 #define Write1355DPRAM(address, value) (write\_word\_DM(address + DPRAM\_BASE\_ADDR,value))

4.31.1.22 #define WriteRegister(address, value) (write\_word\_DM(address + BASE\_ADDRESS,value))

### 4.31.2 Enumeration Type Documentation

4.31.2.1 enum SPU\_science\_header

Enumerator:

*SPU\_SD\_HEADER*

*SPU\_SD\_COUNTER*

*SPU\_SD\_BLOCKS*



*SPU\_SD\_TYPE*

*SPU\_SD\_PIX*

*SPU\_SD\_DEC1*

*SPU\_SD\_DEC2*

*SPU\_SD\_DEC3*

*SPU\_SD\_CDHS*

*SPU\_SD\_SCIS*

*NB\_SPU\_SC\_HEADER*

### **4.31.3 Function Documentation**

**4.31.3.1** unsigned int read\_word\_DM (unsigned *int*)

**4.31.3.2** void write\_word\_DM (unsigned *int*, unsigned *int*)

## 4.32 LT\_FUNC.c File Reference

```
#include <string.h>
#include "LT_TMdef.h"
#include "LT_HKdef.h"
#include "LT_FUNC.h"
```

Include dependency graph for LT\_FUNC.c:

### Functions

- void [set\\_HK\\_list](#) (unsigned int \*parameters)
- unsigned int [function\\_activity](#) (unsigned int function\_id, unsigned int which\_activity)

### Variables

- unsigned int [Tm\\_packet\\_enabled](#) []
- unsigned int [Dpu\\_values](#) []
- unsigned int [Dec\\_values](#) []
- unsigned int [Func\\_data](#) []
- struct [HK\\_def](#) [Dpu\\_hk](#) []
- struct [HK\\_def](#) [Dec\\_hk](#) []

#### 4.32.1 Function Documentation

4.32.1.1 unsigned int [function\\_activity](#) (unsigned int *function\_id*, unsigned int *which\_activity*)

4.32.1.2 void [set\\_HK\\_list](#) (unsigned int \* *parameters*)

#### 4.32.2 Variable Documentation

4.32.2.1 struct [HK\\_def](#) [Dec\\_hk](#) []

4.32.2.2 unsigned int [Dec\\_values](#) []

4.32.2.3 struct [HK\\_def](#) [Dpu\\_hk](#) []

4.32.2.4 unsigned int [Dpu\\_values](#) []

4.32.2.5 unsigned int [Func\\_data](#) []

4.32.2.6 unsigned int [Tm\\_packet\\_enabled](#) []

## 4.33 LT\_FUNC.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define SERVICE\_OK 0xFF
- #define FUNC\_DPU\_ID 100
- #define FUNC\_SPS\_ID 101
- #define FUNC\_SPL\_ID 102
- #define FUNC\_DEC\_ID 103
- #define UPGRADE\_SEQ 1
- #define DEL\_SEQ 2
- #define ADD\_SEQ 3
- #define SET\_HK\_LIST 4
- #define START\_AF 5
- #define SET\_FUNC 6
- #define DPU\_RESET 7
- #define SEND\_TIME 8
- #define CALL\_BOOT 9
- #define BURST\_TOGGLE 0xA
- #define RESET\_1355 0xB
- #define DPU\_TEST\_MODE 0xC
- #define RESET\_1553 0xD
- #define OBSW\_IMAGE\_CPY 0xE
- #define CHECK\_PM 0xF
- #define DIM\_NUMBER\_SEQ 32
- #define DIM\_SEQ\_ARRAY 1500
- #define FUNC\_INVALID\_FUNCID 0x0801
- #define FUNC\_INVALID\_AF 0x0802
- #define FUNC\_INVALID\_SID 0x0803
- #define FUNC\_INVALID\_CRC 0x0804
- #define FUNC\_NOT\_ENOUGH\_SPACE 0x0805
- #define FUNC\_INVALID\_ACTID 0x0806
- #define FUNC\_INVALID\_SEQID 0x0807
- #define FUNC\_INVALID\_PAR 0x0808
- #define FUNC\_STOPPED 0x0809
- #define FUNC\_SS\_STOPPED 0x080A
- #define FUNC\_INVALID\_ARRAY 0x080B
- #define FUNC\_TIMEOUT 0x080C
- #define FUNC\_INVALID\_CMD 0x080D
- #define FUNC\_LINK\_USED 0x080E
- #define FUNCTION\_ON 0xFFFFFFFF
- #define FUNCTION\_OFF 0xEEEEEEEE
- #define FUNCTION\_STOPPED 0xDDDDDDDD



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 137 of [307](#)



### 4.33.1 Define Documentation

4.33.1.1 #define ADD\_SEQ 3

4.33.1.2 #define BURST\_TOGGLE 0xA

4.33.1.3 #define CALL\_BOOT 9

4.33.1.4 #define CHECK\_PM 0xF

4.33.1.5 #define DEL\_SEQ 2

4.33.1.6 #define DIM\_NUMBER\_SEQ 32

4.33.1.7 #define DIM\_SEQ\_ARRAY 1500

4.33.1.8 #define DPU\_RESET 7

4.33.1.9 #define DPU\_TEST\_MODE 0xC

4.33.1.10 #define FUNC\_DEC\_ID 103

4.33.1.11 #define FUNC\_DPU\_ID 100

4.33.1.12 #define FUNC\_INVALID\_ACTID 0x0806

4.33.1.13 #define FUNC\_INVALID\_AF 0x0802

4.33.1.14 #define FUNC\_INVALID\_ARRAY 0x080B

4.33.1.15 #define FUNC\_INVALID\_CMD 0x080D

4.33.1.16 #define FUNC\_INVALID\_CRC 0x0804

4.33.1.17 #define FUNC\_INVALID\_FUNCID 0x0801

4.33.1.18 #define FUNC\_INVALID\_PAR 0x0808

4.33.1.19 #define FUNC\_INVALID\_SEQID 0x0807

4.33.1.20 #define FUNC\_INVALID\_SID 0x0803

4.33.1.21 #define FUNC\_LINK\_USED 0x080E

4.33.1.22 #define FUNC\_NOT\_ENOUGH\_SPACE 0x0805

4.33.1.23 #define FUNC\_SPL\_ID 102

4.33.1.24 #define FUNC\_SPS\_ID 101

4.33.1.25 #define FUNC\_SS\_STOPPED 0x080A

4.33.1.26 #define FUNC\_STOPPED 0x0809

4.33.1.27 #define FUNC\_TIMEOUT 0x080C

4.33.1.28 #define FUNCTION\_OFF 0xEEEEEEEE

4.33.1.29 #define FUNCTION\_ON 0xFFFFFFFF

4.33.1.30 #define FUNCTION\_STOPPED 0xDDDDDDDD



## 4.34 LT\_HKdef.h File Reference

```
#include "HK_def.h"
```

Include dependency graph for LT\_HKdef.h:

This graph shows which files directly or indirectly include this file:

### Enumerations

- enum {  
DPU\_VOL\_25\_P\_N, DPU\_VOL\_5P\_N, DPU\_VOL\_15P\_N, DPU\_VOL\_15N\_N,  
DPU\_T\_N, DPU\_SPS\_LINK, DPU\_SPL\_LINK, DPU\_DMC\_LINK,  
DPU\_SPS\_CMD, DPU\_SPL\_CMD, DPU\_DMC\_CMD, DPU\_SPS\_HK,  
DPU\_SPL\_HK, DPU\_DMC\_HK, DPU\_STATUS, DPU\_WHICH\_OBCP,  
DPU\_AF\_STATUS, DPU\_MUMON\_STATUS, DPU\_ANSWEREDPRAYERS\_STATUS, DPU\_ISIDE\_  
STATUS,  
DPU\_HUNAHPU\_STATUS, DPU\_FRANCESCO\_STATUS, DPU\_GINEVRA\_STATUS, DPU\_MACGIG\_  
STATUS,  
DPU\_IXBALAMQUE\_STATUS, DPU\_THOTH\_STATUS, DPU\_DMCHECK\_STATUS, DPU\_DEC\_LINK\_  
PE,  
DPU\_DEC\_LINK\_DE, DPU\_SPS\_LINK\_PE, DPU\_SPS\_LINK\_DE, DPU\_SPL\_LINK\_PE,  
DPU\_SPL\_LINK\_DE, DPU\_WORKLOAD, DPU\_TM\_RATE, DPU\_SW\_VERS\_ID,  
DPU\_TC\_LOST, DPU\_HK\_LOST, DPU\_EVENT\_LOST, DPU\_GEN\_TM\_LOST,  
DPU\_COMMANDS\_REC\_DPU, DPU\_COMMANDS\_REJ\_DPU, DPU\_COMMANDS\_DMC, DPU\_  
COMMANDS\_SPS,  
DPU\_COMMANDS\_SPL, DPU\_MUMON\_PRIVATE, DPU\_ANSWEREDPRAYERS\_PRIVATE, DPU\_  
ISIDE\_PRIVATE,  
DPU\_HUNAHPU\_PRIVATE, DPU\_FRANCESCO\_PRIVATE, DPU\_GINEVRA\_PRIVATE, DPU\_MACGIG\_  
PRIVATE,  
DPU\_IXBALAMQUE\_PRIVATE, DPU\_THOTH\_PRIVATE, NB\_DPU\_NAMES }  
• enum {  
SPU\_OBSID, SPU\_PIXRB, SPU\_CIRB, SPU\_REAL,  
SPU\_SATURATION\_FLAG, SPU\_SAMP\_CORR, SPU\_N\_RAMPS, SPU\_WORKLOAD,  
SPU\_DMC\_LINK\_STATUS, SPU\_INTEG\_RAMPS, SPU\_VID, SPU\_RCX,  
SPU\_DMC\_ERROR, SPU\_MEM\_CNTS, SPU\_SPARE1, SPU\_LLC\_ERROR,  
SPU\_PAR\_MONITOR, COUNTER\_PACKET, NB\_SPU\_NAMES }  
• enum {  
BF1B\_VH\_B\_1, BF1B\_VL\_B\_1, BF1B\_VRL\_B\_1, BF1B\_VINJ\_B\_1,  
BF1B\_HEATER\_B\_1, BF1B\_VDL\_B\_1, BF1B\_VSS\_B\_1, BF1B\_VGL\_B\_1,  
BF1B\_CKRLH\_B\_1, BF1B\_CKRLB\_B\_1, BF1B\_VDECXH\_B\_1, BF1B\_VDECXL\_B\_1,  
BF1B\_VSMASH\_B\_1, BF1B\_VSMSL\_B\_1, BF1B\_VDDPROT\_CLB1, BF1B\_GND\_BU\_B\_1,  
BF1B\_VDD\_B\_1, BF1B\_VGG\_B\_1, BF1B\_VSS\_BU\_B\_1, BF1B\_VDL\_BU\_B\_1,  
BF1B\_VGL\_BU\_B\_1, BF1B\_VDDPROT\_BUB1, I\_HEATER\_B\_1, I\_VSS\_B\_1,  
I\_VSS\_BU\_B\_1, VH\_BLIND\_B\_1, CKTRIL\_REF\_B\_1, BC\_PWR\_ANA\_P\_1,  
BC\_PWR\_ANA\_N\_1, BC\_PWR\_DIG\_1, BC\_SPARE1, BC\_SPARE2,  
BF2B\_VH\_B\_2, BF2B\_VL\_B\_2, BF2B\_VRL\_B\_2, BF2B\_VINJ\_B\_2,  
BF2B\_HEATER\_B\_2, BF2B\_VDL\_B\_2, BF2B\_VSS\_B\_2, BF2B\_VGL\_B\_2,  
BF2B\_CKRLH\_B\_2, BF2B\_CKRLB\_B\_2, BF2B\_VDECXH\_B\_2, BF2B\_VDECXL\_B\_2,



BF2B\_VSMESH\_B\_2, BF2B\_VSMSL\_B\_2, BF2B\_VDDPROT\_CLB2, BF2B\_GND\_BU\_B\_2,  
BF2B\_VDD\_B\_2, BF2B\_VGG\_B\_2, BF2B\_VSS\_BU\_B\_2, BF2B\_VDL\_BU\_B\_2,  
BF2B\_VGL\_BU\_B\_2, BF2B\_VDDPROT\_BUB2, I\_HEATER\_B\_2, I\_VSS\_B\_2,  
I\_VSS\_BU\_B\_2, VH\_BLIND\_B\_2, CKTRIL\_REF\_B\_2, BC\_PWR\_ANA\_P\_2,  
BC\_PWR\_ANA\_N\_2, BC\_PWR\_DIG\_2, BC\_SPARE3, BC\_SPARE4,  
BF3B\_VH\_B\_3, BF3B\_VL\_B\_3, BF3B\_VRL\_B\_3, BF3B\_VINJ\_B\_3,  
BF3B\_HEATER\_B\_3, BF3B\_VDL\_B\_3, BF3B\_VSS\_B\_3, BF3B\_VGL\_B\_3,  
BF3B\_CKRLH\_B\_3, BF3B\_CKRLR\_B\_3, BF3B\_VDECXH\_B\_3, BF3B\_VDECXL\_B\_3,  
BF3B\_VSMESH\_B\_3, BF3B\_VSMSL\_B\_3, BF3B\_VDDPROT\_CLB3, BF3B\_GND\_BU\_B\_3,  
BF3B\_VDD\_B\_3, BF3B\_VGG\_B\_3, BF3B\_VSS\_BU\_B\_3, BF3B\_VDL\_BU\_B\_3,  
BF3B\_VGL\_BU\_B\_3, BF3B\_VDDPROT\_BUB3, I\_HEATER\_B\_3, I\_VSS\_B\_3,  
I\_VSS\_BU\_B\_3, VH\_BLIND\_B\_3, CKTRIL\_REF\_B\_3, BC\_PWR\_ANA\_P\_3,  
BC\_PWR\_ANA\_N\_3, BC\_PWR\_DIG\_3, BC\_SPARE5, BC\_SPARE6,  
BF4B\_VH\_B\_4, BF4B\_VL\_B\_4, BF4B\_VRL\_B\_4, BF4B\_VINJ\_B\_4,  
BF4B\_HEATER\_B\_4, BF4B\_VDL\_B\_4, BF4B\_VSS\_B\_4, BF4B\_VGL\_B\_4,  
BF4B\_CKRLH\_B\_4, BF4B\_CKRLR\_B\_4, BF4B\_VDECXH\_B\_4, BF4B\_VDECXL\_B\_4,  
BF4B\_VSMESH\_B\_4, BF4B\_VSMSL\_B\_4, BF4B\_VDDPROT\_CLB4, BF4B\_GND\_BU\_B\_4,  
BF4B\_VDD\_B\_4, BF4B\_VGG\_B\_4, BF4B\_VSS\_BU\_B\_4, BF4B\_VDL\_BU\_B\_4,  
BF4B\_VGL\_BU\_B\_4, BF4B\_VDDPROT\_BUB4, I\_HEATER\_B\_4, I\_VSS\_B\_4,  
I\_VSS\_BU\_B\_4, VH\_BLIND\_B\_4, CKTRIL\_REF\_B\_4, BC\_PWR\_ANA\_P\_4,  
BC\_PWR\_ANA\_N\_4, BC\_PWR\_DIG\_4, BC\_SPARE7, BC\_SPARE8,  
BF1R\_VH\_R\_1, BF1R\_VL\_R\_1, BF1R\_VRL\_R\_1, BF1R\_VINJ\_R\_1,  
BF1R\_HEATER\_R\_1, BF1R\_VDL\_R\_1, BF1R\_VSS\_R\_1, BF1R\_VGL\_R\_1,  
BF1R\_CKRLH\_R\_1, BF1R\_CKRLR\_R\_1, BF1R\_VDECXH\_R\_1, BF1R\_VDECXL\_R\_1,  
BF1R\_VSMESH\_R\_1, BF1R\_VSMSL\_R\_1, BF1R\_VDDPROT\_CLR1, BF1R\_GND\_BU\_R\_1,  
BF1R\_VDD\_R\_1, BF1R\_VGG\_R\_1, BF1R\_VSS\_BU\_R\_1, BF1R\_VDL\_BU\_R\_1,  
BF1R\_VGL\_BU\_R\_1, BF1R\_VDDPROT\_BUR1, I\_HEATER\_R\_1, I\_VSS\_R\_1,  
I\_VSS\_BU\_R\_1, VH\_BLIND\_R\_1, CKTRIL\_REF\_R\_1, BC\_PWR\_ANA\_P\_5,  
BC\_PWR\_ANA\_N\_5, BC\_PWR\_DIG\_5, BC\_SPARE9, BC\_SPARE10,  
BF2R\_VH\_R\_2, BF2R\_VL\_R\_2, BF2R\_VRL\_R\_2, BF2R\_VINJ\_R\_2,  
BF2R\_HEATER\_R\_2, BF2R\_VDL\_R\_2, BF2R\_VSS\_R\_2, BF2R\_VGL\_R\_2,  
BF2R\_CKRLH\_R\_2, BF2R\_CKRLR\_R\_2, BF2R\_VDECXH\_R\_2, BF2R\_VDECXL\_R\_2,  
BF2R\_VSMESH\_R\_2, BF2R\_VSMSL\_R\_2, BF2R\_VDDPROT\_CLR2, BF2R\_GND\_BU\_R\_2,  
BF2R\_VDD\_R\_2, BF2R\_VGG\_R\_2, BF2R\_VSS\_BU\_R\_2, BF2R\_VDL\_BU\_R\_2,  
BF2R\_VGL\_BU\_R\_2, BF2R\_VDDPROT\_BUR2, I\_HEATER\_R\_2, I\_VSS\_R\_2,  
I\_VSS\_BU\_R\_2, VH\_BLIND\_R\_2, CKTRIL\_REF\_R\_2, BC\_PWR\_ANA\_P\_6,  
BC\_PWR\_ANA\_N\_6, BC\_PWR\_DIG\_6, BC\_SPARE11, BC\_SPARE12,  
BC\_TEMP\_BOLC\_R\_1, BC\_TEMP\_BOLC\_R\_2, BC\_TEMP\_BOLC\_R\_3, BC\_TEMP\_BOLC\_R\_4,  
DMC\_SW\_GLOBAL\_ST, DMC\_SEQ\_STATUS, DMC\_DPU\_REC\_STAT, DMC\_DPU\_SEN\_STAT,  
DMC\_DECB\_REC\_STA, DMC\_DECB\_CTRL\_ST, DMC\_BLUE\_PAC\_ENC, DMC\_DECR\_REC\_STA,  
DMC\_DECR\_CTRL\_ST, DMC\_RED\_PAC\_ENC, DMC\_BOL\_REC\_STAT, DMC\_BOL\_CTRL\_STA,  
DMC\_GRAT\_CTRL\_ST, DMC\_CHOP\_CTRL\_ST, DMC\_FW\_SPEC\_CTRL, DMC\_FW\_PHOT\_CTRL,  
DMC\_SPARE3, DMC\_CS1\_CTRL\_STA, DMC\_CS2\_CTRL\_STA, DMC\_SEQ\_OPTIONS,  
DMC\_SEQ\_POINTER, DMC\_SEQ\_LOOP\_ID0, DMC\_SEQ\_LOOP\_ID1, DMC\_SEQ\_LOOP\_ID2,



DMC\_SEQ\_LOOP\_ID3, DMC\_SEQ\_LOOP\_ID4, DMC\_SEQ\_WAIT\_IND, DMC\_SEQ\_LABEL,  
DMC\_OBSID, DMC\_BBID, DMC\_TIME\_1, DMC\_TIME\_2,  
DMC\_DECB\_REC\_PAC, DMC\_DECR\_REC\_PAC, DMC\_DECB\_CTRL\_PA, DMC\_DECR\_CTRL\_PA,  
DMC\_BLUE\_ENC\_PAC, DMC\_RED\_ENC\_PAC, DMC\_BOL\_REC\_PAC, DMC\_BOL\_CTRL\_PAC,  
DMC\_DPU\_REC\_PAC, DMC\_DPU\_SEND\_PAC, DMC\_B\_SPEC\_READ, DMC\_R\_SPEC\_READ,  
DMC\_BOL\_READ\_CNT, DMC\_CPU\_LOAD, DMC\_IRS\_CNT, DMC\_VID,  
DMC\_CHOP\_CUR\_POS, DMC\_CHOP\_SETPOIN, DMC\_CHOP\_TARGET, DMC\_CHOP\_PID\_ERR,  
DMC\_CHOP\_PID\_ACC, DMC\_CHOP\_MAX\_DIT, DMC\_GRAT\_CUR\_POS, DMC\_GRAT\_SETPOIN,  
DMC\_GRAT\_TARGET, DMC\_GRAT\_PID\_ERR, DMC\_GRAT\_PID\_ACC, DMC\_FWSP\_CUR\_POS,  
DMC\_FWGRT\_HALLA, DMC\_FWGRT\_HALLB, DMC\_CHOP\_OUTPUT, DMC\_ISR\_STAT,  
DMC\_FWPH\_CUR\_POS, DMC\_SPARE1, DMC\_SPARE2, DMC\_PLL\_RES\_LO,  
DMC\_PLL\_RES\_HI, DMC\_DECB\_VDDD\_3, DMC\_DECB\_VSS\_3, DMC\_DECB\_VSCN\_3,  
DMC\_DECB\_VCAN1\_3, DMC\_DECB\_VCAN2\_3, DMC\_DECB\_V0BIAS\_3, DMC\_DECB\_VBI\_R\_3,  
DMC\_DECB\_V0V\_3, DMC\_DECB\_VSCP\_3, DMC\_DECB\_VDDR\_3, DMC\_DECB\_VDDA\_3,  
DMC\_DECB\_VWELL\_3, DMC\_DECB\_IDDA\_3, DMC\_DECB\_IDDR\_3, DMC\_DECB\_ISS\_3,  
DMC\_DECB\_IGND\_3, DMC\_DECB\_HEAT\_C, DMC\_DECB\_HEAT\_V, DMC\_DECB\_RED\_0V\_3,  
DMC\_DECB\_DCDC\_T3, DMC\_DECB\_SPARE5, DMC\_DECB\_DCDC\_P5V\_CUR, DMC\_DECB\_AC\_CUR,  
DMC\_DECB\_TS\_ST\_3, DMC\_DECB\_CL\_RO\_3, DMC\_DECB\_RO\_RA\_3, DMC\_DECB\_CR\_ST\_3,  
DMC\_DECB\_BR\_CM\_3, DMC\_DECB\_ZB\_CM\_3, DMC\_DECB\_SR\_RB\_3, DMC\_DECB\_TS\_1\_3,  
DMC\_DECB\_TS\_2\_3, DMC\_DECB\_RO\_CO\_3, DMC\_DECB\_RA\_CO\_3, DMC\_DECB\_VDDD\_4,  
DMC\_DECB\_VSS\_4, DMC\_DECB\_VGND\_4, DMC\_DECB\_VCAN1\_4, DMC\_DECB\_VCAN2\_4,  
DMC\_DECB\_V0BIAS\_4, DMC\_DECB\_VBI\_R\_4, DMC\_DECB\_V0V\_4, DMC\_DECB\_VSCP\_4,  
DMC\_DECB\_VDDR\_4, DMC\_DECB\_VDDA\_4, DMC\_DECB\_VWELL\_4, DMC\_DECB\_IDDA\_4,  
DMC\_DECB\_IDDD\_4, DMC\_DECB\_ISS\_4, DMC\_DECB\_IGND\_4, DMC\_DECB\_FLASH\_C,  
DMC\_DECB\_FLASH\_V, DMC\_DECB\_REF\_0V4, DMC\_DECB\_TEMP\_4, DMC\_DECB\_SPARE5B,  
DMC\_DECB\_DCDC\_P15V\_CUR, DMC\_DECB\_DCDC\_N15V\_CUR, DMC\_DECB\_TS\_ST\_4, DMC\_  
DECB\_CL\_RO\_4,  
DMC\_DECB\_RO\_RA\_4, DMC\_DECB\_CR\_ST\_4, DMC\_DECB\_BR\_CM\_4, DMC\_DECB\_ZB\_CM\_4,  
DMC\_DECB\_SR\_RB\_4, DMC\_DECB\_TS\_1\_4, DMC\_DECB\_TS\_2\_4, DMC\_DECB\_RO\_CO\_4,  
DMC\_DECB\_RA\_CO\_4, DMC\_DECR\_VDDD\_1, DMC\_DECR\_VSS\_1, DMC\_DECR\_VGND\_1,  
DMC\_DECR\_VCAN1\_1, DMC\_DECR\_VCAN2\_1, DMC\_DECR\_V0BIAS\_1, DMC\_DECR\_VBI\_R\_1,  
DMC\_DECR\_V0V\_1, DMC\_DECR\_VSCP\_1, DMC\_DECR\_VDDR\_1, DMC\_DECR\_VDDA\_1,  
DMC\_DECR\_VWELL\_1, DMC\_DECR\_IDDA\_1, DMC\_DECR\_IDDD\_1, DMC\_DECR\_ISS\_1,  
DMC\_DECR\_IGND\_1, DMC\_DECR\_HEAT\_C, DMC\_DECR\_HEAT\_V, DMC\_DECR\_REF\_0V\_1,  
DMC\_DECR\_DCDC\_T1, DMC\_DECR\_SPARE5, DMC\_DECR\_DCDC\_P5V\_CUR, DMC\_DECR\_AR\_CUR,  
DMC\_DECR\_TS\_ST\_1, DMC\_DECR\_CL\_RO\_1, DMC\_DECR\_RO\_RA\_1, DMC\_DECR\_CR\_ST\_1,  
DMC\_DECR\_BR\_CM\_1, DMC\_DECR\_ZB\_CM\_1, DMC\_DECR\_SR\_RB\_1, DMC\_DECR\_TS\_1\_1,  
DMC\_DECR\_TS\_2\_1, DMC\_DECR\_RO\_CO\_1, DMC\_DECR\_RA\_CO\_1, DMC\_DECR\_VDDD\_2,  
DMC\_DECR\_VSS\_2, DMC\_DECR\_VGND\_2, DMC\_DECR\_VCAN1\_2, DMC\_DECR\_VCAN2\_2,  
DMC\_DECR\_V0BIAS\_2, DMC\_DECR\_VBI\_R\_2, DMC\_DECR\_V0V\_2, DMC\_DECR\_VSCP\_2,  
DMC\_DECR\_VDDR\_2, DMC\_DECR\_VDDA\_2, DMC\_DECR\_VWELL\_2, DMC\_DECR\_IDDA\_2,  
DMC\_DECR\_IDDD\_2, DMC\_DECR\_ISS\_2, DMC\_DECR\_IGND\_2, DMC\_DECR\_FLASH\_C,  
DMC\_DECR\_FLASH\_V, DMC\_DECR\_REF\_0V\_2, DMC\_DECR\_DCDC\_TEMP\_2, DMC\_DECR\_  
SPARE5B,



DMC\_DECR\_DCDC\_P15V\_CUR, DMC\_DECR\_DCDC\_N15V\_CUR, DMC\_DECR\_TS\_ST\_2, DMC\_DECR\_CL\_RO\_2,  
DMC\_DECR\_RO\_RA\_2, DMC\_DECR\_CR\_ST\_2, DMC\_DECR\_BR\_CM\_2, DMC\_DECR\_ZB\_CM\_2,  
DMC\_DECR\_SR\_RB\_2, DMC\_DECR\_TS\_1\_2, DMC\_DECR\_TS\_2\_2, DMC\_DECR\_RO\_CO\_2,  
DMC\_DECR\_RA\_CO\_2, DMC\_SPARE4, DMC\_SPARE5, DMC\_SPARE6,  
DMC\_FPU\_T\_SENS\_ST, DMC\_FW\_SPEC\_TEMP, DMC\_FW\_PHOT\_TEMP, DMC\_CHOPPER\_TEMP,  
DMC\_GRATING\_TEMP, DMC\_PSC\_V1, DMC\_PSC\_V2, DMC\_PSC\_V3,  
DMC\_PSC\_V4, DMC\_DCDC\_TEMP, DMC\_DSP\_TEMP, DMC\_SPARE10,  
DMC\_SPARE11, DMC\_SPARE12, DMC\_SPARE13, DMC\_SPU\_PSU\_P15V,  
DMC\_SPU\_SWL\_TEMP, DMC\_SPU\_LWL\_TEMP, DMC\_SPU\_PS\_TEMP, DMC\_SPU\_VCC\_CUR,  
DMC\_SPU\_VCC\_VOL, DMC\_SPU\_VP\_CUR, DMC\_FPU\_T1\_TEMP, DMC\_FPU\_T2\_TEMP,  
DMC\_REF\_VOLT\_0V, DMC\_CAL\_SRC\_TEMP, DMC\_REF\_VOLT\_5V, DMC\_SPARE16,  
DMC\_SPARE17, DMC\_CUSTOM\_ENT\_1, DMC\_CUSTOM\_ENT\_2, DMC\_CUSTOM\_ENT\_3,  
DMC\_CUSTOM\_ENT\_4, DMC\_CUSTOM\_ENT\_5, DMC\_CUSTOM\_ENT\_6, DMC\_CUSTOM\_ENT\_7,  
DMC\_CUSTOM\_ENT\_8, DMC\_CUSTOM\_ENT\_9, DMC\_CUSTOM\_ENT10, DMC\_DET\_SIM\_STAT,  
DMC\_DET\_SIM\_PER, DMC\_CS1\_RES\_VALUE, DMC\_CS1\_OUTPUT, DMC\_CS2\_RES\_VALUE,  
DMC\_CS2\_OUTPUT, DMC\_BOLC\_STATUS, DMC\_B\_SPU\_TR\_MODE, DMC\_R\_SPU\_TR\_MODE,  
DMC\_GRAT\_OUT, DMC\_OBT\_COUNT, DMC\_MIM\_ST, DMC\_DM\_SF\_IND,  
DMC\_PM\_SF\_IND, DMC\_DM\_DF\_IND, DMC\_PM\_DF\_IND, DMC\_CS1\_TARGET,  
DMC\_CS2\_TARGET, DMC\_HK\_CTRL\_STAT, DMC\_HK\_DIAG\_STAT, DMC\_HK\_DIAG\_PERI,  
DMC\_LAST\_ER\_ID, DMC\_LAST\_ER\_BF1, DMC\_LAST\_ER\_BF2, DMC\_LAST\_ER\_BF3,  
DMC\_LAST\_ER\_BF4, DMC\_LAST\_ER\_BF5, DMC\_LAST\_ER\_BF6, DMC\_LAST\_ER\_BF7,  
DMC\_LAST\_ER\_BF8, DMC\_LAST\_ER\_BF9, DMC\_LAST\_ER\_BF10, DMC\_LAST\_ER\_BF11,  
DMC\_LAST\_ER\_BF12, DMC\_LAST\_ER\_BF13, DMC\_LAST\_ER\_BF14, DMC\_LAST\_ER\_BF15,  
DMC\_LAST\_ER\_BF16, BC\_TEMP\_BOLC\_R\_5, BC\_TEMP\_BOLC\_B\_1, BC\_TEMP\_BOLC\_B\_2,  
BC\_TEMP\_BOLC\_B\_3, BC\_TEMP\_BOLC\_DAQ, BC\_TEMP\_PSU\_1, BC\_TEMP\_PSU\_2,  
BC\_SPARE13, BC\_SPARE14, BC\_SPARE15, BC\_SPARE16,  
BC\_SPARE17, BCLR\_TEMP\_SP, BCLR\_TEMP\_SP\_SWT, BCLR\_TEMP\_TS,  
BCLR\_TEMP\_EV\_SWT, BFBR\_TEMP\_FPU\_ST, BCLR\_TEMP\_EV, BFBR\_TEMP\_FPU1,  
BFBR\_TEMP\_FPU2, BCLR\_HEATER\_SP, BCLR\_HEAT\_SP\_SWT, BCLR\_HEAT\_EV\_SWT,  
BFBR\_HEATER\_FPU, BC\_PWR\_ANA\_P\_7, BC\_PWR\_ANA\_N\_7, BC\_PWR\_DIG\_7,  
BC\_SPARE18, COUNTER\_DEC\_PACKET, NB\_DEC\_NAMES }

#### 4.34.1 Enumeration Type Documentation

##### 4.34.1.1 anonymous enum

Enumerator:

*DPU\_VOL\_25\_P\_N*  
*DPU\_VOL\_5P\_N*  
*DPU\_VOL\_15P\_N*  
*DPU\_VOL\_15N\_N*  
*DPU\_T\_N*  
*DPU\_SPS\_LINK*  
*DPU\_SPL\_LINK*



*DPU\_DMC\_LINK*  
*DPU\_SPS\_CMD*  
*DPU\_SPL\_CMD*  
*DPU\_DMC\_CMD*  
*DPU\_SPS\_HK*  
*DPU\_SPL\_HK*  
*DPU\_DMC\_HK*  
*DPU\_STATUS*  
*DPU\_WHICH\_OBCP*  
*DPU\_AF\_STATUS*  
*DPU\_MUMON\_STATUS*  
*DPU\_ANSWEREDPRAYERS\_STATUS*  
*DPU\_ISIDE\_STATUS*  
*DPU\_HUNAHPU\_STATUS*  
*DPU\_FRANCESCO\_STATUS*  
*DPU\_GINEVRA\_STATUS*  
*DPU\_MACGIG\_STATUS*  
*DPU\_IXBALAMQUE\_STATUS*  
*DPU\_THOTH\_STATUS*  
*DPU\_DMCKECK\_STATUS*  
*DPU\_DEC\_LINK\_PE*  
*DPU\_DEC\_LINK\_DE*  
*DPU\_SPS\_LINK\_PE*  
*DPU\_SPS\_LINK\_DE*  
*DPU\_SPL\_LINK\_PE*  
*DPU\_SPL\_LINK\_DE*  
*DPU\_WORKLOAD*  
*DPU\_TM\_RATE*  
*DPU\_SW\_VERS\_ID*  
*DPU\_TC\_LOST*  
*DPU\_HK\_LOST*  
*DPU\_EVENT\_LOST*  
*DPU\_GEN\_TM\_LOST*  
*DPU\_COMMANDS\_REC\_DPU*  
*DPU\_COMMANDS\_REJ\_DPU*  
*DPU\_COMMANDS\_DMC*  
*DPU\_COMMANDS\_SPS*  
*DPU\_COMMANDS\_SPL*  
*DPU\_MUMON\_PRIVATE*  
*DPU\_ANSWEREDPRAYERS\_PRIVATE*  
*DPU\_ISIDE\_PRIVATE*  
*DPU\_HUNAHPU\_PRIVATE*  
*DPU\_FRANCESCO\_PRIVATE*  
*DPU\_GINEVRA\_PRIVATE*  
*DPU\_MACGIG\_PRIVATE*  
*DPU\_IXBALAMQUE\_PRIVATE*  
*DPU\_THOTH\_PRIVATE*  
*NB\_DPU\_NAMES*



#### 4.34.1.2 anonymous enum

Enumerator:

*SPU\_OBSID*  
*SPU\_PIXRB*  
*SPU\_CIRB*  
*SPU\_REAL*  
*SPU\_SATURATION\_FLAG*  
*SPU\_SAMP\_CORR*  
*SPU\_N\_RAMPS*  
*SPU\_WORKLOAD*  
*SPU\_DMC\_LINK\_STATUS*  
*SPU\_INTEG\_RAMPS*  
*SPU\_VID*  
*SPU\_RCX*  
*SPU\_DMC\_ERROR*  
*SPU\_MEM\_CNTS*  
*SPU\_SPARE1*  
*SPU\_LLC\_ERROR*  
*SPU\_PAR\_MONITOR*  
*COUNTER\_PACKET*  
*NB\_SPU\_NAMES*

#### 4.34.1.3 anonymous enum

Enumerator:

*BF1B\_VH\_B\_1*  
*BF1B\_VL\_B\_1*  
*BF1B\_VRL\_B\_1*  
*BF1B\_VINJ\_B\_1*  
*BF1B\_HEATER\_B\_1*  
*BF1B\_VDL\_B\_1*  
*BF1B\_VSS\_B\_1*  
*BF1B\_VGL\_B\_1*  
*BF1B\_CKRLH\_B\_1*  
*BF1B\_CKRLB\_B\_1*  
*BF1B\_VDECXH\_B\_1*  
*BF1B\_VDECXL\_B\_1*  
*BF1B\_VSMASH\_B\_1*  
*BF1B\_VSMASL\_B\_1*  
*BF1B\_VDDPROT\_CLB1*  
*BF1B\_GND\_BU\_B\_1*  
*BF1B\_VDD\_B\_1*  
*BF1B\_VGG\_B\_1*  
*BF1B\_VSS\_BU\_B\_1*  
*BF1B\_VDL\_BU\_B\_1*



*BF1B\_VGL\_BU\_B\_1*  
*BF1B\_VDDPROT\_BUB1*  
*I\_HEATER\_B\_1*  
*I\_VSS\_B\_1*  
*I\_VSS\_BU\_B\_1*  
*VH\_BLIND\_B\_1*  
*CKTRIL\_REF\_B\_1*  
*BC\_PWR\_ANA\_P\_1*  
*BC\_PWR\_ANA\_N\_1*  
*BC\_PWR\_DIG\_1*  
*BC\_SPARE1*  
*BC\_SPARE2*  
*BF2B\_VH\_B\_2*  
*BF2B\_VL\_B\_2*  
*BF2B\_VRL\_B\_2*  
*BF2B\_VINJ\_B\_2*  
*BF2B\_HEATER\_B\_2*  
*BF2B\_VDL\_B\_2*  
*BF2B\_VSS\_B\_2*  
*BF2B\_VGL\_B\_2*  
*BF2B\_CKRLH\_B\_2*  
*BF2B\_CKRLB\_B\_2*  
*BF2B\_VDECXH\_B\_2*  
*BF2B\_VDECXL\_B\_2*  
*BF2B\_VSMASH\_B\_2*  
*BF2B\_VSMSL\_B\_2*  
*BF2B\_VDDPROT\_CLB2*  
*BF2B\_GND\_BU\_B\_2*  
*BF2B\_VDD\_B\_2*  
*BF2B\_VGG\_B\_2*  
*BF2B\_VSS\_BU\_B\_2*  
*BF2B\_VDL\_BU\_B\_2*  
*BF2B\_VGL\_BU\_B\_2*  
*BF2B\_VDDPROT\_BUB2*  
*I\_HEATER\_B\_2*  
*I\_VSS\_B\_2*  
*I\_VSS\_BU\_B\_2*  
*VH\_BLIND\_B\_2*  
*CKTRIL\_REF\_B\_2*  
*BC\_PWR\_ANA\_P\_2*  
*BC\_PWR\_ANA\_N\_2*  
*BC\_PWR\_DIG\_2*  
*BC\_SPARE3*  
*BC\_SPARE4*  
*BF3B\_VH\_B\_3*



*BF3B\_VL\_B\_3*  
*BF3B\_VRL\_B\_3*  
*BF3B\_VINJ\_B\_3*  
*BF3B\_HEATER\_B\_3*  
*BF3B\_VDL\_B\_3*  
*BF3B\_VSS\_B\_3*  
*BF3B\_VGL\_B\_3*  
*BF3B\_CKRLH\_B\_3*  
*BF3B\_CKRLB\_B\_3*  
*BF3B\_VDECXH\_B\_3*  
*BF3B\_VDECXL\_B\_3*  
*BF3B\_VSMASH\_B\_3*  
*BF3B\_VSMASL\_B\_3*  
*BF3B\_VDDPROT\_CLB3*  
*BF3B\_GND\_BU\_B\_3*  
*BF3B\_VDD\_B\_3*  
*BF3B\_VGG\_B\_3*  
*BF3B\_VSS\_BU\_B\_3*  
*BF3B\_VDL\_BU\_B\_3*  
*BF3B\_VGL\_BU\_B\_3*  
*BF3B\_VDDPROT\_BUB3*  
*I\_HEATER\_B\_3*  
*I\_VSS\_B\_3*  
*I\_VSS\_BU\_B\_3*  
*VH\_BLIND\_B\_3*  
*CKTRIL\_REF\_B\_3*  
*BC\_PWR\_ANA\_P\_3*  
*BC\_PWR\_ANA\_N\_3*  
*BC\_PWR\_DIG\_3*  
*BC\_SPARE5*  
*BC\_SPARE6*  
*BF4B\_VH\_B\_4*  
*BF4B\_VL\_B\_4*  
*BF4B\_VRL\_B\_4*  
*BF4B\_VINJ\_B\_4*  
*BF4B\_HEATER\_B\_4*  
*BF4B\_VDL\_B\_4*  
*BF4B\_VSS\_B\_4*  
*BF4B\_VGL\_B\_4*  
*BF4B\_CKRLH\_B\_4*  
*BF4B\_CKRLB\_B\_4*  
*BF4B\_VDECXH\_B\_4*  
*BF4B\_VDECXL\_B\_4*  
*BF4B\_VSMASH\_B\_4*  
*BF4B\_VSMASL\_B\_4*





*BF4B\_VDDPROT\_CLB4*  
*BF4B\_GND\_BU\_B\_4*  
*BF4B\_VDD\_B\_4*  
*BF4B\_VGG\_B\_4*  
*BF4B\_VSS\_BU\_B\_4*  
*BF4B\_VDL\_BU\_B\_4*  
*BF4B\_VGL\_BU\_B\_4*  
*BF4B\_VDDPROT\_BUB4*  
*I\_HEATER\_B\_4*  
*I\_VSS\_B\_4*  
*I\_VSS\_BU\_B\_4*  
*VH\_BLIND\_B\_4*  
*CKTRIL\_REF\_B\_4*  
*BC\_PWR\_ANA\_P\_4*  
*BC\_PWR\_ANA\_N\_4*  
*BC\_PWR\_DIG\_4*  
*BC\_SPARE7*  
*BC\_SPARE8*  
*BF1R\_VH\_R\_1*  
*BF1R\_VL\_R\_1*  
*BF1R\_VRL\_R\_1*  
*BF1R\_VINJ\_R\_1*  
*BF1R\_HEATER\_R\_1*  
*BF1R\_VDL\_R\_1*  
*BF1R\_VSS\_R\_1*  
*BF1R\_VGL\_R\_1*  
*BF1R\_CKRLH\_R\_1*  
*BF1R\_CKRLR\_R\_1*  
*BF1R\_VDECXH\_R\_1*  
*BF1R\_VDECXL\_R\_1*  
*BF1R\_VSMRH\_R\_1*  
*BF1R\_VSMSL\_R\_1*  
*BF1R\_VDDPROT\_CLR1*  
*BF1R\_GND\_BU\_R\_1*  
*BF1R\_VDD\_R\_1*  
*BF1R\_VGG\_R\_1*  
*BF1R\_VSS\_BU\_R\_1*  
*BF1R\_VDL\_BU\_R\_1*  
*BF1R\_VGL\_BU\_R\_1*  
*BF1R\_VDDPROT\_BUR1*  
*I\_HEATER\_R\_1*  
*I\_VSS\_R\_1*  
*I\_VSS\_BU\_R\_1*  
*VH\_BLIND\_R\_1*  
*CKTRIL\_REF\_R\_1*



*BC\_PWR\_ANA\_P\_5*  
*BC\_PWR\_ANA\_N\_5*  
*BC\_PWR\_DIG\_5*  
*BC\_SPARE9*  
*BC\_SPARE10*  
*BF2R\_VH\_R\_2*  
*BF2R\_VL\_R\_2*  
*BF2R\_VRL\_R\_2*  
*BF2R\_VINJ\_R\_2*  
*BF2R\_HEATER\_R\_2*  
*BF2R\_VDL\_R\_2*  
*BF2R\_VSS\_R\_2*  
*BF2R\_VGL\_R\_2*  
*BF2R\_CKRLH\_R\_2*  
*BF2R\_CKRLR\_R\_2*  
*BF2R\_VDECXH\_R\_2*  
*BF2R\_VDECXL\_R\_2*  
*BF2R\_VSMRH\_R\_2*  
*BF2R\_VSMSL\_R\_2*  
*BF2R\_VDDPROT\_CLR2*  
*BF2R\_GND\_BU\_R\_2*  
*BF2R\_VDD\_R\_2*  
*BF2R\_VGG\_R\_2*  
*BF2R\_VSS\_BU\_R\_2*  
*BF2R\_VDL\_BU\_R\_2*  
*BF2R\_VGL\_BU\_R\_2*  
*BF2R\_VDDPROT\_BUR2*  
*I\_HEATER\_R\_2*  
*I\_VSS\_R\_2*  
*I\_VSS\_BU\_R\_2*  
*VH\_BLIND\_R\_2*  
*CKTRIL\_REF\_R\_2*  
*BC\_PWR\_ANA\_P\_6*  
*BC\_PWR\_ANA\_N\_6*  
*BC\_PWR\_DIG\_6*  
*BC\_SPARE11*  
*BC\_SPARE12*  
*BC\_TEMP\_BOLC\_R\_1*  
*BC\_TEMP\_BOLC\_R\_2*  
*BC\_TEMP\_BOLC\_R\_3*  
*BC\_TEMP\_BOLC\_R\_4*  
*DMC\_SW\_GLOBAL\_ST*  
*DMC\_SEQ\_STATUS*  
*DMC\_DPU\_REC\_STAT*  
*DMC\_DPU\_SEN\_STAT*



*DMC\_DECB\_REC\_STA*  
*DMC\_DECB\_CTRL\_ST*  
*DMC\_BLUE\_PAC\_ENC*  
*DMC\_DECR\_REC\_STA*  
*DMC\_DECR\_CTRL\_ST*  
*DMC\_RED\_PAC\_ENC*  
*DMC\_BOL\_REC\_STAT*  
*DMC\_BOL\_CTRL\_STA*  
*DMC\_GRAT\_CTRL\_ST*  
*DMC\_CHOP\_CTRL\_ST*  
*DMC\_FW\_SPEC\_CTRL*  
*DMC\_FW\_PHOT\_CTRL*  
*DMC\_SPARE3*  
*DMC\_CS1\_CTRL\_STA*  
*DMC\_CS2\_CTRL\_STA*  
*DMC\_SEQ\_OPTIONS*  
*DMC\_SEQ\_POINTER*  
*DMC\_SEQ\_LOOP\_ID0*  
*DMC\_SEQ\_LOOP\_ID1*  
*DMC\_SEQ\_LOOP\_ID2*  
*DMC\_SEQ\_LOOP\_ID3*  
*DMC\_SEQ\_LOOP\_ID4*  
*DMC\_SEQ\_WAIT\_IND*  
*DMC\_SEQ\_LABEL*  
*DMC\_OBSID*  
*DMC\_BBID*  
*DMC\_TIME\_1*  
*DMC\_TIME\_2*  
*DMC\_DECB\_REC\_PAC*  
*DMC\_DECR\_REC\_PAC*  
*DMC\_DECB\_CTRL\_PA*  
*DMC\_DECR\_CTRL\_PA*  
*DMC\_BLUE\_ENC\_PAC*  
*DMC\_RED\_ENC\_PAC*  
*DMC\_BOL\_REC\_PAC*  
*DMC\_BOL\_CTRL\_PAC*  
*DMC\_DPU\_REC\_PAC*  
*DMC\_DPU\_SEND\_PAC*  
*DMC\_B\_SPEC\_READ*  
*DMC\_R\_SPEC\_READ*  
*DMC\_BOL\_READ\_CNT*  
*DMC\_CPU\_LOAD*  
*DMC\_IRS\_CNT*  
*DMC\_VID*  
*DMC\_CHOP\_CUR\_POS*



*DMC\_CHOP\_SETPOIN*  
*DMC\_CHOP\_TARGET*  
*DMC\_CHOP\_PID\_ERR*  
*DMC\_CHOP\_PID\_ACC*  
*DMC\_CHOP\_MAX\_DIT*  
*DMC\_GRAT\_CUR\_POS*  
*DMC\_GRAT\_SETPOIN*  
*DMC\_GRAT\_TARGET*  
*DMC\_GRAT\_PID\_ERR*  
*DMC\_GRAT\_PID\_ACC*  
*DMC\_FWSP\_CUR\_POS*  
*DMC\_FWGRT\_HALLA*  
*DMC\_FWGRT\_HALLB*  
*DMC\_CHOP\_OUTPUT*  
*DMC\_ISR\_STAT*  
*DMC\_FWPH\_CUR\_POS*  
*DMC\_SPARE1*  
*DMC\_SPARE2*  
*DMC\_PLL\_RES\_LO*  
*DMC\_PLL\_RES\_HI*  
*DMC\_DECB\_VDDD\_3*  
*DMC\_DECB\_VSS\_3*  
*DMC\_DECB\_VSCN\_3*  
*DMC\_DECB\_VCAN1\_3*  
*DMC\_DECB\_VCAN2\_3*  
*DMC\_DECB\_V0BIAS\_3*  
*DMC\_DECB\_VBI\_R\_3*  
*DMC\_DECB\_V0V\_3*  
*DMC\_DECB\_VCSCP\_3*  
*DMC\_DECB\_VDDR\_3*  
*DMC\_DECB\_VDDA\_3*  
*DMC\_DECB\_VWELL\_3*  
*DMC\_DECB\_IDDA\_3*  
*DMC\_DECB\_IDDR\_3*  
*DMC\_DECB\_ISS\_3*  
*DMC\_DECB\_IGND\_3*  
*DMC\_DECB\_HEAT\_C*  
*DMC\_DECB\_HEAT\_V*  
*DMC\_DECB\_RED\_0V\_3*  
*DMC\_DECB\_DCDC\_T3*  
*DMC\_DECB\_SPARE5*  
*DMC\_DECB\_DCDC\_P5V\_CUR*  
*DMC\_DECB\_AC\_CUR*  
*DMC\_DECB\_TS\_ST\_3*  
*DMC\_DECB\_CL\_RO\_3*



*DMC\_DECB\_RO\_RA\_3*  
*DMC\_DECB\_CR\_ST\_3*  
*DMC\_DECB\_BR\_CM\_3*  
*DMC\_DECB\_ZB\_CM\_3*  
*DMC\_DECB\_SR\_RB\_3*  
*DMC\_DECB\_TS\_1\_3*  
*DMC\_DECB\_TS\_2\_3*  
*DMC\_DECB\_RO\_CO\_3*  
*DMC\_DECB\_RA\_CO\_3*  
*DMC\_DECB\_VDDD\_4*  
*DMC\_DECB\_VSS\_4*  
*DMC\_DECB\_VGND\_4*  
*DMC\_DECB\_VCAN1\_4*  
*DMC\_DECB\_VCAN2\_4*  
*DMC\_DECB\_V0BIAS\_4*  
*DMC\_DECB\_VBI\_R\_4*  
*DMC\_DECB\_V0V\_4*  
*DMC\_DECB\_VSCP\_4*  
*DMC\_DECB\_VDDR\_4*  
*DMC\_DECB\_VDDA\_4*  
*DMC\_DECB\_VWELL\_4*  
*DMC\_DECB\_IDDA\_4*  
*DMC\_DECB\_IDDD\_4*  
*DMC\_DECB\_ISS\_4*  
*DMC\_DECB\_IGND\_4*  
*DMC\_DECB\_FLASH\_C*  
*DMC\_DECB\_FLASH\_V*  
*DMC\_DECB\_REF\_0V4*  
*DMC\_DECB\_TEMP\_4*  
*DMC\_DECB\_SPARE5B*  
*DMC\_DECB\_DCDC\_P15V\_CUR*  
*DMC\_DECB\_DCDC\_N15V\_CUR*  
*DMC\_DECB\_TS\_ST\_4*  
*DMC\_DECB\_CL\_RO\_4*  
*DMC\_DECB\_RO\_RA\_4*  
*DMC\_DECB\_CR\_ST\_4*  
*DMC\_DECB\_BR\_CM\_4*  
*DMC\_DECB\_ZB\_CM\_4*  
*DMC\_DECB\_SR\_RB\_4*  
*DMC\_DECB\_TS\_1\_4*  
*DMC\_DECB\_TS\_2\_4*  
*DMC\_DECB\_RO\_CO\_4*  
*DMC\_DECB\_RA\_CO\_4*  
*DMC\_DECR\_VDDD\_1*  
*DMC\_DECR\_VSS\_1*



*DMC\_DECR\_VGND\_1*  
*DMC\_DECR\_VCAN1\_1*  
*DMC\_DECR\_VCAN2\_1*  
*DMC\_DECR\_V0BIAS\_1*  
*DMC\_DECR\_VBI\_R\_1*  
*DMC\_DECR\_V0V\_1*  
*DMC\_DECR\_VSCP\_1*  
*DMC\_DECR\_VDDR\_1*  
*DMC\_DECR\_VDDA\_1*  
*DMC\_DECR\_VWELL\_1*  
*DMC\_DECR\_IDDA\_1*  
*DMC\_DECR\_IDDD\_1*  
*DMC\_DECR\_ISS\_1*  
*DMC\_DECR\_IGND\_1*  
*DMC\_DECR\_HEAT\_C*  
*DMC\_DECR\_HEAT\_V*  
*DMC\_DECR\_REF\_0V\_1*  
*DMC\_DECR\_DCDC\_T1*  
*DMC\_DECR\_SPARE5*  
*DMC\_DECR\_DCDC\_P5V\_CUR*  
*DMC\_DECR\_AR\_CUR*  
*DMC\_DECR\_TS\_ST\_1*  
*DMC\_DECR\_CL\_RO\_1*  
*DMC\_DECR\_RO\_RA\_1*  
*DMC\_DECR\_CR\_ST\_1*  
*DMC\_DECR\_BR\_CM\_1*  
*DMC\_DECR\_ZB\_CM\_1*  
*DMC\_DECR\_SR\_RB\_1*  
*DMC\_DECR\_TS\_1\_1*  
*DMC\_DECR\_TS\_2\_1*  
*DMC\_DECR\_RO\_CO\_1*  
*DMC\_DECR\_RA\_CO\_1*  
*DMC\_DECR\_VDDD\_2*  
*DMC\_DECR\_VSS\_2*  
*DMC\_DECR\_VGND\_2*  
*DMC\_DECR\_VCAN1\_2*  
*DMC\_DECR\_VCAN2\_2*  
*DMC\_DECR\_V0BIAS\_2*  
*DMC\_DECR\_VBI\_R\_2*  
*DMC\_DECR\_V0V\_2*  
*DMC\_DECR\_VSCP\_2*  
*DMC\_DECR\_VDDR\_2*  
*DMC\_DECR\_VDDA\_2*  
*DMC\_DECR\_VWELL\_2*  
*DMC\_DECR\_IDDA\_2*



*DMC\_DECR\_IDDD\_2*  
*DMC\_DECR\_ISS\_2*  
*DMC\_DECR\_IGND\_2*  
*DMC\_DECR\_FLASH\_C*  
*DMC\_DECR\_FLASH\_V*  
*DMC\_DECR\_REF\_0V\_2*  
*DMC\_DECR\_DCDC\_TEMP\_2*  
*DMC\_DECR\_SPARE5B*  
*DMC\_DECR\_DCDC\_P15V\_CUR*  
*DMC\_DECR\_DCDC\_N15V\_CUR*  
*DMC\_DECR\_TS\_ST\_2*  
*DMC\_DECR\_CL\_RO\_2*  
*DMC\_DECR\_RO\_RA\_2*  
*DMC\_DECR\_CR\_ST\_2*  
*DMC\_DECR\_BR\_CM\_2*  
*DMC\_DECR\_ZB\_CM\_2*  
*DMC\_DECR\_SR\_RB\_2*  
*DMC\_DECR\_TS\_1\_2*  
*DMC\_DECR\_TS\_2\_2*  
*DMC\_DECR\_RO\_CO\_2*  
*DMC\_DECR\_RA\_CO\_2*  
*DMC\_SPARE4*  
*DMC\_SPARE5*  
*DMC\_SPARE6*  
*DMC\_FPU\_T\_SENS\_ST*  
*DMC\_FW\_SPEC\_TEMP*  
*DMC\_FW\_PHOT\_TEMP*  
*DMC\_CHOPPER\_TEMP*  
*DMC\_GRATING\_TEMP*  
*DMC\_PSC\_V1*  
*DMC\_PSC\_V2*  
*DMC\_PSC\_V3*  
*DMC\_PSC\_V4*  
*DMC\_DCDC\_TEMP*  
*DMC\_DSP\_TEMP*  
*DMC\_SPARE10*  
*DMC\_SPARE11*  
*DMC\_SPARE12*  
*DMC\_SPARE13*  
*DMC\_SPU\_PSU\_P15V*  
*DMC\_SPU\_SWL\_TEMP*  
*DMC\_SPU\_LWL\_TEMP*  
*DMC\_SPU\_PS\_TEMP*  
*DMC\_SPU\_VCC\_CUR*  
*DMC\_SPU\_VCC\_VOL*



*DMC\_SPU\_VP\_CUR*  
*DMC\_FPU\_T1\_TEMP*  
*DMC\_FPU\_T2\_TEMP*  
*DMC\_REF\_VOLT\_0V*  
*DMC\_CAL\_SRC\_TEMP*  
*DMC\_REF\_VOLT\_5V*  
*DMC\_SPARE16*  
*DMC\_SPARE17*  
*DMC\_CUSTOM\_ENT\_1*  
*DMC\_CUSTOM\_ENT\_2*  
*DMC\_CUSTOM\_ENT\_3*  
*DMC\_CUSTOM\_ENT\_4*  
*DMC\_CUSTOM\_ENT\_5*  
*DMC\_CUSTOM\_ENT\_6*  
*DMC\_CUSTOM\_ENT\_7*  
*DMC\_CUSTOM\_ENT\_8*  
*DMC\_CUSTOM\_ENT\_9*  
*DMC\_CUSTOM\_ENT10*  
*DMC\_DET\_SIM\_STAT*  
*DMC\_DET\_SIM\_PER*  
*DMC\_CS1\_RES\_VALUE*  
*DMC\_CS1\_OUTPUT*  
*DMC\_CS2\_RES\_VALUE*  
*DMC\_CS2\_OUTPUT*  
*DMC\_BOLC\_STATUS*  
*DMC\_B\_SPU\_TR\_MODE*  
*DMC\_R\_SPU\_TR\_MODE*  
*DMC\_GRAT\_OUT*  
*DMC\_OBT\_COUNT*  
*DMC\_MIM\_ST*  
*DMC\_DM\_SF\_IND*  
*DMC\_PM\_SF\_IND*  
*DMC\_DM\_DF\_IND*  
*DMC\_PM\_DF\_IND*  
*DMC\_CS1\_TARGET*  
*DMC\_CS2\_TARGET*  
*DMC\_HK\_CTRL\_STAT*  
*DMC\_HK\_DIAG\_STAT*  
*DMC\_HK\_DIAG\_PERI*  
*DMC\_LAST\_ER\_ID*  
*DMC\_LAST\_ER\_BF1*  
*DMC\_LAST\_ER\_BF2*  
*DMC\_LAST\_ER\_BF3*  
*DMC\_LAST\_ER\_BF4*  
*DMC\_LAST\_ER\_BF5*





*DMC\_LAST\_ER\_BF6*  
*DMC\_LAST\_ER\_BF7*  
*DMC\_LAST\_ER\_BF8*  
*DMC\_LAST\_ER\_BF9*  
*DMC\_LAST\_ER\_BF10*  
*DMC\_LAST\_ER\_BF11*  
*DMC\_LAST\_ER\_BF12*  
*DMC\_LAST\_ER\_BF13*  
*DMC\_LAST\_ER\_BF14*  
*DMC\_LAST\_ER\_BF15*  
*DMC\_LAST\_ER\_BF16*  
*BC\_TEMP\_BOLC\_R\_5*  
*BC\_TEMP\_BOLC\_B\_1*  
*BC\_TEMP\_BOLC\_B\_2*  
*BC\_TEMP\_BOLC\_B\_3*  
*BC\_TEMP\_BOLC\_DAQ*  
*BC\_TEMP\_PSU\_1*  
*BC\_TEMP\_PSU\_2*  
*BC\_SPARE13*  
*BC\_SPARE14*  
*BC\_SPARE15*  
*BC\_SPARE16*  
*BC\_SPARE17*  
*BCLR\_TEMP\_SP*  
*BCLR\_TEMP\_SP\_SWT*  
*BCLR\_TEMP\_TS*  
*BCLR\_TEMP\_EV\_SWT*  
*BFBR\_TEMP\_FPU\_ST*  
*BCLR\_TEMP\_EV*  
*BFBR\_TEMP\_FPU1*  
*BFBR\_TEMP\_FPU2*  
*BCLR\_HEATER\_SP*  
*BCLR\_HEAT\_SP\_SWT*  
*BCLR\_HEAT\_EV\_SWT*  
*BFBR\_HEATER\_FPU*  
*BC\_PWR\_ANA\_P\_7*  
*BC\_PWR\_ANA\_N\_7*  
*BC\_PWR\_DIG\_7*  
*BC\_SPARE18*  
*COUNTER\_DEC\_PACKET*  
*NB\_DEC\_NAMES*

## 4.35 LT\_INIT.c File Reference

```
#include <string.h>
#include "LT_HKdef.h"
#include "LT_1355.h"
#include "NODE1.h"
#include "LT_MEM.h"
```

Include dependency graph for LT\_INIT.c:

### Functions

- void [DPU\\_wait](#) (unsigned int)
- void [irq1\\_to\\_event](#) (void)
- void [init\\_1355](#) ()

### Variables

- unsigned int [Spl\\_values](#) [NB\_SPU\_NAMES]
- unsigned int [Sps\\_values](#) [NB\_SPU\_NAMES]
- unsigned int [Dec\\_values](#) [NB\_DEC\_NAMES]

#### 4.35.1 Function Documentation

4.35.1.1 void [DPU\\_wait](#) (unsigned *int*)

4.35.1.2 void [init\\_1355](#) ()

4.35.1.3 void [irq1\\_to\\_event](#) (void)

#### 4.35.2 Variable Documentation

4.35.2.1 unsigned int [Dec\\_values](#)[NB\_DEC\_NAMES]

4.35.2.2 unsigned int [Spl\\_values](#)[NB\_SPU\_NAMES]

4.35.2.3 unsigned int [Sps\\_values](#)[NB\_SPU\_NAMES]

## 4.36 LT\_MEM.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define [INVALID\\_MEMID](#) 0x12
- #define [INVALID\\_ADDRESS](#) 0x13
- #define [INVALID\\_MEMLength](#) 0x14
- #define [INVALID\\_CRC\\_1ST\\_CHK](#) 0x15
- #define [INVALID\\_CRC\\_2ND\\_CHK](#) 0x1B
- #define [MEM\\_LOAD\\_OK](#) 0xFFFF
- #define [DATA\\_MEMORY\\_BASE\\_ADDRESS](#) 0
- #define [START\\_DM\\_IN\\_PM](#) 0x7BC00
- #define [IF\\_1355\\_BASE\\_ADDRESS](#) 0x40000000
- #define [EEPROM\\_MEMORY\\_BASE\\_ADDRESS](#) 0x80000000
- #define [INTERVAL\\_TIMER\\_BASE\\_ADDRESS](#) 0x81000000
- #define [WATCHDOG\\_BASE\\_ADDRESS](#) 0x82000000
- #define [INT\\_MANAGER\\_BASE\\_ADDRESS](#) 0x83000000
- #define [SMCS\\_REGISTERS\\_BASE\\_ADDRESS](#) 0x84000000
- #define [BUS\\_IF\\_BOARD\\_REGISTERS](#) 0x8D000000
- #define [BUS\\_IF\\_MIL\\_AND\\_ANALOG\\_INP](#) 0x8F000000
- #define [MSEL\\_reg](#) 0x8000
- #define [MDATA\\_reg](#) 0x8001



#### 4.36.1 Define Documentation

4.36.1.1 #define BUS\_IF\_BOARD\_REGISTERS 0x8D000000

4.36.1.2 #define BUS\_IF\_MIL\_AND\_ANALOG\_INP 0x8F000000

4.36.1.3 #define DATA\_MEMORY\_BASE\_ADDRESS 0

4.36.1.4 #define EEPROM\_MEMORY\_BASE\_ADDRESS 0x80000000

4.36.1.5 #define IF\_1355\_BASE\_ADDRESS 0x40000000

4.36.1.6 #define INT\_MANAGER\_BASE\_ADDRESS 0x83000000

4.36.1.7 #define INTERVAL\_TIMER\_BASE\_ADDRESS 0x81000000

4.36.1.8 #define INVALID\_ADDRESS 0x13

4.36.1.9 #define INVALID\_CRC\_1ST\_CHK 0x15

4.36.1.10 #define INVALID\_CRC\_2ND\_CHK 0x1B

4.36.1.11 #define INVALID\_MEMID 0x12

4.36.1.12 #define INVALID\_MEMLength 0x14

4.36.1.13 #define MDATA\_reg 0x8001

4.36.1.14 #define MEM\_LOAD\_OK 0xFFFF

4.36.1.15 #define MSEL\_reg 0x8000

4.36.1.16 #define SMCS\_REGISTERS\_BASE\_ADDRESS 0x84000000

4.36.1.17 #define START\_DM\_IN\_PM 0x7BC00

4.36.1.18 #define WATCHDOG\_BASE\_ADDRESS 0x82000000

## 4.37 LT\_OBCP.h File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [OBCP\\_param](#)

### Defines

- #define [SERVICE\\_OK](#) 0xFF
- #define [MAX\\_PROC\\_ID](#) 49
- #define [MAX\\_NUMBER\\_PAR](#) 25
- #define [TIME\\_TO\\_SUSPEND](#) 500
- #define [INIT\\_OBCP\\_PAR](#) {0,0}
- #define [OBCP\\_STOPPED](#) 0
- #define [OBCP\\_RUNNING](#) 1
- #define [OBCP\\_SUSPENDED](#) 2
- #define [OBCP\\_DELETED](#) 3
- #define [MY\\_BIRTHDAY](#) 0x19660502
- #define [OBCP\\_INVALID\\_PROCID](#) 0x1201
- #define [OBCP\\_REQ\\_IGNORED](#) SERVICE\_OK
- #define [OBCP\\_START\\_DELETED\\_PROC](#) 0x1202
- #define [OBCP\\_SUSP\\_TIMEOUT](#) 0x1203
- #define [OBCP\\_ALREADY\\_RUNNING](#) 0x1204
- #define [OBCP\\_TOO\\_MUCH\\_PAR](#) 0x1205
- #define [OBCP\\_LOADING\\_ACTIVE](#) 0x1206
- #define [OBCP\\_ILL\\_PAR\\_ID](#) 0x1207
- #define [OBCP\\_WRONG\\_SEQ\\_ID](#) 0x1208
- #define [OBCP\\_WRONG\\_EE\\_PAR](#) 0x1209
- #define [OBCP\\_NOT\\_COMPLETED](#) 0x120A
- #define [OBCP\\_SEQ\\_NOT\\_COMPLETED](#) 0x120B
- #define [OBCP\\_INVALID\\_DATUM](#) 0x120C
- #define [OBCP\\_WRONG\\_LENGTH](#) 0x120E
- #define [OBCP\\_OK](#) SERVICE\_OK
- #define [OBCP\\_LOAD\\_OK](#) 0x00EA
- #define [OBCP\\_FAIL](#) 0x00EE
- #define [OBCP\\_PROC\\_COMPLETED](#) 0
- #define [OBCP\\_PROC\\_NO\\_REPORT](#) 1
- #define [OBCP\\_COMMAND\\_NOT\\_SENT](#) 2
- #define [OBCP\\_DEC\\_SEQ\\_NOT\\_COMPLETED](#) 3
- #define [OBCP\\_GENERIC\\_FAILURE](#) 4
- #define [OBCP\\_INVALID\\_DATA](#) 5
- #define [OBCP\\_WRONG\\_SEQ](#) 6

### Typedefs

- typedef void(\* [OBCP\\_pointer](#) )()



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 160 of [307](#)



#### **4.37.1 Define Documentation**

**4.37.1.1 #define INIT\_OBCP\_PAR {0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0}**

**4.37.1.2 #define MAX\_NUMBER\_PAR 25**

**4.37.1.3 #define MAX\_PROC\_ID 49**

**4.37.1.4 #define MY\_BIRTHDAY 0x19660502**

**4.37.1.5 #define OBCP\_ALREADY\_RUNNING 0x1204**

**4.37.1.6 #define OBCP\_COMMAND\_NOT\_SENT 2**

**4.37.1.7 #define OBCP\_DEC\_SEQ\_NOT\_COMPLETED 3**

**4.37.1.8 #define OBCP\_DELETED 3**

**4.37.1.9 #define OBCP\_FAIL 0x00EE**

**4.37.1.10 #define OBCP\_GENERIC\_FAILURE 4**

**4.37.1.11 #define OBCP\_ILL\_PAR\_ID 0x1207**

**4.37.1.12 #define OBCP\_INVALID\_DATA 5**

**4.37.1.13 #define OBCP\_INVALID\_DATUM 0x120C**

**4.37.1.14 #define OBCP\_INVALID\_PROCID 0x1201**

**4.37.1.15 #define OBCP\_LOAD\_OK 0x00EA**

**4.37.1.16 #define OBCP\_LOADING\_ACTIVE 0x1206**

**4.37.1.17 #define OBCP\_NOT\_COMPLETED 0x120A**

**4.37.1.18 #define OBCP\_OK SERVICE\_OK**

**4.37.1.19 #define OBCP\_PROC\_COMPLETED 0**

**4.37.1.20 #define OBCP\_PROC\_NO\_REPORT 1**

**4.37.1.21 #define OBCP\_REQ\_IGNORED SERVICE\_OK**

**4.37.1.22 #define OBCP\_RUNNING 1**

**4.37.1.23 #define OBCP\_SEQ\_NOT\_COMPLETED 0x120B**

**4.37.1.24 #define OBCP\_START\_DELETED\_PROC 0x1202**

**4.37.1.25 #define OBCP\_STOPPED 0**

**4.37.1.26 #define OBCP\_SUSP\_TIMEOUT 0x1203**

**4.37.1.27 #define OBCP\_SUSPENDED 2**

**4.37.1.28 #define OBCP\_TOO\_MUCH\_PAR 0x1205**

**4.37.1.29 #define OBCP\_WRONG\_EE\_PAR 0x1209**

**4.37.1.30 #define OBCP\_WRONG\_LENGTH 0x120F**

## 4.38 LT\_TMdef.h File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [TC\\_packet](#)
- struct [TM\\_packet](#)
- struct [TM\\_EVpacket](#)
- struct [TM\\_entry](#)
- struct [TM\\_EVentry](#)
- struct [event\\_field](#)
- struct [time\\_struct](#)

### Defines

- #define [ILLEGAL\\_APID](#) 0
- #define [INVALID\\_LENGTH](#) 1
- #define [INVALID\\_CRC](#) 2
- #define [ILLEGAL\\_PACKET\\_TYPE](#) 3
- #define [ILLEGAL\\_PACKET\\_SUBTYPE](#) 4
- #define [ILLEGAL\\_DATA](#) 5
- #define [ILLEGAL\\_STATUS](#) 16
- #define [RESOURCE\\_FAILURE](#) 17
- #define [ACCEPTANCE\\_OK](#) 0xFF
- #define [TC\\_OK](#) 0xFF
- #define [TC\\_FAIL](#) 0xEE
- #define [SID\\_SCIENCE\\_LOST](#) 0x40
- #define [TC\\_DATA\\_MAX](#) 118
- #define [TM\\_DATA\\_MAX](#) 503
- #define [TM\\_DATA\\_MAX\\_EV](#) 50
- #define [TC\\_DATA\\_HEADER\\_LEN](#) 2
- #define [TM\\_DATA\\_HEADER\\_LEN](#) 5
- #define [ONE\\_SECOND](#) 0x1312D00

### Enumerations

- enum [TM\\_packets\\_type](#) {  
[TC\\_ACCE\\_OK](#), [TC\\_ACCE\\_FAILURE](#), [TC\\_EXEC\\_REP\\_STARTED](#), [TC\\_EXEC\\_REP\\_ENDED](#),  
[TC\\_EXEC\\_REP\\_FAILURE](#), [HK\\_NOMINAL\\_PACKET\\_SPEC](#), [HK\\_NOMINAL\\_PACKET\\_PHOT](#), [HK\\_NOMINAL\\_PACKET\\_NPRI](#),  
[HK\\_EXTRA\\_PACKET\\_NPRI](#), [EVENT\\_REPORT](#), [EXCEPTION\\_REPORT](#), [ERROR\\_REPORT](#),  
[MEMORY\\_DUMP](#), [MEMORY\\_CHK](#), [TIME\\_VERIFICATION\\_REP](#), [ENABLED\\_TM\\_PACKETS\\_REP](#),  
[CONNECTION\\_TEST\\_REP](#), [OBCP\\_LIST\\_REP](#), [OBCP\\_ACTIVE\\_LIST\\_REP](#), [OBCP\\_STATUS\\_REP](#),  
[SCIENCE\\_SPEC\\_BLUE](#), [SCIENCE\\_SPEC\\_RED](#), [SCIENCE\\_PHOT\\_BLUE](#), [SCIENCE\\_PHOT\\_RED](#),  
[DIAG\\_HK\\_PACKET](#), [NB\\_TM\\_TYPES](#) }
- enum {  
[APID\\_GENERIC](#), [APID\\_HK](#), [APID\\_NOT\\_USED](#), [APID\\_DIAG\\_HK](#),  
[APID\\_SCIENCE\\_RED](#), [APID\\_SCIENCE\\_BLUE](#) }
- enum { [EVENT\\_OFF](#), [EVENT\\_ON](#) = 0xFF }





- enum {

PAR\_EVENT\_ID, PAR\_EVENT\_SID, PAR\_EVENT\_OBSID\_1ST, PAR\_EVENT\_OBSID\_2ND,

PAR\_EVENT\_BBID\_1ST, PAR\_EVENT\_BBID\_2ND, PAR\_EVENT\_COUNTER, PAR\_EVENT\_DATA\_-  
START }

- enum { EV\_REPORT = 1, EX\_REPORT = 2, ER\_REPORT = 4 }

- enum {

SID0, SID1, SID2, SID3,

SID4, SID5, SID6, SID7,

SID8 }

- enum {

EVENT\_NO\_1355\_ACK = 1, EVENT\_WRONG\_DMC\_CHKSUM, EVENT\_NACK, EVENT\_GO\_SAFE,

EVENT\_SPARE3, EVENT\_POWER\_CYCLE, EVENT\_SS\_STOPPED, EVENT\_DUMP\_TOO\_MANY\_-  
WORDS,

EVENT\_SEQ\_NOT\_COMPLETED, EVENT\_SPL\_DEAD, EVENT\_PM\_FAILURE, EVENT\_SCIENCE\_-  
LOST,

EVENT\_IMMEDIATE\_OFF, EVENT\_SPS\_DEAD, EVENT\_COUNTER\_ERROR, EVENT\_DM\_FAILURE,

EVENT\_SPARE7, EVENT\_HK\_DPU\_SOFT, EVENT\_HK\_DPU\_OK, EVENT\_DEC\_DEAD,

EVENT\_SPARE1, EVENT\_HK\_DEC\_SOFT, EVENT\_HK\_DEC\_OK, EVENT\_SPARE8,

EVENT\_PACS\_NOMINAL\_OFF, EVENT\_SPARE9, EVENT\_BUFFER\_OVERFLOW, EVENT\_1355\_ACK\_-  
UNEXPECTED,

EVENT\_SPARE2, EVENT\_1355\_READ\_ERROR, EVENT\_TIMEOUT\_IN\_1355, NB\_EV\_TYPES }



#### 4.38.1 Define Documentation

- 4.38.1.1 #define ACCEPTANCE\_OK 0xFF
- 4.38.1.2 #define ILLEGAL\_APID 0
- 4.38.1.3 #define ILLEGAL\_DATA 5
- 4.38.1.4 #define ILLEGAL\_PACKET\_SUBTYPE 4
- 4.38.1.5 #define ILLEGAL\_PACKET\_TYPE 3
- 4.38.1.6 #define ILLEGAL\_STATUS 16
- 4.38.1.7 #define INVALID\_CRC 2
- 4.38.1.8 #define INVALID\_LENGTH 1
- 4.38.1.9 #define ONE\_SECOND 0x1312D00
- 4.38.1.10 #define RESOURCE\_FAILURE 17
- 4.38.1.11 #define SID\_SCIENCE\_LOST 0x40
- 4.38.1.12 #define TC\_DATA\_HEADER\_LEN 2
- 4.38.1.13 #define TC\_DATA\_MAX 118
- 4.38.1.14 #define TC\_FAIL 0xEE
- 4.38.1.15 #define TC\_OK 0xFF
- 4.38.1.16 #define TM\_DATA\_HEADER\_LEN 5
- 4.38.1.17 #define TM\_DATA\_MAX 503
- 4.38.1.18 #define TM\_DATA\_MAX\_EV 50

#### 4.38.2 Enumeration Type Documentation

##### 4.38.2.1 anonymous enum

Enumerator:

- SID0*
- SID1*
- SID2*
- SID3*
- SID4*
- SID5*
- SID6*
- SID7*
- SID8*



#### 4.38.2.2 anonymous enum

**Enumerator:**

*EVENT\_NO\_1355\_ACK*  
*EVENT\_WRONG\_DMC\_CHKSUM*  
*EVENT\_NACK*  
*EVENT\_GO\_SAFE*  
*EVENT\_SPARE3*  
*EVENT\_POWER\_CYCLE*  
*EVENT\_SS\_STOPPED*  
*EVENT\_DUMP\_TOO\_MANY\_WORDS*  
*EVENT\_SEQ\_NOT\_COMPLETED*  
*EVENT\_SPL\_DEAD*  
*EVENT\_PM\_FAILURE*  
*EVENT\_SCIENCE\_LOST*  
*EVENT\_IMMEDIATE\_OFF*  
*EVENT\_SPS\_DEAD*  
*EVENT\_COUNTER\_ERROR*  
*EVENT\_DM\_FAILURE*  
*EVENT\_SPARE7*  
*EVENT\_HK\_DPU\_SOFT*  
*EVENT\_HK\_DPU\_OK*  
*EVENT\_DEC\_DEAD*  
*EVENT\_SPARE1*  
*EVENT\_HK\_DEC\_SOFT*  
*EVENT\_HK\_DEC\_OK*  
*EVENT\_SPARE8*  
*EVENT\_PACS\_NOMINAL\_OFF*  
*EVENT\_SPARE9*  
*EVENT\_BUFFER\_OVERFLOW*  
*EVENT\_1355\_ACK\_UNEXPECTED*  
*EVENT\_SPARE2*  
*EVENT\_1355\_READ\_ERROR*  
*EVENT\_TIMEOUT\_IN\_1355*  
*NB\_EV\_TYPES*

#### 4.38.2.3 anonymous enum

**Enumerator:**

*APID\_GENERIC*  
*APID\_HK*  
*APID\_NOT\_USED*  
*APID\_DIAG\_HK*  
*APID\_SCIENCE\_RED*  
*APID\_SCIENCE\_BLUE*



#### 4.38.2.4 anonymous enum

**Enumerator:**

*EVENT\_OFF*  
*EVENT\_ON*

#### 4.38.2.5 anonymous enum

**Enumerator:**

*PAR\_EVENT\_ID*  
*PAR\_EVENT\_SID*  
*PAR\_EVENT\_OBSID\_1ST*  
*PAR\_EVENT\_OBSID\_2ND*  
*PAR\_EVENT\_BBID\_1ST*  
*PAR\_EVENT\_BBID\_2ND*  
*PAR\_EVENT\_COUNTER*  
*PAR\_EVENT\_DATA\_START*

#### 4.38.2.6 anonymous enum

**Enumerator:**

*EV\_REPORT*  
*EX\_REPORT*  
*ER\_REPORT*

#### 4.38.2.7 enum TM\_packets\_type

**Enumerator:**

*TC\_ACCE\_OK*  
*TC\_ACCE\_FAILURE*  
*TC\_EXEC\_REP\_STARTED*  
*TC\_EXEC\_REP\_ENDED*  
*TC\_EXEC\_REP\_FAILURE*  
*HK\_NOMINAL\_PACKET\_SPEC*  
*HK\_NOMINAL\_PACKET\_PHOT*  
*HK\_NOMINAL\_PACKET\_NPRI*  
*HK\_EXTRA\_PACKET\_NPRI*  
*EVENT\_REPORT*  
*EXCEPTION\_REPORT*  
*ERROR\_REPORT*  
*MEMORY\_DUMP*  
*MEMORY\_CHCK*  
*TIME\_VERIFICATION\_REP*  
*ENABLED\_TM\_PACKETS\_REP*  
*CONNECTION\_TEST\_REP*  
*OBCP\_LIST\_REP*



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 167 of [307](#)

*OBCP\_ACTIVE\_LIST\_REP*

*OBCP\_STATUS\_REP*

*SCIENCE\_SPEC\_BLUE*

*SCIENCE\_SPEC\_RED*

*SCIENCE\_PHOT\_BLUE*

*SCIENCE\_PHOT\_RED*

*DIAG\_HK\_PACKET*

*NB\_TM\_TYPES*

## 4.39 LT\_upTMb.c File Reference

```
#include <stdlib.h>
#include "LT_TMdef.h"
#include "MM_21020.h"
#include "MM_MISC.h"
#include "1553_def.h"
#include "LT_HKdef.h"
#include "NODE1.h"
```

Include dependency graph for LT\_upTMb.c:

### Functions

- void [get\\_time](#) (struct [time\\_struct](#) \*)
- void [handle\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- unsigned int [IFSI\\_DIV](#) (unsigned int, unsigned int)
- unsigned int [IFSI\\_MOD](#) (unsigned int, unsigned int)
- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*p\_tm)
- void [update\\_TM\\_EVbuffer](#) (struct [TM\\_EVpacket](#) \*p\_tm)
- unsigned int [get\\_APID](#) (unsigned int apid\_index)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*p\_tm, int type\_code)
- void [event\\_packet](#) (unsigned int id, unsigned int \*p\_event\_data)

### Variables

- unsigned int [Dpu\\_values](#) []
- int [Waiting\\_TM\\_packet](#)
- unsigned int [Dpu\\_time](#) []
- int [Current\\_time](#)

*com1553 - For Esa enhanced directive use only. Internal High resolution time.*

- [MilConf\\_p](#) [MilRTConf](#)

*Remote Terminal Configuration Holder - General Configuration.*

- struct [TM\\_EVentry](#) [Pool\\_EV\\_packets](#) []
- struct [TM\\_entry](#) [Pool\\_HK\\_packets](#) []
- struct [TM\\_entry](#) [Pool\\_SC\\_packets](#) []
- unsigned int [Tm\\_packet\\_enabled](#) []
- unsigned int [Dec\\_values](#) []
- [event\\_field](#) [Ev\\_packet\\_enabled](#) []
- int [RTAddress](#)

*com1553 - DPU Remote Terminal.*



## 4.39.1 Function Documentation

4.39.1.1 void event\_packet (unsigned int *id*, unsigned int \* *p\_event\_data*)

4.39.1.2 unsigned int fill\_in\_type\_subtype (struct TM\_packet \* *p\_tm*, int *type\_code*)

4.39.1.3 unsigned int get\_APID (unsigned int *apid\_index*)

4.39.1.4 void get\_time (struct time\_struct \* *p\_time*)

4.39.1.5 void handle\_TM\_buffer (struct TM\_packet \*)

4.39.1.6 unsigned int IFSI\_DIV (unsigned *int*, unsigned *int*)

4.39.1.7 unsigned int IFSI\_MOD (unsigned *int*, unsigned *int*)

4.39.1.8 void update\_TM\_buffer (struct TM\_packet \* *p\_tm*)

4.39.1.9 void update\_TM\_EVbuffer (struct TM\_EVpacket \* *p\_tm*)

## 4.39.2 Variable Documentation

4.39.2.1 int Current\_time

com1553 - For Esa enhanced directive use only. Internal High resolution time.

4.39.2.2 unsigned int Dec\_values[ ]

4.39.2.3 unsigned int Dpu\_time[ ]

4.39.2.4 unsigned int Dpu\_values[ ]

4.39.2.5 event\_field Ev\_packet\_enabled[ ]

4.39.2.6 MilConf\_p MilRTConf

Remote Terminal Configuration Holder - General Configuration.

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102>) The Modification Log has been posted at End Of File.

4.39.2.7 struct TM\_EVentry Pool\_EV\_packets[ ]

4.39.2.8 struct TM\_entry Pool\_HK\_packets[ ]

4.39.2.9 struct TM\_entry Pool\_SC\_packets[ ]

4.39.2.10 int RTAddress

com1553 - DPU Remote Terminal.

4.39.2.11 unsigned int Tm\_packet\_enabled[ ]

4.39.2.12 int Waiting\_TM\_packet

## 4.40 MilConf.c File Reference

```
#include <signal.h>
```

```
#include "MilDef.h"
```

Include dependency graph for MilConf.c:

### Functions

- unsigned int [IFSI\\_MOD](#) (unsigned int, unsigned int)
- void [MilInitStructMsg](#) ([MilConf\\_p](#) pw\_MilConf, [RxMsgPointerType](#) \*bw\_Vector)
- void [MilRTInterrptHandler](#) (int i\_MilError)
- [MilConf\\_p](#) [MilOpen](#) (void)
- [MilError\\_t](#) [MilClose](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t](#) [MilWriteReg](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data)
- unsigned int [MilReadReg](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset)
- [MilError\\_t](#) [MilWriteRam](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data)
- unsigned int [MilReadRam](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset)
- [MilError\\_t](#) [MilBlockRead](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Addr, unsigned int \*pj\_Ptr, unsigned int j\_Length)
- [MilError\\_t](#) [MilBlockWrite](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset, unsigned int \*pj\_Ptr, unsigned int j\_Length)
- [MilError\\_t](#) [MilBlockWriteWithBound](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Bl, unsigned int \*j\_Offset, unsigned int \*pj\_Ptr, unsigned int j\_Length)
- [MilError\\_t](#) [MilBlockFill](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data, unsigned int j\_Length)
- [MilError\\_t](#) [MilRTReadStack](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_EnhModeCodeFlag, unsigned char d\_EnhModeFlag)

### Variables

- [RxMsgPointerType](#) [gbv\\_RxMessages](#) [MIL\_SA\_MESSAGE]
- [RxMsgPointerType](#) [gbv\\_TxMessages](#) [MIL\_SA\_MESSAGE]
- [RxMsgPointerType](#) \* [gpw\\_RxMsgPointer](#)
- [RxMsgPointerType](#) \* [gpw\\_RxMsg](#)
- [MsgBlockStructType](#) [sw\\_MsgBlock](#)
- unsigned char [gd\\_SemaModeCode](#)
- unsigned int [UserVar](#)
- static [MilConf\\_t](#) [sw\\_MilConf](#)

### 4.40.1 Function Documentation

#### 4.40.1.1 unsigned int IFSI\_MOD (unsigned int, unsigned int)

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :





**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 171 of 307

**Author**

daniele

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilConf.c,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilConf.c,v 1.7 2006/05/08 10:30:34 daniele Exp

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102>) The Modification Log has been posted at End Of File.



- 4.40.1.2 `MilError_t MilBlockFill (MilConf_p pw_MilConf, unsigned int j_Offset, unsigned int j_Data, unsigned int j_Length)`
- 4.40.1.3 `MilError_t MilBlockRead (MilConf_p pw_MilConf, unsigned int j_Addr, unsigned int * pj_Ptr, unsigned int j_Length)`
- 4.40.1.4 `MilError_t MilBlockWrite (MilConf_p pw_MilConf, unsigned int j_Offset, unsigned int * pj_Ptr, unsigned int j_Length)`
- 4.40.1.5 `MilError_t MilBlockWriteWithBound (MilConf_p pw_MilConf, MemBlockHandle pw_Blkn, unsigned int * j_Offset, unsigned int * pj_Ptr, unsigned int j_Length)`
- 4.40.1.6 `MilError_t MilClose (MilConf_p pw_MilConf)`
- 4.40.1.7 `void MilInitStructMsg (MilConf_p pw_MilConf, RxMsgPointerType * bw_Vector)`
- 4.40.1.8 `MilConf_p MilOpen (void)`
- 4.40.1.9 `unsigned int MilReadRam (MilConf_p pw_MilConf, unsigned int j_Offset)`
- 4.40.1.10 `unsigned int MilReadReg (MilConf_p pw_MilConf, unsigned int j_Offset)`
- 4.40.1.11 `void MilRTInterruptHandler (int i_MilError)`
- 4.40.1.12 `MilError_t MilRTReadStack (MilConf_p pw_MilConf, unsigned char d_EnhModeCodeFlag, unsigned char d_EnhModeFlag)`
- 4.40.1.13 `MilError_t MilWriteRam (MilConf_p pw_MilConf, unsigned int j_Offset, unsigned int j_Data)`
- 4.40.1.14 `MilError_t MilWriteReg (MilConf_p pw_MilConf, unsigned int j_Offset, unsigned int j_Data)`
- 4.40.2 **Variable Documentation**
  - 4.40.2.1 `RxMsgPointerType gbv_RxMessages[MIL_SA_MESSAGE]`
  - 4.40.2.2 `RxMsgPointerType gbv_TxMessages[MIL_SA_MESSAGE]`
  - 4.40.2.3 `unsigned char gd_SemaModeCode`
  - 4.40.2.4 `RxMsgPointerType* gpw_RxMsg`
  - 4.40.2.5 `RxMsgPointerType* gpw_RxMsgPointer`
  - 4.40.2.6 `MilConf_t sw_MilConf [static]`
  - 4.40.2.7 `MsgBlockStructType sw_MsgBlock`
  - 4.40.2.8 `unsigned int UserVar`

## 4.41 MilConf.h File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [RTStruct](#)
- struct [MemBlockStruct](#)
- struct [MilConfStruct](#)
- struct [RxMsgPointer](#)
- struct [RxMsgPointerStruct](#)

### Defines

- #define [MIL\\_OTHER](#) 0
- #define [MIL\\_MEMMAP](#) 1
- #define [MIL\\_PULSE](#) 0
- #define [MIL\\_LEVEL](#) 1
- #define [MIL\\_OPENED](#) 1
- #define [MIL\\_CLOSED](#) 0
- #define [INTRPT\\_MASK](#) 0x00
- #define [CONFIG\\_1](#) 0x01
- #define [CONFIG\\_2](#) 0X02
- #define [CONTROL](#) 0X03
- #define [CMD\\_STK](#) 0X03
- #define [CNTRL\\_WORD](#) 0X04
- #define [TIMETAG](#) 0X05
- #define [INTRPT\\_STATUS](#) 0X06
- #define [CONFIG\\_3](#) 0X07
- #define [CONFIG\\_4](#) 0X08
- #define [CONFIG\\_5](#) 0X09
- #define [MT\\_DATA\\_STK](#) 0X0A
- #define [BC\\_FT\\_REMAIN](#) 0X0B
- #define [BC\\_MSG\\_REMAIN](#) 0X0C
- #define [BC\\_FRAME\\_TIME](#) 0X0D
- #define [RT\\_LAST\\_CMD](#) 0X0D
- #define [MT\\_TRIGGER\\_WORD](#) 0X0D
- #define [RT\\_STATUS\\_WORD](#) 0X0E
- #define [RT\\_BIT\\_WORD](#) 0X0F
- #define [MEM\\_ENABLE](#) 0X18
- #define [MIL\\_SA\\_MESSAGE](#) 32
- #define [MIL\\_NOT\\_DEFINED](#) 0
- #define [MIL\\_MSG\\_FREE](#) 1
- #define [MIL\\_MSG\\_READY](#) 2
- #define [MIL\\_MSG\\_FAILED](#) 3

### Typedefs

- typedef struct [RTStruct](#) [RTType](#)
- typedef struct [RTStruct](#) \* [RTPtr](#)
- typedef struct [MemBlockStruct](#) \* [MemBlockHandle](#)
- typedef struct [MemBlockStruct](#) [MemBlockType](#)
- typedef struct [MilConfStruct](#) [MilConf\\_t](#)
- typedef struct [MilConfStruct](#) \* [MilConf\\_p](#)
- typedef struct [RxMsgPointer](#) [RxMsgPointerType](#)
- typedef struct [RxMsgPointerStruct](#) [RxMsgPointerStructType](#)

## Functions

- [MilConf\\_p MilOpen](#) (void)
- [MilError\\_t MilClose](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilWriteReg](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data)
- unsigned int [MilReadReg](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset)
- [MilError\\_t MilBlockRead](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Addr, unsigned int \*pj\_Ptr, unsigned int j\_Length)
- [MilError\\_t MilBlockWrite](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset, unsigned int \*pj\_Ptr, unsigned int j\_Length)
- [MilError\\_t MilBlockFill](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data, unsigned int j\_Length)
- unsigned int [MilReadRam](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset)
- [MilError\\_t MilWriteRam](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data)
- [MilError\\_t MilRTReadStack](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_EnhModeCodeFlag, unsigned char d\_EnhModeFlag)
- void [MilRTInterrptHandler](#) (int i\_MilError)



#### 4.41.1 Define Documentation

4.41.1.1 #define BC\_FRAME\_TIME 0X0D

4.41.1.2 #define BC\_FT\_REMAIN 0X0B

4.41.1.3 #define BC\_MSG\_REMAIN 0X0C

4.41.1.4 #define CMD\_STK 0X03

4.41.1.5 #define CNTRL\_WORD 0X04

4.41.1.6 #define CONFIG\_1 0x01

4.41.1.7 #define CONFIG\_2 0X02

4.41.1.8 #define CONFIG\_3 0X07

4.41.1.9 #define CONFIG\_4 0X08

4.41.1.10 #define CONFIG\_5 0X09

4.41.1.11 #define CONTROL 0X03

4.41.1.12 #define INTRPT\_MASK 0x00

4.41.1.13 #define INTRPT\_STATUS 0X06

4.41.1.14 #define MEM\_ENABLE 0X18

4.41.1.15 #define MIL\_CLOSED 0

4.41.1.16 #define MIL\_LEVEL 1

4.41.1.17 #define MIL\_MEMMAP 1

4.41.1.18 #define MIL\_MSG\_FAILED 3

4.41.1.19 #define MIL\_MSG\_FREE 1

4.41.1.20 #define MIL\_MSG\_READY 2

4.41.1.21 #define MIL\_NOT\_DEFINED 0

4.41.1.22 #define MIL\_OPENED 1

4.41.1.23 #define MIL\_OTHER 0

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 176 of 307

**Author**

daniele

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilConf.h,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilConf.h,v 1.6 2006/05/08 10:30:34 daniele Exp



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 177 of [307](#)



4.41.1.24 #define MIL\_PULSE 0

4.41.1.25 #define MIL\_SA\_MESSAGE 32

4.41.1.26 #define MT\_DATA\_STK 0X0A

4.41.1.27 #define MT\_TRIGGER\_WORD 0X0D

4.41.1.28 #define RT\_BIT\_WORD 0X0F

4.41.1.29 #define RT\_LAST\_CMD 0X0D

4.41.1.30 #define RT\_STATUS\_WORD 0X0E

4.41.1.31 #define TIMETAG 0X05

## 4.41.2 Typedef Documentation

4.41.2.1 typedef struct MemBlockStruct \* MemBlockHandle

4.41.2.2 typedef struct MemBlockStruct MemBlockType

4.41.2.3 typedef struct MilConfStruct\* MilConf\_p

4.41.2.4 typedef struct MilConfStruct MilConf\_t

4.41.2.5 typedef struct RTStruct \* RTPtr

4.41.2.6 typedef struct RTStruct RTType

4.41.2.7 typedef struct RxMsgPointerStruct RxMsgPointerStructType

4.41.2.8 typedef struct RxMsgPointer RxMsgPointerType

## 4.41.3 Function Documentation

4.41.3.1 MilError\_t MilBlockFill (MilConf\_p pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data, unsigned int j\_Length)

4.41.3.2 MilError\_t MilBlockRead (MilConf\_p pw\_MilConf, unsigned int j\_Addr, unsigned int \* pj\_Ptr, unsigned int j\_Length)

4.41.3.3 MilError\_t MilBlockWrite (MilConf\_p pw\_MilConf, unsigned int j\_Offset, unsigned int \* pj\_Ptr, unsigned int j\_Length)

4.41.3.4 MilError\_t MilClose (MilConf\_p pw\_MilConf)

4.41.3.5 MilConf\_p MilOpen (void)

4.41.3.6 unsigned int MilReadRam (MilConf\_p pw\_MilConf, unsigned int j\_Offset)

4.41.3.7 unsigned int MilReadReg (MilConf\_p pw\_MilConf, unsigned int j\_Offset)

4.41.3.8 void MilRTInterrptHandler (int i\_MilError)

4.41.3.9 MilError\_t MilRTReadStack (MilConf\_p pw\_MilConf, unsigned char d\_EnhModeCodeFlag, unsigned char d\_EnhModeFlag)

4.41.3.10 ~~MilError\_t MilWriteRam (MilConf\_p pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data)~~

4.41.3.11 ~~MilError\_t MilWriteReg (MilConf\_p pw\_MilConf, unsigned int j\_Offset, unsigned int j\_Data)~~



## 4.42 MilDef.h File Reference

```
#include "conf1553.h"  
#include <stdlib.h>  
#include "MilErr.h"  
#include "MilConf.h"  
#include "MilIrq.h"  
#include "MilInit.h"  
#include "Milmem.h"  
#include "MilRt.h"  
#include "NODE1.h"  
#include "MM_21020.h"
```

Include dependency graph for MilDef.h:

This graph shows which files directly or indirectly include this file:

### Defines

- #define `__MILDEF__`
- #define `MilMalloc`(pw\_MilConf, size) malloc(size)
- #define `MilFree`(pw\_MilConf, ptr) free(ptr)
- #define `MilMemCpy`(pw\_MilConf, src, dest, size) adicpy(dest,src,size)
- #define `TRUE` 1
- #define `FALSE` 0
- #define `ON` 1
- #define `OFF` 0

### 4.42.1 Define Documentation

#### 4.42.1.1 #define `__MILDEF__`

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

#### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :

#### Name

Last Modification :



**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilDef.h,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilDef.h,v 1.11 2006/05/08 10:30:34 daniele Exp

4.42.1.2 #define FALSE 0

4.42.1.3 #define MilFree(pw\_MilConf, ptr) free(ptr)

4.42.1.4 #define MilMalloc(pw\_MilConf, size) malloc(size)

4.42.1.5 #define MilMemCpy(pw\_MilConf, src, dest, size) adicpy(dest,src,size)

4.42.1.6 #define OFF 0

4.42.1.7 #define ON 1

4.42.1.8 #define TRUE 1

## 4.43 MilErr.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define [MIL\\_SUCCESS](#) 0x00
- #define [MIL\\_ERROR\\_OPENING\\_FILE](#) -100
- #define [MIL\\_ERROR\\_UNKNOWN\\_CARD](#) -101
- #define [MIL\\_ERROR\\_REGISTERCLIENT](#) -102
- #define [MIL\\_ERROR\\_ENABLE](#) -103
- #define [MIL\\_ERROR\\_DISABLE](#) -104
- #define [MIL\\_ERROR\\_DEREGISTERCLIENT](#) -105
- #define [MIL\\_ERROR\\_OPEN](#) -107
- #define [MIL\\_ERROR\\_RESET\\_ACE](#) -108
- #define [MIL\\_ERROR\\_NO\\_MILCONF\\_CLOSE](#) -109
- #define [MIL\\_ERROR\\_RT\\_NOMSG](#) -110
- #define [MIL\\_ERROR\\_RTDEFMSGILLTYPE](#) -111
- #define [MIL\\_ERROR\\_RTDEFMSGILLSA](#) -112
- #define [MIL\\_ERROR\\_RTDEFMSGILLWC](#) -113
- #define [MIL\\_ERROR\\_INVALIDMODECODE](#) -114
- #define [MIL\\_ERROR\\_ENHANCEDMODEOFF](#) -115
- #define [MIL\\_ERROR\\_RTNOTOPENED](#) -116
- #define [MIL\\_ERROR\\_RTMONNOTOPENED](#) -117
- #define [MIL\\_ERROR\\_OUTOFMEMORY](#) -118
- #define [MIL\\_ERROR\\_BADBLOCK](#) -119
- #define [MIL\\_ERROR\\_BLOCKTOOSMALL](#) -200
- #define [MIL\\_ERROR\\_BUFFERTOOSMALL](#) -201
- #define [MIL\\_ERROR\\_INVALIDIRQ](#) -202
- #define [MIL\\_ERROR\\_NOTCONFIGURED](#) -203
- #define [MIL\\_ERROR\\_RAMOUTOFRANGE](#) -204
- #define [MIL\\_BAD\\_SELECTION](#) -205
- #define [MIL\\_ERR\\_INT\\_STACK\\_ROLL\\_OVER](#) -206
- #define [MIL\\_ERR\\_INT\\_FORMAT\\_ERROR](#) -207
- #define [MIL\\_ERROR\\_STACK\\_NOT\\_READ](#) -208
- #define [MIL\\_ERROR\\_SUBADDRES\\_MSG\\_NOT\\_DEFINED](#) -209
- #define [MIL\\_ERROR\\_SA\\_OVERFLOW](#) -210
- #define [MIL\\_ERROR\\_TX\\_RX\\_BAD\\_DEFINED](#) -211
- #define [MIL\\_ERROR\\_MSG\\_NOT\\_DEFINED](#) -212
- #define [MIL\\_ERROR\\_FRAME\\_NOT\\_READY](#) -213
- #define [MIL\\_ERROR\\_BAD\\_NUMBER\\_OF\\_WORDS](#) -214
- #define [MIL\\_ERROR\\_MSG\\_ALREADY\\_DEFINED](#) -215
- #define [MIL\\_ERROR\\_FRAME\\_NOT\\_DEFINED](#) -216

### Typedefs

- typedef int [MilError\\_t](#)



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 182 of [307](#)



#### 4.43.1 Define Documentation

- 4.43.1.1 #define MIL\_BAD\_SELECTION -205
- 4.43.1.2 #define MIL\_ERR\_INT\_FORMAT\_ERROR -207
- 4.43.1.3 #define MIL\_ERR\_INT\_STACK\_ROLL\_OVER -206
- 4.43.1.4 #define MIL\_ERROR\_BAD\_NUMBER\_OF\_WORDS -214
- 4.43.1.5 #define MIL\_ERROR\_BADBLOCK -119
- 4.43.1.6 #define MIL\_ERROR\_BLOCKTOOSMALL -200
- 4.43.1.7 #define MIL\_ERROR\_BUFFERTOOSMALL -201
- 4.43.1.8 #define MIL\_ERROR\_DEREGISTERCLIENT -105
- 4.43.1.9 #define MIL\_ERROR\_DISABLE -104
- 4.43.1.10 #define MIL\_ERROR\_ENABLE -103
- 4.43.1.11 #define MIL\_ERROR\_ENHANCEDMODEOFF -115
- 4.43.1.12 #define MIL\_ERROR\_FRAME\_NOT\_DEFINED -216
- 4.43.1.13 #define MIL\_ERROR\_FRAME\_NOT\_READY -213
- 4.43.1.14 #define MIL\_ERROR\_INVALIDMODECODE -114
- 4.43.1.15 #define MIL\_ERROR\_INVALIDIRQ -202
- 4.43.1.16 #define MIL\_ERROR\_MSG\_ALREADY\_DEFINED -215
- 4.43.1.17 #define MIL\_ERROR\_MSG\_NOT\_DEFINED -212
- 4.43.1.18 #define MIL\_ERROR\_NO\_MILCONF\_CLOSE -109
- 4.43.1.19 #define MIL\_ERROR\_NOTCONFIGURED -203
- 4.43.1.20 #define MIL\_ERROR\_OPEN -107
- 4.43.1.21 #define MIL\_ERROR\_OPENING\_FILE -100
- 4.43.1.22 #define MIL\_ERROR\_OUTOFMEMORY -118
- 4.43.1.23 #define MIL\_ERROR\_RAMOUTOFRANGE -204
- 4.43.1.24 #define MIL\_ERROR\_REGISTERCLIENT -102
- 4.43.1.25 #define MIL\_ERROR\_RESET\_ACE -108
- 4.43.1.26 #define MIL\_ERROR\_RT\_NOMSG -110
- 4.43.1.27 #define MIL\_ERROR\_RTDEFMSGILLSA -112
- 4.43.1.28 #define MIL\_ERROR\_RTDEFMSGILLTYPE -111
- 4.43.1.29 #define MIL\_ERROR\_RTDEFMSGILLWC -113



IFSI  
INAF

**Herschel PACS**  
**DPU OBS**  
**Detailed Design Document**  
**Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 184 of 307

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

**Author**

daniele

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilErr.h,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilErr.h,v 1.6 2006/05/08 10:30:34 daniele Exp

## 4.44 MilInit.c File Reference

```
#include "MilDef.h"
```

Include dependency graph for MilInit.c:

### Functions

- [MilError\\_t Mil1553AModeCd](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilWordBoundaries](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilRamParityCheck](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilClockSel](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilSamplingSel](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- unsigned int [MilReadTimeTag](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilTimeout](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Value)
- [MilError\\_t MilTimeTagResolution](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Value)
- [MilError\\_t MilTimeTagTest](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilTimeTagReset](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilReset](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilValidMENoData](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilValidBUSYNoData](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Selection)
- unsigned int [MilCreateCmdWord](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Rt, unsigned int j\_Tr, unsigned int j\_Sa, unsigned int j\_Wc)
- [MilError\\_t MilEnhancedMode](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilPreset](#) ([MilConf\\_p](#) pw\_MilConf)
- void [MilParseCmdWord](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_CmdWord, unsigned int \*j\_Rt, unsigned int \*j\_Tr, unsigned int \*j\_Sa, unsigned int \*j\_Wc)
- [MilError\\_t MilRTSelfTest](#) ([MilConf\\_p](#) pw\_MilConf)

### 4.44.1 Function Documentation

#### 4.44.1.1 [MilError\\_t Mil1553AModeCd](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

#### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :

#### Name

Last Modification :



**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[Millnit.c,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilInit.c,v 1.7 2006/05/08 10:30:34 daniele Exp

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.

- 4.44.1.2 **MilError\_t MilClockSel (MilConf\_p pw\_MilConf, unsigned char d\_Selection)**
- 4.44.1.3 **unsigned int MilCreateCmdWord (MilConf\_p pw\_MilConf, unsigned int j\_Rt, unsigned int j\_Tr, unsigned int j\_Sa, unsigned int j\_Wc)**
- 4.44.1.4 **MilError\_t MilEnhancedMode (MilConf\_p pw\_MilConf, unsigned char d\_Selection)**
- 4.44.1.5 **void MilParseCmdWord (MilConf\_p pw\_MilConf, unsigned int j\_CmdWord, unsigned int \*j\_Rt, unsigned int \*j\_Tr, unsigned int \*j\_Sa, unsigned int \*j\_Wc)**
- 4.44.1.6 **MilError\_t MilPreset (MilConf\_p pw\_MilConf)**
- 4.44.1.7 **MilError\_t MilRamParityCheck (MilConf\_p pw\_MilConf, unsigned char d\_Selection)**
- 4.44.1.8 **unsigned int MilReadTimeTag (MilConf\_p pw\_MilConf)**
- 4.44.1.9 **MilError\_t MilReset (MilConf\_p pw\_MilConf)**
- 4.44.1.10 **MilError\_t MilRTSelfTest (MilConf\_p pw\_MilConf)**
- 4.44.1.11 **MilError\_t MilSamplingSel (MilConf\_p pw\_MilConf, unsigned char d\_Selection)**
- 4.44.1.12 **MilError\_t MilTimeout (MilConf\_p pw\_MilConf, unsigned int j\_Value)**
- 4.44.1.13 **MilError\_t MilTimeTagReset (MilConf\_p pw\_MilConf)**
- 4.44.1.14 **MilError\_t MilTimeTagResolution (MilConf\_p pw\_MilConf, unsigned int j\_Value)**
- 4.44.1.15 **MilError\_t MilTimeTagTest (MilConf\_p pw\_MilConf)**
- 4.44.1.16 **MilError\_t MilValidBUSYNoData (MilConf\_p pw\_MilConf, unsigned int j\_Selection)**
- 4.44.1.17 **MilError\_t MilValidMENoData (MilConf\_p pw\_MilConf, unsigned int j\_Selection)**
- 4.44.1.18 **MilError\_t MilWordBoundaries (MilConf\_p pw\_MilConf, unsigned char d\_Selection)**





## 4.45 MilInit.h File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [MsgStruct](#)

### Defines

- #define [BS\\_AD\\_CHIP\\_SELECT\\_7](#) 0x8F000000
- #define [BS\\_AD\\_MIL\\_1553\\_DPRAM](#) BS\_AD\_CHIP\_SELECT\_7
- #define [OFFSET\\_REG](#) 0x4000
- #define [BS\\_AD\\_MIL\\_1553\\_REG](#) BS\_AD\_CHIP\_SELECT\_7 + OFFSET\_REG
- #define [MIL\\_1553\\_RAM\\_SIZE](#) 0x1000
- #define [ACE\\_INT\\_MASK\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG
- #define [ACE\\_CONF\\_1\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 1
- #define [ACE\\_CONF\\_2\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 2
- #define [ACE\\_START\\_RST\\_W\\_REG](#) BS\_AD\_MIL\_1553\_REG + 3
- #define [ACE\\_CMD\\_STK\\_PNT\\_R\\_REG](#) BS\_AD\_MIL\_1553\_REG + 3
- #define [ACE\\_RT\\_SA\\_CNT\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 4
- #define [ACE\\_TIME\\_TAG\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 5
- #define [ACE\\_INT\\_ST\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 6
- #define [ACE\\_CONF\\_3\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 7
- #define [ACE\\_CONF\\_4\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 8
- #define [ACE\\_CONF\\_5\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 9
- #define [ACE\\_RT\\_DATA\\_STK\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 10
- #define [ACE\\_BC\\_FRM\\_TM\\_\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 11
- #define [ACE\\_BC\\_TM\\_NEXT\\_MSG\\_R\\_REG](#) BS\_AD\_MIL\_1553\_REG + 12
- #define [ACE\\_RT\\_LAST\\_CMD\\_RW\\_REG](#) BS\_AD\_MIL\_1553\_REG + 13
- #define [ACE\\_RT\\_ST\\_WD\\_R\\_REG](#) BS\_AD\_MIL\_1553\_REG + 14
- #define [ACE\\_RT\\_BIT\\_WD\\_R\\_REG](#) BS\_AD\_MIL\_1553\_REG + 15
- #define [ACE\\_TEST\\_MODE\\_0\\_REG](#) BS\_AD\_MIL\_1553\_REG + 16
- #define [ACE\\_TEST\\_MODE\\_1\\_REG](#) BS\_AD\_MIL\_1553\_REG + 17
- #define [ACE\\_TEST\\_MODE\\_2\\_REG](#) BS\_AD\_MIL\_1553\_REG + 18
- #define [ACE\\_TEST\\_MODE\\_3\\_REG](#) BS\_AD\_MIL\_1553\_REG + 19
- #define [ACE\\_TEST\\_MODE\\_4\\_REG](#) BS\_AD\_MIL\_1553\_REG + 20
- #define [ACE\\_TEST\\_MODE\\_5\\_REG](#) BS\_AD\_MIL\_1553\_REG + 21
- #define [ACE\\_TEST\\_MODE\\_6\\_REG](#) BS\_AD\_MIL\_1553\_REG + 22
- #define [ACE\\_TEST\\_MODE\\_7\\_REG](#) BS\_AD\_MIL\_1553\_REG + 23
- #define [MIL\\_STACK\\_A\\_I](#) BS\_AD\_MIL\_1553\_DPRAM
- #define [MIL\\_STACK\\_A\\_E](#) BS\_AD\_MIL\_1553\_DPRAM + 0x00FF
- #define [MIL\\_RT\\_CMD\\_STK\\_PNT\\_A](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0100
- #define [MIL\\_RESERVED\\_AREA1\\_I](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0101
- #define [MIL\\_RESERVED\\_AREA1\\_E](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0103
- #define [MIL\\_RT\\_CMD\\_STK\\_PNT\\_B](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0104
- #define [MIL\\_RESERVED\\_AREA2\\_I](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0105
- #define [MIL\\_RESERVED\\_AREA2\\_E](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0107
- #define [MIL\\_MD\\_CD\\_SEL\\_INT\\_TBL\\_I](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0108
- #define [MIL\\_MD\\_CD\\_SEL\\_INT\\_TBL\\_E](#) BS\_AD\_MIL\_1553\_DPRAM + 0x010F
- #define [MIL\\_MD\\_CD\\_DATA\\_I](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0110
- #define [MIL\\_MD\\_CD\\_DATA\\_E](#) BS\_AD\_MIL\_1553\_DPRAM + 0x013F
- #define [MIL\\_LOOK\\_UP\\_TABLE\\_A\\_I](#) BS\_AD\_MIL\_1553\_DPRAM + 0x0140
- #define [MIL\\_LOOK\\_UP\\_TABLE\\_A\\_E](#) BS\_AD\_MIL\_1553\_DPRAM + 0x01BF



- #define MIL\_LOOK\_UP\_TABLE\_B\_I BS\_AD\_MIL\_1553\_DPRAM + 0x01C0
- #define MIL\_LOOK\_UP\_TABLE\_B\_E BS\_AD\_MIL\_1553\_DPRAM + 0x023F
- #define MIL\_BUSY\_BIT\_LK\_TBL\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0240
- #define MIL\_BUSY\_BIT\_LK\_TBL\_E BS\_AD\_MIL\_1553\_DPRAM + 0x0247
- #define MIL\_NOT\_USER\_AREA\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0248
- #define MIL\_NOT\_USER\_AREA\_E BS\_AD\_MIL\_1553\_DPRAM + 0x025F
- #define MIL\_DATA\_BLOCK\_AREA1\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0260
- #define MIL\_DATA\_BLOCK\_AREA1\_E BS\_AD\_MIL\_1553\_DPRAM + 0x02FF
- #define MIL\_CMD\_ILL\_TBL\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0300
- #define MIL\_CMD\_ILL\_TBL\_E BS\_AD\_MIL\_1553\_DPRAM + 0x03FF
- #define MIL\_DATA\_BLOCK\_AREA2\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0400
- #define MIL\_DATA\_BLOCK\_AREA2\_E BS\_AD\_MIL\_1553\_DPRAM + 0x0EFF
- #define MIL\_STACK\_B\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0F00
- #define MIL\_STACK\_B\_E BS\_AD\_MIL\_1553\_DPRAM + 0x0FFF
- #define MIL\_LK\_TBL\_A\_RX\_SA0 MIL\_LOOK\_UP\_TABLE\_A\_I
- #define MIL\_LK\_TBL\_A\_RX\_SA31 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x001F
- #define MIL\_LK\_TBL\_A\_TX\_SA0 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x0020
- #define MIL\_LK\_TBL\_A\_TX\_SA31 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x003F
- #define MIL\_LK\_TBL\_A\_BCST\_SA0 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x0040
- #define MIL\_LK\_TBL\_A\_BCST\_SA31 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x005F
- #define MIL\_LK\_TBL\_A\_SACW\_SA0 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x0060
- #define MIL\_LK\_TBL\_A\_SACW\_SA31 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x007F
- #define MIL\_LK\_TBL\_B\_RX\_SA0 MIL\_LOOK\_UP\_TABLE\_B\_I
- #define MIL\_LK\_TBL\_B\_RX\_SA31 MIL\_LOOK\_UP\_TABLE\_B\_I + 0x001F
- #define MIL\_LK\_TBL\_B\_TX\_SA0 MIL\_LOOK\_UP\_TABLE\_B\_I + 0x0020
- #define MIL\_LK\_TBL\_B\_TX\_SA31 MIL\_LOOK\_UP\_TABLE\_B\_I + 0x003F
- #define MIL\_LK\_TBL\_B\_BCST\_SA0 MIL\_LOOK\_UP\_TABLE\_B\_I + 0x0040
- #define MIL\_LK\_TBL\_B\_BCST\_SA31 MIL\_LOOK\_UP\_TABLE\_B\_I + 0x005F
- #define MIL\_LK\_TBL\_B\_SACW\_SA0 MIL\_LOOK\_UP\_TABLE\_B\_I + 0x0060
- #define MIL\_LK\_TBL\_B\_SACW\_SA31 MIL\_LOOK\_UP\_TABLE\_B\_I + 0x007F
- #define MIL\_ILL\_MAP\_BCST\_RX\_I MIL\_CMD\_ILL\_TBL\_I
- #define MIL\_ILL\_MAP\_BCST\_RX\_E MIL\_CMD\_ILL\_TBL\_I + 0x003F
- #define MIL\_ILL\_MAP\_BCST\_TX\_I MIL\_CMD\_ILL\_TBL\_I + 0x0040
- #define MIL\_ILL\_MAP\_BCST\_TX\_E MIL\_CMD\_ILL\_TBL\_I + 0x007F
- #define MIL\_ILL\_MAP\_TX\_I MIL\_CMD\_ILL\_TBL\_I + 0x0080
- #define MIL\_ILL\_MAP\_TX\_E MIL\_CMD\_ILL\_TBL\_I + 0x00BF
- #define MIL\_ILL\_MAP\_RX\_I MIL\_CMD\_ILL\_TBL\_I + 0x00C0
- #define MIL\_ILL\_MAP\_RX\_E MIL\_CMD\_ILL\_TBL\_I + 0x00FF
- #define MODESADDRVAL1 0x00
- #define MODESADDRVAL2 0x1F
- #define BRDCSTRTADDRVAL 0x1F
- #define BCTORT 0
- #define RTTORT 1
- #define BRDCST 2
- #define BRDCSTRTTORT 3
- #define MODEDATARX 5
- #define BRDCSTMODEDATA 7
- #define RTTOBC 8
- #define MODENODATA 12
- #define MODEDATATX 13
- #define BRDCSTMODENODATA 14
- #define INVALID 15
- #define MsgTypeString
- #define RESPONSE\_185 0x0000
- #define RESPONSE\_225 0x0200

- #define [RESPONSE\\_505](#) 0x0400
- #define [RESPONSE\\_130](#) 0x0600
- #define [MIL\\_TIMETAG\\_2](#) 0x0280
- #define [MIL\\_TIMETAG\\_4](#) 0x0200
- #define [MIL\\_TIMETAG\\_8](#) 0x0180
- #define [MIL\\_TIMETAG\\_16](#) 0x0100
- #define [MIL\\_TIMETAG\\_32](#) 0x0080
- #define [MIL\\_TIMETAG\\_64](#) 0x0000
- #define [MIL\\_TIMETAG\\_TEST](#) 0x0300
- #define [MIL\\_TIMETAG\\_EXT\\_CLOCK](#) 0x0380
- #define [CLOCK\\_16](#) 1
- #define [CLOCK\\_12](#) 0
- #define [SINGLE\\_EDGE](#) 0
- #define [DOUBLE\\_EDGE](#) 1
- #define [BCmode](#) 0
- #define [MTmode](#) 1
- #define [RTmode](#) 2

## Typedefs

- typedef struct [MsgStruct](#) [MsgType](#)

## Functions

- [MilError\\_t](#) [Mil1553AModeCd](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned char [d\\_Selection](#))
- [MilError\\_t](#) [MilWordBoundaries](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned char [d\\_Selection](#))
- [MilError\\_t](#) [MilRamParityCheck](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned char [d\\_Selection](#))
- [MilError\\_t](#) [MilClockSel](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned char [d\\_Selection](#))
- [MilError\\_t](#) [MilSamplingSel](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned char [d\\_Selection](#))
- unsigned int [MilReadTimeTag](#) ([MilConf\\_p](#) [pw\\_MilConf](#))
- [MilError\\_t](#) [MilTimeout](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned int [j\\_Value](#))
- [MilError\\_t](#) [MilTimeTagResolution](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned int [j\\_Value](#))
- [MilError\\_t](#) [MilTimeTagTest](#) ([MilConf\\_p](#) [pw\\_MilConf](#))
- [MilError\\_t](#) [MilTimeTagReset](#) ([MilConf\\_p](#) [pw\\_MilConf](#))
- [MilError\\_t](#) [MilReset](#) ([MilConf\\_p](#) [pw\\_MilConf](#))
- [MilError\\_t](#) [MilValidMENoData](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned int [j\\_Selection](#))
- [MilError\\_t](#) [MilValidBUSYNoData](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned int [j\\_Selection](#))
- [MilError\\_t](#) [MilEnhancedMode](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned char [d\\_Selection](#))
- unsigned int [MilCreateCmdWord](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned int [j\\_Rt](#), unsigned int [j\\_Tr](#), unsigned int [j\\_Sa](#), unsigned int [j\\_Wc](#))
- [MilError\\_t](#) [MilPreset](#) ([MilConf\\_p](#) [pw\\_MilConf](#))
- void [MilParseCmdWord](#) ([MilConf\\_p](#) [pw\\_MilConf](#), unsigned int [j\\_CmdWord](#), unsigned int [\\*j\\_Rt](#), unsigned int [\\*j\\_Tr](#), unsigned int [\\*j\\_Sa](#), unsigned int [\\*j\\_Wc](#))
- [MilError\\_t](#) [MilRTSelfTest](#) ([MilConf\\_p](#) [pw\\_MilConf](#))



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 190 of 307



#### 4.45.1 Define Documentation

4.45.1.1 #define ACE\_BC\_FRM\_TM\_RW\_REG BS\_AD\_MIL\_1553\_REG + 11

4.45.1.2 #define ACE\_BC\_TM\_NEXT\_MSG\_R\_REG BS\_AD\_MIL\_1553\_REG + 12

4.45.1.3 #define ACE\_CMD\_STK\_PNT\_R\_REG BS\_AD\_MIL\_1553\_REG + 3

4.45.1.4 #define ACE\_CONF\_1\_RW\_REG BS\_AD\_MIL\_1553\_REG + 1

4.45.1.5 #define ACE\_CONF\_2\_RW\_REG BS\_AD\_MIL\_1553\_REG + 2

4.45.1.6 #define ACE\_CONF\_3\_RW\_REG BS\_AD\_MIL\_1553\_REG + 7

4.45.1.7 #define ACE\_CONF\_4\_RW\_REG BS\_AD\_MIL\_1553\_REG + 8

4.45.1.8 #define ACE\_CONF\_5\_RW\_REG BS\_AD\_MIL\_1553\_REG + 9

4.45.1.9 #define ACE\_INT\_MASK\_RW\_REG BS\_AD\_MIL\_1553\_REG

4.45.1.10 #define ACE\_INT\_ST\_RW\_REG BS\_AD\_MIL\_1553\_REG + 6

4.45.1.11 #define ACE\_RT\_BIT\_WD\_R\_REG BS\_AD\_MIL\_1553\_REG + 15

4.45.1.12 #define ACE\_RT\_DATA\_STK\_RW\_REG BS\_AD\_MIL\_1553\_REG + 10

4.45.1.13 #define ACE\_RT\_LAST\_CMD\_RW\_REG BS\_AD\_MIL\_1553\_REG + 13

4.45.1.14 #define ACE\_RT\_SA\_CNT\_RW\_REG BS\_AD\_MIL\_1553\_REG + 4

4.45.1.15 #define ACE\_RT\_ST\_WD\_R\_REG BS\_AD\_MIL\_1553\_REG + 14

4.45.1.16 #define ACE\_START\_RST\_W\_REG BS\_AD\_MIL\_1553\_REG + 3

4.45.1.17 #define ACE\_TEST\_MODE\_0\_REG BS\_AD\_MIL\_1553\_REG + 16

4.45.1.18 #define ACE\_TEST\_MODE\_1\_REG BS\_AD\_MIL\_1553\_REG + 17

4.45.1.19 #define ACE\_TEST\_MODE\_2\_REG BS\_AD\_MIL\_1553\_REG + 18

4.45.1.20 #define ACE\_TEST\_MODE\_3\_REG BS\_AD\_MIL\_1553\_REG + 19

4.45.1.21 #define ACE\_TEST\_MODE\_4\_REG BS\_AD\_MIL\_1553\_REG + 20

4.45.1.22 #define ACE\_TEST\_MODE\_5\_REG BS\_AD\_MIL\_1553\_REG + 21

4.45.1.23 #define ACE\_TEST\_MODE\_6\_REG BS\_AD\_MIL\_1553\_REG + 22

4.45.1.24 #define ACE\_TEST\_MODE\_7\_REG BS\_AD\_MIL\_1553\_REG + 23

4.45.1.25 #define ACE\_TIME\_TAG\_RW\_REG BS\_AD\_MIL\_1553\_REG + 5

4.45.1.26 #define BCmode 0

4.45.1.27 #define BCTORT 0

4.45.1.28 #define BRDCST 2

4.45.1.29 #define BRDCSTMODEDATA 7

Generated on Tue Jul 14 10:13:42 2009 for DPU OBSW by Doxygen

4.45.1.30 #define BRDCSTMODENODATA 14



**IFSI**  
**INAF**

**Herschel PACS**  
**DPU OBS**  
**Detailed Design Document**  
**Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 192 of 307

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

**Author**

daniele

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilInit.h,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilInit.h,v 1.6 2006/05/08 10:30:34 daniele Exp



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 193 of [307](#)



4.45.1.34 #define BS\_AD\_MIL\_1553\_DPRAM BS\_AD\_CHIP\_SELECT\_7

4.45.1.35 #define BS\_AD\_MIL\_1553\_REG BS\_AD\_CHIP\_SELECT\_7 + OFFSET\_REG

4.45.1.36 #define CLOCK\_12 0

4.45.1.37 #define CLOCK\_16 1

4.45.1.38 #define DOUBLE\_EDGE 1

4.45.1.39 #define INVALID 15

4.45.1.40 #define MIL\_1553\_RAM\_SIZE 0x1000

4.45.1.41 #define MIL\_BUSY\_BIT\_LK\_TBL\_E BS\_AD\_MIL\_1553\_DPRAM + 0x0247

4.45.1.42 #define MIL\_BUSY\_BIT\_LK\_TBL\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0240

4.45.1.43 #define MIL\_CMD\_ILL\_TBL\_E BS\_AD\_MIL\_1553\_DPRAM + 0x03FF

4.45.1.44 #define MIL\_CMD\_ILL\_TBL\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0300

4.45.1.45 #define MIL\_DATA\_BLOCK\_AREA1\_E BS\_AD\_MIL\_1553\_DPRAM + 0x02FF

4.45.1.46 #define MIL\_DATA\_BLOCK\_AREA1\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0260

4.45.1.47 #define MIL\_DATA\_BLOCK\_AREA2\_E BS\_AD\_MIL\_1553\_DPRAM + 0x0EFF

4.45.1.48 #define MIL\_DATA\_BLOCK\_AREA2\_I BS\_AD\_MIL\_1553\_DPRAM + 0x0400

4.45.1.49 #define MIL\_ILL\_MAP\_BCST\_RX\_E MIL\_CMD\_ILL\_TBL\_I + 0x003F

4.45.1.50 #define MIL\_ILL\_MAP\_BCST\_RX\_I MIL\_CMD\_ILL\_TBL\_I

4.45.1.51 #define MIL\_ILL\_MAP\_BCST\_TX\_E MIL\_CMD\_ILL\_TBL\_I + 0x007F

4.45.1.52 #define MIL\_ILL\_MAP\_BCST\_TX\_I MIL\_CMD\_ILL\_TBL\_I + 0x0040

4.45.1.53 #define MIL\_ILL\_MAP\_RX\_E MIL\_CMD\_ILL\_TBL\_I + 0x00FF

4.45.1.54 #define MIL\_ILL\_MAP\_RX\_I MIL\_CMD\_ILL\_TBL\_I + 0x00C0

4.45.1.55 #define MIL\_ILL\_MAP\_TX\_E MIL\_CMD\_ILL\_TBL\_I + 0x00BF

4.45.1.56 #define MIL\_ILL\_MAP\_TX\_I MIL\_CMD\_ILL\_TBL\_I + 0x0080

4.45.1.57 #define MIL\_LK\_TBL\_A\_BCST\_SA0 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x0040

4.45.1.58 #define MIL\_LK\_TBL\_A\_BCST\_SA31 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x005F

4.45.1.59 #define MIL\_LK\_TBL\_A\_RX\_SA0 MIL\_LOOK\_UP\_TABLE\_A\_I

4.45.1.60 #define MIL\_LK\_TBL\_A\_RX\_SA31 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x001F

4.45.1.61 #define MIL\_LK\_TBL\_A\_SACW\_SA0 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x0060

4.45.1.62 #define MIL\_LK\_TBL\_A\_SACW\_SA31 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x007F

4.45.1.63 #define MIL\_LK\_TBL\_A\_TX\_SA0 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x0020

4.45.1.64 #define MIL\_LK\_TBL\_A\_TX\_SA31 MIL\_LOOK\_UP\_TABLE\_A\_I + 0x003F





```
{"BC to RT      ",  
"RT to RT      ",  
"Broadcast     ",  
"Bcst RT to RT",  
"Invalid       ",  
"Mode Rx Data  ",  
"Invalid       ",  
"Bcst Mode Data",  
"RT to BC     ",  
"Invalid       ",  
"Invalid       ",  
"Invalid       ",  
"Mode No Data  ",  
"Mode Tx Data  ",  
"Bcst Mode     ",  
"Invalid       "}
```

4.45.1.107 #define MTmode 1

4.45.1.108 #define OFFSET\_REG 0x4000

4.45.1.109 #define RESPONSE\_130 0x0600

4.45.1.110 #define RESPONSE\_185 0x0000

4.45.1.111 #define RESPONSE\_225 0x0200

4.45.1.112 #define RESPONSE\_505 0x0400

4.45.1.113 #define RTmode 2

4.45.1.114 #define RTTOBC 8

4.45.1.115 #define RTTORT 1

4.45.1.116 #define SINGLE\_EDGE 0

## 4.45.2 Typedef Documentation

4.45.2.1 typedef struct MsgStruct MsgType

## 4.45.3 Function Documentation

4.45.3.1 MilError\_t Mil1553AModeCd (MilConf\_p pw\_MilConf, unsigned char d\_Selection)

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 196 of 307

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilInit.c,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilInit.c,v 1.7 2006/05/08 10:30:34 daniele Exp

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.



- 4.45.3.2 `MilError_t MilClockSel (MilConf_p pw_MilConf, unsigned char d_Selection)`
- 4.45.3.3 `unsigned int MilCreateCmdWord (MilConf_p pw_MilConf, unsigned int j_Rt, unsigned int j_Tr, unsigned int j_Sa, unsigned int j_Wc)`
- 4.45.3.4 `MilError_t MilEnhancedMode (MilConf_p pw_MilConf, unsigned char d_Selection)`
- 4.45.3.5 `void MilParseCmdWord (MilConf_p pw_MilConf, unsigned int j_CmdWord, unsigned int *j_Rt, unsigned int *j_Tr, unsigned int *j_Sa, unsigned int *j_Wc)`
- 4.45.3.6 `MilError_t MilPreset (MilConf_p pw_MilConf)`
- 4.45.3.7 `MilError_t MilRamParityCheck (MilConf_p pw_MilConf, unsigned char d_Selection)`
- 4.45.3.8 `unsigned int MilReadTimeTag (MilConf_p pw_MilConf)`
- 4.45.3.9 `MilError_t MilReset (MilConf_p pw_MilConf)`
- 4.45.3.10 `MilError_t MilRTSelfTest (MilConf_p pw_MilConf)`
- 4.45.3.11 `MilError_t MilSamplingSel (MilConf_p pw_MilConf, unsigned char d_Selection)`
- 4.45.3.12 `MilError_t MilTimeout (MilConf_p pw_MilConf, unsigned int j_Value)`
- 4.45.3.13 `MilError_t MilTimeTagReset (MilConf_p pw_MilConf)`
- 4.45.3.14 `MilError_t MilTimeTagResolution (MilConf_p pw_MilConf, unsigned int j_Value)`
- 4.45.3.15 `MilError_t MilTimeTagTest (MilConf_p pw_MilConf)`
- 4.45.3.16 `MilError_t MilValidBUSYNoData (MilConf_p pw_MilConf, unsigned int j_Selection)`
- 4.45.3.17 `MilError_t MilValidMENoData (MilConf_p pw_MilConf, unsigned int j_Selection)`
- 4.45.3.18 `MilError_t MilWordBoundaries (MilConf_p pw_MilConf, unsigned char d_Selection)`



## 4.46 MilIrq.c File Reference

```
#include "MilDef.h"
```

Include dependency graph for MilIrq.c:

### Functions

- [MilError\\_t MilIrqAutoClear](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilIrqType](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilIrqEnable](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Mask)
- [MilError\\_t MilIrqDisable](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Mask)
- unsigned int [MilGetIrqStatus](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilIrqReset](#) ([MilConf\\_p](#) pw\_MilConf)

### 4.46.1 Function Documentation

#### 4.46.1.1 unsigned int MilGetIrqStatus ([MilConf\\_p](#) pw\_MilConf)

#### 4.46.1.2 MilError\_t MilIrqAutoClear ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

#### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :

#### Name

Last Modification :

#### Date

2006/05/08 10:30:34

Location :

#### RCSfile

[MilIrq.c,v](#)

#### Version:

:

#### Header

/usr/local/cvsrep/PACS\_V2/code/MilIrq.c,v 1.7 2006/05/08 10:30:34 daniele Exp



Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102>) The Modification Log has been posted at End Of File.

**4.46.1.3** `MilError_t MilIrqDisable (MilConf_p pw_MilConf, unsigned int j_Mask)`

**4.46.1.4** `MilError_t MilIrqEnable (MilConf_p pw_MilConf, unsigned int j_Mask)`

**4.46.1.5** `MilError_t MilIrqReset (MilConf_p pw_MilConf)`

**4.46.1.6** `MilError_t MilIrqType (MilConf_p pw_MilConf, unsigned char d_Selection)`



## 4.47 MilIrq.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define [IRQ\\_ALL](#) 0xffff
- #define [IRQ\\_MASTER](#) 0x8000
- #define [IRQ\\_RAM\\_PARITY\\_ERROR](#) 0x4000
- #define [IRQ\\_TRANSMITTER\\_TIMEOUT](#) 0x2000
- #define [IRQ\\_BC\\_RT\\_CMD\\_STK\\_ROLLOVR](#) 0x1000
- #define [IRQ\\_MT\\_CMD\\_STACK\\_ROLLOVR](#) 0x0800
- #define [IRQ\\_MT\\_DTA\\_STACK\\_ROLLOVR](#) 0x0400
- #define [IRQ\\_HANDSHAKE\\_FAILURE](#) 0x0200
- #define [IRQ\\_BC\\_RETRY](#) 0x0100
- #define [IRQ\\_RT\\_ADDR\\_PARITY\\_ERROR](#) 0x0080
- #define [IRQ\\_TIMETAG\\_ROLLOVR](#) 0x0040
- #define [IRQ\\_RT\\_CIRC\\_BUFFR\\_ROLLOVR](#) 0x0020
- #define [IRQ\\_RT\\_BC\\_MESSAGE\\_INT](#) 0x0010
- #define [IRQ\\_BC\\_END\\_OF\\_FRAME](#) 0x0008
- #define [IRQ\\_RT\\_BC\\_MT\\_FORMAT\\_ERROR](#) 0x0004
- #define [IRQ\\_STATUS\\_SET\\_MODE\\_INT\\_TRIG](#) 0x0002
- #define [IRQ\\_END\\_OF\\_MESSAGE](#) 0x0001
- #define [PULSE](#) 0
- #define [LEVEL](#) 1

### Functions

- [MilError\\_t MilIrqAutoClear](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilIrqType](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Selection)
- [MilError\\_t MilIrqEnable](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Mask)
- [MilError\\_t MilIrqDisable](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Mask)
- unsigned int [MilGetIrqStatus](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilIrqReset](#) ([MilConf\\_p](#) pw\_MilConf)

### 4.47.1 Define Documentation

#### 4.47.1.1 #define IRQ\_ALL 0xffff

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

#### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 201 of 307

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilIrq.h,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilIrq.h,v 1.6 2006/05/08 10:30:34 daniele Exp



4.47.1.2 #define IRQ\_BC\_END\_OF\_FRAME 0X0008  
4.47.1.3 #define IRQ\_BC\_RETRY 0X0100  
4.47.1.4 #define IRQ\_BC\_RT\_CMD\_STK\_ROLLOVR 0x1000  
4.47.1.5 #define IRQ\_END\_OF\_MESSAGE 0X0001  
4.47.1.6 #define IRQ\_HANDSHAKE\_FAILURE 0X0200  
4.47.1.7 #define IRQ\_MASTER 0x8000  
4.47.1.8 #define IRQ\_MT\_CMD\_STACK\_ROLLOVR 0x0800  
4.47.1.9 #define IRQ\_MT\_DTA\_STACK\_ROLLOVR 0X0400  
4.47.1.10 #define IRQ\_RAM\_PARITY\_ERROR 0x4000  
4.47.1.11 #define IRQ\_RT\_ADDR\_PARITY\_ERROR 0X0080  
4.47.1.12 #define IRQ\_RT\_BC\_MESSAGE\_INT 0X0010  
4.47.1.13 #define IRQ\_RT\_BC\_MT\_FORMAT\_ERROR 0X0004  
4.47.1.14 #define IRQ\_RT\_CIRC\_BUFFR\_ROLLOVR 0X0020  
4.47.1.15 #define IRQ\_STATUS\_SET\_MODE\_INT\_TRIG 0X0002  
4.47.1.16 #define IRQ\_TIMETAG\_ROLLOVR 0X0040  
4.47.1.17 #define IRQ\_TRANSMITTER\_TIMEOUT 0x2000  
4.47.1.18 #define LEVEL 1  
4.47.1.19 #define PULSE 0

## 4.47.2 Function Documentation

4.47.2.1 unsigned int MilGetIrqStatus (MilConf\_p pw\_MilConf)

4.47.2.2 MilError\_t MilIrqAutoClear (MilConf\_p pw\_MilConf, unsigned char d\_Selection)

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :





**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilIrq.c,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilIrq.c,v 1.7 2006/05/08 10:30:34 daniele Exp

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102>) The Modification Log has been posted at End Of File.

**4.47.2.3** MilError\_t MilIrqDisable (MilConf\_p *pw\_MilConf*, unsigned int *j\_Mask*)

**4.47.2.4** MilError\_t MilIrqEnable (MilConf\_p *pw\_MilConf*, unsigned int *j\_Mask*)

**4.47.2.5** MilError\_t MilIrqReset (MilConf\_p *pw\_MilConf*)

**4.47.2.6** MilError\_t MilIrqType (MilConf\_p *pw\_MilConf*, unsigned char *d\_Selection*)



## 4.48 Milmem.c File Reference

```
#include "MilDef.h"
```

Include dependency graph for Milmem.c:

### Functions

- unsigned int [IFSI\\_MOD](#) (unsigned int, unsigned int)
- [MemBlockHandle CreateMemBlockHandle](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MemBlockRemove](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Tp)
- [MilError\\_t MemBlockInsert](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Area, [MemBlockHandle](#) pw\_BlK)
- [MilError\\_t SwapMemBlocks](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Tp, [MemBlockHandle](#) pw\_Tq)
- [MilError\\_t MilInitBlockList](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilClearBlockList](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilCloseBlockList](#) ([MilConf\\_p](#) pw\_MilConf)
- [MemBlockHandle CreatePermanentMemBlock](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Area, unsigned long m\_Addr, unsigned int j\_Size)
- [MemBlockHandle CreateProtectedMemBlock](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Area, unsigned long m\_Addr, unsigned int j\_Size)
- [MemBlockHandle MilAllocateOnBoard](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Area, unsigned int j\_Size)
- [MemBlockHandle MilAllocHandle](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Size)
- [MemBlockHandle MilAllocHandleBoundary](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Size, unsigned int j\_Boundary)
- [MilError\\_t MilReleaseHandle](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Tp)
- [MemBlockHandle MilFindSpace](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Size, unsigned int j\_Boundary)
- [MilError\\_t MilReadBlk](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_BlockHdl, unsigned int \*pj\_DataPtr, unsigned int j\_Size)
- [MilError\\_t MilWriteBlk](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_BlockHdl, unsigned int \*pj\_DataPtr, unsigned int j\_Size)

### 4.48.1 Function Documentation

**4.48.1.1** [MemBlockHandle CreateMemBlockHandle](#) ([MilConf\\_p](#) pw\_MilConf)

**4.48.1.2** [MemBlockHandle CreatePermanentMemBlock](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Area, unsigned long m\_Addr, unsigned int j\_Size)

**4.48.1.3** [MemBlockHandle CreateProtectedMemBlock](#) ([MilConf\\_p](#) pw\_MilConf, [MemBlockHandle](#) pw\_Area, unsigned long m\_Addr, unsigned int j\_Size)

**4.48.1.4** unsigned int [IFSI\\_MOD](#) (unsigned int, unsigned int)

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

#### Author

daniele



IFSI  
INAF

Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 205 of 307

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[Milmem.c,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/Milmem.c,v 1.9 2006/05/08 10:30:34 daniele Exp

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102>) The Modification Log has been posted at End Of File.

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

**Author**

daniele

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilConf.c,v](#)

**Version:**

:



## Header

/usr/local/cvsrep/PACS\_V2/code/MilConf.c,v 1.7 2006/05/08 10:30:34 daniele Exp

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.

- 4.48.1.5 **MilError\_t MemBlockInsert (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Area, MemBlockHandle pw\_Bl)**
- 4.48.1.6 **MilError\_t MemBlockRemove (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Tp)**
- 4.48.1.7 **MemBlockHandle MilAllocateOnBoard (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Area, unsigned int j\_Size)**
- 4.48.1.8 **MemBlockHandle MilAllocHandle (MilConf\_p pw\_MilConf, unsigned int j\_Size)**
- 4.48.1.9 **MemBlockHandle MilAllocHandleBoundary (MilConf\_p pw\_MilConf, unsigned int j\_Size, unsigned int j\_Boundary)**
- 4.48.1.10 **MilError\_t MilClearBlockList (MilConf\_p pw\_MilConf)**
- 4.48.1.11 **MilError\_t MilCloseBlockList (MilConf\_p pw\_MilConf)**
- 4.48.1.12 **MemBlockHandle MilFindSpace (MilConf\_p pw\_MilConf, unsigned int j\_Size, unsigned int j\_Boundary)**
- 4.48.1.13 **MilError\_t MilInitBlockList (MilConf\_p pw\_MilConf)**
- 4.48.1.14 **MilError\_t MilReadBlk (MilConf\_p pw\_MilConf, MemBlockHandle pw\_BlockHdl, unsigned int \* pj\_DataPtr, unsigned int j\_Size)**
- 4.48.1.15 **MilError\_t MilReleaseHandle (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Tp)**
- 4.48.1.16 **MilError\_t MilWriteBlk (MilConf\_p pw\_MilConf, MemBlockHandle pw\_BlockHdl, unsigned int \* pj\_DataPtr, unsigned int j\_Size)**
- 4.48.1.17 **MilError\_t SwapMemBlocks (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Tp, MemBlockHandle pw\_Tq)**

## 4.49 Milmem.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define `UNUSED` 0x00
- #define `PROTECTED` 0x01
- #define `USED` 0x02
- #define `ACTIVE` 0x04
- #define `OFFBOARD` 0x08
- #define `CMDSTACK` 0x10
- #define `PERMANENT` 0x20
- #define `MilGetBlkAddress`(pw\_MilConf, pw\_Blk) (pw\_Blk → m\_AbsAddr)
- #define `MilGetBlkSize`(pw\_MilConf, pw\_Blk) (pw\_Blk → j\_Size)

### Functions

- `MilError_t MilCloseBlockList` (MilConf\_p pw\_MilConf)
- `MilError_t MilClearBlockList` (MilConf\_p pw\_MilConf)
- `MilError_t MilInitBlockList` (MilConf\_p pw\_MilConf)
- `MemBlockHandle CreateMemBlockHandle` (MilConf\_p pw\_MilConf)
- `MilError_t MemBlockRemove` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Tp)
- `MilError_t MemBlockInsert` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Tp, MemBlockHandle pw\_Tq)
- `MilError_t SwapMemBlocks` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Tp, MemBlockHandle pw\_Tq)
- `MemBlockHandle CreateProtectedMemBlock` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Blk, unsigned long m\_Addr, unsigned int j\_Size)
- `MemBlockHandle CreatePermanentMemBlock` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Blk, unsigned long m\_Addr, unsigned int j\_Size)
- `MemBlockHandle AllocateOnBoard` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Area, unsigned int j\_Size)
- `MemBlockHandle AllocOffBoard` (MilConf\_p pw\_MilConf, unsigned int j\_Size)
- `MemBlockHandle MilAllocHandleBoundary` (MilConf\_p pw\_MilConf, unsigned int j\_Size, unsigned int j\_Boundary)
- `MemBlockHandle MilAllocHandle` (MilConf\_p pw\_MilConf, unsigned int j\_Size)
- `MilError_t MilReleaseHandle` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_Tp)
- `MemBlockHandle MilFindSpace` (MilConf\_p pw\_MilConf, unsigned int j\_Size, unsigned int j\_Boundary)
- `MilError_t MilWriteBlk` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_BlockHdl, unsigned int \*pj\_DataPtr, unsigned int j\_Size)
- `MilError_t MilReadBlk` (MilConf\_p pw\_MilConf, MemBlockHandle pw\_BlockHdl, unsigned int \*pj\_DataPtr, unsigned int j\_Size)



#### 4.49.1 Define Documentation

4.49.1.1 #define ACTIVE 0x04

4.49.1.2 #define CMDSTACK 0x10

4.49.1.3 #define MilGetBlkAddress(pw\_MilConf, pw\_Blk) (pw\_Blk → m\_AbsAddr)

4.49.1.4 #define MilGetBlkSize(pw\_MilConf, pw\_Blk) (pw\_Blk → j\_Size)

4.49.1.5 #define OFFBOARD 0x08

4.49.1.6 #define PERMANENT 0x20

4.49.1.7 #define PROTECTED 0x01

4.49.1.8 #define UNUSED 0x00

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

#### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :

#### Name

Last Modification :

#### Date

2006/05/08 10:30:34

Location :

#### RCSfile

[Milmem.h,v](#)

#### Version:

:

#### Header

/usr/local/cvsrep/PACS\_V2/code/Milmem.h,v 1.6 2006/05/08 10:30:34 daniele Exp



4.49.1.9 #define USED 0x02

## 4.49.2 Function Documentation

- 4.49.2.1 MemBlockHandle AllocateOnBoard (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_Area*, unsigned int *j\_Size*)
- 4.49.2.2 MemBlockHandle AllocOffBoard (MilConf\_p *pw\_MilConf*, unsigned int *j\_Size*)
- 4.49.2.3 MemBlockHandle CreateMemBlockHandle (MilConf\_p *pw\_MilConf*)
- 4.49.2.4 MemBlockHandle CreatePermanentMemBlock (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_Bl*, unsigned long *m\_Addr*, unsigned int *j\_Size*)
- 4.49.2.5 MemBlockHandle CreateProtectedMemBlock (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_Bl*, unsigned long *m\_Addr*, unsigned int *j\_Size*)
- 4.49.2.6 MilError\_t MemBlockInsert (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_Tp*, MemBlockHandle *pw\_Tq*)
- 4.49.2.7 MilError\_t MemBlockRemove (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_Tp*)
- 4.49.2.8 MemBlockHandle MilAllocHandle (MilConf\_p *pw\_MilConf*, unsigned int *j\_Size*)
- 4.49.2.9 MemBlockHandle MilAllocHandleBoundary (MilConf\_p *pw\_MilConf*, unsigned int *j\_Size*, unsigned int *j\_Boundary*)
- 4.49.2.10 MilError\_t MilClearBlockList (MilConf\_p *pw\_MilConf*)
- 4.49.2.11 MilError\_t MilCloseBlockList (MilConf\_p *pw\_MilConf*)
- 4.49.2.12 MemBlockHandle MilFindSpace (MilConf\_p *pw\_MilConf*, unsigned int *j\_Size*, unsigned int *j\_Boundary*)
- 4.49.2.13 MilError\_t MilInitBlockList (MilConf\_p *pw\_MilConf*)
- 4.49.2.14 MilError\_t MilReadBlk (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_BlockHdl*, unsigned int \* *pj\_DataPtr*, unsigned int *j\_Size*)
- 4.49.2.15 MilError\_t MilReleaseHandle (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_Tp*)
- 4.49.2.16 MilError\_t MilWriteBlk (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_BlockHdl*, unsigned int \* *pj\_DataPtr*, unsigned int *j\_Size*)
- 4.49.2.17 MilError\_t SwapMemBlocks (MilConf\_p *pw\_MilConf*, MemBlockHandle *pw\_Tp*, MemBlockHandle *pw\_Tq*)

## 4.50 MilRt.c File Reference

```
#include "MilDef.h"
```

Include dependency graph for MilRt.c:

### Functions

- unsigned int [Sacw2Word](#) (MilConf\_p pw\_MilConf, [SubAddrCtrlWrd](#) \*pw\_Sacw)
- [SubAddrCtrlWrd Word2Sacw](#) (MilConf\_p pw\_MilConf, unsigned int j\_Word)
- unsigned char [MilRTAddress](#) (MilConf\_p pw\_MilConf)
- unsigned char [MilReadParityBit](#) (MilConf\_p pw\_MilConf)
- [MilError\\_t MilRTIrqMsgSaEnable](#) (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, unsigned char d\_t\_r, unsigned char d\_Selection)
- [MilError\\_t MilRTIrqMsgSaDisable](#) (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, unsigned char d\_t\_r, unsigned char d\_Selection)
- [MilError\\_t MilRTDefSA](#) (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, [SubAddrCtrlWrd](#) \*pw\_Sacw)
- unsigned long [MilRTMapBlk](#) (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, unsigned int j\_t\_r, [RTBlkHandle](#) pw\_BlockHdl, unsigned int j\_Offset)
- [MilError\\_t MilRTRun](#) (MilConf\_p pw\_MilConf)
- [RTBlkHandle MilRTAllocBlk](#) (MilConf\_p pw\_MilConf, unsigned char d\_BlkJType)
- [MilError\\_t MilRTFreeBlk](#) (MilConf\_p pw\_MilConf, [RTBlkHandle](#) pw\_BlockHdl)
- [MilError\\_t MilRTOpen](#) (MilConf\_p pw\_MilConf)
- [MilError\\_t MilRTCclose](#) (MilConf\_p pw\_MilConf)
- unsigned char [MilRTMsgOK](#) (MilConf\_p pw\_MilConf, [MsgType](#) \*pw\_Message)
- [MilError\\_t MilRTReadMsg](#) (MilConf\_p pw\_MilConf, unsigned int j\_MessageNum, [MsgType](#) \*pw\_Message)
- [MilError\\_t MilRTReadInactive](#) (MilConf\_p pw\_MilConf, [RTBlkHandle](#) pw\_BlockHdl, unsigned int \*pw\_Buffer)
- [MilError\\_t MilRTDefMsgLegal](#) (MilConf\_p pw\_MilConf, unsigned int j\_MessType, unsigned int j\_Subaddr, unsigned int j\_Wc)
- [MilError\\_t MilRTDefMsgIllegal](#) (MilConf\_p pw\_MilConf, unsigned int j\_MessType, unsigned int j\_Subaddr, unsigned int j\_Wc)
- [MilError\\_t MilRTConfigMemory](#) (MilConf\_p pw\_MilConf)
- [MilError\\_t MilRTAltStatusEna](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTBusyTableEna](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTExtBITWord](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTBitInhibit](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTBrdest](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTModeCode](#) (MilConf\_p pw\_MilConf, unsigned int j\_Enhanced, unsigned int j\_OverRideEnable)
- [MilError\\_t MilRTAltStat](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTMsgErrValid](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTBusyValid](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTIllegal](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTFlagWrap](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTFlag](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSetSSflag](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSetSvcReq](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSetBusy](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSetDbA](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTEnhMM](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTEnhModeCode](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSeparateBest](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- unsigned int [MilRTReadEnhMCDData](#) (MilConf\_p pw\_MilConf, unsigned int j\_Addr)
- [MilError\\_t MilRTWriteEnhMCDData](#) (MilConf\_p pw\_MilConf, unsigned int j\_Addr, unsigned int j\_Data)





- [MilError\\_t MilRTModeIrqEnable](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Data, unsigned int j\_Map)
- [MilError\\_t MilRTModeIrqDisable](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Data, unsigned int j\_Map)
- [MilError\\_t MilRTextBITWrite](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Map)
- unsigned int [MilRTBITRead](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilRTBusyBitEnable](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Sa)
- [MilError\\_t MilRTBusyBitDisable](#) ([MilConf\\_p](#) pw\_MilConf, unsigned char d\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Sa)
- [MilError\\_t MilRTAltStatusWrite](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Map)
- unsigned int [MilRTAltStatusRead](#) ([MilConf\\_p](#) pw\_MilConf)
- void [MilRTStop](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilRTCreateMsgStruct](#) ([MilConf\\_p](#) pw\_MilConf, [RxMsgPointerType](#) \*bw\_VectorMsg)
- [MilError\\_t MilRTDeleteMsgStruct](#) ([MilConf\\_p](#) pw\_MilConf, [RxMsgPointerType](#) \*bw\_VectorMsg)
- [FrameType](#) \* [MilRTCreateFrame](#) ([MilConf\\_p](#) pw\_MilConf)
- [MilError\\_t MilRTAddMsgtoFrame](#) ([MilConf\\_p](#) pw\_MilConf, [FrameType](#) \*pw\_FrameID, unsigned int j\_Sa, unsigned char d\_t\_r, unsigned int j\_Words)
- [MilError\\_t MilRTDeleteFrame](#) ([MilConf\\_p](#) pw\_MilConf, [FrameType](#) \*pw\_FrameID)
- [MilError\\_t MilRTFrameRead](#) ([MilConf\\_p](#) pw\_MilConf, [FrameType](#) \*pw\_FrameID, unsigned int \*pj\_Buffer)
- [MilError\\_t MilRTFrameWrite](#) ([MilConf\\_p](#) pw\_MilConf, [FrameType](#) \*pw\_FrameID, unsigned int \*pj\_Buffer)
- [MilError\\_t MilRTCreateSingleMsg](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Sa, unsigned char d\_t\_r, unsigned int j\_Words)
- [MilError\\_t MilRTDeleteSingleMsg](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int j\_Sa, unsigned char d\_t\_r)
- [MilError\\_t MilRTReadSingleMsg](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int \*pj\_Buffer, unsigned int j\_Sa, unsigned int j\_WordCount)
- [MilError\\_t MilRTWriteSingleMsg](#) ([MilConf\\_p](#) pw\_MilConf, unsigned int \*pj\_Buffer, unsigned int j\_Sa, unsigned int j\_WordCount)

## Variables

- [FrameType](#) spw\_RxFrameID [MIL\_SA\_MESSAGE]
- [FrameType](#) spw\_TxFrameID [MIL\_SA\_MESSAGE]
- [ConfigDDCMemType](#) saw\_ConfigDDCMem [MIL\_SA\_MESSAGE]
- [RxMsgPointerType](#) gbv\_RxMessages [MIL\_SA\_MESSAGE]
- [RxMsgPointerType](#) gbv\_TxMessages [MIL\_SA\_MESSAGE]



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 212 of [307](#)



## 4.50.1 Function Documentation

- 4.50.1.1 unsigned char MilReadParityBit (MilConf\_p pw\_MilConf)
- 4.50.1.2 MilError\_t MilRTAddMsgtoFrame (MilConf\_p pw\_MilConf, FrameType \* pw\_FrameID, unsigned int j\_Sa, unsigned char d\_t\_r, unsigned int j\_Words)
- 4.50.1.3 unsigned char MilRTAddress (MilConf\_p pw\_MilConf)
- 4.50.1.4 RTBlkHandle MilRTAllocBlk (MilConf\_p pw\_MilConf, unsigned char d\_BlkType)
- 4.50.1.5 MilError\_t MilRTAltStat (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- 4.50.1.6 MilError\_t MilRTAltStatusEna (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- 4.50.1.7 unsigned int MilRTAltStatusRead (MilConf\_p pw\_MilConf)
- 4.50.1.8 MilError\_t MilRTAltStatusWrite (MilConf\_p pw\_MilConf, unsigned int j\_Map)
- 4.50.1.9 MilError\_t MilRTBitInhibit (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- 4.50.1.10 unsigned int MilRTBITRead (MilConf\_p pw\_MilConf)
- 4.50.1.11 MilError\_t MilRTBrdcst (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- 4.50.1.12 MilError\_t MilRTBusyBitDisable (MilConf\_p pw\_MilConf, unsigned char d\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Sa)
- 4.50.1.13 MilError\_t MilRTBusyBitEnable (MilConf\_p pw\_MilConf, unsigned char d\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Sa)
- 4.50.1.14 MilError\_t MilRTBusyTableEna (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- 4.50.1.15 MilError\_t MilRTBusyValid (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- 4.50.1.16 MilError\_t MilRTCclose (MilConf\_p pw\_MilConf)
- 4.50.1.17 MilError\_t MilRTConfigMemory (MilConf\_p pw\_MilConf)
- 4.50.1.18 FrameType\* MilRTCreateFrame (MilConf\_p pw\_MilConf)
- 4.50.1.19 MilError\_t MilRTCreateMsgStruct (MilConf\_p pw\_MilConf, RxMsgPointerStructType \* bw\_VectorMsg)
- 4.50.1.20 MilError\_t MilRTCreateSingleMsg (MilConf\_p pw\_MilConf, unsigned int j\_Sa, unsigned char d\_t\_r, unsigned int j\_Words)
- 4.50.1.21 MilError\_t MilRTDefMsgIllegal (MilConf\_p pw\_MilConf, unsigned int j\_MessType, unsigned int j\_Subaddr, unsigned int j\_Wc)
- 4.50.1.22 MilError\_t MilRTDefMsgLegal (MilConf\_p pw\_MilConf, unsigned int j\_MessType, unsigned int j\_Subaddr, unsigned int j\_Wc)
- 4.50.1.23 MilError\_t MilRTDefSA (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, SubAddrCtrlWrd \* pw\_Sacw)
- 4.50.1.24 MilError\_t MilRTDeleteFrame (MilConf\_p pw\_MilConf, FrameType \* pw\_FrameID)
- 4.50.1.25 MilError\_t MilRTDeleteMsgStruct (MilConf\_p pw\_MilConf, RxMsgPointerStructType \*



IFSI  
INAF

**Herschel PACS**  
**DPU OBS**  
**Detailed Design Document**  
**Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 214 of 307

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

**Author**

daniele

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilRt.c,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilRt.c,v 1.8 2006/05/08 10:30:34 daniele Exp

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.

**4.50.2.5 FrameType spw\_TxFrameID[MIL\_SA\_MESSAGE]**

## 4.51 MilRt.h File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [CmdWordType](#)
- struct [SubAddrCtrlWrD](#)
- union [RTWords](#)
- struct [FrameElement](#)
- struct [Frame](#)
- struct [MsgBlockStruct](#)
- struct [ConfigDDCMemStruct](#)

### Defines

- #define [RT\\_AltSta\\_S00](#) 0X0002
- #define [RT\\_AltSta\\_S01](#) 0X0004
- #define [RT\\_AltSta\\_S02](#) 0X0008
- #define [RT\\_AltSta\\_S03](#) 0X0010
- #define [RT\\_AltSta\\_S04](#) 0X0020
- #define [RT\\_AltSta\\_S05](#) 0X0040
- #define [RT\\_AltSta\\_RTFLAG](#) 0X0080
- #define [RT\\_AltSta\\_SUBSYS\\_FLAG](#) 0X0100
- #define [RT\\_AltSta\\_SRVC\\_REQST](#) 0X0200
- #define [RT\\_AltSta\\_BUSY](#) 0X0400
- #define [RT\\_AltSta\\_DYN\\_BUS\\_CTRL](#) 0X0800
- #define [RT\\_MODE\\_DYN\\_BUS\\_CTRL](#) 0X0000
- #define [RT\\_MODE\\_SYNCHRONIZE](#) 0X0001
- #define [RT\\_MODE\\_TX\\_STAT\\_WORD](#) 0X0002
- #define [RT\\_MODE\\_INIT\\_SELF\\_TST](#) 0X0003
- #define [RT\\_MODE\\_TXS\\_SHUTDN](#) 0X0004
- #define [RT\\_MODE\\_OVER\\_TXS\\_SHUTDN](#) 0X0005
- #define [RT\\_MODE\\_INH\\_TERM\\_FLAG](#) 0X0006
- #define [RT\\_MODE\\_OVER\\_INH\\_TERM\\_FLAG](#) 0X0007
- #define [RT\\_MODE\\_RESET\\_REMOTE\\_TERM](#) 0X0008
- #define [RT\\_MODE\\_TXS\\_VECTOR\\_WORD](#) 0X0010
- #define [RT\\_MODE\\_SYNCHRONIZE\\_DATA](#) 0X0011
- #define [RT\\_MODE\\_TX\\_LAST\\_COMMAND](#) 0X0012
- #define [RT\\_MODE\\_TX\\_BIT\\_WORD](#) 0X0013
- #define [RT\\_MODE\\_SEL\\_TRANS\\_SHUTDN](#) 0X0014
- #define [RT\\_MODE\\_OVER\\_SEL\\_TRANS\\_SHUTDN](#) 0X0015
- #define [RtEmod\\_SYNC\\_WITH\\_DATA](#) 0X0111
- #define [RtEmod\\_SEL\\_TXM\\_SHUT](#) 0X0114
- #define [RtEmod\\_OVER\\_SEL\\_TXM\\_SHUT](#) 0X0115
- #define [RtEmod\\_TRANSMIT\\_VECTOR\\_WORD](#) 0X0120
- #define [RtEmod\\_TRANSMIT\\_LAST\\_COMMAND](#) 0X0122
- #define [RtEmod\\_TRANSMIT\\_BIT\\_WORD](#) 0X0123
- #define [RtEmod\\_BCST\\_SYNC\\_WITH\\_DATA](#) 0X0131
- #define [RtEmod\\_BCST\\_SEL\\_TXM\\_SHUT](#) 0X0134
- #define [RtEmod\\_BCST\\_OVER\\_SEL\\_TXM\\_SHUT](#) 0X0135
- #define [RtBitwd\\_CMD\\_WRD\\_CONTENTS\\_ERR](#) 0X0001
- #define [RtBitwd\\_RT\\_RT\\_2ND\\_CMD\\_WD\\_ERR](#) 0X0002
- #define [RtBitwd\\_RT\\_RT\\_NO\\_RESPONS\\_ERR](#) 0X0004



- #define RtBitwd\_RT\_RT\_GP\_SYNC\_ADR\_ER 0X0008
- #define RtBitwd\_PAR\_MAN\_ERR\_WD\_RXD 0X0010
- #define RtBitwd\_INCORRECT\_SYNC\_RXD 0X0020
- #define RtBitwd\_LOW\_WORD\_COUNT 0X0040
- #define RtBitwd\_HIGH\_WORD\_COUNT 0X0080
- #define RtBitwd\_CHANN\_B\_CHANN\_A 0X0100
- #define RtBitwd\_TERMINAL\_FLAG\_INHD 0X0200
- #define RtBitwd\_TXTTR\_SHUTDOWN\_A 0X0400
- #define RtBitwd\_TXTTR\_SHUTDOWN\_B 0X0800
- #define RtBitwd\_HANDSHAKE\_FAILURE 0X1000
- #define RtBitwd\_LOOP\_TEST\_FAILURE\_A 0X2000
- #define RtBitwd\_LOOP\_TEST\_FAILURE\_B 0X4000
- #define RtBitwd\_TRANSMITTER\_TIMEOUT 0X8000
- #define ALL 0xffff
- #define TX\_CMD 0x0400
- #define RX\_CMD 0x0000
- #define LOOKUP\_A 0x0140
- #define ILLEGALIZATION\_TABLE 0x0300
- #define STACK\_A 0x0000
- #define STACK\_POINTER\_A 0x0100
- #define ENH\_MODE\_TABLE\_START 0x0110
- #define ENH\_MODE\_TABLE\_END 0x013F
- #define ENH\_MODE\_IRQ\_TABLE 0x0108
- #define LAST\_MESSAGE 0xFFFF
- #define RT\_ENH\_BIT\_WORD\_ADDR 0x0123
- #define ENH\_SA\_BUSY\_TABLE 0x0240
- #define LOOK\_UP\_TABLE\_TX\_MSG 0x0160
- #define LOOK\_UP\_TABLE\_RX\_MSG 0x0140
- #define LOOK\_UP\_TABLE\_BCST\_MSG 0x0180
- #define LOOK\_UP\_TABLE\_SACW 0x01A0
- #define SINGLE\_MESSAGE 0
- #define RTBUFFER128 1
- #define RTBUFFER256 2
- #define RTBUFFER512 3
- #define RTBUFFER1024 4
- #define RTBUFFER2048 5
- #define RTBUFFER4096 6
- #define RTBUFFER8192 7
- #define DOUBLE\_MESSAGE 8
- #define NO\_BUFFER 0xFF
- #define RECEIVE 0
- #define TRANSMIT 1
- #define BROADCAST 2
- #define SINGLEBUFFER 0
- #define DOUBLEBUFFER 1
- #define RT\_CIRCULAR\_BUFFER 1
- #define RT\_END\_OF\_MESSAGE 0
- #define RT\_ENABLE 1
- #define RT\_DISABLE 0
- #define RTMIRQ\_DYNAMIC\_BUS\_CONTROL 0X0001
- #define RTMIRQ\_SYNCHRONIZE 0X0002
- #define RTMIRQ\_TRANSMIT\_STATUS 0X0004
- #define RTMIRQ\_INITIATE\_SELF\_TEST 0X0008
- #define RTMIRQ\_TRANSMITTER\_SHUTDOWN 0X0010
- #define RTMIRQ\_OVERRIDE\_TX\_SHUTDOWN 0X0020



- #define RTMIRQ\_INHIBIT\_TERMINAL\_FLAG 0X0041
- #define RTMIRQ\_OVERRIDE\_INHIBIT\_TF 0X0080
- #define RTMIRQ\_RESET\_REMOTE\_TERMINAL 0X0100
- #define MIL\_NUM\_MESSAGE\_SIZE 16
- #define MIL\_FRAME\_CREATION\_SUCCESS 0
- #define MIL\_SUCCESS\_FRAME\_READ 0
- #define MIL\_FRAME\_NOT\_READY 3
- #define MIL\_FRAME\_READ\_FAILED 4
- #define MIL\_FRAME\_BAD\_SETTING 5
- #define MIL\_FRAME\_WRITE\_SUCCESS 0

## Typedefs

- typedef MemBlockHandle RTBlkHandle
- typedef MemBlockType RTBlkType
- typedef struct FrameElement FrameElementType
- typedef struct Frame FrameType
- typedef struct MsgBlockStruct MsgBlockStructType
- typedef struct ConfigDDCMemStruct ConfigDDCMemType

## Functions

- unsigned char MilReadParityBit (MilConf\_p pw\_MilConf)
- unsigned char MilRTAddress (MilConf\_p pw\_MilConf)
- unsigned int Sacw2Word (MilConf\_p pw\_MilConf, SubAddrCtrlWrd \*pw\_Sacw)
- SubAddrCtrlWrd Word2Sacw (MilConf\_p pw\_MilConf, unsigned int j\_Word)
- MilError\_t MilRTDefSA (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, SubAddrCtrlWrd \*pw\_Sacw)
- unsigned long MilRTMapBlk (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, unsigned int j\_t\_r, RTBlkHandle pw\_BlockHdl, unsigned int j\_Offset)
- MilError\_t MilRTRun (MilConf\_p pw\_MilConf)
- RTBlkHandle MilRTAllocBlk (MilConf\_p pw\_MilConf, unsigned char d\_BlkJType)
- MilError\_t MilRTFreeBlk (MilConf\_p pw\_MilConf, RTBlkHandle pw\_BlockHdl)
- MilError\_t MilRTOpen (MilConf\_p pw\_MilConf)
- MilError\_t MilRTCclose (MilConf\_p pw\_MilConf)
- unsigned char MilRTMsgOK (MilConf\_p pw\_MilConf, MsgType \*pw\_Message)
- MilError\_t MilRTReadMsg (MilConf\_p pw\_MilConf, unsigned int j\_MessageNum, MsgType \*pw\_Message)
- MilError\_t MilRTReadInactive (MilConf\_p pw\_MilConf, RTBlkHandle pw\_MilBlockHdl, unsigned int \*pw\_Buffer)
- MilError\_t MilRTDefMsgLegal (MilConf\_p pw\_MilConf, unsigned int MessType, unsigned int j\_Subaddr, unsigned int j\_Wc)
- MilError\_t MilRTDefMsgIllegal (MilConf\_p pw\_MilConf, unsigned int j\_MessType, unsigned int j\_Subaddr, unsigned int j\_Wc)
- MilError\_t MilRTAltStatusEna (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTBusyTableEna (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTExtBITWord (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTBitInhibit (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTBrdcst (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTModeCode (MilConf\_p pw\_MilConf, unsigned int j\_Enhanced, unsigned int j\_OverrideEnable)
- MilError\_t MilRTAltStat (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTMsgErrValid (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTBusyValid (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTIllegal (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- MilError\_t MilRTFlagWrap (MilConf\_p pw\_MilConf, unsigned int j\_Selection)



- [MilError\\_t MilRTFlag](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSetSsflag](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSetSvcReq](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSetBusy](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSetDbc](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTEnhMM](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTEnhModeCode](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- [MilError\\_t MilRTSeparateBcst](#) (MilConf\_p pw\_MilConf, unsigned int j\_Selection)
- unsigned int [MilRTReadEnhMCData](#) (MilConf\_p pw\_MilConf, unsigned int j\_Addr)
- [MilError\\_t MilRTWriteEnhMCData](#) (MilConf\_p pw\_MilConf, unsigned int j\_Addr, unsigned int j\_Data)
- [MilError\\_t MilRTModeIrqEnable](#) (MilConf\_p pw\_MilConf, unsigned int j\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Data, unsigned int j\_Map)
- [MilError\\_t MilRTModeIrqDisable](#) (MilConf\_p pw\_MilConf, unsigned char d\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Data, unsigned int j\_Map)
- [MilError\\_t MilRTExtBITWrite](#) (MilConf\_p pw\_MilConf, unsigned int j\_Map)
- unsigned int [MilRTBITRead](#) (MilConf\_p pw\_MilConf)
- [MilError\\_t MilRTBusyBitEnable](#) (MilConf\_p pw\_MilConf, unsigned char d\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Sa)
- [MilError\\_t MilRTBusyBitDisable](#) (MilConf\_p pw\_MilConf, unsigned char d\_Broadcast, unsigned char d\_t\_r, unsigned char d\_Sa)
- [MilError\\_t MilRTAltStatusWrite](#) (MilConf\_p pw\_MilConf, unsigned int j\_Map)
- unsigned int [MilRTAltStatusRead](#) (MilConf\_p pw\_MilConf)
- void [MilRTStop](#) (MilConf\_p pw\_MilConf)
- [MilError\\_t MilRTIrqMsgSaEnable](#) (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, unsigned char d\_t\_r, unsigned char d\_Selection)
- [MilError\\_t MilRTIrqMsgSaDisable](#) (MilConf\_p pw\_MilConf, unsigned int j\_SubAddr, unsigned char d\_t\_r, unsigned char d\_Selection)
- [MilError\\_t MilRTCreateMsgStruct](#) (MilConf\_p pw\_MilConf, [RxMsgPointerType](#) \*bw\_VectorMsg)
- [MilError\\_t MilRTDeleteMsgStruct](#) (MilConf\_p pw\_MilConf, [RxMsgPointerType](#) \*bw\_VectorMsg)
- [FrameType](#) \* [MilRTCreateFrame](#) (MilConf\_p pw\_MilConf)
- [MilError\\_t MilRTDeleteFrame](#) (MilConf\_p pw\_MilConf, [FrameType](#) \*pw\_FrameID)
- [MilError\\_t MilRTAddMsgtoFrame](#) (MilConf\_p pw\_MilConf, [FrameType](#) \*pw\_FrameID, unsigned int j\_Sa, unsigned char d\_t\_r, unsigned int j\_Words)
- [MilError\\_t MilRTFrameRead](#) (MilConf\_p pw\_MilConf, [FrameType](#) \*pw\_FrameID, unsigned int \*pj\_Buffer)
- [MilError\\_t MilRTFrameWrite](#) (MilConf\_p pw\_MilConf, [FrameType](#) \*pw\_FrameID, unsigned int \*pj\_Buffer)
- [MilError\\_t MilRTReadSingleMsg](#) (MilConf\_p pw\_MilConf, unsigned int \*pj\_Buffer, unsigned int j\_Sa, unsigned int j\_WordCount)
- [MilError\\_t MilRTWriteSingleMsg](#) (MilConf\_p pw\_MilConf, unsigned int \*pj\_Buffer, unsigned int j\_Sa, unsigned int j\_WordCount)
- [MilError\\_t MilRTCreateSingleMsg](#) (MilConf\_p pw\_MilConf, unsigned int j\_Sa, unsigned char d\_t\_r, unsigned int j\_Words)
- [MilError\\_t MilRTDeleteSingleMsg](#) (MilConf\_p pw\_MilConf, unsigned int j\_Sa, unsigned char d\_t\_r)
- [MilError\\_t MilRTConfigMemory](#) (MilConf\_p pw\_MilConf)





**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 219 of [307](#)



#### 4.51.1 Define Documentation

4.51.1.1 #define ALL 0xffff

4.51.1.2 #define BROADCAST 2

4.51.1.3 #define DOUBLE\_MESSAGE 8

4.51.1.4 #define DOUBLEBUFFER 1

4.51.1.5 #define ENH\_MODE\_IRQ\_TABLE 0x0108

4.51.1.6 #define ENH\_MODE\_TABLE\_END 0x013F

4.51.1.7 #define ENH\_MODE\_TABLE\_START 0x0110

4.51.1.8 #define ENH\_SA\_BUSY\_TABLE 0x0240

4.51.1.9 #define ILLEGALIZATION\_TABLE 0x0300

4.51.1.10 #define LAST\_MESSAGE 0xFFFF

4.51.1.11 #define LOOK\_UP\_TABLE\_BCST\_MSG 0x0180

4.51.1.12 #define LOOK\_UP\_TABLE\_RX\_MSG 0x0140

4.51.1.13 #define LOOK\_UP\_TABLE\_SACW 0x01A0

4.51.1.14 #define LOOK\_UP\_TABLE\_TX\_MSG 0x0160

4.51.1.15 #define LOOKUP\_A 0x0140

4.51.1.16 #define MIL\_FRAME\_BAD\_SETTING 5

4.51.1.17 #define MIL\_FRAME\_CREATION\_SUCCESS 0

4.51.1.18 #define MIL\_FRAME\_NOT\_READY 3

4.51.1.19 #define MIL\_FRAME\_READ\_FAILED 4

4.51.1.20 #define MIL\_FRAME\_WRITE\_SUCCESS 0

4.51.1.21 #define MIL\_NUM\_MESSAGE\_SIZE 16

4.51.1.22 #define MIL\_SUCCESS\_FRAME\_READ 0

4.51.1.23 #define NO\_BUFFER 0xFF

4.51.1.24 #define RECEIVE 0

4.51.1.25 #define RT\_AltSta\_BUSY 0X0400

4.51.1.26 #define RT\_AltSta\_DYN\_BUS\_CTRL 0X0800

4.51.1.27 #define RT\_AltSta\_RTFLAG 0X0080

4.51.1.28 #define RT\_AltSta\_S00 0X0002



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 221 of 307

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

**Author**

daniele

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilRt.h,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/PACS\_V2/code/MilRt.h,v 1.6 2006/05/08 10:30:34 daniele Exp



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 222 of [307](#)



4.51.1.29 #define RT\_AltSta\_S01 0X0004

4.51.1.30 #define RT\_AltSta\_S02 0X0008

4.51.1.31 #define RT\_AltSta\_S03 0X0010

4.51.1.32 #define RT\_AltSta\_S04 0X0020

4.51.1.33 #define RT\_AltSta\_S05 0X0040

4.51.1.34 #define RT\_AltSta\_SRVC\_REQST 0X0200

4.51.1.35 #define RT\_AltSta\_SUBSYS\_FLAG 0X0100

4.51.1.36 #define RT\_CIRCULAR\_BUFFER 1

4.51.1.37 #define RT\_DISABLE 0

4.51.1.38 #define RT\_ENABLE 1

4.51.1.39 #define RT\_END\_OF\_MESSAGE 0

4.51.1.40 #define RT\_ENH\_BIT\_WORD\_ADDR 0x0123

4.51.1.41 #define RT\_MODE\_DYN\_BUS\_CTRL 0X0000

4.51.1.42 #define RT\_MODE\_INH\_TERM\_FLAG 0X0006

4.51.1.43 #define RT\_MODE\_INIT\_SELF\_TST 0X0003

4.51.1.44 #define RT\_MODE\_OVER\_INH\_TERM\_FLAG 0X0007

4.51.1.45 #define RT\_MODE\_OVER\_SEL\_TRANS\_SHUTDN 0X0015

4.51.1.46 #define RT\_MODE\_OVER\_TXS\_SHUTDN 0X0005

4.51.1.47 #define RT\_MODE\_RESET\_REMOTE\_TERM 0X0008

4.51.1.48 #define RT\_MODE\_SEL\_TRANS\_SHUTDN 0X0014

4.51.1.49 #define RT\_MODE\_SYNCHRONIZE 0X0001

4.51.1.50 #define RT\_MODE\_SYNCHRONIZE\_DATA 0X0011

4.51.1.51 #define RT\_MODE\_TX\_BIT\_WORD 0X0013

4.51.1.52 #define RT\_MODE\_TX\_LAST\_COMMAND 0X0012

4.51.1.53 #define RT\_MODE\_TX\_STAT\_WORD 0X0002

4.51.1.54 #define RT\_MODE\_TXS\_SHUTDN 0X0004

4.51.1.55 #define RT\_MODE\_TXS\_VECTOR\_WORD 0X0010

4.51.1.56 #define RtBitwd\_CHANN\_B\_CHANN\_A 0X0100

4.51.1.57 #define RtBitwd\_CMD\_WRD\_CNTENTS\_ERR 0X0001

4.51.1.58 #define RtBitwd\_HANDSHAKE\_FAILURE 0X1000

4.51.1.59 #define RtBitwd\_HIGH\_WORD\_COUNT 0X0080

## 4.52 MM\_21020.h File Reference

This graph shows which files directly or indirectly include this file:

### Functions

- void [from\\_2DM\\_to\\_1DM](#) (unsigned int \*, unsigned int \*, unsigned int)
- void [from\\_1DM\\_to\\_2DM](#) (unsigned int \*, unsigned int \*, unsigned int)
- void [from\\_DM\\_to\\_PM](#) (unsigned int \*, unsigned int \*, unsigned int)
- void [from\\_PM\\_to\\_DM](#) (unsigned int \*, unsigned int \*, unsigned int)
- void [one\\_PM\\_to\\_DM](#) (unsigned int \*, unsigned int \*, unsigned int \*, unsigned int \*)
- void [adicpy](#) (unsigned int \*, unsigned int \*, unsigned int)
- void [adicpyMask](#) (unsigned int \*, unsigned int \*, unsigned int)
- void [adicpyPM](#) (unsigned int pm \*, unsigned int pm \*, unsigned int)
- void [copyPatched\\_AndReset](#) (unsigned int pm \*, unsigned int pm \*, unsigned int)

### 4.52.1 Function Documentation

**4.52.1.1 void [adicpy](#) (unsigned int \*, unsigned int \*, unsigned int)**

**4.52.1.2 void [adicpyMask](#) (unsigned int \*, unsigned int \*, unsigned int)**

**4.52.1.3 void [adicpyPM](#) (unsigned int pm \*, unsigned int pm \*, unsigned int)**

**4.52.1.4 void [copyPatched\\_AndReset](#) (unsigned int pm \*, unsigned int pm \*, unsigned int)**

**4.52.1.5 void [from\\_1DM\\_to\\_2DM](#) (unsigned int \*, unsigned int \*, unsigned int)**

**4.52.1.6 void [from\\_2DM\\_to\\_1DM](#) (unsigned int \*, unsigned int \*, unsigned int)**

**4.52.1.7 void [from\\_DM\\_to\\_PM](#) (unsigned int \*, unsigned int \*, unsigned int)**

**4.52.1.8 void [from\\_PM\\_to\\_DM](#) (unsigned int \*, unsigned int \*, unsigned int)**

**4.52.1.9 void [one\\_PM\\_to\\_DM](#) (unsigned int \*, unsigned int \*, unsigned int \*, unsigned int \*)**

## 4.53 MM\_crc.c File Reference

```
#include "MM_crc.h"
```

Include dependency graph for MM\_crc.c:

### Functions

- unsigned int [crc8](#) (unsigned int datum, unsigned int crc)
- unsigned int [crc16](#) (unsigned int datum, unsigned int crc)
- unsigned int [crc32](#) (unsigned int datum, unsigned int crc)
- unsigned int [memcrc8](#) (unsigned int \*p\_data, unsigned int len, unsigned int crc)
- unsigned int [memcrc16](#) (unsigned int \*p\_data, unsigned int len, unsigned int crc)
- unsigned int [memcrc32](#) (unsigned int \*p\_data, unsigned int len, unsigned int crc)
- unsigned int [memcrc32\\_pm](#) (unsigned int pm \*p\_data, unsigned int len, unsigned int crc)

### Variables

- static unsigned int [CRc\\_table](#) [256]

#### 4.53.1 Function Documentation

**4.53.1.1 unsigned int [crc16](#) (unsigned int *datum*, unsigned int *crc*)**

**4.53.1.2 unsigned int [crc32](#) (unsigned int *datum*, unsigned int *crc*)**

**4.53.1.3 unsigned int [crc8](#) (unsigned int *datum*, unsigned int *crc*)**

**4.53.1.4 unsigned int [memcrc16](#) (unsigned int \*, unsigned *int*, unsigned *int*)**

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102>) The Modification Log has been posted at End Of File.

**4.53.1.5 unsigned int [memcrc32](#) (unsigned int \* *p\_data*, unsigned int *len*, unsigned int *crc*)**

**4.53.1.6 unsigned int [memcrc32\\_pm](#) (unsigned int pm \* *p\_data*, unsigned int *len*, unsigned int *crc*)**

**4.53.1.7 unsigned int [memcrc8](#) (unsigned int \* *p\_data*, unsigned int *len*, unsigned int *crc*)**

#### 4.53.2 Variable Documentation

**4.53.2.1 unsigned int [CRc\\_table](#)[256] [static]**

## 4.54 MM\_crc.h File Reference

This graph shows which files directly or indirectly include this file:

### Functions

- unsigned int [crc8](#) (unsigned int datum, unsigned int crc)
- unsigned int [crc16](#) (unsigned int datum, unsigned int crc)
- unsigned int [crc32](#) (unsigned int datum, unsigned int crc)
- unsigned int [memcrc8](#) (unsigned int \*p\_data, unsigned int len, unsigned int crc)
- unsigned int [memcrc16](#) (unsigned int \*p\_data, unsigned int len, unsigned int crc)
- unsigned int [memcrc32](#) (unsigned int \*p\_data, unsigned int len, unsigned int crc)
- unsigned int [memcrc32\\_pm](#) (unsigned int pm \*p\_data, unsigned int len, unsigned int crc)

### 4.54.1 Function Documentation

**4.54.1.1 unsigned int [crc16](#) (unsigned int *datum*, unsigned int *crc*)**

**4.54.1.2 unsigned int [crc32](#) (unsigned int *datum*, unsigned int *crc*)**

**4.54.1.3 unsigned int [crc8](#) (unsigned int *datum*, unsigned int *crc*)**

**4.54.1.4 unsigned int [memcrc16](#) (unsigned int \* *p\_data*, unsigned int *len*, unsigned int *crc*)**

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.

**4.54.1.5 unsigned int [memcrc32](#) (unsigned int \* *p\_data*, unsigned int *len*, unsigned int *crc*)**

**4.54.1.6 unsigned int [memcrc32\\_pm](#) (unsigned int pm \* *p\_data*, unsigned int *len*, unsigned int *crc*)**

**4.54.1.7 unsigned int [memcrc8](#) (unsigned int \* *p\_data*, unsigned int *len*, unsigned int *crc*)**



## 4.55 MM\_lib.c File Reference

```
#include <stdlib.h>
#include "MM_crc.h"
#include "MM_21020.h"
#include "MM_lib.h"
```

Include dependency graph for MM\_lib.c:

### Data Structures

- struct [memory\\_segment\\_def](#)

### Enumerations

- enum {  
    [MEMORY\\_PROM\\_ID](#), [MEMORY\\_RAM\\_ID](#), [MEMORY\\_1355\\_REG\\_ID](#), [MEMORY\\_EEPROM\\_ID](#),  
    [MEMORY\\_SMCS\\_DRAM\\_ID](#), [MEMORY\\_1553\\_ID](#), [MEMORY\\_DM\\_IN\\_PM\\_ID](#), [NUMBER\\_OF\\_MEM\\_SEGMENT](#) }

### Functions

- unsigned int [IFSI\\_DIV](#) (unsigned int, unsigned int)
- unsigned int [IFSI\\_MOD](#) (unsigned int, unsigned int)
- void [delete\\_memory\\_segments](#) (void)
- int [add\\_memory\\_segment](#) (unsigned int par\_ID, unsigned int par\_offset, unsigned int par\_size, int par\_is\_writable)
- int [create\\_memory\\_header](#) (unsigned int \*data, [memory\\_header](#) \*p\_header, unsigned int length\_to\_check)
- unsigned int [memory\\_load](#) (unsigned int \*data, [memory\\_header](#) \*p\_head, int \*err)
- unsigned int [memory\\_dump](#) ([memory\\_header](#) \*p\_head, unsigned int \*data\_dumped, unsigned int \*start\_address)
- unsigned int [memory\\_check](#) ([memory\\_header](#) \*p\_head, unsigned int crc\_init)
- unsigned int [copy\\_OBSW\\_image](#) (unsigned int direction, unsigned int StartDestAddr, unsigned int NumOfWords)

### Variables

- unsigned int [adicpy\\_len](#) = 50
- unsigned int [Make\\_reset](#) = 0
- static [memory\\_segment\\_def](#) [MEmory\\_map](#) [[NUMBER\\_OF\\_MEM\\_SEGMENT](#)]
- static int [NUmber\\_of\\_mem\\_segment](#) = [NUMBER\\_OF\\_MEM\\_SEGMENT](#)

#### 4.55.1 Enumeration Type Documentation

##### 4.55.1.1 anonymous enum

Enumerator:

*MEMORY\_PROM\_ID*

*MEMORY\_RAM\_ID*

*MEMORY\_1355\_REG\_ID*

*MEMORY\_EEPROM\_ID*

*MEMORY\_SMCS\_DRAM\_ID*



*MEMORY\_1553\_ID*

*MEMORY\_DM\_IN\_PM\_ID*

*NUMBER\_OF\_MEM\_SEGMENT*

## 4.55.2 Function Documentation

4.55.2.1 `int add_memory_segment (unsigned int par_ID, unsigned int par_offset, unsigned int par_size, int par_is_writeable)`

4.55.2.2 `unsigned int copy_OBSW_image (unsigned int direction, unsigned int StartDestAddr, unsigned int NumOfWords)`

4.55.2.3 `int create_memory_header (unsigned int * data, memory_header * p_header, unsigned int length_to_check)`

4.55.2.4 `void delete_memory_segments (void)`

4.55.2.5 `unsigned int IFSI_DIV (unsigned int, unsigned int)`

4.55.2.6 `unsigned int IFSI_MOD (unsigned int, unsigned int)`

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :

### Name

Last Modification :

### Date

2006/05/08 10:30:34

Location :

### RCSfile

[MilConf.c,v](#)

### Version:

:

### Header

/usr/local/cvsrep/PACS\_V2/code/MilConf.c,v 1.7 2006/05/08 10:30:34 daniele Exp



Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.12.html#SEC102>) The Modification Log has been posted at End Of File.

**4.55.2.7** unsigned int memory\_check (memory\_header \* p\_head, unsigned int crc\_init)

**4.55.2.8** unsigned int memory\_dump (memory\_header \* p\_head, unsigned int \* data\_dumped, unsigned int \* start\_address)

**4.55.2.9** unsigned int memory\_load (unsigned int \* data, memory\_header \* p\_head, int \* err)

### 4.55.3 Variable Documentation

**4.55.3.1** unsigned int adicpy\_len = 50

**4.55.3.2** unsigned int Make\_reset = 0

**4.55.3.3** memory\_segment\_def MEmory\_map[NUMBER\_OF\_MEM\_SEGMENT] [static]

**Initial value:**

```
{
  {MEMORY_PROM_ID, 0x100, 0x1555, 0},
  {MEMORY_RAM_ID, DATA_MEMORY_BASE_ADDRESS, 0x80000, 1},
  {MEMORY_1355_REG_ID, SMCS_REGISTERS_BASE_ADDRESS, 0x70, 1},
  {MEMORY_EEPROM_ID, EEPROM_MEMORY_BASE_ADDRESS, 0x40000, 0},
  {MEMORY_SMCS_DRAM_ID, IF_1355_BASE_ADDRESS, 0x2000, 1},
  {MEMORY_1553_ID, BUS_IF_MIL_AND_ANALOG_INP, 0x4000, 1},
  {MEMORY_DM_IN_PM_ID, START_DM_IN_PM, 0x3A0, 0}
}
```

**4.55.3.4** int Number\_of\_mem\_segment = NUMBER\_OF\_MEM\_SEGMENT [static]

## 4.56 MM\_lib.h File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [memory\\_header](#)

### Defines

- #define [MAX\\_SUBSYSTEM](#) 4
- #define [DATA\\_MEMORY\\_BASE\\_ADDRESS](#) 0
- #define [START\\_DM\\_IN\\_PM](#) 0x7BC00
- #define [IF\\_1355\\_BASE\\_ADDRESS](#) 0x40000000
- #define [EEPROM\\_MEMORY\\_BASE\\_ADDRESS](#) 0x80000000
- #define [INTERVAL\\_TIMER\\_BASE\\_ADDRESS](#) 0x81000000
- #define [WATCHDOG\\_BASE\\_ADDRESS](#) 0x82000000
- #define [INT\\_MANAGER\\_BASE\\_ADDRESS](#) 0x83000000
- #define [SMCS\\_REGISTERS\\_BASE\\_ADDRESS](#) 0x84000000
- #define [BUS\\_IF\\_BOARD\\_REGISTERS](#) 0x8D000000
- #define [BUS\\_IF\\_MIL\\_AND\\_ANALOG\\_INP](#) 0x8F000000
- #define [MSEL\\_reg](#) 0x8000
- #define [MDATA\\_reg](#) 0x8001
- #define [INVALID\\_MEMID](#) 0x12
- #define [INVALID\\_ADDRESS](#) 0x13
- #define [INVALID\\_MEMLength](#) 0x14
- #define [INVALID\\_CRC\\_1ST\\_CHK](#) 0x15
- #define [INVALID\\_CRC\\_2ND\\_CHK](#) 0x1B
- #define [MEM\\_LOAD\\_OK](#) 0xFFFF
- #define [COPY\\_OBSW\\_IMAGE\\_OK](#) 0
- #define [NUM\\_OF\\_WORDS\\_WRONG](#) 1
- #define [ILLEGAL\\_DIRECTION](#) 3
- #define [LOW\\_PM2HIGH\\_PM](#) 1
- #define [HIGH\\_PM2LOW\\_PM](#) 2
- #define [MAX\\_NUMBER\\_PM\\_WORDS\\_TC](#) 38
- #define [MAX\\_NUMBER\\_DM\\_WORDS\\_TC](#) 57
- #define [MAX\\_NUMBER\\_PM\\_WORDS\\_TM](#) 166
- #define [MAX\\_NUMBER\\_DM\\_WORDS\\_TM](#) 249

### Functions

- void [delete\\_memory\\_segments](#) (void)
- int [add\\_memory\\_segment](#) (unsigned int, unsigned int, unsigned int, int)
- int [create\\_memory\\_header](#) (unsigned int \*, [memory\\_header](#) \*, unsigned int)
- unsigned int [memory\\_load](#) (unsigned int \*, [memory\\_header](#) \*, int \*)
- unsigned int [memory\\_dump](#) ([memory\\_header](#) \*, unsigned int \*, unsigned int \*)
- unsigned int [memory\\_check](#) ([memory\\_header](#) \*, unsigned int)
- unsigned int [copy\\_OBSW\\_image](#) (unsigned int, unsigned int, unsigned int)



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 231 of [307](#)



## 4.56.1 Define Documentation

4.56.1.1 #define BUS\_IF\_BOARD\_REGISTERS 0x8D000000

4.56.1.2 #define BUS\_IF\_MIL\_AND\_ANALOG\_INP 0x8F000000

4.56.1.3 #define COPY\_OBSW\_IMAGE\_OK 0

4.56.1.4 #define DATA\_MEMORY\_BASE\_ADDRESS 0

4.56.1.5 #define EEPROM\_MEMORY\_BASE\_ADDRESS 0x80000000

4.56.1.6 #define HIGH\_PM2LOW\_PM 2

4.56.1.7 #define IF\_1355\_BASE\_ADDRESS 0x40000000

4.56.1.8 #define ILLEGAL\_DIRECTION 3

4.56.1.9 #define INT\_MANAGER\_BASE\_ADDRESS 0x83000000

4.56.1.10 #define INTERVAL\_TIMER\_BASE\_ADDRESS 0x81000000

4.56.1.11 #define INVALID\_ADDRESS 0x13

4.56.1.12 #define INVALID\_CRC\_1ST\_CHK 0x15

4.56.1.13 #define INVALID\_CRC\_2ND\_CHK 0x1B

4.56.1.14 #define INVALID\_MEMID 0x12

4.56.1.15 #define INVALID\_MEMLength 0x14

4.56.1.16 #define LOW\_PM2HIGH\_PM 1

4.56.1.17 #define MAX\_NUMBER\_DM\_WORDS\_TC 57

4.56.1.18 #define MAX\_NUMBER\_DM\_WORDS\_TM 249

4.56.1.19 #define MAX\_NUMBER\_PM\_WORDS\_TC 38

4.56.1.20 #define MAX\_NUMBER\_PM\_WORDS\_TM 166

4.56.1.21 #define MAX\_SUBSYSTEM 4

4.56.1.22 #define MDATA\_reg 0x8001

4.56.1.23 #define MEM\_LOAD\_OK 0xFFFF

4.56.1.24 #define MSEL\_reg 0x8000

4.56.1.25 #define NUM\_OF\_WORDS\_WRONG 1

4.56.1.26 #define SMCS\_REGISTERS\_BASE\_ADDRESS 0x84000000

4.56.1.27 #define START\_DM\_IN\_PM 0x7BC00

4.56.1.28 #define WATCHDOG\_BASE\_ADDRESS 0x82000000

## 4.56.2 Function Documentation

4.56.2.1 int add\_memory\_segment(unsigned int, unsigned int, unsigned int, int)



## 4.57 MM\_MISC.c File Reference

```
#include <stdlib.h>
#include <string.h>
#include "MM_MISC.h"
```

Include dependency graph for MM\_MISC.c:

### Functions

- unsigned int [is\\_even](#) (unsigned int a)
- unsigned int [IFSI\\_DIV](#) (unsigned int Dividend, unsigned int Divisor)
- unsigned int [IFSI\\_MOD](#) (unsigned int Dividend, unsigned int Divisor)
- void [read\\_BSW\\_counters](#) (unsigned int \*p\_counters)

### 4.57.1 Function Documentation

**4.57.1.1 unsigned int IFSI\_DIV (unsigned int *Dividend*, unsigned int *Divisor*)**

**4.57.1.2 unsigned int IFSI\_MOD (unsigned int, unsigned int)**

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

#### Author

daniele

Revision : \$Revision: 1.3

Checkout Tag :

#### Name

Last Modification :

#### Date

2006/05/08 10:30:34

Location :

#### RCSfile

[MilConf.c,v](#)

#### Version:

:

#### Header

/usr/local/cvsrep/PACS\_V2/code/MilConf.c,v 1.7 2006/05/08 10:30:34 daniele Exp



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 234 of 307

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cvs-1.11.18.html#SEC102>) The Modification Log has been posted at End Of File.

**4.57.1.3 unsigned int is\_even (unsigned int *a*)**

**4.57.1.4 void read\_BSW\_counters (unsigned int \**p\_counters*)**



## 4.58 MM\_MISC.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define [BOOT\\_SEQ\\_COUNTER](#) 0x1560
- #define [BOOT\\_EVENT\\_51](#) 0x1561
- #define [BOOT\\_EVENT\\_54](#) 0x1562
- #define [BOOT\\_EVENT\\_52](#) 0x1563
- #define [OBSW\\_APID\\_2](#) 0x1564
- #define [OBSW\\_APID\\_3](#) 0x1565
- #define [OBSW\\_APID\\_4](#) 0x1566
- #define [OBSW\\_APID\\_5](#) 0x1567
- #define [OBSW\\_APID\\_6](#) 0x1568
- #define [MASK\\_FOR\\_APID\\_SSC](#) 0xABCD0000

### Functions

- unsigned int [is\\_even](#) (unsigned int a)
- unsigned int [IFSI\\_DIV](#) (unsigned int Dividend, unsigned int Divisor)
- unsigned int [IFSI\\_MOD](#) (unsigned int Dividend, unsigned int Divisor)
- void [read\\_BSW\\_counters](#) (unsigned int \*)

### 4.58.1 Define Documentation

**4.58.1.1** #define [BOOT\\_EVENT\\_51](#) 0x1561

**4.58.1.2** #define [BOOT\\_EVENT\\_52](#) 0x1563

**4.58.1.3** #define [BOOT\\_EVENT\\_54](#) 0x1562

**4.58.1.4** #define [BOOT\\_SEQ\\_COUNTER](#) 0x1560

**4.58.1.5** #define [MASK\\_FOR\\_APID\\_SSC](#) 0xABCD0000

**4.58.1.6** #define [OBSW\\_APID\\_2](#) 0x1564

**4.58.1.7** #define [OBSW\\_APID\\_3](#) 0x1565

**4.58.1.8** #define [OBSW\\_APID\\_4](#) 0x1566

**4.58.1.9** #define [OBSW\\_APID\\_5](#) 0x1567

**4.58.1.10** #define [OBSW\\_APID\\_6](#) 0x1568

### 4.58.2 Function Documentation

**4.58.2.1** unsigned int [IFSI\\_DIV](#) (unsigned int *Dividend*, unsigned int *Divisor*)

**4.58.2.2** unsigned int [IFSI\\_MOD](#) (unsigned int *Dividend*, unsigned int *Divisor*)

MIL-STD 1553B Library - Carlo Gavazzi Space

Filename : [MilRt.h](#)



IFSI  
INAF

**Herschel PACS**  
**DPU OBS**  
**Detailed Design Document**  
**Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 236 of 307

Purposes :

Logical Task :

Author : CGSpace

Last Developer :

**Author**

daniele

Revision : \$Revision: 1.3

Checkout Tag :

**Name**

Last Modification :

**Date**

2006/05/08 10:30:34

Location :

**RCSfile**

[MilConf.c,v](#)

**Version:**

:

**Header**

`/usr/local/cvsrep/PACS_V2/code/MilConf.c,v 1.7 2006/05/08 10:30:34 daniele Exp`

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.

**4.58.2.3 unsigned int is\_even (unsigned int a)**

**4.58.2.4 void read\_BSW\_counters (unsigned int \*)**

## 4.59 NODE1.c File Reference

```
#include "iface.h"  
#include "NODE1.h"  
#include "bwrsgen.h"
```

Include dependency graph for NODE1.c:

### Typedefs

- typedef void(\* [taskstartfunction](#) )(void)
- typedef void(\* [taskabortfunction](#) )(void)

### Functions

- void [init\\_drivers](#) (void)
- void [init\\_node](#) (void)
- int [main](#) (void)

### Variables

- int [K\\_NodeCount](#) = 1
- int [K\\_PrioCount](#) = 64
- [K\\_TQHD](#) [K\\_PrioList](#) [64]
- int [K\\_TaskCount](#) = 9
- int [K\\_QueueCount](#) = 2
- int [K\\_MapCount](#) = 0
- int [K\\_SemCount](#) = 5
- int [K\\_ResCount](#) = 3
- int [K\\_MbxCount](#) = 0
- int [K\\_PoolCount](#) = 0
- int [K\\_max\\_eventnr](#) = 61
- [K\\_PRIO](#) [K\\_PrioCeiling](#) = 5
- [K\\_NODE](#) [K\\_ThisNode](#) = 0x00010000
- int [tickunit](#) = 20000
- int [ticktime](#) = 1000
- int [K\\_DataSize](#) = 16384
- int [K\\_DataNall](#) = 0
- int [K\\_ArgsNall](#) = 50
- int [K\\_TimerNall](#) = 30
- int [K\\_StackSize](#) = 256
- UNS32 [K\\_KernelPrio](#) = 0
- UNS32 [K\\_DriverPrio](#) = 0
- [K\\_PROC](#) [K\\_TaskList](#) [10]
- [QUE\\_STRUCT](#) [K\\_QueueList](#) [2]
- [MAP\\_STRUCT](#) \* [K\\_MapList](#) = NULL
- [SEM\\_STRUCT](#) [K\\_SemList](#) [5]
- [RES\\_STRUCT](#) [K\\_ResList](#) [3]
- [MBX\\_STRUCT](#) \* [K\\_MbxList](#) = NULL
- [POOL\\_STRUCT](#) \* [K\\_PoolList](#) = NULL
- int \* [RouteInd](#) [1]
- kernelfunc [\\_minik\\_func](#) [66]
- EVSTR [EVENTS](#) [61]

### 4.59.1 Typedef Documentation

4.59.1.1 `typedef void(* taskabortfunction)(void)`

4.59.1.2 `typedef void(* taskstartfunction)(void)`

### 4.59.2 Function Documentation

4.59.2.1 `void init_drivers (void)`

4.59.2.2 `void init_node (void)`

4.59.2.3 `int main (void)`

### 4.59.3 Variable Documentation

4.59.3.1 `kernelfunc _minik_func[66]`

4.59.3.2 `EVSTR EVENTS[61]`

4.59.3.3 `int K_ArgsNall = 50`

4.59.3.4 `int K_DataNall = 0`

4.59.3.5 `int K_DataSize = 16384`

4.59.3.6 `UNS32 K_DriverPrio = 0`

4.59.3.7 `UNS32 K_KernelPrio = 0`

4.59.3.8 `int K_MapCount = 0`

4.59.3.9 `MAP_STRUCT* K_MapList = NULL`

4.59.3.10 `int K_max_eventnr = 61`

4.59.3.11 `int K_MbxCount = 0`

4.59.3.12 `MBX_STRUCT* K_MbxList = NULL`

4.59.3.13 `int K_NodeCount = 1`

4.59.3.14 `int K_PoolCount = 0`

4.59.3.15 `POOL_STRUCT* K_PoolList = NULL`

4.59.3.16 `K_PRIO K_PrioCeiling = 5`

4.59.3.17 `int K_PrioCount = 64`

4.59.3.18 `K_TQHD K_PrioList[64]`

4.59.3.19 `int K_QueueCount = 2`

4.59.3.20 `QUE_STRUCT K_QueueList[2]`

Initial value:



```
{  
    { 1, 4},  
    { 1, 16}  
}
```

**4.59.3.21 int K\_ResCount = 3**

**4.59.3.22 RES\_STRUCT K\_ResList[3]**

**4.59.3.23 int K\_SemCount = 5**

**4.59.3.24 SEM\_STRUCT K\_SemList[5]**

**4.59.3.25 int K\_StackSize = 256**

**4.59.3.26 int K\_TaskCount = 9**

**4.59.3.27 K\_PROC K\_TaskList[10]**

**Initial value:**

```
{  
    {NULL, NULL, 5, 0x00010000, 0, 0x00000003, Francesco, NULL, 5000, (taskabortfu  
    {NULL, NULL, 10, 0x00010001, 0, 0x0000000a, Iside, NULL, 10000, (taskabortfu  
    {NULL, NULL, 13, 0x00010002, 0, 0x00000012, answered_prayers, NULL, 10000, (taska  
    {NULL, NULL, 8, 0x00010003, 0, 0x0000000a, thoth, NULL, 10000, (taskabortfu  
    {NULL, NULL, 11, 0x00010004, 0, 0x0000000a, ma_cgig, NULL, 10000, (taskabortfu  
    {NULL, NULL, 12, 0x00010005, 0, 0x00000022, mumon, NULL, 5000, (taskabortfu  
    {NULL, NULL, 12, 0x00010006, 0, 0x00000022, Hunahpu, NULL, 5000, (taskabortfu  
    {NULL, NULL, 12, 0x00010007, 0, 0x00000022, Ixbalamque, NULL, 5000, (taskabortfu  
    {NULL, NULL, 9, 0x00010008, 0, 0x0000000a, Ginevra, NULL, 10000, (taskabortfu  
    {NULL, NULL, 9999, 0x00000000, 0, 0x00000000, (taskstartfunction) NULL, NULL, 0,  
}
```

**4.59.3.28 K\_NODE K\_ThisNode = 0x00010000**

**4.59.3.29 int K\_TimerNall = 30**

**4.59.3.30 int\* RouteInd[1]**

**Initial value:**

```
{  
    NULL  
}
```

**4.59.3.31 int ticktime = 1000**

**4.59.3.32 int tickunit = 20000**

## 4.60 NODE1.h File Reference

```
#include "iface.h"  
#include "allnodes.h"
```

Include dependency graph for NODE1.h:

This graph shows which files directly or indirectly include this file:

### Defines

- #define [ISR\\_1553\\_EVENT](#) 56
- #define [INT\\_DEC](#) 57
- #define [STARTPROC](#) 58
- #define [INT\\_SPS](#) 59
- #define [INT\\_SPL](#) 60

### Functions

- void [Francesco](#) (void)
- void [Iside](#) (void)
- void [answered\\_prayers](#) (void)
- void [thoth](#) (void)
- void [ma\\_cgig](#) (void)
- void [mumon](#) (void)
- void [Hunahpu](#) (void)
- void [Ixbalamque](#) (void)
- void [Ginevra](#) (void)

### Variables

- int [K\\_max\\_eventnr](#)
- EVSTR [EVENTS](#) []



#### **4.60.1 Define Documentation**

**4.60.1.1 #define INT\_DEC 57**

**4.60.1.2 #define INT\_SPL 60**

**4.60.1.3 #define INT\_SPS 59**

**4.60.1.4 #define ISR\_1553\_EVENT 56**

**4.60.1.5 #define STARTPROC 58**

#### **4.60.2 Function Documentation**

**4.60.2.1 void answered\_prayers (void)**

**4.60.2.2 void Francesco (void)**

**4.60.2.3 void Ginevra (void)**

**4.60.2.4 void Hunahpu (void)**

**4.60.2.5 void Iside (void)**

**4.60.2.6 void Ixbalamque (void)**

**4.60.2.7 void ma\_cgig (void)**

**4.60.2.8 void mumon (void)**

**4.60.2.9 void thoth (void)**

#### **4.60.3 Variable Documentation**

**4.60.3.1 EVSTR EVENTS[ ]**

**4.60.3.2 int K\_max\_eventnr**



## 4.61 pmload.h File Reference

This graph shows which files directly or indirectly include this file:

### Functions

- unsigned long [PmRead16Bits](#) (unsigned long *m\_PmCellAddr*)
- unsigned long [PmRead32Bits](#) (unsigned long *m\_PmCellAddr*)

### 4.61.1 Function Documentation

4.61.1.1 unsigned long [PmRead16Bits](#) (unsigned long *m\_PmCellAddr*)

4.61.1.2 unsigned long [PmRead32Bits](#) (unsigned long *m\_PmCellAddr*)



## 4.62 SEQ\_BUFF.h File Reference

This graph shows which files directly or indirectly include this file:

### Variables

- WAIT
- LABEL
- LOOP
- DMC\_SEQ\_ARG\_6
- DMC\_SEQ\_ARG\_1
- MOVE\_CHOP\_ABS
- DMC\_SEQ\_ARG\_2
- DMC\_SEQ\_ARG\_3
- DMC\_SEQ\_ARG\_4
- DMC\_SEQ\_ARG\_5
- END\_LOOP
- DMC\_SEQ\_ARG\_7
- DMC\_SEQ\_ARG\_8
- DMC\_SEQ\_ARG\_9
- END\_SEQUENCE
- MOVE\_CHOP\_ABS\_DITHER
- MOVE\_CHOP\_REL
- DMC\_SEQ\_ARG\_10
- MOVE\_GRAT\_REL
- DMC\_SEQ\_ARG\_11
- DMC\_SEQ\_ARG\_12
- MOVE\_GRAT\_ABS
- DMC\_SEQ\_ARG\_13
- DMC\_SEQ\_ARG\_14
- DMC\_SEQ\_ARG\_15



## 4.62.1 Variable Documentation

4.62.1.1 DMC\_SEQ\_ARG\_1

4.62.1.2 DMC\_SEQ\_ARG\_10

4.62.1.3 DMC\_SEQ\_ARG\_11

4.62.1.4 DMC\_SEQ\_ARG\_12

4.62.1.5 DMC\_SEQ\_ARG\_13

4.62.1.6 DMC\_SEQ\_ARG\_14

4.62.1.7 DMC\_SEQ\_ARG\_15

4.62.1.8 DMC\_SEQ\_ARG\_2

4.62.1.9 DMC\_SEQ\_ARG\_3

4.62.1.10 DMC\_SEQ\_ARG\_4

4.62.1.11 DMC\_SEQ\_ARG\_5

4.62.1.12 DMC\_SEQ\_ARG\_6

4.62.1.13 DMC\_SEQ\_ARG\_7

4.62.1.14 DMC\_SEQ\_ARG\_8

4.62.1.15 DMC\_SEQ\_ARG\_9

4.62.1.16 END\_LOOP

4.62.1.17 END\_SEQUENCE

4.62.1.18 LABEL

4.62.1.19 LOOP

4.62.1.20 MOVE\_CHOP\_ABS

4.62.1.21 MOVE\_CHOP\_ABS\_DITHER

4.62.1.22 MOVE\_CHOP\_REL

4.62.1.23 MOVE\_GRAT\_ABS

4.62.1.24 MOVE\_GRAT\_REL

4.62.1.25 WAIT



## 4.63 SPUCmd.h File Reference

This graph shows which files directly or indirectly include this file:

### Defines

- #define TRIG\_HEADER 0x00040000
- #define WRITE\_HEADER 0x00060000

### Enumerations

- enum {

LOAD\_SPU\_RED\_ASW\_FROM\_EEPROM = 0x00650005, RUN\_RED\_ASW = 0x00660002, RED\_LLSW\_WARM\_RESET = 0x00680000, COPY\_PM\_IN\_EEPROM\_RED = 0x00040005,

WARM\_RESET\_RED = 0x00050000, RAW\_CHANNEL\_TRANSMISSION\_MODE\_RED = 0x00060005, STOP\_REDUCTION\_COMPRESSION\_RED = 0x00070000, START\_REDUCTION\_COMPRESSION\_RED = 0x00080000,

START\_PEAKUP\_RED = 0x00090000, ACTIVATE\_SPU\_TEST\_PHOT\_RED = 0x000A0000, ACTIVATE\_SPU\_TEST\_SPEC\_RED = 0x000B0000, CONNECT\_DMC\_RED = 0x00100001,

LOAD\_SPU\_BLUE\_ASW\_FROM\_EEPROM = 0x00650005, RUN\_BLUE\_ASW = 0x00660002, BLUE\_LLSW\_WARM\_RESET = 0x00680000, COPY\_PM\_IN\_EEPROM\_BLUE = 0x00040005,

WARM\_RESET\_BLUE = 0x00050000, RAW\_CHANNEL\_TRANSMISSION\_MODE\_BLUE = 0x00060005, STOP\_REDUCTION\_COMPRESSION\_BLUE = 0x00070000, START\_REDUCTION\_COMPRESSION\_BLUE = 0x00080000,

START\_PEAKUP\_BLUE = 0x00090000, ACTIVATE\_SPU\_TEST\_PHOT\_BLUE = 0x000A0000, ACTIVATE\_SPU\_TEST\_SPEC\_BLUE = 0x000B0000, CONNECT\_DMC\_BLUE = 0x00100001,

SPU\_WRITE\_SIM\_DATA\_RED = 0x00180000, SPU\_WRITE\_DET\_CONST\_PHOT\_RED = 0x00240000, SPU\_WRITE\_DET\_CONST\_SPEC\_RED = 0x00420000, SPU\_WRITE\_DET\_SEL\_TABLE\_1\_RED = 0x00810000,

SPU\_WRITE\_DET\_SEL\_TABLE\_2\_RED = 0x00820000, SPU\_WRITE\_DET\_SEL\_TABLE\_3\_RED = 0x00830000, SPU\_WRITE\_DET\_SEL\_TABLE\_4\_RED = 0x00840000, SPU\_WRITE\_DET\_SEL\_TABLE\_5\_RED = 0x00850000,

SPU\_WRITE\_DET\_SEL\_TABLE\_6\_RED = 0x00860000, SPU\_WRITE\_DET\_SEL\_TABLE\_7\_RED = 0x00870000, SPU\_WRITE\_SIM\_DATA\_BLUE = 0x00180000, SPU\_WRITE\_DET\_CONST\_PHOT\_BLUE = 0x00240000,

SPU\_WRITE\_DET\_CONST\_SPEC\_BLUE = 0x00420000, SPU\_WRITE\_DET\_SEL\_TABLE\_1\_BLUE = 0x00810000, SPU\_WRITE\_DET\_SEL\_TABLE\_2\_BLUE = 0x00820000, SPU\_WRITE\_DET\_SEL\_TABLE\_3\_BLUE = 0x00830000,

SPU\_WRITE\_DET\_SEL\_TABLE\_4\_BLUE = 0x00840000, SPU\_WRITE\_DET\_SEL\_TABLE\_5\_BLUE = 0x00850000, SPU\_WRITE\_DET\_SEL\_TABLE\_6\_BLUE = 0x00860000, SPU\_WRITE\_DET\_SEL\_TABLE\_7\_BLUE = 0x00870000 }



#### 4.63.1 Define Documentation

4.63.1.1 #define TRIG\_HEADER 0x00040000

4.63.1.2 #define WRITE\_HEADER 0x00060000

#### 4.63.2 Enumeration Type Documentation

4.63.2.1 anonymous enum

Enumerator:

*LOAD\_SPU\_RED\_ASW\_FROM\_EEPROM*  
*RUN\_RED\_ASW*  
*RED\_LLSW\_WARM\_RESET*  
*COPY\_PM\_IN\_EEPROM\_RED*  
*WARM\_RESET\_RED*  
*RAW\_CHANNEL\_TRANSMISSION\_MODE\_RED*  
*STOP\_REDUCTION\_COMPRESSION\_RED*  
*START\_REDUCTION\_COMPRESSION\_RED*  
*START\_PEAKUP\_RED*  
*ACTIVATE\_SPU\_TEST\_PHOT\_RED*  
*ACTIVATE\_SPU\_TEST\_SPEC\_RED*  
*CONNECT\_DMC\_RED*  
*LOAD\_SPU\_BLUE\_ASW\_FROM\_EEPROM*  
*RUN\_BLUE\_ASW*  
*BLUE\_LLSW\_WARM\_RESET*  
*COPY\_PM\_IN\_EEPROM\_BLUE*  
*WARM\_RESET\_BLUE*  
*RAW\_CHANNEL\_TRANSMISSION\_MODE\_BLUE*  
*STOP\_REDUCTION\_COMPRESSION\_BLUE*  
*START\_REDUCTION\_COMPRESSION\_BLUE*  
*START\_PEAKUP\_BLUE*  
*ACTIVATE\_SPU\_TEST\_PHOT\_BLUE*  
*ACTIVATE\_SPU\_TEST\_SPEC\_BLUE*  
*CONNECT\_DMC\_BLUE*  
*SPU\_WRITE\_SIM\_DATA\_RED*  
*SPU\_WRITE\_DET\_CONST\_PHOT\_RED*  
*SPU\_WRITE\_DET\_CONST\_SPEC\_RED*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_1\_RED*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_2\_RED*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_3\_RED*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_4\_RED*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_5\_RED*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_6\_RED*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_7\_RED*  
*SPU\_WRITE\_SIM\_DATA\_BLUE*  
*SPU\_WRITE\_DET\_CONST\_PHOT\_BLUE*



*SPU\_WRITE\_DET\_CONST\_SPEC\_BLUE*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_1\_BLUE*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_2\_BLUE*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_3\_BLUE*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_4\_BLUE*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_5\_BLUE*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_6\_BLUE*  
*SPU\_WRITE\_DET\_SEL\_TABLE\_7\_BLUE*

## 4.64 spwdef.H File Reference

This graph shows which files directly or indirectly include this file:

### Data Structures

- struct [channel](#)

### Defines

- #define [MAX\\_NUM\\_LINK](#) 3
- #define [OK](#) 0
- #define [NOT\\_OK](#) 1
- #define [RESET\\_REGISTER](#) 0x82000000
- #define [RESET\\_ON](#) 0x10
- #define [RESET\\_OFF](#) 0x0
- #define [BASE\\_ADDRESS](#) 0x84000000
- #define [DPRAM\\_BASE\\_ADDR](#) 0x40000000
- #define [DELTA\\_CHx](#) 0x20
- #define [DELTA\\_IMR](#) 0xA
- #define [SICR](#) 0x00
- #define [TRS\\_CTRL](#) 0x01
- #define [RT\\_CTRL](#) 0x02
- #define [ISR](#) 0x04
- #define [IMR](#) 0x08
- #define [COMI\\_CSOR](#) 0x0C
- #define [COMI\\_ACR](#) 0x0E
- #define [PRCIR](#) 0x0F
- #define [CH1\\_DSM\\_MODR](#) 0x10
- #define [CH1\\_DSM\\_CMDR](#) 0x11
- #define [CH1\\_DSM\\_STAR](#) 0x12
- #define [CH1\\_DSM\\_TSTR](#) 0x13
- #define [CH1\\_ADDR](#) 0x14
- #define [CH1\\_RT\\_ADDR](#) 0x15
- #define [CH1\\_PR\\_STAR](#) 0x16
- #define [CH1\\_CNTRL1](#) 0x18
- #define [CH1\\_CNTRL2](#) 0x19
- #define [CH1\\_HTID](#) 0x1A
- #define [CH1\\_HCNTRL](#) 0x1B
- #define [CH1\\_ESR1](#) 0x1C
- #define [CH1\\_ESR2](#) 0x1D
- #define [CH1\\_COMICFG](#) 0x1F
- #define [CH1\\_TX\\_SAR](#) 0x20
- #define [CH1\\_TX\\_EAR](#) 0x22
- #define [CH1\\_TX\\_CAR](#) 0x24
- #define [CH1\\_TX\\_FIFO](#) 0x26
- #define [CH1\\_TX\\_EOPB](#) 0x27
- #define [CH1\\_RX\\_SAR](#) 0x28
- #define [CH1\\_RX\\_EAR](#) 0x2A
- #define [CH1\\_RX\\_CAR](#) 0x2C
- #define [CH1\\_RX\\_FIFO](#) 0x2E
- #define [CH1\\_STAR](#) 0x2F
- #define [CH2\\_DSM\\_MODR](#) 0x30
- #define [CH2\\_DSM\\_CMDR](#) 0x31



- #define CH2\_DSM\_STAR 0x32
- #define CH2\_DSM\_TSTR 0x33
- #define CH2\_ADDR 0x34
- #define CH2\_RT\_ADDR 0x35
- #define CH2\_PR\_STAR 0x36
- #define CH2\_CNTRL1 0x38
- #define CH2\_CNTRL2 0x39
- #define CH2\_HTID 0x3A
- #define CH2\_HCNTRL 0x3B
- #define CH2\_ESR1 0x3C
- #define CH2\_ESR2 0x3D
- #define CH2\_COMICFG 0x3F
- #define CH2\_TX\_SAR 0x40
- #define CH2\_TX\_EAR 0x42
- #define CH2\_TX\_CAR 0x44
- #define CH2\_TX\_FIFO 0x46
- #define CH2\_TX\_EOPB 0x47
- #define CH2\_RX\_SAR 0x48
- #define CH2\_RX\_EAR 0x4A
- #define CH2\_RX\_CAR 0x4C
- #define CH2\_RX\_FIFO 0x4E
- #define CH2\_STAR 0x4F
- #define CH3\_DSM\_MODR 0x50
- #define CH3\_DSM\_CMDR 0x51
- #define CH3\_DSM\_STAR 0x52
- #define CH3\_DSM\_TSTR 0x53
- #define CH3\_ADDR 0x54
- #define CH3\_RT\_ADDR 0x55
- #define CH3\_PR\_STAR 0x56
- #define CH3\_CNTRL1 0x58
- #define CH3\_CNTRL2 0x59
- #define CH3\_HTID 0x5A
- #define CH3\_HCNTRL 0x5B
- #define CH3\_ESR1 0x5C
- #define CH3\_ESR2 0x5D
- #define CH3\_COMICFG 0x5F
- #define CH3\_TX\_SAR 0x60
- #define CH3\_TX\_EAR 0x62
- #define CH3\_TX\_CAR 0x64
- #define CH3\_TX\_FIFO 0x66
- #define CH3\_TX\_EOPB 0x67
- #define CH3\_RX\_SAR 0x68
- #define CH3\_RX\_EAR 0x6A
- #define CH3\_RX\_CAR 0x6C
- #define CH3\_RX\_FIFO 0x6E
- #define CH3\_STAR 0x6F
- #define DPRAM\_RX1\_MIN 0x0000
- #define DPRAM\_RX1\_MAX 0x07FF
- #define BLOCK\_RX1\_DIM 0x0800
- #define DPRAM\_RX2\_MIN 0x0800
- #define DPRAM\_RX2\_MAX 0x0FFF
- #define BLOCK\_RX2\_DIM 0x0800
- #define DPRAM\_RX3\_MIN 0x1000
- #define DPRAM\_RX3\_MAX 0x17FF
- #define BLOCK\_RX3\_DIM 0x0800



- #define [DPRAM\\_TX\\_MIN](#) 0x1800
- #define [DPRAM\\_TX\\_MAX](#) 0x1FFF
- #define [BLOCK\\_TX\\_DIM](#) 0x0800
- #define [LINK\\_1](#) 0
- #define [LINK\\_2](#) 1
- #define [LINK\\_3](#) 2
- #define [TRANSFER\\_NOT\\_STARTED](#) 1
- #define [TRANSFER\\_STARTED](#) 2
- #define [TRANSFER\\_DONE](#) 3
- #define [TRANSFER\\_ERROR\\_DISCONNECT](#) 4
- #define [TRANSFER\\_ERROR\\_PARITY](#) 5
- #define [TRANSFER\\_ERROR\\_TIMEOUT](#) 6
- #define [TRANSFER\\_ERROR\\_LINK\\_NOT\\_STARTED](#) 7
- #define [TRANSFER\\_OVERFLOW](#) 8
- #define [INTERRUPT\\_NOTHING\\_TO\\_DO](#) 0xFF
- #define [ABORT](#) 2
- #define [OPEN](#) 1
- #define [CLOSE](#) 0
- #define [OPERATION\\_AS\\_32\\_BITS](#) 0x02
- #define [SET\\_160\\_MEGABITS](#) 0x10
- #define [G\\_1355\\_DMY\\_ADDRESS](#) 0x7F
- #define [INT\\_MASK\\_REG](#) 0x01D0741D
- #define [IMR\\_NO\\_IRQ](#) 0x00
- #define [MASK\\_DSM\\_STAR](#) 0x06
- #define [RESET](#) 0x01
- #define [MASK\\_DSM\\_STAR\\_FCT](#) 0x10
- #define [MASK\\_DSM\\_STAR\\_NULL](#) 0x08
- #define [MASK\\_DSM\\_STAR\\_GO](#) 0x01
- #define [DSM\\_CMDR\\_MASTER\\_MASK](#) 0x06
- #define [DSM\\_CMDR\\_SLAVE\\_MASK](#) 0x02
- #define [DSM\\_CMDR\\_RESET\\_MASK](#) 0x01
- #define [DSM\\_CMDR\\_STOP\\_MASK](#) 0x05
- #define [CNTRL1\\_MASK](#) 0x00
- #define [CNTRL2\\_MASK](#) 0x07
- #define [COMI\\_MASK](#) 0X33
- #define [CHIP\\_SELECT\\_8K](#) 0x20
- #define [MASK\\_LINK](#) 0x3D
- #define [MASK\\_LINK\\_1](#) 0x00000015
- #define [MASK\\_LINK\\_2](#) 0x00005400
- #define [MASK\\_LINK\\_3](#) 0x01500000
- #define [ERROR\\_PARITY](#) 4
- #define [ERROR\\_DISCONNECT](#) 2
- #define [MASK\\_ERROR\\_LINK\\_1](#) 0x00000001
- #define [MASK\\_EOP\\_SENT\\_LINK\\_1](#) 0x00000004
- #define [MASK\\_EOP\\_REC\\_LINK\\_1](#) 0x00000010
- #define [MASK\\_ERROR\\_LINK\\_2](#) 0x00000400
- #define [MASK\\_EOP\\_SENT\\_LINK\\_2](#) 0x00001000
- #define [MASK\\_EOP\\_REC\\_LINK\\_2](#) 0x00004000
- #define [MASK\\_ERROR\\_LINK\\_3](#) 0x00100000
- #define [MASK\\_EOP\\_SENT\\_LINK\\_3](#) 0x00400000
- #define [MASK\\_EOP\\_REC\\_LINK\\_3](#) 0x01000000

## Typedefs

- typedef struct [channel LINK](#)





**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 251 of [307](#)



#### 4.64.1 Define Documentation

4.64.1.1 #define ABORT 2

4.64.1.2 #define BASE\_ADDRESS 0x84000000

4.64.1.3 #define BLOCK\_RX1\_DIM 0x0800

4.64.1.4 #define BLOCK\_RX2\_DIM 0x0800

4.64.1.5 #define BLOCK\_RX3\_DIM 0x0800

4.64.1.6 #define BLOCK\_TX\_DIM 0x0800

4.64.1.7 #define CH1\_ADDR 0x14

4.64.1.8 #define CH1\_CNTRL1 0x18

4.64.1.9 #define CH1\_CNTRL2 0x19

4.64.1.10 #define CH1\_COMICFG 0x1F

4.64.1.11 #define CH1\_DSM\_CMDR 0x11

4.64.1.12 #define CH1\_DSM\_MODR 0x10

4.64.1.13 #define CH1\_DSM\_STAR 0x12

4.64.1.14 #define CH1\_DSM\_TSTR 0x13

4.64.1.15 #define CH1\_ESR1 0x1C

4.64.1.16 #define CH1\_ESR2 0x1D

4.64.1.17 #define CH1\_HCNTRL 0x1B

4.64.1.18 #define CH1\_HTID 0x1A

4.64.1.19 #define CH1\_PR\_STAR 0x16

4.64.1.20 #define CH1\_RT\_ADDR 0x15

4.64.1.21 #define CH1\_RX\_CAR 0x2C

4.64.1.22 #define CH1\_RX\_EAR 0x2A

4.64.1.23 #define CH1\_RX\_FIFO 0x2E

4.64.1.24 #define CH1\_RX\_SAR 0x28

4.64.1.25 #define CH1\_STAR 0x2F

4.64.1.26 #define CH1\_TX\_CAR 0x24

4.64.1.27 #define CH1\_TX\_EAR 0x22

4.64.1.28 #define CH1\_TX\_EOPB 0x27

4.64.1.29 #define CH1\_TX\_FIFO 0x26

4.64.1.30 #define CH1\_TX\_SAR 0x20

## 4.65 T1\_INIT.c File Reference

```
#include <string.h>
#include "NODE1.h"
#include "LT_HKdef.h"
#include "LT_TMdef.h"
#include "LT_1355.h"
#include "1553_def.h"
#include "DmcCmd.h"
#include "LT_FUNC.h"
#include "T1_INIT.h"
#include "LT_MEM.h"
```

Include dependency graph for T1\_INIT.c:

### Functions

- void [DPU\\_wait](#) (unsigned int)
- void [init\\_1355](#) ()
- void [main\\_1553\\_init](#) (void)
- void [irq3\\_timer](#) (void)
- void [align\\_ptr\\_counter](#) (void)
- unsigned int [function\\_activity](#) (unsigned int, unsigned int)
- void [adicpy](#) (unsigned int \*, unsigned int \*, unsigned int)
- void [Francesco](#) (void)

### Variables

- unsigned int [Dpu\\_time](#) []
- struct [TM\\_EVentry Pool\\_EV\\_packets](#) [EV\_NUM]
- struct [TM\\_entry Pool\\_HK\\_packets](#) [HK\_NUM]
- struct [TM\\_entry Pool\\_SC\\_packets](#) [SC\_NUM]
- unsigned int [Task\\_index](#) [9]
- K\_PROC [K\\_TaskList](#) []
- unsigned int [Dpu\\_values](#) [NB\_DPU\_NAMES]
- int [Current\\_time](#)

*com1553 - For Esa enhanced directive use only. Internal High resolution time.*

- K\_TIMER \* [OBCP\\_timer](#)
- K\_TIMER \* [HK\\_timer](#)
- K\_TIMER \* [ACK\\_timer](#)
- K\_TIMER \* [Controller\\_timer](#)
- int [RTAddress](#)

*com1553 - DPU Remote Terminal.*

- unsigned int [Func\\_data](#) []



## 4.65.1 Function Documentation

- 4.65.1.1 void `adicpy` (unsigned int \*, unsigned int \*, unsigned int)
- 4.65.1.2 void `align_ptr_counter` (void)
- 4.65.1.3 void `DPU_wait` (unsigned int)
- 4.65.1.4 void `Francesco` (void)
- 4.65.1.5 unsigned int `function_activity` (unsigned int, unsigned int)
- 4.65.1.6 void `init_1355` ()
- 4.65.1.7 void `irq3_timer` (void)
- 4.65.1.8 void `main_1553_init` (void)

## 4.65.2 Variable Documentation

- 4.65.2.1 K\_TIMER \* `ACK_timer`
- 4.65.2.2 K\_TIMER \* `Controller_timer`
- 4.65.2.3 int `Current_time`

com1553 - For Esa enhanced directive use only. Internal High resolution time.

- 4.65.2.4 unsigned int `Dpu_time` [ ]
- 4.65.2.5 unsigned int `Dpu_values` [NB\_DPU\_NAMES]

### Initial value:

```
{[DPU_SPS_LINK] CLOSE, [DPU_SPL_LINK] CLOSE, [DPU_DMC_LINK] CLOSE,  
[DPU_SPS_CMD] SS_OFF, [DPU_SPL_CMD] SS_OFF, [DPU_DMC_CMD] SS_OFF,  
[DPU_SPS_HK] SS_OFF, [DPU_SPL_HK] SS_OFF, [DPU_DMC_HK] SS_OFF,  
[DPU_WHICH_OBCP] 63, [DPU_TM_RATE] NPRI, [DPU_SW_VERS_ID] 0x484}
```

- 4.65.2.6 unsigned int `Func_data` [ ]
- 4.65.2.7 K\_TIMER \* `HK_timer`
- 4.65.2.8 K\_PROC `K_TaskList` [ ]
- 4.65.2.9 K\_TIMER\* `OBCP_timer`
- 4.65.2.10 struct `TM_EVentry Pool_EV_packets` [EV\_NUM]
- 4.65.2.11 struct `TM_entry Pool_HK_packets` [HK\_NUM]
- 4.65.2.12 struct `TM_entry Pool_SC_packets` [SC\_NUM]
- 4.65.2.13 int `RTAddress`

com1553 - DPU Remote Terminal.



**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 255 of [307](#)

4.65.2.14 unsigned int Task\_index[9]

## 4.66 T1\_INIT.h File Reference

```
#include "SEQ_BUFF.h"
```

Include dependency graph for T1\_INIT.h:

This graph shows which files directly or indirectly include this file:

### Variables

- [LINK board\\_1355](#) [MAX\_NUM\_LINK]
- [LINK \\* p\\_DEC\\_1355](#) = &[board\\_1355](#)[DEC\_LINK]
- [LINK \\* p\\_SPS\\_1355](#) = &[board\\_1355](#)[SPS\_LINK]
- [LINK \\* p\\_SPL\\_1355](#) = &[board\\_1355](#)[SPL\_LINK]
- [K\\_ARGS Isr\\_1355\\_sema](#)
- volatile unsigned int [Elapsed\\_time](#)
- unsigned int [Abort\\_OBCP](#) = 0
- unsigned int [Link\\_through](#) = NO\_COMMAND\_SENT
- unsigned int [Counter\\_1\\_2](#) = 0
- unsigned int [Counter\\_1\\_8](#) = 0
- unsigned int [NewCellToCheck](#) = 0
- unsigned int [Buffer\\_Of\\_Fault\\_Address](#) [32]
- unsigned int \* [ArrayOfDMFail](#) = [Buffer\\_Of\\_Fault\\_Address](#)
- unsigned int [NumOfDMCelltoTest](#) = 6
- unsigned int [OffsetDMFail](#) = 0
- unsigned int [Seq\\_buffer](#) [DIM\_SEQ\_ARRAY]
- unsigned int [Seq\\_length](#) [DIM\_NUMBER\_SEQ]
- unsigned int [Tm\\_packet\\_enabled](#) [NB\_TM\_TYPES]
- [event\\_field Ev\\_packet\\_enabled](#) [NB\_EV\_TYPES]
- struct [HK\\_def Dpu\\_hk](#) [NB\_DPU\_NAMES]
- struct [HK\\_def Spl\\_hk](#) [NB\_SPU\_NAMES-1]
- struct [HK\\_def Sps\\_hk](#) [NB\_SPU\_NAMES-1]
- struct [HK\\_def Dec\\_hk](#) [NB\_DEC\_NAMES-1]
- struct [HK\\_def Dec\\_hk\\_red](#) [24]

### 4.66.1 Variable Documentation

#### 4.66.1.1 unsigned int Abort\_OBCP = 0

#### 4.66.1.2 unsigned int\* ArrayOfDMFail = Buffer\_Of\_Fault\_Address

#### 4.66.1.3 LINK board\_1355[MAX\_NUM\_LINK]

##### Initial value:

```
{  
  
{TRANSFER_NOT_STARTED, CLOSE, 0},  
{TRANSFER_NOT_STARTED, CLOSE, 0},  
{TRANSFER_NOT_STARTED, CLOSE, 0}}
```



- 4.66.1.4 unsigned int Buffer\_Of\_Fault\_Address[32]
- 4.66.1.5 unsigned int Counter\_1\_2 = 0
- 4.66.1.6 unsigned int Counter\_1\_8 = 0
- 4.66.1.7 struct HK\_def Dec\_hk[NB\_DEC\_NAMES-1]
- 4.66.1.8 struct HK\_def Dec\_hk\_red[24]
- 4.66.1.9 struct HK\_def Dpu\_hk[NB\_DPU\_NAMES]
- 4.66.1.10 volatile unsigned int Elapsed\_time
- 4.66.1.11 event\_field Ev\_packet\_enabled[NB\_EV\_TYPES]
- 4.66.1.12 K\_ARGS Isr\_1355\_sema
- 4.66.1.13 unsigned int Link\_through = NO\_COMMAND\_SENT
- 4.66.1.14 unsigned int NewCellToCheck = 0
- 4.66.1.15 unsigned int NumOfDMCelltoTest = 6
- 4.66.1.16 unsigned int OffsetDMFail = 0
- 4.66.1.17 LINK\* p\_DEC\_1355 = &board\_1355[DEC\_LINK]
- 4.66.1.18 LINK\* p\_SPL\_1355 = &board\_1355[SPL\_LINK]
- 4.66.1.19 LINK\* p\_SPS\_1355 = &board\_1355[SPS\_LINK]
- 4.66.1.20 unsigned int Seq\_buffer[DIM\_SEQ\_ARRAY]
- 4.66.1.21 unsigned int Seq\_length[DIM\_NUMBER\_SEQ]

Initial value:

```
{  
    72,  
    72,  
    18,  
    30,  
    44,  
    96,  
    54,  
    142,  
    142,  
    112,  
    74,  
    110,  
    82,  
    100,  
    38,  
    38,  
    88,  
    72,  
    108}
```



#### 4.66.1.22 struct HK\_def Spl\_hk[NB\_SPU\_NAMES-1]

##### Initial value:

```
{
  {0,0,0,0, HK_NOCHK | HK_BOTH | 32,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 32,0,0},
  {0,0,0xFFFF,0xFFFF, HK_AUTFN | FUNCTION_MONITOR_COUNTER_SPL | HK_ALL_PACK | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 8,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 24,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 8,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 8,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 8,0,0},
  {0,0,0,0, HK_AUTFN | FUNCTION_MONITOR_STABLE_SPL | HK_ALL_PACK | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0}}
}
```

#### 4.66.1.23 struct HK\_def Sps\_hk[NB\_SPU\_NAMES-1]

##### Initial value:

```
{
  {0,0,0,0, HK_NOCHK | HK_BOTH | 32,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 32,0,0},
  {0,0,0xFFFF,0xFFFF, HK_AUTFN | FUNCTION_MONITOR_COUNTER_SPS | HK_ALL_PACK | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 8,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 24,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 8,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 8,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_ALL_PACK | 8,0,0},
  {0,0,0,0, HK_AUTFN | FUNCTION_MONITOR_STABLE_SPS | HK_ALL_PACK | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0},
  {0,0,0,0, HK_NOCHK | HK_BOTH | 16,0,0}}
}
```

#### 4.66.1.24 unsigned int Tm\_packet\_enabled[NB\_TM\_TYPES]

##### Initial value:

```
{
  0xFF000101,
  0xFF000201,
  0xFF000301,
  0xFF000701,
  0xFF000801,
  0xFF011903,
  0xFF021903,
  0xFF031903,
  0xFF041903,
  0xFF000105,
  0xFF000205,
  0xFF000405,
  0xFF000606,
  0xFF000A06,
  0xFF000909,
}
```





**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 259 of [307](#)

```
0xFF00040E,  
0xFF000211,  
0xFF000912,  
0xFF000B12,  
0xFF000D12,  
0x00010115,  
0x00020115,  
0x00010215,  
0x00020215,  
0xFF000315}
```

## 4.67 T2TMTCIF.c File Reference

```
#include "1553_def.h"  
#include "LT_TMdef.h"  
#include "NODE1.h"  
#include "init1553.h"  
#include "LT_HKdef.h"  
#include "MM_MISC.h"  
#include "MM_21020.h"
```

Include dependency graph for T2TMTCIF.c:

### Functions

- void [event\\_packet](#) (unsigned int, unsigned int \*)
- void [thoth](#) (void)
- void [prepare\\_packet](#) (unsigned int \*cBuffer)
- void [drop\\_packet](#) ()

### Variables

- struct [TM\\_EVentry Pool\\_EV\\_packets](#) []
- struct [TM\\_entry Pool\\_HK\\_packets](#) []
- struct [TM\\_entry Pool\\_SC\\_packets](#) []
- unsigned int [Dpu\\_values](#) []
- unsigned int [Task\\_index](#) []
- K\_PROC [K\\_TaskList](#) []
- unsigned int [T4\\_running](#)
- static unsigned int [APid\\_counters](#) [6] = {0,0,0,0,0,0}



#### 4.67.1 Function Documentation

4.67.1.1 void drop\_packet ()

4.67.1.2 void event\_packet (unsigned int, unsigned int \*)

4.67.1.3 void prepare\_packet (unsigned int \* cBuffer)

4.67.1.4 void thoth (void)

#### 4.67.2 Variable Documentation

4.67.2.1 unsigned int APid\_counters[6] = {0,0,0,0,0,0} [static]

4.67.2.2 unsigned int Dpu\_values[ ]

4.67.2.3 K\_PROC K\_TaskList[ ]

4.67.2.4 struct TM\_EVentry Pool\_EV\_packets[ ]

4.67.2.5 struct TM\_entry Pool\_HK\_packets[ ]

4.67.2.6 struct TM\_entry Pool\_SC\_packets[ ]

4.67.2.7 unsigned int T4\_running

4.67.2.8 unsigned int Task\_index[ ]

## 4.68 T3IRQ1SV.c File Reference

```
#include "LT_1355.h"  
#include "LT_TMdef.h"  
#include "LT_HKdef.h"  
#include "MM_21020.h"  
#include "NODE1.h"
```

Include dependency graph for T3IRQ1SV.c:

### Functions

- void [event\\_packet](#) (unsigned int, unsigned int \*)
- unsigned int [crc32](#) (unsigned int, unsigned int)
- unsigned int [function\\_activity](#) (unsigned int, unsigned int)
- void [link\\_1355\\_lost](#) ()
- void [Ginevra](#) (void)
- void [process\\_DEC\\_packet](#) ()
- void [process\\_SPS\\_packet](#) ()
- void [process\\_SPL\\_packet](#) ()

### Variables

- [LINK](#) \* [p\\_DEC\\_1355](#)
- [LINK](#) \* [p\\_SPS\\_1355](#)
- [LINK](#) \* [p\\_SPL\\_1355](#)
- unsigned int [Dpu\\_values](#) []
- unsigned int [Dec\\_values](#) []
- unsigned int [Sps\\_values](#) []
- unsigned int [Spl\\_values](#) []
- unsigned int [Save\\_int\\_ERR1](#)
- unsigned int [Save\\_int\\_ERR2](#)
- unsigned int [Save\\_int\\_ERR3](#)
- unsigned int [Save\\_int\\_EPS1](#)
- unsigned int [Save\\_int\\_EPS2](#)
- unsigned int [Save\\_int\\_EPS3](#)
- unsigned int [Save\\_int\\_EPR1](#)
- unsigned int [Save\\_int\\_EPR2](#)
- unsigned int [Save\\_int\\_EPR3](#)
- unsigned int pm [Save\\_chksum\\_T3](#)
- unsigned int [Param\\_for\\_AF](#) []



#### 4.68.1 Function Documentation

- 4.68.1.1 unsigned int crc32 (unsigned *int*, unsigned *int*)
- 4.68.1.2 void event\_packet (unsigned *int*, unsigned *int* \*)
- 4.68.1.3 unsigned int function\_activity (unsigned *int*, unsigned *int*)
- 4.68.1.4 void Ginevra (void)
- 4.68.1.5 void link\_1355\_lost ()
- 4.68.1.6 void process\_DEC\_packet ()
- 4.68.1.7 void process\_SPL\_packet ()
- 4.68.1.8 void process\_SPS\_packet ()

#### 4.68.2 Variable Documentation

- 4.68.2.1 unsigned int Dec\_values[ ]
- 4.68.2.2 unsigned int Dpu\_values[ ]
- 4.68.2.3 LINK\* p\_DEC\_1355
- 4.68.2.4 LINK\* p\_SPL\_1355
- 4.68.2.5 LINK\* p\_SPS\_1355
- 4.68.2.6 unsigned int Param\_for\_AF[ ]
- 4.68.2.7 unsigned int pm Save\_chksum\_T3
- 4.68.2.8 unsigned int Save\_int\_EPR1
- 4.68.2.9 unsigned int Save\_int\_EPR2
- 4.68.2.10 unsigned int Save\_int\_EPR3
- 4.68.2.11 unsigned int Save\_int\_EPS1
- 4.68.2.12 unsigned int Save\_int\_EPS2
- 4.68.2.13 unsigned int Save\_int\_EPS3
- 4.68.2.14 unsigned int Save\_int\_ERR1
- 4.68.2.15 unsigned int Save\_int\_ERR2
- 4.68.2.16 unsigned int Save\_int\_ERR3
- 4.68.2.17 unsigned int Spl\_values[ ]
- 4.68.2.18 unsigned int Sps\_values[ ]

## 4.69 T4CNTRLR.c File Reference

```
#include "LT_TMdef.h"  
#include "LT_OBCP.h"  
#include "MM_21020.h"  
#include "1553_def.h"  
#include "NODE1.h"
```

Include dependency graph for T4CNTRLR.c:

### Functions

- int [TC\\_acceptance](#) ([TC\\_packet](#) \*)
- void [mem\\_service](#) ([TC\\_packet](#) \*)
- void [perform\\_activity](#) ([TC\\_packet](#) \*)
- unsigned int [load\\_start\\_proc](#) ([TC\\_packet](#) \*, struct [TM\\_packet](#) \*p\_tm)
- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- unsigned int [crc16](#) (unsigned int, unsigned int)
- unsigned int [crc32](#) (unsigned int, unsigned int)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- void [Iside](#) (void)

### Variables

- unsigned int [Counter\\_1\\_8](#)
- unsigned int [Dpu\\_time](#) []
- unsigned int [T4\\_running](#) = 0



#### 4.69.1 Function Documentation

4.69.1.1 unsigned int `crc16` (unsigned *int*, unsigned *int*)

4.69.1.2 unsigned int `crc32` (unsigned *int*, unsigned *int*)

4.69.1.3 unsigned int `fill_in_type_subtype` (struct `TM_packet *`, *int*)

4.69.1.4 void `Iside` (*void*)

4.69.1.5 unsigned int `load_start_proc` (`TC_packet *`, struct `TM_packet * p_tm`)

4.69.1.6 void `mem_service` (`TC_packet *`)

4.69.1.7 void `perform_activity` (`TC_packet *`)

4.69.1.8 *int* `TC_acceptance` (`TC_packet *`)

4.69.1.9 void `update_TM_buffer` (struct `TM_packet *`)

#### 4.69.2 Variable Documentation

4.69.2.1 unsigned *int* `Counter_1_8`

4.69.2.2 unsigned *int* `Dpu_time[]`

4.69.2.3 unsigned *int* `T4_running = 0`

## 4.70 T5\_HKMON.c File Reference

```
#include <stddef.h>
#include <string.h>
#include "LT_MEM.h"
#include "LT_TMdef.h"
#include "LT_HKdef.h"
#include "LT_1355.h"
#include "LT_OBCP.h"
#include "LT_FUNC.h"
#include "1553_def.h"
#include "MM_21020.h"
#include "NODE1.h"
```

Include dependency graph for T5\_HKMON.c:

### Functions

- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- unsigned int [MilReadRam](#) ([MilConf\\_p](#), unsigned int)
- void [handle\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- void [event\\_packet](#) (unsigned int, unsigned int \*)
- unsigned int [function\\_activity](#) (unsigned int, unsigned int)
- unsigned int [memcrc32](#) (unsigned int \*, unsigned int, unsigned int)
- void [ma\\_cgig](#) (void)
- void [HK\\_pack](#) (unsigned int \*p\_values, int subsystem, int sel\_array)
- unsigned int [cpy\\_HK\\_values](#) (unsigned int subsystem, unsigned int \*local\_values)

### Variables

- unsigned int [Tm\\_packet\\_enabled](#) []
- unsigned int [Param\\_for\\_AF](#) []
- struct [HK\\_def](#) [Dpu\\_hk](#) []
- struct [HK\\_def](#) [Dec\\_hk](#) []
- struct [HK\\_def](#) [Spl\\_hk](#) []
- struct [HK\\_def](#) [Sps\\_hk](#) []
- unsigned int [Dpu\\_values](#) []
- unsigned int [Dec\\_values](#) []
- unsigned int [Spl\\_values](#) []
- unsigned int [Sps\\_values](#) []
- [OBCP\\_pointer](#) [p\\_FUNC](#) []
- unsigned int [Counter\\_1\\_2](#)
- unsigned int [Counter\\_1\\_8](#)
- [MilConf\\_p](#) [MilRTConf](#)

*Remote Terminal Configuration Holder - General Configuration.*

- unsigned int [Task\\_index](#) []
- K\_PROC [K\\_TaskList](#) []
- K\_TIMER \* [HK\\_timer](#)





- int [RTAddress](#)  
*com1553 - DPU Remote Terminal.*
- volatile unsigned int [Burst\\_active](#)  
*com1553 - Burst Mode Activation Flag*
- unsigned int [Proc\\_ID\\_and\\_TC\\_header](#) []
- unsigned int [NewCellToCheck](#)
- unsigned int [Buffer\\_Of\\_Fault\\_Address](#) []
- unsigned int pm [Save\\_chksum\\_T3](#)
- unsigned int pm [Save\\_chksum\\_T5](#)
- static unsigned int [INdex](#)
- static unsigned int [FRee\\_bit](#)
- static unsigned int [MOde\\_id](#)
- static struct [TM\\_packet](#) [TM\\_hk](#)
- static struct [TM\\_packet](#) [TM\\_hk\\_extra](#)
- static unsigned int [LAsT\\_address](#)
- static unsigned int [LAsT\\_offset](#)

## 4.70.1 Function Documentation

- 4.70.1.1 unsigned int [cpy\\_HK\\_values](#) (unsigned int *subsystem*, unsigned int \* *local\_values*)
- 4.70.1.2 void [event\\_packet](#) (unsigned *int*, unsigned int \*)
- 4.70.1.3 unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- 4.70.1.4 unsigned int [function\\_activity](#) (unsigned *int*, unsigned *int*)
- 4.70.1.5 void [handle\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- 4.70.1.6 void [HK\\_pack](#) (unsigned int \* *p\_values*, int *subsystem*, int *sel\_array*)
- 4.70.1.7 void [ma\\_cgig](#) (void)
- 4.70.1.8 unsigned int [memcrc32](#) (unsigned int \*, unsigned *int*, unsigned *int*)
- 4.70.1.9 unsigned int [MilReadRam](#) (MilConf\_p, unsigned *int*)
- 4.70.1.10 void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)

## 4.70.2 Variable Documentation

- 4.70.2.1 unsigned int [Buffer\\_Of\\_Fault\\_Address](#) []
- 4.70.2.2 volatile unsigned int [Burst\\_active](#)

*com1553 - Burst Mode Activation Flag*



- 4.70.2.3 unsigned int Counter\_1\_2
- 4.70.2.4 unsigned int Counter\_1\_8
- 4.70.2.5 struct HK\_def Dec\_hk[ ]
- 4.70.2.6 unsigned int Dec\_values[ ]
- 4.70.2.7 struct HK\_def Dpu\_hk[ ]
- 4.70.2.8 unsigned int Dpu\_values[ ]
- 4.70.2.9 unsigned int FRee\_bit [static]
- 4.70.2.10 K\_TIMER\* HK\_timer
- 4.70.2.11 unsigned int INdex [static]
- 4.70.2.12 K\_PROC K\_TaskList[ ]
- 4.70.2.13 unsigned int LAst\_address [static]
- 4.70.2.14 unsigned int LAst\_offset [static]
- 4.70.2.15 MilConf\_p MilRTConf

Remote Terminal Configuration Holder - General Configuration.

Commitments History : As reported in Main cvs Documentation (<https://www.cvshome.org/docs/manual/cvs-1.11.18/cv12.html#SEC102>) The Modification Log has been posted at End Of File.

- 4.70.2.16 unsigned int MOde\_id [static]
- 4.70.2.17 unsigned int NewCellToCheck
- 4.70.2.18 OBCP\_pointer p\_FUNC[ ]
- 4.70.2.19 unsigned int Param\_for\_AF[ ]
- 4.70.2.20 unsigned int Proc\_ID\_and\_TC\_header[ ]
- 4.70.2.21 int RTAddress

com1553 - DPU Remote Terminal.



- 4.70.2.22 unsigned int pm Save\_chksum\_T3
- 4.70.2.23 unsigned int pm Save\_chksum\_T5
- 4.70.2.24 struct HK\_def Spl\_hk[ ]
- 4.70.2.25 unsigned int Spl\_values[ ]
- 4.70.2.26 struct HK\_def Sps\_hk[ ]
- 4.70.2.27 unsigned int Sps\_values[ ]
- 4.70.2.28 unsigned int Task\_index[ ]
- 4.70.2.29 struct TM\_packet TM\_hk [static]
- 4.70.2.30 struct TM\_packet TM\_hk\_extra [static]
- 4.70.2.31 unsigned int Tm\_packet\_enabled[ ]

## 4.71 T6\_MECRX.c File Reference

```
#include "LT_1355.h"  
#include "LT_TMdef.h"  
#include "MM_21020.h"  
#include "NODE1.h"
```

Include dependency graph for T6\_MECRX.c:

### Functions

- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- void [event\\_packet](#) (unsigned int, unsigned int \*)
- void [ACK\\_handling](#) (unsigned int, unsigned int \*)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- void [mumon](#) (void)

### Variables

- unsigned int [Tm\\_packet\\_enabled](#) []
- volatile unsigned int [Burst\\_active](#)  
*com1553 - Burst Mode Activation Flag*
- [LINK](#) \* [p\\_DEC\\_1355](#)

#### 4.71.1 Function Documentation

- 4.71.1.1 void [ACK\\_handling](#) (unsigned *int*, unsigned int \*)
- 4.71.1.2 void [event\\_packet](#) (unsigned *int*, unsigned int \*)
- 4.71.1.3 unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- 4.71.1.4 void [mumon](#) (void)
- 4.71.1.5 void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)

#### 4.71.2 Variable Documentation

- 4.71.2.1 volatile unsigned int [Burst\\_active](#)

*com1553 - Burst Mode Activation Flag*

- 4.71.2.2 [LINK](#)\* [p\\_DEC\\_1355](#)

- 4.71.2.3 unsigned int [Tm\\_packet\\_enabled](#) []

## 4.72 T7\_SPSRX.c File Reference

```
#include "LT_1355.h"  
#include "LT_TMdef.h"  
#include "LT_HKdef.h"  
#include "MM_21020.h"  
#include "NODE1.h"
```

Include dependency graph for T7\_SPSRX.c:

### Functions

- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- void [event\\_packet](#) (unsigned int, unsigned int \*)
- void [ACK\\_handling](#) (unsigned int, unsigned int \*)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- void [Hunahpu](#) (void)

### Variables

- unsigned int [Tm\\_packet\\_enabled](#) [ ]
- unsigned int [Sps\\_values](#) [ ]
- volatile unsigned int [Burst\\_active](#)  
*com1553 - Burst Mode Activation Flag*
- [LINK](#) \* [p\\_SPS\\_1355](#)

### 4.72.1 Function Documentation

**4.72.1.1** void [ACK\\_handling](#) (unsigned *int*, unsigned int \*)

**4.72.1.2** void [event\\_packet](#) (unsigned *int*, unsigned int \*)

**4.72.1.3** unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)

**4.72.1.4** void [Hunahpu](#) (void)

**4.72.1.5** void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)

### 4.72.2 Variable Documentation

**4.72.2.1** volatile unsigned int [Burst\\_active](#)

*com1553 - Burst Mode Activation Flag*

**4.72.2.2** [LINK](#)\* [p\\_SPS\\_1355](#)

**4.72.2.3** unsigned int [Sps\\_values](#)[ ]

**4.72.2.4** unsigned int [Tm\\_packet\\_enabled](#)[ ]

## 4.73 T8\_SPLRX.c File Reference

```
#include "LT_1355.h"  
#include "LT_TMdef.h"  
#include "LT_HKdef.h"  
#include "MM_21020.h"  
#include "NODE1.h"
```

Include dependency graph for T8\_SPLRX.c:

### Functions

- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- void [event\\_packet](#) (unsigned int, unsigned int \*)
- void [ACK\\_handling](#) (unsigned int, unsigned int \*)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- void [Ixbalamque](#) (void)

### Variables

- unsigned int [Tm\\_packet\\_enabled](#) []
- unsigned int [Spl\\_values](#) []
- volatile unsigned int [Burst\\_active](#)  
*com1553 - Burst Mode Activation Flag*
- [LINK](#) \* [p\\_SPL\\_1355](#)

### 4.73.1 Function Documentation

- 4.73.1.1 void [ACK\\_handling](#) (unsigned *int*, unsigned int \*)
- 4.73.1.2 void [event\\_packet](#) (unsigned *int*, unsigned int \*)
- 4.73.1.3 unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- 4.73.1.4 void [Ixbalamque](#) (void)
- 4.73.1.5 void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)

### 4.73.2 Variable Documentation

- 4.73.2.1 volatile unsigned int [Burst\\_active](#)

*com1553 - Burst Mode Activation Flag*

- 4.73.2.2 [LINK](#)\* [p\\_SPL\\_1355](#)
- 4.73.2.3 unsigned int [Spl\\_values](#) []
- 4.73.2.4 unsigned int [Tm\\_packet\\_enabled](#) []

## 4.74 T9\_OBCP.c File Reference

```
#include <stddef.h>
#include <string.h>
#include "LT_TMdef.h"
#include "LT_HKdef.h"
#include "LT_OBCP.h"
#include "LT_FUNC.h"
#include "DmcCmd.h"
#include "MM_21020.h"
#include "NODE1.h"
```

Include dependency graph for T9\_OBCP.c:

### Functions

- void [event\\_packet](#) (unsigned int, unsigned int \*)
- void [update\\_TM\\_buffer](#) (struct [TM\\_packet](#) \*)
- unsigned int [fill\\_in\\_type\\_subtype](#) (struct [TM\\_packet](#) \*, int)
- unsigned int [is\\_even](#) (unsigned int)
- void [idle\\_state](#) ()
- void [timesync\\_3](#) ()
- void [fixed\\_fixed\\_chopped\\_photometry](#) ()
- void [chopped\\_photometry](#) ()
- void [chopped\\_photometry\\_dither](#) ()
- void [freeze\\_chopped\\_photometry](#) ()
- void [staring\\_photometry](#) ()
- void [chopped\\_spectroscopy](#) ()
- void [chopped\\_spectroscopy\\_dither](#) ()
- void [photometry\\_cal\\_i](#) ()
- void [photometry\\_cal\\_ii](#) ()
- void [photometry\\_cal\\_iii](#) ()
- void [spectroscopy\\_cal](#) ()
- void [chopped\\_photometry\\_up\\_down](#) ()
- void [dec\\_test\\_mode](#) ()
- void [spec\\_to\\_phot](#) ()
- void [go\\_SAFE2](#) ()
- void [chopped\\_spectroscopy\\_up\\_down](#) ()
- void [proc1355](#) ()
- void [EEPROM\\_proc](#) ()
- void [start\\_HLSW](#) ()
- void [wave\\_switch\\_grating](#) ()
- void [chopped\\_spectroscopy\\_2](#) ()
- void [go\\_SAFE](#) ()
- void [timesync\\_1](#) ()
- void [timesync\\_2](#) ()
- void [no\\_chopping](#) ()
- void [science\\_dummy](#) ()
- void [spu\\_test\\_spec](#) ()
- void [spu\\_test\\_phot](#) ()
- void [wave\\_switch\\_grating\\_2](#) ()
- void [obmo](#) ()



- void [acwe](#) ()
- void [chopped\\_spectroscopy\\_3](#) ()
- void [bol\\_temp\\_ev](#) ()
- void [generate\\_event\\_normal\\_HL](#) ()
- void [generate\\_event\\_invert](#) ()
- void [monitor\\_counter\\_stable](#) ()
- void [monitor\\_counter\\_changing](#) ()
- void [bol\\_temp\\_fpu](#) ()
- void [heater\\_sp](#) ()
- void [link\\_1355\\_lost](#) ()
- void [answered\\_prayers](#) (void)
- void [DPU\\_wait](#) (unsigned int time\_to\_wait)
- unsigned int [write\\_seq](#) (unsigned int seq\_id)

## Variables

- [OBCP\\_pointer p\\_OBCP](#) [MAX\_PROC\_ID+1]
- [OBCP\\_pointer p\\_FUNC](#) [100]
- struct [OBCP\\_param Obcp\\_data](#) [(MAX\_PROC\_ID+1)]
- unsigned int [Func\\_data](#) [100]
- unsigned int [Param\\_for\\_AF](#) [5]
- unsigned int [Counter\\_1\\_8](#)
- unsigned int [Buffer\\_for\\_1355\\_tx](#) [512]
- struct [time\\_struct Time\\_of\\_dpu](#)
- K\_TIMER \* [OBCP\\_timer](#)
- K\_TIMER \* [Controller\\_timer](#)
- K\_PROC [K\\_TaskList](#) []
- unsigned int [Task\\_index](#) []
- unsigned int [Abort\\_OBCP](#)
- unsigned int [Seq\\_length](#) []
- unsigned int [Seq\\_buffer](#) []
- unsigned int [Obcp\\_data\\_current](#) [MAX\_NUMBER\_PAR+1]
- unsigned int [Dpu\\_values](#) []
- unsigned int [Dec\\_values](#) []
- unsigned int [Proc\\_ID\\_and\\_TC\\_header](#) [3]





**IFSI  
INAF**

**Herschel PACS  
DPU OBS  
Detailed Design Document  
Appendix 3**

Ref.: PACS-CR-DD-023  
Issue: Issue 3.3  
Date: 14 July 2009  
Page: 275 of [307](#)

## 4.74.1 Function Documentation

- 4.74.1.1 void acwe ()
- 4.74.1.2 void answered\_prayers (void)
- 4.74.1.3 void bol\_temp\_ev ()
- 4.74.1.4 void bol\_temp\_fpu ()
- 4.74.1.5 void chopped\_photometry ()
- 4.74.1.6 void chopped\_photometry\_dither ()
- 4.74.1.7 void chopped\_photometry\_up\_down ()
- 4.74.1.8 void chopped\_spectroscopy ()
- 4.74.1.9 void chopped\_spectroscopy\_2 ()
- 4.74.1.10 void chopped\_spectroscopy\_3 ()
- 4.74.1.11 void chopped\_spectroscopy\_dither ()
- 4.74.1.12 void chopped\_spectroscopy\_up\_down ()
- 4.74.1.13 void dec\_test\_mode ()
- 4.74.1.14 void DPU\_wait (unsigned int *time\_to\_wait*)
- 4.74.1.15 void EEPROM\_proc ()
- 4.74.1.16 void event\_packet (unsigned *int*, unsigned int \*)
- 4.74.1.17 unsigned int fill\_in\_type\_subtype (struct TM\_packet \*, int)
- 4.74.1.18 void fixed\_fixed\_chopped\_photometry ()
- 4.74.1.19 void freeze\_chopped\_photometry ()
- 4.74.1.20 void generate\_event\_invert ()
- 4.74.1.21 void generate\_event\_normal\_HL ()
- 4.74.1.22 void go\_SAFE ()
- 4.74.1.23 void go\_SAFE2 ()
- 4.74.1.24 void heater\_sp ()
- 4.74.1.25 void idle\_state ()
- 4.74.1.26 unsigned int is\_even (unsigned *int*)
- 4.74.1.27 void link\_1355\_lost ()
- 4.74.1.28 void monitor\_counter\_changing ()
- 4.74.1.29 void monitor\_counter\_stable ()

4.74.1.30 void no\_chopping ()



```
{  
  0,  
  generate_event_normal_HL,  
  generate_event_normal_HL,  
    monitor_counter_stable,  
    monitor_counter_changing,  
  monitor_counter_changing,  
  monitor_counter_changing,  
  monitor_counter_changing,  
  monitor_counter_stable,  
  monitor_counter_changing,  
  monitor_counter_stable,  
  generate_event_normal_HL,  
  generate_event_normal_HL,  
  generate_event_invert,  
    bol_temp_fpu,  
  generate_event_invert,  
  generate_event_invert,  
  generate_event_normal_HL,  
  heater_sp,  
  generate_event_invert,  
  generate_event_normal_HL,  
  heater_sp,  
  NULL,  
  link_1355_lost,  
    [99] heater_sp  
}
```

**4.74.2.13 OBCP\_pointer p\_OBCP[MAX\_PROC\_ID+1]**

**4.74.2.14 unsigned int Param\_for\_AF[5]**

**4.74.2.15 unsigned int Proc\_ID\_and\_TC\_header[3]**

**4.74.2.16 unsigned int Seq\_buffer[]**

**4.74.2.17 unsigned int Seq\_length[]**

**4.74.2.18 unsigned int Task\_index[]**

**4.74.2.19 struct time\_struct Time\_of\_dpu**

## 4.75 util1553.c File Reference

[DONE] com1553 - MIL-1553 Communication Library for Herschel - Low Level Interface Management

```
#include "conf1553.h"  
#include "MM_21020.h"  
#include "LT_TMdef.h"  
#include "init1553.h"  
#include "MilConf.h"  
#include "MilInit.h"
```

Include dependency graph for util1553.c:

### Defines

- #define [M1553\\_SA10\\_AREA\\_A\\_OFFSET](#) 0x14A  
*Offset in DDC1553 Dual Port Ram of the A Memory Area Sub Address Data Lookup Table.*
- #define [M1553\\_SA10\\_AREA\\_B\\_OFFSET](#) 0x1CA  
*Offset in DDC1553 Dual Port Ram of the B Memory Area Sub Address Data Lookup Table.*
- #define [M1553\\_CONF\\_1\\_\\_CURRENT\\_AREA](#) 0x2000  
*Bit Placement in DDC1553 Configuration Word for A/B Memory Area Selection.*

### Functions

- void [UpLoad\\_Packet](#) (int \*cBuffer)  
*Writes a Telemetry Packet into DPRAM.*
- static void [TmRequestGenerator](#) (int n)  
*Enqueue in Telemetry Packet Transfer Request Que a new Token then step the Writer access to the next token, ready to be written.*
- void [DownLoad\\_Packet](#) (TC\_packet \*tpacket)  
*Read a TeleCommand packet.*
- void [align\\_ptr\\_counter](#) (void)  
*Read Last Telemetry Packet Transfer Request Sent, and align local Telemetry Packet Request Counter.*
- void [force\\_1553\\_reset](#) (void)  
*Hardware Reset of DDC1553 Chip.*
- void [miaMilSaWrite](#) (MilConf\_p pw\_MilConf, MemBlockHandle pw\_BlockHdl, unsigned int \*j\_Offset, unsigned int \*pj\_Ptr, unsigned int j\_Length)  
*Copy data to a DDC1553 SubAddress. If SubAddress is Circular Buffered copy data circularly.*

#### 4.75.1 Detailed Description

[DONE] com1553 - MIL-1553 Communication Library for Herschel - Low Level Interface Management

com1553 - MIL-1553 Communication Library for Herschel - Low Level Interface Management



Filename :

Purposes : Logical Task : in Spire - TMTC : in Pacs - TOTH : in HIFI - TMTC :

Author : Scige

Last Developer :

**Author**

scige

Revision :

**Revision**

1.26

Checkout Tag :

**Name**

Last Modification :

**Date**

2007/02/07 16:39:02

Location :

**RCSfile**

[util1553.c,v](#)

**Version:**

:

**Header**

/usr/local/cvsrep/1553\_consolidated/util1553.c,v 1.26 2007/02/07 16:39:02 scige Exp

## 4.75.2 Define Documentation

### 4.75.2.1 #define M1553\_CONF\_1\_\_CURRENT\_AREA 0x2000

Bit Placement in DDC1553 Configuration Word for A/B Memory Area Selection.

### 4.75.2.2 #define M1553\_SA10\_AREA\_A\_OFFSET 0x14A

Offset in DDC1553 Dual Port Ram of the A Memory Area Sub Address Data Lookup Table.

### 4.75.2.3 #define M1553\_SA10\_AREA\_B\_OFFSET 0x1CA

Offset in DDC1553 Dual Port Ram of the B Memory Area Sub Address Data Lookup Table.



### 4.75.3 Function Documentation

#### 4.75.3.1 void align\_ptr\_counter (void) [inline]

Read Last Telemetry Packet Transfer Request Sent, and align local Telemetry Packet Request Counter.

```
inline void align_ptr_counter ( void )
```

**Effect on:**

[TM\\_pkt\\_ctr](#) - Telemetry Packet Request Counter.

**Architectural Definition (Hardware Related):**

[BS\\_AD\\_MIL\\_1553\\_DPRAM M1553\\_SA10\\_AREA\\_A\\_OFFSET M1553\\_SA10\\_AREA\\_B\\_OFFSET](#)

#### 4.75.3.2 void DownLoad\_Packet (TC\_packet \* tpacket)

Read a TeleCommand packet.

```
void DownLoad_Packet( TC_packet * tpacket )
```

**Parameters:**

*tpacket* Pointer to a memory area dedicated to host a TeleCommand Packet

**Note:**

In some Implementation could be NULL. Check [OBSCODE](#) Value.

#### 4.75.3.3 void force\_1553\_reset (void) [inline]

Hardware Reset of DDC1553 Chip.

```
inline void force_1553_reset ( void )
```

#### 4.75.3.4 void miaMilSaWrite (MilConf\_p pw\_MilConf, MemBlockHandle pw\_BlockHdl, unsigned int \* j\_Offset, unsigned int \* pj\_Ptr, unsigned int j\_Length)

Copy data to a DDC1553 SubAddress. If SubAddress is Circular Buffered copy data circularly.

```
void miaMilSaWrite ( MilConf_p pw_MilConf, MemBlockHandle pw_BlockHdl, unsigned int *j_Offset, unsigned int *pj_Ptr, unsigned int j_Length )
```

**Parameters:**

*pw\_MilConf* DDC1553 Hardware Configuration Descriptor.

*pw\_BlockHdl* DDC1553 SubAddress Memory Map Descriptor.

*j\_Offset* Offset in SubAddress.

*pj\_Ptr* Pointer to data.

*j\_Length* Number of word to copy.



#### 4.75.3.5 static void TmRequestGenerator (int *n*) [static]

Enqueue in Telemetry Packet Transfer Request Que a new Token then step the Writer access to the next token, ready to be written.

static void TmRequestGenerator ( int *n*)

#### Parameters:

*n* Packet Length in 16 Bit word base.

#### 4.75.3.6 void UpLoad\_Packet (int \* *cBuffer*)

Writes a Telemetry Packet into DPRAM.

void UpLoad\_Packet ( int \* *cBuffer* )

It presumes that there's place on DDC1553 Memory. Check done by calling [checkFreeDPRAM\(\)](#).

***cBuffer* Raw Packet Data Already Formatted and Aligned in memory.**