SPIRE

SUBJECT: DRCU - Declared Components List (Flight Model)

PREPARED BY: V. Mauguen

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ISSUE: 11 **Date:** 06th December 2001

CHECKED BY: C. Cara **Date:** **10/12/2001**

Local Project Manager:

Project Manager:

Instrument Scientist:

Systems Engineer:

REFERENCE: SAp-SPIRE-VM-0051-01

SPIRE
Declared Components List

User Code: FSDRCC

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Prepared by :	**Date :**
V. Mauguen	
Checked by :	**Date :**
C. Cara	

Document change record

Révision			
Issue - rev.	**Date**	**Approved by**	**Modifications**
0	23/08/00		Preliminary List, including capacitors, connectors, crystals, diodes, integrated circuits, resistors, wires & cables, and miscellaneous. No quantities.
1	18/09/00		• Quantities for parts types: OP400, PM139, HS303, HS508BRH, HS1840, ADC7809, DAC 7545, HS-26C31, HS-26C32, FPGA, resistors and MAT02. • components eliminated: HS-508ARH (new version: B), wires & cables, and miscellaneous.
2	9/10/00		Parts type to be eliminated: resistors CMS type SMC3 (obsolete)
3	27/10/00		• Obsolete parts for space: OP27, OP297, OP497, OP482, AD580, AD7545G • Standardisation proposals: LM124 (instead of OP400) , AD565ATD (instead of 7545ARP, AD584TH (instead of AD580 & REF-02), SEI7809LPRP (instead of ADS7809).
4	29/11/00		Components definitely eliminated: OP27, OP297, OP497, OP482, HS1840 (obsolete) and AD584TE-LCC20 (to be replaced by AD584TH-TO99), and ADS7809 (replaced by 7809LPRP.
5	16/01/01		• new quantities (more actual), and for all parts we are sure to use, including attritions. • Components definitely eliminated: OP400AY-DIP14 & LM124 (no accepted by CEA), AD580TH (no need) • New components: UT54LVDS031 (item 18), UT54LVDS032 (item 19) • Type reduction accepted: RT54SX32S-1 CQ208E (instead of all FPGA types).

6	02/01/01		• Components definitely eliminated: HS1840; AD584TH (replaced by REF02AL) ; AD565 (standardisation refused) & 1N5617 (replaced by 1N4148) • New components: 1N4148 (item 1), 54HC137 (item 20), 54HC164 (item 21), HS117RH (item 22). For these new parts types, the package is to be confirmed.
7	14/03/01		• a new colon “WIH” to identify cables/connectors for Warm Interbox Hardness (no crio harness). Today only connectors because cables not identified yet. • PM139: any need more (quantity: 0) • New connector type: HE801 144P • New colons for costing • Attrition for STM parts • Quantity identified for connectors accessories • Components eliminated of the list: ADS7809, OP400AY, AD584, AD589, old version of FPGAs.
8	14/06/01		• New components: capacitor KM-94 220nF(item 19), **54HC595** (item 23), **OP215** (item 24) • Quantities have changed for: UT54LVDS032, HS-508RH, MAT-02, HS-033RH, SEI7809, 26C31, 26C32, AMP02, 1N4148, 2N2222A, 2N2907A, 7545ARP • Components eliminated of the list:PM139 • Components self-procured: OP400, DAC8800, REF02AL (only for QM) and OP15AL (only for QM) because don’t exist in FP & QM quality level
9	23/07/01		• new components: CMS1206 100nF (item 21) to replace CMS1210, CHPHR0505 10R (item 62), 1R (item 70), **diode 1N6642**, PHR0603 143K (item 72), 17K (item 73), 29K (item 74), 475R (item 75), 51.1K & 6.65K, CHPHR0805 1K (item 77), PHR0603 4K (item 78), **fifo 16K*9 FP28 ref: 672061EV-15** • Quantities have changed for: CHPP0603 200R (item 24), CHP0805 470pF, 47pF, CEC 47nF (item 10), KM94-1 220nF, **OP400**, TAJC 10µF 16V, **HS508BRH, SEI7809LPRP**, CMS1210 100nF, **UT54LVDS031, OP215**, TAJC 10µF 16v, **REF02AL**, CHPHR0805 100R & 10K, PHR0603 4.99K, CHPHR0805 200R

9	04/09/01	1	• new components: **OP15AL & AMP01** (parts types existing in PACS's list FPBOLC) • quantities have changed for **SEI 7545**
10	23/10/01		• new components: **54HC14 , MMDP-65656GV-40sB** • quantities have changed for **AD590** • parts eliminated: **T1507 16MHz & 20MHz** to replace by **T807 20MHz** • correction of Part Number for SMDP-67206 • modification for attrition rules (only for CHIP capacitors and resistors)
11	06/12/01		• new components: - Capacitor CMS 0805 T1 **1,5nF** (item 5) - HE801connectors: **KNB0965510110** (item 10), **KNB0964430121** (item 11), **KNC1605510110** (item 14) & **KNC1604430121** (item 15) - savers: **KNB096 44 91 944** (item 24) & **KNC160 44 91 944** (item 26) - **quartz 10 MHz T807** - resistors: **RLR07/2H4 1R** (item 37) Chip **CMS P0603** type P(0,01%) **9K76** (item 38), **13K3** (item 39), **17K4** (item 40), **18K2** (item 41), **27K4** (item 42), **61K** (item 43), **90K9** (item 44), **95K3** (item 45), **97K6** (item 46) , **102K** (item 47) & **267R** (item 48). - relays: type **TL, GP2 & EL210** • parts to be eliminated: - quartz T1507 @ 11,0592 MHz (STC 3665) 3549_350100933B - Chip CMS P0603 type P(0,01%): 200R (item 20), 475R (item 21), 6.65K (item 24), 8K (item 25), 16K9 (item 28), 28K7 (item 30), 65K (item 32), 143K (item 35) & 147K (item 36). - CHPHR 0505: 10R2 (item 2), 10K (item 6). - Capacitor CMS 0805 T1 470pF • quantities have changed for: 2N2222, 2N5154, 1N5618, AD589, OP215, OP15, AD590 & HS508
			•

Distribution list

Ken King	RAL	X	
Eva Diaz	TL	X	
Olga Ramos	TL	X	
Susanna Gadeano	TL	X	
Giovanni Gallina	TP	X	
		X	
Christophe Cara	CEA / SAp	X	
F. Pinsard	CEA / SAp		
		X	
P. Levacher	LAM	X	
		X	

I. Acronyms

ABCL	As Built Configuration List
AD	Applicable Document
AO	Announcement of Opportunity
API	Application Programming Interface
AIT	Assembly Integration &Test after delivery
AIV	Assembly Integration &Verification before delivery
AVM	Avionics Model
BOL	Begin Of Life
CC	Configuration Control
CCS	Central Checkout System
CIDL	Configuration Item Data List
CEA	Commissariat à l'Energie Atomique
CMB	Cosmic Microwave background
Co-I	Co-Investigator
COTS	Commercial Off The Shelf Software
CQM	Cryogenic Qualification Model
DMS	Document Management System
DPC	Data Processing Centres
DPCM	Data Processing Centres Manager
EGSE	Electric Ground Support Equipment
EOL	End Of Life
EP	Entrance Pupil
ESA	European Space Agency
ESOC	European Space Operations Centre
ESTEC	European Space Technology and Research Centre
FINDAS	FIRST Integrated Network And Data Archive System
FIRST	Far InfraRed and Sub-millimetre Telescope
FOV	Field-Of-View
FPA	Focal Plane Assembly
FPU	Focal Plane Unit
FS	Flight Spares
HK	House-Keeping
HTML	Hyper Text Mark-up Language
HTTP	Hyper Text Transport Protocol
H/W	Hardware
ICD	Interface Control Document
IDIS	Integrated Data and Information System
IDIS-DT	IDIS Development Team
IDIS-MT	IDIS Management Team
IID-A	Instrument Interface Document, Part A
IID-B	Instrument Interface Document, Part B
IS	Instrument Scientist
LAM	Laboratoire d'Astrophysique de Marseille
LAN	Local Area Network
LEOP	Launch & Early Orbit Phase
LM	Local Manager
LOS	Line Of Sight
MGSE	Mechanic Ground Support Equipment
MOC	Mission Operations Centre
MOS	Margin Of Safety
MRB	Material Review Board
N/A	Not Applicable
NCR	Non Conformance Report
OAT	Osservatorio Astronomico di Trieste
OBDH	On Board Data Handling
OGS	Operational Ground Segment
PA	Product Assurance
PDF	Portable Document Format (Adobe Acrobat)
PFM	Proto-Flight Model
PGSE	Pneumatic Ground Support Equipment
PI	Principal Investigator
PLM	Payload Module
PM	Project Manager
PO	Parts Order
PR	Public Relations
PS	Project Scientist
PSF	Point-Spread-Function
QA	Quality Assurance
QLA	Quick Look Analysis
RAL	Rutherford Appleton Laboratory
RD	Reference Document
RFW	Request For Waiver
RH	Relative Humidity
RMS	Root Mean Square
RTA	Real Time Analysis
S/C	Spacecraft
SAMBA	Satellite for Measurement of Background Anisotropies
SAp	Service d'Astrophysique
SCMP	Software Configuration Management Plan
SE	System Engineer
SIP	Science Implementation Plan
SPIRE	S
SPMP	Software Project Management Plan
SQAP	Software Quality Assurance Plan
SRR	Software Requirements Review
SS	Survey Scientist
SSD	Space Science Department (ESTEC)
S/W	Software
TBC	To Be Confirmed
TBD	To Be Determined
TBN	To Be Nominated
TBW	To Be Written
TC	Tele-Command
TM	TeleMetry
TRB	Test Review Board
URD	User Requirements Document
WFE	Wave Front Error
WWW	World Wide Web

II. Table of Contents

1. INTRODUCTION

1.1 Purpose and scope

This document provides a list of the electrical components which would be used in the flight model of the DRCU system (DCU & SCU).

The harness connectors are not included in this list, only savers on warm electronics and cryogenics connectors are included.

1.2 Documents

1.2.1 Applicable Documents

1.2.2 Reference Documents

[RD1] ESA/SCC QUALIFIED PARTS LIST (15-01-00)

[RD2] EUROPEAN PREFERRED PARTS LIST (15-02-00)

[RD3] CNES / QFT / IN0500 Liste préférentielle des composants

[RD4] FIRST/Planck Preferred Part List ref. : FP-TLG-LI-0001 (07-06-2000)

2. LEGEND OF LIST COLUMNES

Generic Name : Part Name
Manuf : Manufacturer
Pkg. : Preferred Package / Housing
Part Description : Details / Features of the component
Radiation Harness : Radiation marker
FLT Part Type: Flight Part Type
Preferred Proc-Spec : Preferred Procurement Specification
Level : Required Quality Level
LAT: Lot Acceptance Tests
FM parts : Quantity for Flight Model
FS parts : Quantity for Flight Spare
Needs CEA : Total quantity (PFM + FS)
Attr parts : Attrition quantity
PO : Total quantity for order (Needs CEA + Attr)

3. RADIATION CONSTRAINTS

3.1 Abbreviations

TD : Total Dose effects
SEE : Single Event Effect
SEU : Single Event Upset
SEL : Single Event Latch up (Soft error due to heavy ions)

4. LIST OF COMPONENT MANUFACTURERS

Code	Country	Manufacturer	Address / Seller
TBD		To Be Defined	
ACTEL	USA	Actel Corporation	
AD	USA	Analog Devices	1500 Space Park Drive CA 95052 Santa Clara USA Tel /Fax: 1(0)408 5627408/526 www.analog.com
ATMEL	USA	Atmel	
BB	USA	Burr Brown	
CAN	F	ITT Cannon	BP 359 Av; du Mal deLattre de Tassigny F-39105 DOLE Cedex Tel/Fax: 33(1)84729469/9593 www.ittcannon.com
CEPE	F	CEPE	C-MAC France 44, avenue de la Glacière BP165 F-95100 ARGENTEUIL Tel/Fax : 33(0)139983633/50 Cepe.com@hol.fr
EFD	F	Eurofarad	23, rue Jeanne d'Arc F-77400 LAGNY Te/Fax : 33(0)160317000/64305063 www.eurofarad.com
FCI	France	Framatome Connector International	3, rue de Vallon Hameau d'activités n°2 F-91550 Marolles-en-brie Tel/Fax: 33(0)145107844/40 www.fciconnect.com
FRB		Hypertac S.A.	31, rue Isidore Maille F-76410 St Aubin Les Elboeufs Tel/Fax: 33(0)232969176/70 www.frb-connectron.com Frb.connectron.ama@wanadoo.fr
HARRIS	USA	HARRIS	INTERSIL 2401 Palm Bay Road, N.E. FL 32905 Palm Bay USA Tel/Fax: 1(0)407 7279207/95361 www.semi.harris.com

HON	USA	Honeywell	12001 State Highway 55 MN 55441 PLYMOUTH USA Tel/Fax: 1(0)6129542888/257 www.honeywell.com
LCC	GB	LCC/AVX LTD	Long Road 7Q4 7ER Paignton Dvon England Tel/fax : 44(0)1803528046/6223 www.avxcorp.com
LM	USA	Lockheed Martin	
LT	USA	Linear Technology	Mac Carthy Boulevard CA 95035 MILPITAS USA Tel/Fax: 1(0)4084321900/40507 www.linear-tech.com
MAXIM	USA	Maxim	
	USA	Microsemi	2830 S. Fairview Street PO Box 26890 CA 92704 Santa Anna Tel/Fax: 1(0)7149798220/5575989 www.microsemi.com
NS	USA	National Semiconductor	2900 Semiconductor Drive PO Box 58090 CA 95052 Santa Clara Tel/Fax: 1(0)4087215000/399803 www.national.com
SEI	USA	Space Electronic Inc.	REP' FRANCE
SFR	F	Sfernice	
TEMIC	F	Temic, Matra Harris	NANTES
TI	USA	Texas Instruments - Unitrode	7 Continental Boulevard NH 03054 MERRIMACK USA Tel/Fax: 1(0)034242410/3460 www.unitrode.com
VIS	F	Vishay S.A. division Sfernice	199, Bld de la Madeleine BP 1159 F-06003 NICE Cedex 1 Tel/fax: 33(0)493372727/26
VIT	F	Vitramon	

5. GENERAL ATTRITION RULES FOR FLIGHT AND SPARE MODELS

The following table shows the attrition quantities to be applied for parts families. For high cost semiconductor parts, the attrition quantities will be done case by case in the next chapter.

Net Quantity	Chip Capacitors and resistors	Other resistors, capacitors and filters	Semiconductors, relays and connectors with fixed contacts	Connectors bodies, saver bodies and crystals
1 - 5	+10	+4	+3	+2
6 – 8	+10	+5	+4	+2
9 – 15	+10	+6	+5	+3
16 – 25	+15	+7	+6	+4
26 – 40	+20	+10	+8	+5
41 – 60	+20	+13	+10	+6
61 – 100	+25	+17	+15	+10%
101 – 150	+25	+25	+20	+10%
151 – 250	+35	+37	+28	+10%
>= 251	+15%	+15%	+11%	+10%

6. SPECIAL ATTRITION RULES FOR HIGH COST SEMICONDUCTOR PARTS

High cost parts	**Net Quantity : 1 - 5**	**Net Quantity : >5**
PROM	+100%	+100%
FPGA RT54SX32S	+2	+4

7. LIST OF PARTS

7.1 Family Codes

Family Code	Group Code	Family	
01	01	Capacitors	Ceramic
	02	Capacitors	Ceramic Chip
	03	Capacitors	Tantalum Solid
02	01	Connectors	Circular
	02		Rectangular
	03		Printed Circuit Board
	07		Microminiature
03	01	Piezo-Electric Devices	Crystal Resonator
	99		Miscellaneous
04	01	Diodes	Switching
	02		Rectifier
	03		Voltage Regulator
	04		Voltage Reference
07	01	Inductors	RF Coils
	02		Cores
	03		Chip
08	10	Microcircuits	Microprocess/Microcontrol/
	20		Memory SRAM
	21		Memory DRAM
	22		Memory PROM
	23		Memry EPROM
	24		Memory EEPROM
	29		Memory Others
	30		Programmable Logic
	40		ASIC Technoloies Digital
			ASIC Technologies Linear
			ASIC Technologies Mixed
			Linear Sample & Hold Amplifier
	99		Miscellaneous

obsolete part for space, proposal (x)

* new components/last list

in italic: type proposal by Tecnologica, but not acceptable by CEA

	Item N°	Family Code	Group Code		GENERIC NAME	comments	FLT Part Type	FLT Generic Spec	FLT Detail Spec	Level	evaluation	upscreening	Lat	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	FM parts	FS parts
														Tol											9 LIA_P	2 LIA-P
																									3LIA-S	LIA-S
																									2 BIAS	BIAS
																									2 DAC	DAC-F
																									1 BP	BP
																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
		Capacitors																								
					CMS 0805 T1 (NPO) 1% 30ppm																						
	1	1-			33 pF, 25 V		A612CC 0330F NC 300900306C33C0FA	ESA/SCC 3009	ESA/SCC 3009/003	C					Capacitors, Ceramic, Fixed, Chip, Type I (dielectric:COG-NPO)	EPPL	TPC	805	25	93	N	**118**			62	31
	2	1-			47 pF, 25 V		A612CC 0470F NC 300900306C47C0FA	ESA/SCC 3009	ESA/SCC 3009/003	C					Capacitors, Ceramic, Fixed, Chip, Type I (dielectric:COG-NPO)	EPPL	TPC	805	67.2	448	N	**515**			360	88
	~~4~~	~~1-~~			~~470 pF, 25 V~~		~~A612CC 0471F NC 300900306C4700FA~~	~~ESA/SCC 3009~~	~~ESA/SCC 3009/003~~	~~C~~					~~Capacitors, Ceramic, Fixed, Chip, Type I (dielectric:COG-NPO)~~	~~EPPL~~	~~TPC~~	~~805~~	~~134.4~~	~~896~~	~~N~~	**~~1030~~**			~~720~~	~~176~~
*	5	1-			1,5nF		A612CC 0152F NC 300900306C15C2FA	ESA/SCC 3009	ESA/SCC 3009/003	C					Capacitors, Ceramic, Fixed, Chip, Type I (dielectric:COG-NPO)	EPPL	TPC	805	134.4	896	N	**1030**			720	176
					CMS 1206 T2 10% ou 20%																						
	21	1-			100nF, 50v,10%		A620ZD0104K NC 300900306C104KC	according to ESA/SCC 3009	ESA/SCC 3009/023	C					Capacitors, Ceramic, Fixed, Chip, Type II, terminaisons Ni barrier	EPPL	TPC	1206	575.4	3836	N	**4411**			2973	863
					CMS 1210 T2 (BX) 10%																						
	20	1-			10 nF , ~~50~~ 100 V		A613GE 0103K NC 3009 009 06 C 103KE	ESA/SCC 3009	ESA/SCC 3009/009	C					Capacitors, Ceramic, Fixed, Chip, Type II (dielectric BX/2C1) , terminaisons Ni barrier	EPPL/ QPL ESA	TPC	1210	25	90	N	**115**			60	30
					CMS 2220 T1 (NPO) 1% 30ppm																						
	9	1-			15 nF, 25 V		A615CC 0153F NC 300900606C153FA	ESA/SCC 3009	ESA/SCC 3009/011	C					Capacitors, Ceramic, Fixed, Chip, Type I (dielectric:COG-NPO)	EPPL	TPC	2220	10	12	N	**22**			8	4
					CEC class1 30ppm 1% 25V																						
	10	1-			47 nF, 25 V		CEC W PS 47nF 1% 25V		ESA/SCC C + LAT 2						Low voltage ceramic chip capacitors, class I (dielectric:COG-NPO)	?	Eurofarad	2528	67.2	448	N	**515**			360	88
					KM94-1 1%																						

obsolete part for space, proposal (x)

* new components/last list

in italic: type proposal by Tecnologica, but not acceptable by CEA

	Item N°	Family Code	Group Code		GENERIC NAME	comments	FLT Part Type	FLT Generic Spec	FLT Detail Spec	Level	evaluation	upscreening	Lat	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	FM parts	FS parts
														Tol											9 LIA_P	2 LIA-P
																									3LIA-S	LIA-S
																									2 BIAS	BIAS
																									2 DAC	DAC-F
																									1 BP	BP
																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
	19	1-			220 nF, 40 V		KM94 S1 220nF 1% 40V								Metallized Polycarbonate Capacitors		Eurofarad	3218	297.6	1984	N	**2282**			1584	400
					TAJ 10%																					
	13	1-			2,2uF 6,3V		**TAJ A 225K 006**	ESA/SCC 3012	ESA/SCC 3012/001-011	C					Capacitors, leadless surface monted, tantalum, solid electrolyte, enclosed anode connection	EPPL	TPC	SMD size A	20	42	N	**62**			28	14
	15	1-			10uF, 16V		**TAJ C 106K 016**	ESA/SCC 3012	ESA/SCC 3012/001-013	C					Capacitors, leadless surface monted, tantalum, solid electrolyte, enclosed anode connection	EPPL	TPC	SMD size C	25	129	N	**154**			97	32
					Connectors																					
	1	2-			DBMA 25P		3401 002 B DBMA 25P NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-01	B					D Subminiature Rectangular Connector without contacts	QPL ESA	CAN/F		5	28	P	**33**			14	14
	2	2-			DBMA 25S		3401 002 B DBMA 25S NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-01	B					D Subminiature Rectangular Connector without contacts	QPL ESA	CAN/F		5	33	P	**38**			18	15
	3	2-			DCMA 37S		3401 002 B DCMA 37S NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-01	B					D Subminiature Rectangular Connector without contacts	QPL ESA	CAN/F		2	6	P	**8**			4	2
	4	2-			DBMA 44 S		3401 002 B DBMA 44S NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-02	B					D Subminiature Rectangular High Density Crimp Contact CableConnector	QPL ESA	CAN/F		2	3	P	**5**			2	1
	5	2-			DDMA50P		3401 002 B DDMA 50P NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-01	B					D Subminiature Rectangular Connector without contacts	QPL ESA	CAN/F		5	30	P	**35**			24	6
	6	2-			DCMA 62S		3401 002 B DCMA 62S NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-02	B					D Subminiature Rectangular Hight density Crimp Contact CableConnector	QPL ESA	CAN/F		2	6	P	**8**			4	2
	7	2-			DDMA 78 S		3401 002 B DDMA 78S NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-02	B					D Subminiature Rectangular Hight density Crimp Contact CableConnector	QPL ESA	CAN/F		2	3	P	**5**			2	1
	8	2-			HE 801 65 P/MC		3401 016 01 B 05 MC **343** 00 **343** KNB 065 13 55 110	ESA/SCC 3401	ESA/SCC 3401/016	B					HE 801 PCB Connector, Plug 2 rows equipped with 65 solder 90° male contacts	QPL ESA	HYP/G		4	18	N	**22**			14	4
	9	2-			HE 801 65 E/FD		3401 016 01 B 17 FD 36 00 36 KNB 065 44 30 121	ESA/SCC 3401	ESA/SCC 3401/016	B					HE 801 PCB Connector, Receptacle 2 rows equipped with 65 solder straigh-through female contacts	QPL ESA	HYP/G		5	28	N	**33**			14	14
*	10	2-			HE 801 96 P/MC		3401 016 01B 08 MC 33 00 33 KNB 096 55 10 110	ESA/SCC 3401	ESA/SCC 3401/016	B					HE 801 PCB Connector, Plug 2 rows equipped with 96 solder 90° male contacts	QPL ESA	HYP/G		5	3	N	**8**			2	1

		obsolete part for space, proposal (x)																											
	*	new components/last list																											
	in italic: type proposal by Tecnologica, but not acceptable by CEA																												
	Item N°	Family Code	Group Code		GENERIC NAME	comments	FLT Part Type	FLT Generic Spec	FLT Detail Spec	Level	evaluation	upscreening	Lat	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	FM parts	FS parts
														Tol											9 LIA_P	2 LIA-P
																									3LIA-S	LIA-S
																									2 BIAS	BIAS
																									2 DAC	DAC-F
																									1 BP	BP
																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
*	11	2-			HE 801 96 E/FD		3401 016 01B 17 FD 36 00 36 KNB 096 44 30 121	ESA/SCC 3401	ESA/SCC 3401/016	B					HE 801 PCB Connector, Receptacle 2 rows equipped with 96 solder straigh-through female contacts	QPL ESA	HYP/G		5	4	N	**9**			2	2
	12	2-			HE808 144 P/MC		3401 039 01B 144 55 10 110 KMC 144 55 10 110	ESA/SCC 3401	ESA/SCC 3401/039	B					HE 808 High Density PCB Connector, Plug 3 rows equipped with 144 solder 90° male contacts	QPL ESA	HYP/G		2	3	N	**5**			2	1
	13	2-			HE808 144 E/FD		3401 39 01B 144 44 30 121 KMC 144 44 30 121	ESA/SCC 3401	ESA/SCC 3401/039	B					HE 808 High Density PCB Connector, Receptacle 3 rows equipped with 144 solder straigh-through female contacts	QPL ESA	HYP/G		2	4	N	**6**			2	2
*	14	2-			HE 801 160 P/MC		3401 016 01B 12 MC 34 00 34 KNC 160 55 10 110	ESA/SCC 3401	ESA/SCC 3401/016	B					HE 801 PCB Connector, Plug 2 rows equipped with 96 solder 90° male contacts	QPL ESA	HYP/G		3	5	N	**8**			3	2
*	15	2-			HE 801 160 E/FD		3401 016 01B 24 MC 36 00 36 KNC 160 44 30 121	ESA/SCC 3401	ESA/SCC 3401/016	B					HE 801 PCB Connector, Receptacle 2 rows equipped with 96 solder straigh-through female contacts	QPL ESA	HYP/G		4	8	N	**12**			4	4
					Contact																								
		2-			2020 Pin		PIN 3401-005-01B	ESA/SCC 3401	ESA/SCC 3401/005 01B	B					Male Contact crimp for D*MA connectors, AWG 20,22 &24	QPL ESA	CAN/F		375	2200	P	**2575**			1550	650
		2-			2020 Socket		SOCK 3401-005-02B	ESA/SCC 3401	ESA/SCC 3401/005 02B	B					Female Contact crimp for D*MA connectors, AWG 20,22 &24	QPL ESA	CAN/F		199	1047	P	**1246**			598	449
		2-			2020 Pin/Socket		PIN SOCKET 3401-021-01B	ESA/SCC 3401	ESA/SCC 3401/021 01B	B					Male/Female Contact crimp for D*MA connectors savers	QPL ESA	CAN/F		792	3985	P	**4777**			2640	1345
		2-			2026 Pin		PIN 3401-005-03B	ESA/SCC 3401	ESA/SCC 3401/005 03B	B					Male Contact crimp for D*MA connectors, AWG 26&28	QPL ESA	CAN/F		375	2200	P	**2575**			1550	650
		2-			2026 socket		SOCK 3401-005-04B	ESA/SCC 3401	ESA/SCC 3401/005 04B	B					Female Contact crimp for D*MA connectors, AWG 26 & 28	QPL ESA	CAN/F		199	1047	P	**1246**			598	449
		2-			2222 socket		SOCK 3401-005-08B	ESA/SCC 3401	ESA/SCC 3401/005 08B	B					Female Contact crimp for D*MA connectors, AWG 22, 24 & 26	QPL ESA	CAN/F		280	606	P	**886**			404	202
					Screw-lock																								
		2-			Male DB, DC		D 20419-48 NMB	ESA/SCC 3401	ESA/SCC 3401/022 03B	B					Screw-lock male	QPL ESA	CAN/F		10	56	P	**66**			28	28
		2-			female		3401 022 01 B NMB	ESA/SCC 3401	ESA/SCC 3401/022 01B	B					Screw-lock female	QPL ESA	CAN/F		26	102	P	**128**			60	42
		2-			Screw-lock saver DMA		3401 022 06 B NMB D20418-7(	ESA/SCC 3401	ESA/SCC 3401/022 06B	B					Srew-lock for DMA savers	QPL ESA	CAN/F		34	218	P	**252**			136	82

obsolete part for space, proposal (x)

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																									3LIA-S	LIA-S
																									2 BIAS	BIAS
																									2 DAC	DAC-F
																									1 BP	BP
																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
					Dust Caps																					
		2-			DB 59-20 (socket)	var 11	3401 022 11B	ESA/SCC 3401	ESA/SCC 3401/022 11B	B					Dust Cap for female connector, size B		CAN/F		7	36	P	**43**			20	16
		2-			DB 60-20 (pin)	var 12	3401 022 12B	ESA/SCC 3401	ESA/SCC 3401/022 12B	B					Dust Cap for male connector, size B		CAN/F		5	28	P	**33**			14	14
		2-			DC 59-20 (socket)	var 13	3401 022 13B	ESA/SCC 3401	ESA/SCC 3401/022 13B	B					Dust Cap for female connector, size C		CAN/F		4	12	P	**16**			8	4
		2-			DD 59-20 (socket)	var 15	3401 022 15B	ESA/SCC 3401	ESA/SCC 3401/022 15B	B					Dust Cap for female connector, size D		CAN/F		2	3	P	**5**			2	1
		2-			DD 60-20 (pin)	var 16	3401 022 16B	ESA/SCC 3401	ESA/SCC 3401/022 16B	B					Dust Cap for male connector, size D		CAN/F		5	30	P	**35**			24	6
					Savers																					
	17	2-			DBBMA 25 PS FO		3401 020 01 B DBBMA 25 PS NMB FC	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 25 PS With contacts	QPL ESA	CAN/F		4	21	P	**25**			12	9
	18	2-			DCBMA 37 PS FO		3401 020 01 B DCBMA 37 PS NMB FC	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 37 PS With contacts	QPL ESA	CAN/F		2	6	P	**8**			4	2
	19	2-			DBBMA 44 PS FO		3401 020 01 B DBBMA 44 PS NMB FC	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 37 PS With contacts	QPL ESA	CAN/F		2	3	P	**5**			2	1
	20	2-			DDBMA 50 PS FO		3401 020 01 B DDBMA 50 PS NMB FC	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 50 PS With contacts	QPL ESA	CAN/F		5	30	P	**35**			24	6
	21	2-			DCBMA 62 PS FO		3401 020 01 B DCBMA 62 PS NMB FC	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 50 PS With contacts	QPL ESA	CAN/F		2	6	P	**8**			4	2
	22	2-			DDBMA 78 PS FO		3401 020 01 B DDBMA 78 PS NMB FC	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 50 PS With contacts	QPL ESA	CAN/F		2	3	P	**5**			2	1
	23	2-			HE801 65 saver		3401 016 01 B 17 FM 00 00 00 KNB065 44 91 944	ESA/SCC 3401	ESA/SCC 3401/016	B					HE801 Saver equipped with 65 female-male contacts	QPL ESA	FRB/F		6	46	N	**52**			28	18
*	24	2-			HE801 96 saver		3401 016 01 B 20 FM 00 00 00 KNB096 44 91 944	ESA/SCC 3401	ESA/SCC 3401/016	B					HE801 Saver equipped with 96 female-male contacts	QPL ESA	FRB/F		6	7	N	**13**			4	3
	25	2-			HE808 144 saver		3401 039 01B 144 44 91 744 KMC 144 44 91 703	ESA/SCC 3401	ESA/SCC 3401/039	B					HE 808 High Density Saver equipped with 144 solder male/female contacts	QPL ESA	HYP/G		2	7	N	**9**			4	3
*	26	2-			HE801 160 saver		3401 016 01 B 24 FM 00 00 00 KNC160 44 91 944	ESA/SCC 3401	ESA/SCC 3401/016	B					HE801 Saver equipped with 160 female-male contacts	QPL ESA	FRB/F		6	13	N	**19**			7	6
					Crystals																					

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																									3LIA-S	LIA-S
																									2 BIAS	BIAS
																									2 DAC	DAC-F
																									1 BP	BP
																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
		3-			T807 20 MHz STC 3342		STC 3342 variante 42	ESA/SCC 3501	ESA/SCC 3501/008	B					Cristal units in metal holder based on type 807	QPL ESA EPPL	CEP/F	TO 807	3	3	N	**6**			2	1
*		3-			T807 10 MHz STC 3342			ESA/SCC 3501	ESA/SCC 3501/008	B					Cristal units in metal holder based on type 807	QPL ESA EPPL	CEP/F	TO 807	3	6	N	**9**			4	2
		~~3-~~			~~T1507 11,0592 MHz~~		~~T1507 @ 11,0592 MHz (STC 3665) 3549_350100933B~~	~~ESA/SCC 3501~~	~~ESA/SCC 3501/009~~	~~B~~					~~Cristal units in metal holder based on type 1507~~	~~QPL ESA EPPL~~	~~CEP/F~~	~~TO 8~~	~~0~~	~~0~~	~~N~~	**~~0~~**			~~0~~	~~0~~
		Diodes																								
	3				1N5617		JANS 1N5617	MIL-PRF-19500	MIL-PRF-19500/429	S					Silicon, Power Rectifier, Fast Recorvery	QPL ESA EPPL	MSC/U	Melf.A	29.92	272	NC	**302**			136	136
	1				1N4148		1N4148-1	ESA/SCC 5101	ESA/SCC 5101/023-02B	B					High Speed Silicon Diode	QPL ESA	MSC/U	DO35	15	90	**N**	**105**			60	30
	2				1N6642		JANS1N6642U									QPL ESA	MSC/U	MELF	99	900	**N**	**999**			722	178
		Inductors																								
		Integrated circuits monolithic																								
					Amplifiers																					
	1	8-			OP 400 A	Type reduction (1c)	OP400 ATC/QML V	MIL-I-38535	5962-87771 01V3A	**V**					Quad Low-Offset, Low-Power Opertional Amplifier	QML38535	AND/U	LCC28	93.06	846	**N**	**939**		**Y**	660	186
	24	8-			OP 215		OP215AZ/QML V	MIL-PRF-38535	5962-88538 01VPA	**V**				100K rad	DUAL Precision JFET INPUT Operational Amplifier	QML38535	AND/U	CerDIP 8	6	21	**N**	**27**			14	7
	26	8-			OP15		OP15AL/QMLR	MIL-PRF-38535	5962R8954203VHA	**V**					OP AMP, JFET-INPUT, RAD-HARD	QML38535	AND/U	FP	5	15	**N**	**20**			10	5

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																							2 DAC	DAC-F
																							1 BP	BP
																							TEMP	TEMP
																							2 CK-I/F	CK-I/F
																							BP	BP
																							distrib	distrib
			Instrumentation Amplifier																					
25	8-		AMP02AZ		AMP02-903Z	ADS0011177	Built on a QML line but not covered on an SMD						High Accuracy Instrumentation Amplifier		AND/U	CerDIP8	15	72		**87**			48	24
~~27~~	8-		AMP01		AMP01N/QMLV	MIL-PRF-38535	5962-8863003VKA	V					Instrumentation Amplifier, low noise, precision	QML38535	AND/U	FP14	3	3		**6**			2	1
			Mux																					
3	8-		HS 303 RH		HS9-303RH-**QS 9000**	MIL-PRF-38535	5962R9581301VXC	V				0,1M	Analog Switch, Dual, SPDT, Radiation Hardened CMOS	EPPL QML-38535	HAR/U	FP-14	28.93	263	N	**292**			206	57
4	8-		HS 508 BRH		HS9-508BRH-QS9000	MIL-PRF-38535	5962F9674202VXC	V				0,3M	single 8-Channel MUX, with Overvoltage Protection, Radiation Hardened DI CMOS	QML-38535	HAR/U	FP-16	28	153	N	**181**			110	43
			S/Hold																					
			HCMOS																					
32	8-		54HC14		54HC14	ESA/SCC 9409	ESA/SCC 9409/007	B					HCMOS Hex Schmitt Trigger Inverters	QPL ESA	STM/F	FP14	3	3		**6**			2	1
20	8-		54 HC 137	no more required	54HC137 K	ESA/SCC 9205	ESA/SCC 9205/13-02BF	B				50k	HCMOS 3 to 8 line decoders/demultiplexers with address latches & inverted outputs	QPL ESA	STM/F	FP16	0	0		**0**			0	0
21	8-		54 HC 164		54 HC 164 K01(2)V	ESA/SCC 9306 MIL-PRF-38535	ESA/SCC 9306/041 5962-8416201VXA(C)	B V				50k	HCMOS 8 bit sipo shift regiser	EPPL QML	STM/F	FP14	4	6		**10**			4	2
23	8-		54 HC 595		54 HC 595K	ESA/SCC 9306	ESA/SCC 9306/051	B V				50k	HCMOS 8 bit shift regiser	QPL ESA	STM/F	FP10	8	40		**48**			30	10
			Temp Sensor																					
28			AD590M		AD590MF/883B	883B	5962-87571 04MXA	V				tol to 50K	Microcircuit,linear, radiation hardened, Temperature Transducer, Two Terminals, monolithic silicon	EPPL QML-38535	AND/U	FP2A	10	44	N	**54**			33	11
			Voltage Ref																					

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																								2 DAC	DAC-F
																								1 BP	BP
																								TEMP	TEMP
																								2 CK-I/F	CK-I/F
																								BP	BP
																								distrib	distrib
	8-			AD 589 T H		AD 589 TH /QMLV	MIL-PRF-38535	5962-8992901VXA	V				?	Two-Terminal IC 1.2V Reference	QML-38535	AND/U	CAN2	3	4	N	**7**			2	2
	8-			REF-02A	Type reduction (15a)	REF02AL	MIL-PRF-38535	5962-8551401VHA	V					Volt Reference +5V adjustable output, precision	QML-38535	AND/U	FP10	10	42	**N**	**52**			32	10
				Regulator																					
22a	8-			HS-117RH	TBC	HS9S-117RH-Q	MIL-PRF-35535	5962F9954701VXC	V				300K	Radiation Hardened Adjustable Positive Voltage Regulator	QML-35535	HAR/U	TO-257	4	9	**N**	**13**			6	3
				RAM/SRAM																					
30	8-			67206		SMDP-67206FV-15SV	MIL-PRF-38535	5962-9317704VZC	V					FIFO MEMORY, 16K X 9 PARALLEL, LOW POWER, 15 NS ACCESS TIME	QML 38535	MHS/F	FP28	4	6		**10**			4	2
31	8-			65656G		SMDP-65656GV-40SV	MIL-PRF-38535	QML-V	V					32K*8 Very Low Power CMOS SRAM Rad Tolerant (45nS)	QML 38535	MHS/F	FP28	3	3		**6**			2	1
				ADC																					
7b	8-	4		SEI 7809LPRP				7809LPRP0901,99	K	Y			RE	A/D convertor, 16 bit serial, latch-protected	QML-38535	SEI	FP24	6	27	**Y**	**33**	30		18	9
				DAC																					
8c	8-	4		7545A		7545ARP		7545ARP0610,99	S				RE	CMOS 12-Bit Buffered Multiplying DAC	QML-38535	SEI/U	FP20	15	96	**Y**	**111**		Y	64	32
8c	*8-*	*4*		*7545A*		*7545ARP*		*7545ARP0610,99*	*S*				*RE*	*CMOS 12-Bit Buffered Multiplying DAC*	*QML-38535*	*SEI/U*	FP20	*10*	*45*	***Y***	***55***	58	*N*	30	*15*
				DAC8800	DAC880BR/883C		MIL-STD-883	It was tested by JPL up to an LET of 80MeV*cm2/mg: no effects was seen, DUT Icc did not change, and						octal 8-bit CMOS DAC	883B	AND/U	DIL20	5	9		**14**		Y	6	3
				E/R diff																					
9	8-			HS-26C31RH		HS9-26C31RH -QS9000	MIL-PRF-38535	5962F9666301VXC	V				100K	Quad EIA RS422, Radiation Hardened CMOS, Differential Driver, with 3-State Output	QML-38535	HAR/U	FP16	5	10	**N**	**15**			6	4

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																									BP	BP
																									distrib	distrib
	10	8-			HS-26C32RH		HS9-26C32RH -QS9000	MIL-PRF-38535	5962F9568901VXC	v				100K	Quad EIA RS422, Radiation Hardened CMOS, Differential Receiver, with 3-State Output	EPPL QML-38535	HAR/U	FP16	5	10	N	**15**			6	4
	18	8-			UT54LVDS031		UT54LVDS031	MIL-PRF-38535	5962R9583302VXC	V				1M	Quad CMOS Differential Line Driver, LVDS, Rad-Hard	QML-38535	NS	FP16	6	21	N	**27**			14	7
	19	8-			UT54LVDS032		UT54LVDS032	MIL-PRF-38535	5962R9583402VXC	V				300K	Quad CMOS Differential Line Receiver, LVDS	QML-38535	UTMC	FP16	15	66	N	**81**			52	14
					FPGA																					
	11c	8-			RT 54SX32S		RT54SX32S CQ208E	SA-0320-EYC	SMD + Mfr Amend					rt 75-100k	32000 Gates,SX-A Family, FPGA, RadTolerant and Hirel	QML-38535	ACT/U	CQFP-208	4	12	N	**16**			10	2
																									total without l	
					Resistors																					
					RLR07/2H4 1% 100ppm 1/8W 200V																					
*	37				1R		2H4/RLR 07 1R	ESA/SCC 4001	ESA/SCC 4001/006-01	C					High Reliability, Resistor, Fixed, Film,non hermitically sealed based on type RLR07	EPPL	SFER		10	54		**64**			42	12
					~~**CHP HR 0505 1/8W 2% 50V +/ 200 ppm**~~																					
	~~1~~	~~10-~~			~~1R~~		~~CHPHR 0505 1R00 F6 BE~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/016-03~~	~~C~~					~~High reliability,Resistor, Fixed, Chip~~	~~EPPL~~	~~SFER~~	~~505~~	~~0~~	~~0~~	~~P~~	~~**0**~~			~~0~~	~~0~~
					CHP HR 0505 1/8W 1% 50V +/-100 ppm																					
	~~2~~	~~10-~~			~~10R2~~		~~CHPHR 0505 10R2 F4 BE~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/016-03~~	~~C~~					~~High reliability,Resistor, Fixed, Chip~~	~~EPPL~~	~~SFER~~	~~505~~	~~25~~	~~112~~	~~P~~	~~**137**~~			~~90~~	~~22~~
	3	10-			100R	0505 TBD	CHPHR 0505 100R0 F4	ESA/SCC 4001	ESA/SCC 4001/016-03	C					High reliability,Resistor, Fixed, Chip	EPPL	SFER	505	479.1	3194	P	**3673**			2562	632
	4	10-			1K		CHPHR 0505 1K F4	ESA/SCC 4001	ESA/SCC 4001/016-03	C					High reliability,Resistor, Fixed, Chip	EPPL QPL ESA	SFER	505	71.7	478	N	**550**			384	94
	5	10-			5K	4,99K	CHPHR 0505 5K F4	ESA/SCC 4001	ESA/SCC 4001/016-03	C					High reliability,Resistor, Fixed, Chip	EPPL QPL ESA	SFER	505	67.2	448	N	**515**			360	88

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																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
	~~6~~	~~10-~~			~~10K~~		~~CHPHR 0505 10K F4~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/016-03~~	~~C~~					~~High reliability,Resistor, Fixed, Chip~~	~~EPPL QPL ESA~~	~~SFER~~	~~505~~	~~206.1~~	~~1374~~	~~N~~	**~~1580~~**			~~1104~~	~~270~~
	7	10-			15K		CHPHR 0505 15K F4	ESA/SCC 4001	ESA/SCC 4001/016-03	C					High reliability,Resistor, Fixed, Chip	EPPL QPL ESA	SFER	505	206.1	1374	N	**1580**			1104	270
	8	10-			30K	30k1	CHPHR 0505 30K F4	ESA/SCC 4001	ESA/SCC 4001/016-03	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	505	134.4	896	N	**1030**			720	176
	9	10-			100K		CHPHR 0505 100K F4	ESA/SCC 4001	ESA/SCC 4001/016-03	C					High reliability,Resistor, Fixed, Chip	EPPL QPL ESA	SFER	505	201.6	1344	N	**1546**			1080	264
	10	10-			1Mo		CHPHR 0505 1Mo F4	ESA/SCC 4001	ESA/SCC 4001/016-03	C					High reliability,Resistor, Fixed, Chip	EPPL QPL ESA	SFER	505	134.4	896	N	**1030**			720	176
					CHP CMS 0805 1/5W 1% 75V +/-200 ppm																							
	11	10-			10R		CHPHR 0805 K 1% R 10U	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	25	96	N	**121**			64	32
					CHP CMS 0805 1/5W 1% 75V +/-100 ppm																							
	12	10-			68R	68R1	CHPHR 0805 K 1% R 100U	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	25	75	N	**100**			50	25
	13	10-			100R		CHPHR 0805 K 1% R 100U	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	92.7	618	N	**711**			412	206
	14	10-			200R		CHPHR 0805 K 1% R 200U	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	25	96	N	**121**			64	32
	15	10-			1K		CHPHR 0805 K 1% R 1K	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	20	36	N	**56**			24	12
	16	10-			10K		CHPHR 0805 K 1% R 10K	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	25	144	N	**169**			96	48
	17	10-			15K		CHPHR 0805 K 1% R 15K	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	10	6	N	**16**	*20*		4	2
	18	10-			33,2K		CHPHR 0805 K 1% R 33K2	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	15	21	N	**36**			14	7
	19	10-			100K		CHPHR 0805 K 1% R 100K	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	25	90	N	**115**			60	30
					Chip CMS 0603 type P 0,01% +/-10 ppm 1/10W																							
	~~20~~	~~10-~~			~~200R~~	~~251R~~	~~PHR 0603 Y2000LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~52.8~~	~~352~~	~~NC~~	**~~405~~**			~~288~~	~~64~~
	48	10-			267R		PHR 0603 Y2670LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	96	NC	**121**			72	24
	~~21~~	~~10-~~			~~475R~~		~~PHR 0603 Y4750LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~25~~	~~96~~	~~NC~~	**~~121~~**			~~72~~	~~24~~
	22	10-			4K		PHR 0603 Y4001LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	15	18	NC	**33**			12	6

obsolete part for space, proposal (x)

* new components/last list

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	Item N°	Family Code	Group Code		GENERIC NAME	comments	FLT Part Type	FLT Generic Spec	FLT Detail Spec	Level	evaluation	upscreening	Lat	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	FM parts	FS parts
														Tol											9 LIA_P	2 LIA-P
																									3LIA-S	LIA-S
																									2 BIAS	BIAS
																									2 DAC	DAC-F
																									1 BP	BP
																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
	23	10-			~~5K~~ 4,99K		PHR 0603 Y4991LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	81	NC	**106**			54	27
	~~24~~	~~10-~~			~~6,65K~~		~~PHR 0603 Y6651LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~25~~	~~96~~	~~NC~~	**~~121~~**			~~72~~	~~24~~
	~~25~~	~~10-~~			~~8K~~		~~PHR 0603 Y8001LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~52.8~~	~~352~~	~~NC~~	**~~405~~**			~~288~~	~~64~~
*	38	10-			9K76		PHR 0603 Y9762LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	128	NC	**153**			96	32
	26	10-			10K		PHR 0603 Y1002LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	301.4	2009	NC	**2310**			1607	402
*	39	10-			13K3		PHR 0603 Y1332LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	52.8	352	NC	**405**			288	64
	27	10-			15K		PHR 0603 Y1502LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	163.2	1088	NC	**1251**			864	224
	~~28~~	~~10-~~			~~16K9~~		~~PHR 0603 Y1692LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~25~~	~~96~~		**~~121~~**			~~72~~	~~24~~
*	40	10-			17K4		PHR 0603 Y1742LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	35	192	NC	**227**			144	48
*	41	10-			18K2		PHR 0603 Y1822LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	35	192	NC	**227**			144	48
	29	10-			20K		PHR 0603 Y2002LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	10	12	NC	**22**			8	4
	~~30~~	~~10-~~			~~28K7~~		~~PHR 0603 Y2872LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~86.4~~	~~576~~	~~NC~~	**~~662~~**			~~432~~	~~144~~
*	42	10-			27K4		PHR 0603 Y2742LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	96		**121**			72	24
	31	10-			~~51K~~ 51,1K		PHR 0603 Y5112LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	54.9	366	NC	**421**			252	114
*	43	10-			61K		PHR 0603 Y6102LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	15	18		**33**			12	6
	~~32~~	~~10-~~			~~65K~~		~~PHR 0603 Y6502LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~52.8~~	~~352~~		**~~405~~**			~~288~~	~~64~~
*	44	10-			90K9		PHR 0603 Y9532LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	105.6	704		**810**			576	128
*	45	10-			95K3		PHR 0603 Y9532LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	96		**121**			72	24
*	46	10-			97K6		PHR 0603 Y9762LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	52.8	352		**405**			288	64

obsolete part for space, proposal (x)

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	Item N°	Family Code	Group Code		GENERIC NAME	comments	FLT Part Type	FLT Generic Spec	FLT Detail Spec	Level	evaluation	upscreening	Lat	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	FM parts	FS parts
														Tol											9 LIA_P	2 LIA-P
																									3LIA-S	LIA-S
																									2 BIAS	BIAS
																									2 DAC	DAC-F
																									1 BP	BP
																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
*	47	10-			102K		PHR 0603 Y1023LB	ESA/SCC 4001	ESA/SCC 4001/023-05	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	105.6	704	NC	**810**			576	128
	~~35~~	~~10-~~			~~143K~~		~~PHR 0603 Y1433LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~211.2~~	~~1408~~	~~NC~~	**~~1619~~**			~~1152~~	~~256~~
	~~36~~	~~10-~~			~~147K~~		~~PHR 0603 Y1473LB~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/023-05~~	~~C~~					~~Resistors, Fixed, Chips, thin film, high precision wraparound~~	~~EPPL~~	~~SFER~~	~~603~~	~~25~~	~~96~~	~~NC~~	**~~121~~**			~~72~~	~~24~~
		Transistors																								
	1	12-	16		MAT02		MAT02-903H	in accordance with the "AND Standard Space Level prodcuts program" as QML-V equivalent part (MAT02-903H)	ADS0011413	S				RT 200K	Low Noise, Matched Dual Monolithic Transistor		AND	TO78	49.28	448	**N**	**497**			360	88
		12-			2N2907A		2N2907A AHR 520200103B	ESA/SCC 5202	ESA/SCC 5202/001-02	B					Transistors, Low power, PNP	QPL ESA EPPL	STM/F	TO18	6	18		**24**			10	8
		12-			2N5154		2N5154	ESA/SCC 5203	ESA/SCC 5203/010						Transistors, low & hight power, NPN	QPL ESA EPPL	STM/F	TO39 ou TO257	15	102		**117**			68	34
		12-			2N2222A		2N2222A	ESA/SCC 5201	ESA/SCC 5201/002-02	B					Transistors, low power, NPN, switching	QPL ESA EPPL	STM/F	TO18	6	20		**26**			12	8
		Relays																								

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														Tol											9 LIA_P	2 LIA-P
																									3LIA-S	LIA-S
																									2 BIAS	BIAS
																									2 DAC	DAC-F
																									1 BP	BP
																									TEMP	TEMP
																									2 CK-I/F	CK-I/F
																									BP	BP
																									distrib	distrib
		9-	17		TL		TL 2PDT 1A 12V 500R 2ms	ESA/SCC 3602	ESA/SCC 3602/002						Relays, Electromagnetic, latching 28Vdc, 1A, 2PDT, TO5 CAN	QPL ESA EPPL	Deutsch	TO5		40		**40**			20	20
		9-	17		GP2		GP2 2PDT 2A 12V 180R 4ms	ESA/SCC 3602	ESA/SCC 3602/003-02	B					Relays, Electromagnetic, latching 28Vdc, 2A, 2PDT, half size crystal can	QPL ESA EPPL	Leach Inter	alf-crystal		14		**14**			7	7
		9-	17		EL210		EL210 2PDT 10A 12V 60R 15ms	ESA/SCC 3602	ESA/SCC 3602/009-06	B					Relays, Electromagnetic, latching 28Vdc, 15A, 2PDT	QPL ESA EPPL	Deutsch	qaure-inch		12		**12**			6	6
		9-	16		EL210			ESA/SCC 3601	ESA/SCC 3601/017						Relays, Electromagnetic, non latching 28Vdc, 15A, 2PDT	QPL ESA EPPL	Deutsch			12		**12**			6	6