K. King

SPIRE-SAP-DOC-001075

Herschel Spire	**SPIRE/DRCU Instrument** **Herschel Mission**	CEA DSM-DAPNIA Ref : SAp-SPIRE-VM-0059-02 Date : 01/03/2002 Edition : 12 Revision : 0

SPIRE
Declared Components List

User Code: FSDRCC

1st March 2002
Edition: 12
Revision: 0

SAp-SPIRE-VM-0059-02

Prepared by :	Date : 01/03/2002
V. Mauguen	
Checked by :	**Date :** 01/03/2002
C. Cara	

Document change record

Révision			Modifications
Issue - rev.	Date	Approved by	
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

12	01/03/2002		• new components: - resistor PHR0603 115R 0.02% (variant 01) - connectors DEMA9S, DAMA15S, DAMA15P, DDMA50S, DEBMA9PS, DABMA15PS & DCDMA50PS - OP484AM • quantities have changed for: - 1N4148, 1N6642, AD590MF, 2N2907A, 2N2222A, OP15, AMP01, REF02, HS303RH, SMDP67206. - capacitors CMS1206 100nF&10nF, TAJ 16v 10% 10µF - resistors CHP0805 1% 10R,10K&100K; PHR0603 0.01% 10K - connectors DBMA25S,DEBMA9PS-QM,DCBMA25PS, & DDBMA50PS screw-lock, dust-caps…, HE801 160P, HE801 160S • parts to be eliminated: - connectors DBMA44S , DBMA37S, DCMA62S (+ savers..) - AD589, 1N5617

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 09)

[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	Lot	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	QM parts reference (to be defined or confirmed by Tecnologica)	Package	Manufacturer	Total Need	PO
																							Qualification Model				
	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	96	N	**121**			A612CC0330FRD 3009-00306D3C0FA	805	TPC	**89**	
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**			A612CC0470FRD 3009-00306D47C0FA	805	TPC	**414**	
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	896	N	**1030**			A612CC 0152F RD	805	TPC	**828**	
			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	576	3841	N	**4417**			A620ZD0104KRD 3009-02306D104KC	1206	TPC	**3 414**	
	1-		xpF, 25 to 400V	100 to 220000	3009 023 06 C xxx Kx	ESA/SCC 3009	ESA/SCC 3009/023	C					Capacitors, Ceramic, Fixed, Chip, Type II, terminaisons Ni barrier	EPPL	TPC/ ~~Vishay~~	1206		0	N	**0**							
			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	123	N	**148**			A613GE0103KRD 3009-00906D103KE	1210	TPC	**102**	
			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**			A615CC0153FRD 3009-00606D153FA	2220	TPC	**18**	
			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**			CEC WPS 47nF 1% 25V	2528	Eur	**414**	
			KM94-1 1%																								
19	1-		220 nF, 40 V		KM94 S1 220nF 1% 40V								Metallized Polycarbonate Capacitors		Eurofarad	3218	298	1984	N	**2282**			KM94 S1 220nF 1% 40V	3218	Eur	**1 822**	
			TAJ 10%																								

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	Lot	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	Qualification Model (QM parts reference (to be defined or confirmed by Tecnologica))	Package	Manufacturer	Total Need	PO
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			TAJ A	A	TPC	43	
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	141	N	166			TAJ C	C	TPC	130	
				Connectors																								
27	2-			DEMA 9S		3401 002 B DEMA 9S NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-01	B					D Subminiature Rectangular Connector without contacts	QPL ESA	CAN/F		2	3	P	5			DEMA 9S NMB FO		CAN/F	4	0
26	2-			DAMA 15P		3401 002 B DAMA 15P NMB	ESA/SCC 3401	ESA/SCC 3401/002-01	B					D Subminiature Rectangular Connector without contacts	QPL ESA	CAN/F		2	4	P	6			DAMA 15P NMB FO		CAN/F	4	0
29	2-			DAMA 15S		3401 002 B DAMA 15S NMB	ESA/SCC 3401	ESA/SCC 3401/002-01	B					D Subminiature Rectangular Connector without contacts	QPL ESA	CAN/F		2	4	P	6			DAMA 15S NMB FO		CAN/F	4	0
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			DBMA 25P NMB FO		CAN/F	17	17
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		4	25	P	29			DBMA 25S NMB FO		CAN/F	17	23
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	3	P	5			DCMA 37S NMB FO		CAN/F	4	6
~~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~~			~~0~~	~~P~~	~~0~~			~~DBMA 44S NMB FO~~		~~CAN/F~~	~~0~~	~~4~~
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			DDMA 50P NMB FO		CAN/F	28	28
30	2-			DDMA 50S		3401 002 B DDMA 50S NMB FO	ESA/SCC 3401	ESA/SCC 3401/002-01	B					D Subminiature Rectangular Connector without contacts	QPL ESA	CAN/F		2	3	P	5			DDMA 50S NMB FO		CAN/F	4	0
~~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~~			~~0~~	~~P~~	~~0~~			~~DCMA 62S NMB FO~~		~~CAN/F~~	~~0~~	~~4~~
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			DDMA 78S NMB FO		CAN/F	4	4
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			KNB 065 13 10 110			17	17
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			KNB 065 22 30 121			17	17
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			KNB 096 13 10 110			4	5
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			KNB 096 22 30 121			4	5
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			KMC 144 13 10 110			4	4

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	Lot	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	Qualification Model				
																								QM parts reference (to be defined or confirmed by Tecnologica)	Package	Manufacturer	Total Need	PO
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			KMC 144 22 30 121			4	4
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		2	3	N	5			KNC 160 13 10 110			4	6
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		2	4	N	6			KNC 160 22 30 121			4	7
				Contact																				**Contact**				
31	2-			2020 Pin		PIN 3401-005-01B	ESA/SCC 3401	ESA/SCC 3401/005 01E	B					Male Contact crimp for D*MA connectors, AWG 20,22 &24	QPL ESA	CAN/F		375	2200	P	2575			2020 Pin		CAN/F	1 885	3100
32	2-			2020 Socket		SOCK 3401-005-02B	ESA/SCC 3401	ESA/SCC 3401/005 02E	B					Female Contact crimp for D*MA connectors, AWG 20,22 &24	QPL ESA	CAN/F		174	736	P	910			2020 Socket		CAN/F	669	1932
33	2-			2020 Pin/Socket		PIN SOCKET 3401-021-01B	ESA/SCC 3401	ESA/SCC 3401/021 01E	B					Male/Female Contact crimp for D*MA connectors savers	QPL ESA	CAN/F		805	3320	P	4125			2020 Pin/Socket		CAN/F	2 910	4032
34	2-			2026 Pin		PIN 3401-005-03B	ESA/SCC 3401	ESA/SCC 3401/005 03E	B					Male Contact crimp for D*MA connectors, AWG 26&28	QPL ESA	CAN/F		375	2200	P	2575			2026 Pin		CAN/F	1 885	3100
35	2-			2026 socket		SOCK 3401-005-04B	ESA/SCC 3401	ESA/SCC 3401/005 04E	B					Female Contact crimp for D*MA connectors, AWG 26 & 28	QPL ESA	CAN/F		174	736	P	910			2026 socket		CAN/F	669	1932
36	2-			2222 Pin		PIN 3401-005-07B	ESA/SCC 3401	ESA/SCC 3401/005 07E	B					Male Contact crimp for D*MA connectors, AWG 22,24 & 26	QPL ESA	CAN/F		0	0	P	0			2222 Pin		CAN/F		3100
37	2-			2222 socket		SOCK 3401-005-08B	ESA/SCC 3401	ESA/SCC 3401/005 08E	B					Female Contact crimp for D*MA connectors, AWG 22, 24 & 26	QPL ESA	CAN/F		156	234	P	390			2222 socket		CAN/F	312	1932
				Screw-lock																				**Screw-lock**				
38	2-			Male DA, DE		3401 022 02B D20419-74	ESA/SCC 3401	ESA/SCC 3401/022 02E	B					male Screw-Lock for DA,DE (pin or socket) & DB,DC socket (without Backshell)	QPL ESA	CAN/F		24	78	P	102			Male DA, DE D 20419-74		CAN/F	66	0
39	2-			Male DB, DC		3401 022 03B D 20419-48	ESA/SCC 3401	ESA/SCC 3401/022 03E	B					male Screw-Lock for DB,DC pin (without Backshell)	QPL ESA	CAN/F		10	56	P	66			Male DB, DC: D 20419-48		CAN/F	34	28
40	2-			Male DD		3401 022 05B D 20420-67	ESA/SCC 3401	ESA/SCC 3401/022 04B						male Screw-Lock for DD socket (without Backshell)	QPL ESA	CAN/F		8	12		20			Male DD (S) D 20420-67		CAN/F	16	0
41	2-			Male DD		3401 022 05B D 20420-49	ESA/SCC 3401	ESA/SCC 3401/022 05B						male Screw-Lock for DD pin (without Backshell)	QPL ESA	CAN/F		10	60		70			Male DD (p) D 20420-49		CAN/F	56	0
42	2-			female		3401 022 01B D 20418-52	ESA/SCC 3401	ESA/SCC 3401/022 01E	B					female Screw-Lock for all sizes pin and socket	QPL ESA	CAN/F		52	206	P	258			female : D20418-52		CAN/F	172	49
																											33
																											72
43	2-			Screw-lock saver DMA		3401 022 06B D 20418-70	ESA/SCC 3401	ESA/SCC 3401/022 06E	B					Srew-lock for DMA savers	QPL ESA	CAN/F		52	206	P	258			Screw-lock saver DMA: D20418-70		CAN/F	172	166
44	2-			Screw-lock Saver MDM		3401 032 05 B	ESA/SCC 3401	ESA/SCC 3401/032 05E	B					Screw-lock for MDM saver	QPL ESA	ITT			0	P	0			Screw-lock Saver MDM		CAN/F		

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	Lot	Rad	FLT Description	Status	Manuf	Pkg	Affr.	Needs CEA	LLI	Total Need	PO	Self procured	QM parts reference (to be defined or confirmed by Tecnologica)	Package	Manufacturer	Total Need	PO
																								Qualification Model				
				Dust Caps																				**Dust Caps**				
45	2-			DE 59-20 (socket)	var 7	3401 022 07B	ESA/SCC 3401	ESA/SCC 3401/022 07E	B					Dust Cap for female connector, size E		CAN/F		2	3	P	**5**			DE 59-20 (socket)		CAN/F	4	0
46	2-			DA 59-20 (socket)	var 9	3401 022 09B	ESA/SCC 3401	ESA/SCC 3401/022 09E	B					Dust Cap for female connector, size A		CAN/F		2	4	P	**6**			DA 59-20 (socket)		CAN/F	4	0
47	2-			DA 60-20 (pin)	var 10	3401 022 10B	ESA/SCC 3401	ESA/SCC 3401/022 10E	B					Dust Cap for male connector, size A		CAN/F		2	4	P	**6**			DA 60-20 (pin)		CAN/F	4	0
48	2-			DB 59-20 (socket)	var 11	3401 022 11B	ESA/SCC 3401	ESA/SCC 3401/022 11E	B					Dust Cap for female connector, size B		CAN/F		4	25	P	**29**			DB 59-20 (socket)		CAN/F	17	25
49	2-			DB 60-20 (pin)	var 12	3401 022 12B	ESA/SCC 3401	ESA/SCC 3401/022 12E	B					Dust Cap for male connector, size B		CAN/F		5	28	P	**33**			DB 60-20 (pin)		CAN/F	17	17
50	2-			DC 59-20 (socket)	var 13	3401 022 13B	ESA/SCC 3401	ESA/SCC 3401/022 13E	B					Dust Cap for female connector, size C		CAN/F		2	3	P	**5**			DC 59-20 (socket)		CAN/F	4	12
	~~3-~~			~~DC 60-20 (pin)~~	~~var 14~~	~~3401 022 14B~~	~~ESA/SCC 3401~~	~~ESA/SCC 3401/022 14E~~	~~B~~					~~Dust Cap for male connector, size C~~		~~CAN/F~~				~~P~~	**0**			~~DC 60-20 (pin)~~		~~CAN/F~~	0	
51	2-			DD 59-20 (socket)	var 15	3401 022 15B	ESA/SCC 3401	ESA/SCC 3401/022 15E	B					Dust Cap for female connector, size D		CAN/F		4	6	P	**10**			DD 59-20 (socket)		CAN/F	8	4
																												4
52	2-			DD 60-20 (pin)	var 16	3401 022 16B	ESA/SCC 3401	ESA/SCC 3401/022 16E	B					Dust Cap for male connector, size D		CAN/F		5	30	P	**35**			DD 60-20 (pin)		CAN/F	28	28
	2-			For MDM 51S		025-8843-000	ESA/SCC 3401	ESA/SCC 3401						Dust Cap for MDM 51S		CAN/F												
	2-			For MDM 51P		025-8842-0000	ESA/SCC 3401	ESA/SCC 3401						Dust Cap for MDM 51P		CAN/F												
				Savers																				**Savers**				
16	2-			DEBMA 9 PS		3401 020 01 B DEBMA 9 PS NMB FC	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 9 PS With contacts	QPL ESA	CAN/F		2	3	P	**5**			DEBMA 9 PS		CAN/F	4	2
																												2
53	2-			DABMA 15 PS		3401 020 01 B DABMA 15 PS NMB F	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 15 PS With contacts	QPL ESA	CAN/F		4	8	P	**12**			DABMA 15 PS		CAN/F	8	0
17	2-			DBBMA 25 PS FO		3401 020 01 B DBBMA 25 PS NMB F	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 25 PS With contacts	QPL ESA	CAN/F		9	53	P	**62**			DBBMA 25 PS FO		CAN/F	34	15
18	2-			DCBMA 37 PS FO		3401 020 01 B DCBMA 37 PS NMB F	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 37 PS With contacts	QPL ESA	CAN/F		2	3	P	**5**			DCBMA 37 PS FO		CAN/F	4	6
~~19~~	~~2-~~			~~DBBMA 44 PS FO~~		~~3401 020 01 B DBBMA 44 PS NMB F~~	~~ESA/SCC 3401~~	~~ESA/SCC 3401/020~~	~~B~~					~~D*MA Saver 37 PS With contacts~~	~~QPL ESA~~	~~CAN/F~~		~~0~~	~~0~~	~~P~~	**0**			~~DBBMA 44 PS FO~~		~~CAN/F~~	0	~~0~~
20	2-			DDBMA 50 PS FO		3401 020 01 B DDBMA 50 PS NMB F	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 50 PS With contacts	QPL ESA	CAN/F		7	33	P	**40**			DDBMA 50 PS FO		CAN/F	32	28
																												4
~~21~~	~~2-~~			~~DCBMA 62 PS FO~~		~~3401 020 01 B DCBMA 62 PS NMB F~~	~~ESA/SCC 3401~~	~~ESA/SCC 3401/020~~	~~B~~					~~D*MA Saver 50 PS With contacts~~	~~QPL ESA~~	~~CAN/F~~		~~0~~	~~0~~	~~P~~	**0**			~~DCBMA 62 PS FO~~		~~CAN/F~~	0	~~0~~
22	2-			DDBMA 78 PS FO		3401 020 01 B DDBMA 78 PS NMB F	ESA/SCC 3401	ESA/SCC 3401/020	B					D*MA Saver 50 PS With contacts	QPL ESA	CAN/F		2	3	P	**5**			DDBMA 78 PS FO		CAN/F	4	4
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		9	46	N	**55**			HE801 65 saver: KNB065 22 91 944		FRB/F	34	33
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		10	7	N	**17**			HE801 96 saver: KNB096 22 91 944		FRB/F	8	6

~~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	QM parts reference (to be defined or confirmed by Tecnologicu)	Package	Manufacturer	Total Need	PO
																								Qualification Model				
25	2-			HE808 144 saver		3401 039 01B 144 44 91 744 KMC 144 44 91 703	BSA/SCC 3401	ESA/SCC 3401/039	B					HE 808 High Density Saver equipped with 144 solder male/female contacts	QPL ESA	HYP/G		4	7	N	11			HE808 144 saver KMC 144 22 91 703		FRB/E	8	6
26	2-			HE801 160 saver		3401 016 01 B 24 FM 00 00 00 KNC160 44 91 944	BSA/SCC 3401	ESA/SCC 3401/016	B					HE801 Saver equipped with 160 female-male contacts	QPL ESA	FRB/F		4	7	N	11			HE801 160 saver: KNC160 22 91 944		FRB/E	8	9
																											330126,95 F
	Crystals																										
	~~3-~~			~~T807 20 MHz STC 3342~~		~~STC 3342 variante 42~~	~~BSA/SCC 3501~~	~~ESA/SCC 3501/008~~	~~B~~					~~Cristal units in metal holder based on type 807~~	~~QPL ESA BPPL~~	~~CEP/F~~	~~TO 807~~	~~3~~	~~3~~	~~N~~	6			~~T807 20 MHz~~			~~5~~	
	3-			T1507 10 MHz			ESA/SCC 3501	ESA/SCC 3501/008	B					Cristal units in metal holder based on type 807	QPL ESA BPPL	CEP/F	TO 1507	3	6	N	9			T 1507 10 MHz			7	0
	~~3-~~			~~T1507 11,0592 MHz~~		~~T1507 @ 11,0592 MHz (STC 3665) 3549_350100933B~~	~~BSA/SCC 3501~~	~~ESA/SCC 3501/009~~	~~B~~					~~Cristal units in metal holder based on type 1507~~	~~QPL ESA BPPL~~	~~CEP/F~~	~~TO 8~~		~~0~~	~~N~~	~~0~~			~~T1507 11,0592 MHz~~			~~0~~	~~5~~
	Diodes																							Diodes				
~~3~~				~~1N5617~~		~~JANS 1N5617~~	~~MIL-PRF-19500~~	~~MIL-PRF-19500/429~~	~~0~~					~~Silicon Power Rectifier Fast Recovery~~	~~QPL BSA BPPL~~	~~MSC/U~~	~~MELF~~	~~0~~	~~0~~	~~NO~~	~~0~~	~~999~~		~~JANTX 1N5617~~	~~Packa~~	~~Micro semi~~	~~20~~	~~9~~
1				1N4148		1N4148-1	BSA/SCC 5101	ESA/SCC 5101/023-02E	B					High Speed Silicon Diode	QPL ESA	MSC/U	DO35	20	129	N	149	105		JANTX 1N4148-1			101	73
				1N4148																		44		JANTX 1N4148-1				28
2				1N6642		JANS1N6642U									QPL ESA	MSC/U	MELF	98,6	896	N	995	999		1N6642			800	0
	Inductors																							Inductors				

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	Lal	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	QM parts reference (to be defined or confirmed by Tecnologica)	Package	Manufacturer	Total Need	PO
																						Qualification Model				
				Integrated circuits monolithic																								
				Amplifiers																								
1	8-			OP 400 A		OP400 GBC (die)	according to ESA/SCC 9000						Quad Low-Offset, Low-Power Operational Amplifier		AND/U	FP14	96,4	876	N	**972**		Y	OP400	FP14	AD	**755**	0
24	8-			OP 215		OP215AZ/QML V	MIL-PRF-38535	5962-88538 01VPA	V			100K rad	DUAL Precision JFET INPUT Operational Amplifier	QML3853 5	AND/U	CerDIP 8	6	21	N	**27**	27		OP215 5962-883601PA	DIP8	AD	**19**	24
26	8-			OP15		OP15AL/QMLR	MIL-PRF-38535	5962R8954203VHA	V				OP AMP, JFET-INPUT, RAD-HARD	QML3853 5	AND/U	FP	8	27	N	**35**	20		OP15 + encapsulation	FP	AD	**24**	21
*				OP484A		OP484AM/QMLV	MIL-PRF-38535	5962-0051701VDA	V				Linear, QUAD, rail-to-rail, precision, OP AMP	QML3853 5	AND/U	FP14	4	6	N	**10**	0	?	Op484AM	FP14	AD	**7**	0
				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	CerDI P8	15	72		**87**	87		AMP02AZ/883C	CerD IP8	AD	**58**	58
~~27~~	8-			AMP01		AMP01N/QMLV	MIL-PRF-38535	5962-8863003VKA	V				Instrumentation Amplifier, low noise, precision	QML3853 5	AND/U	FP14	8	30		**38**	6					**26**	7
				Mux																								
3	8-			HS 303 RH		HS9-303RH-**QS 9000**	MIL-PRF-38535	5962R9581301VXC	V			0,1M	Analog Switch, Dual, SPDT, Radiation Hardened CMOS	RPPL QML-38535	HAR/U	FP-14	30,9	281	N	**312**	292		HS9-303RH/protos	FP14	HAR/ U	**246**	224
4	8-			HS 508 BRH		HS9-508BRH-QS9000	MIL-PRF-38535	5962F9674202VXC	V			0,3M	single 8-Channel MUX, with Overvoltage Protection, Radiation Hardened D1 CMOS	QML-38535	HAR/U	FP-16	28	138	N	**166**	141		HS9-508BRH/proto	FP16	HAR/U	**120**	121
				S/Hold																								
				HCMOS																								
22	8-			54HC14		54HC14	ESA/SCC 9409	ESA/SCC 9409/007	B				HCMOS Hex Schmit Trigger Inverters	QPL ESA	STM/F	FP14	3	3		**6**	6		M54HC14	FP14	STM/F	**5**	7
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		M54HC137	FP16	STM/F	**0**	12
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 register	RPPL QML	STM/F	FP14	4	6		**10**	10		M54HC164K	FP14	STM/F	**7**	7

~~ 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	Lot	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	Qualification Model				
																								QM parts reference (to be defined or confirmed by Tecnologica)	Package	Manufacturer	Total Need	PO
23	8-			54 HC 595		54 HC 595K	ESA/SCC 9306	ESA/SCC 9306/051	B	V			50k	HCMOS 8 bit shift register	QPL ESA	STM/F	FP16	8	40		48	48		M54HC595K	FP10	STM/F	38	38
				Temp Sensor																								
28				AD590M		AD590MF/883B	883B	5962-87571 04MXA	V				tol to 50K	Microcircuit,linear, radiation hardened, Temperature Transducer, Two Terminals, monolithic silicon	EPEL QML-38535	AND/U	FP2A	10	42	N	52	54		AD590MF/883B	FP2A	AND/U	40	43
				Voltage Ref																								
~~29~~	~~8-~~			~~AD 589 T H~~		~~AD 589 TH/QMLV~~	~~MIL-PRF-38535~~	~~5962-8992901VXA~~	~~V~~				~~9~~	~~Two-Terminal IC 1.2V Reference~~	~~QML-38535~~	~~AND/U~~	~~CAN2~~	~~3~~	~~0~~	~~N~~	~~3~~	~~3~~		~~AD589TH/883: self-procured for QMIO2A~~	~~AD~~		~~0~~	~~0~~
6	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	45	N	55	52		REF02AL	FP10	AD	42	38
																								REF02AL	FP10	AD		
				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	13		HS9S-117RH/proto	TO-257	HAR/U	9	26
				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	5	12		17	10		MMDP67206FV-15 -E	FP28	MHS/F	12	7
																						7					5
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	6		MMDP-65656GV-40-E	FP28	MHS/F	5	5
				ADC																								
7b	8-	4		SEI 7809LPRP				7809LPRP0901,99	K	Y			RR	A/D convertor, 16 bit serial, latch-protected	QML-38535	SEI	FP24	6	27	Y	33	30		SEI 7809LPRPFE (class E)	FP24		23	21
				DAC																								
6c	8-	4		7545A		7545ARP		7545ARP0610,99	S				RR	CMOS 12-Bit Buffered Multiplying DAC	QML-38535	SEI/U	FP20	13	102	Y	115	58		7545 ARPFE (class E)	FP20	SEI	76	38
																						56	*ATP à placer*				38
				E/R diff																								

~~ 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	Lot	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	Qualification Model: QM parts reference (to be defined or confirmed by Tecnologica)	Package	Manufacturer	Total Need	PO
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**	15		HS9-26C31RH/PROTO	FP16	HAR/U	**10**	10
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**	15		HS9-26C32RH/PROTO	FP16	HAR/U	**10**	10
18	8-			UT54LVDS031		UT54LVDS031	MIL-PRF-38535	5962R9583302VXC	V				1M	Quad CMOS Differential Line Driver, LVDS, Rad-Hard	QML-38535	UTMC/U	FP16	6	21	N	**27**	27		UT54LVDS031-UCX	FP16	UTMC/U	**19**	19
19	8-			UT54LVDS032		UT54LVDS032	MIL-PRF-38535	5962R9583402VXC	V				300K	Quad CMOS Differential Line Receiver, LVDS	QML-38535	UTMC/U	FP16	15	66	N	**81**	81		UT54LVDS032-UCX	FP16	UTMC/U	**62**	62
		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**	16		RT54SX32SCQ208B 5962-0150801QYC	CQFP208	Actel	**14**	15
																												214323,125 1784,1 E
	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	66		**76**						**70**	
		CHP HR 0505 1/8W 1% 50V +/-100 ppm																										
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	3194	P	**3673**						**2 947**	
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**						**442**	
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**						**414**	
~~6~~	~~10-~~			~~10K~~		~~CHPHR 0505 10K F4~~	~~ESA/SCC 4001~~	~~ESA/SCC 4001/016-03~~	~~e~~					~~High reliability,Resistor, Fixed, Chip~~	~~EPPL QPL ESA~~	~~SFER~~	~~505~~	~~206~~	~~1374~~	~~N~~	~~**1580**~~						~~**1 114**~~	
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	1374	N	**1580**						**1 270**	

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	Lot	Rad	FLT Description	Status	Manuf	Pkg	Affr.	Needs CEA	LLI	Total Need	PO	Self procured	Qualification Model: QM parts reference (to be defined or confirmed by Tecnologica)	Package	Manufacturer	Total Need	PO
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	896	N	1030						828	
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	202	1344	N	1546						1 242	
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	896	N	1030						828	
				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	123	N	148			CHP 10R	805	SFER/F	70	
				CHP CMS 0805 1/5W 1% 75V +/-100 ppm																								
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	95,9	639	N	735			CHP 100R	805	SFER/F	490	500
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	15	21	N	36			CHP 200R	805	SFER/F	24	
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	35	180	N	215			CHP 1K	805	SFER/F	145	
	10-			5K		CHPHR 0805 K 1% R 10K	ESA/SCC 4001	ESA/SCC 4001/018	C					Resistor, Fixed, Chip	EPPL QPL ESA	SFER	805	25	12	N	37			CHP 0805 5K	805	SFER/F	33	
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	177	N	202			CHP 0805 10K	805	SFER/F	143	
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		CHP 15K	805	SFER/F	14	20
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			CHP 33,2K	805	SFER/F	24	
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	123	N	148			CHP 100K	805	SFER/F	102	
				Chip CMS 0603 type P 0,02% +/-10 ppm 1/10W																								
	10-			115R		PHR 0603 Y1150PB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	52,8	352	NC	405			CMS P 0603		SFER/F	332	
				Chip CMS 0603 type P 0,01% +/-10 ppm 1/10W																								
48	10-			267R		PHR 0603 Y2670LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	96	NC	121			CMS P 0603		SFER/F	97	
22	10-			4K		PHR 0603 Y4001LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	15	18	NC	33			CMS P 0603		SFER/F	22	
23	10-			~~5K~~ 4,99K		PHR 0603 Y4991LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	81	NC	106			CMS P 0603		SFER/F	74	
38	10-			9K76		PHR 0603 Y9762LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	96	NC	121			CMS P 0603		SFER/F	97	
26	10-			10K		PHR 0603 Y1002LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	303	2020	NC	2323			CMS P 0603		SFER/F	1 859	
39	10-			13K3		PHR 0603 Y1332LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	52,8	352	NC	405			CMS P 0603		SFER/F	332	

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	Lot	Rad	FLT Description	Status	Manuf	Pkg	Attr.	Needs CEA	LLI	Total Need	PO	Self procured	Qualification Model	Package	Manufacturer	Total Need	PO
27	10-			15K		PHR 0603 Y1502LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	163	1088	NC	1251			CMS P 0603		SFER/F	994	
40	10-			17K4		PHR 0603 Y1742LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	35	192	NC	227			CMS P 0603		SFER/F	169	
41	10-			18K2		PHR 0603 Y1822LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	35	192	NC	227			CMS P 0603		SFER/F	169	
29	10-			20K		PHR 0603 Y2002LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	10	12	NC	22			CMS P 0603		SFER/F	18	
42	10-			27K4		PHR 0603 Y2742LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	96		121			CMS P 0603		SFER/F	97	
31	10-			~~51K~~ 51,1K		PHR 0603 Y5112LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	55,8	372	NC	428			CMS P 0603		SFER/F	295	
43	10-			61K		PHR 0603 Y6102LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	15	18		33			CMS P 0603		SFER/F	22	
44	10-			90K9		PHR 0603 Y9532LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	106	704		810			CMS P 0603		SFER/F	663	
45	10-			95K3		PHR 0603 Y9532LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	25	96		121			CMS P 0603		SFER/F	97	
46	10-			97K6		PHR 0603 Y9762LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	52,8	352		405			CMS P 0603		SFER/F	332	
47	10-			102K		PHR 0603 Y1023LB	ESA/SCC 4001	ESA/SCC 4001/023-01	C					Resistors, Fixed, Chips, thin film, high precision wraparound	EPPL	SFER	603	106	704	NC	810			CMS P 0603		SFER/F	663	
				Transistors																				**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	49,3	448	N	497	497		MAT_02 AH/883	TO-78	AD	400	400
	12-			2N2907A		2N2907A AHR 520200103B	ESA/SCC 5202	ESA/SCC 5202/001-02	B					Transistors, Low power, PNP	QPL ESA EPPL	STMF	TO18	6	18		24	24		2N2907A	TO-18	STM/F	17	11
																											6
	12-			2N5154		2N5154	ESA/SCC 5203	ESA/SCC 5203/010						Transistors, low & hight power, NPN	QPL ESA EPPL	STMF	TO39	15	102		117	117	Y	2N5154 self-procured			78	0
	12-			2N2222A		2N2222A	ESA/SCC 5201	ESA/SCC 5201/002-02	B					Transistors, low power, NPN, switching	QPL ESA EPPL	STMF	TO18	6	18		24	26		2N2222A	TO-18	STM/F	17	17

				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 CSA	LLI	Total Need	PO	Self procured	QM parts reference (to be defined or confirmed by Tecnologica)	Package	Manufacturer	Total Need	PO
																								Qualification Model				