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FIRST / SPIRE / SMEC / MCU

QM EEE component list

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| Prepared by : | Date : |
| P. L. | 02-02-2001 |
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| Issue - rev. | Date | Approved by | |
| 01 - 0 | 01-02-01 | | First issue |
| 01 - 1 | 05-03-01 | | definitive choice of RAM memory |
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Acronyms

| | |
|-------|---|
| AD | Applicable Document |
| AIV | Acceptance, Integration and Validation |
| AVM | Avionics Model |
| BOL | Beginning Of Life |
| BSM | Beam Steering Mirror |
| CEA | Commissariat à l'Energie Atomique |
| CQM | Cryogenic Qualification Model |
| EGSE | Electrical Ground Support Equipment |
| EOL | End of Life |
| ESA | European Space Agency |
| FIRST | Far InfraRed ans Submillimetre Telescope |
| FM | Flight Model |
| FPU | Focal Plane Unit |
| FTS | Fourrier Transform Spectrometer |
| FTSE | FTS warm Electronics |
| FTSP | FTS Preamplifier for the position encoder signals |
| H/K | HouseKeeping |
| H/W | Hardware |
| ICD | Interface Control Document |
| I/F | Interface |
| LAM | Laboratoire d'Astrophysique de Marseille |
| MAC | Multi Axes Controller |
| MCE | Mechanism Control Electronics |
| N/A | Not Applicable |
| RAL | Rutherford Appleton Laboratory |
| RD | Reference Document |
| ROE | Royal Observatory of Edinburgh |
| SAP | Service d'Astrophysique |
| S/C | Spacecraft |
| SM | Spare Model |
| SMEC | Spectrograph MEChanism |
| S/W | Software |
| TBC | To Be Confirmed |
| TBD | To Be Define |
| TBW | To Be Written |
| TC | Tele-Command |
| TM | TeleMetry |
| WE | Warm Electronics |

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1. Introduction

1.1 Purpose and scope

This document provides a primarily list of the active components for the QM model of Herschel / Spire / FTS / MCU units (FSFTSL).

1.2 Need Date

Due to the general schedule of Herschel / Spire instrument, we need the QM components for the end of september 2001.

1.3 Quality Level requirement

For the QM model, we foresee to use at least commercial components and extended temperature (-40°C to +85°C).

Component must have :

same manufacturer as flight type,
same package as flight type.

1.4 Configuration of MCU Cryogenic Model (CQM)

- 2 MAC (multi axes controller),
- 2 SMEC (FTS mechanism I/F),
- 1 BSM (BSM mechanism I/F),
- 1 FDP (back pannel board).

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2. MANUFACTURERS

| Code | Manufacturer | Country | Remarks |
|------|----------------------------|---------|----------|
| AND | Analog Devices | USA | |
| ACT | Actel Corporation | USA | |
| BBR | Burr Brown | USA | |
| CAN | ITT Cannon | USA | |
| CDI | Compensted Devices Inc. | USA | |
| DAL | Dale | USA | |
| DEU | Compagnie Deutsch | F | |
| FCI | Framatome Connectors Int. | F | |
| FRB | FRB Connectron | USA | |
| GLN | Glenair | USA | |
| HAM | Hamamatsu | J | |
| HAR | Harris | USA | Intersil |
| HON | Honeywell | USA | |
| INT | Intersil | USA | |
| INF | Infineon | D | |
| IRL | Infrared Laboratories Inc. | USA | |
| TEK | Tekelec | F | |
| LTC | Linear Technology Corp. | USA | |
| MAX | Maxim | USA | |
| MSC | Microsemi Corporation | USA | |
| NSC | National Semiconductor | USA | |
| OPD | Opto Diode | USA | |
| SEI | Space Electronic Inc. | USA | |
| SEM | Semicoa | USA | |
| SFR | Vishay Sfernice | F | |
| SIL | Siliconix | USA | |
| SPR | Sprague | F | |
| STM | STMicro | F | |
| TEM | Temic (Atmel) | F | |
| VIT | Vitramon | D | |

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| Generic Name | Package | Man | Function | Level | QM qty |
|---|---------|--------|---|-------|-----------|
| CONNECTORS CRYO | | | | | |
| MDM-37PSB A172 | | CAN/F | MDM , 37 pins, gold plated, cryo type | | 29 |
| MDM-37SSB A172 | | CAN/F | MDM , 37 sockets, gold plated, cryo type | | 26 |
| MDM-37SBR A172 | | CAN/F | MDM , 37 sockets, 90° PCB, gold plated, cryo type | | 5 |
| MDM-25PSB A172 | | CAN/F | MDM , 25 pins, gold plated, cryo type | | 11 |
| MDM-25SSB A172 | | CAN/F | MDM , 25 sockets, gold plated, cryo type | | 5 |
| MDM-25SBR A172 | | CAN/F | MDM , 25 sockets, 90° PCB, gold plated, cryo type | | 11 |
| MDM male & female screw lock (set of 2) | | CAN/F | set of 2 MDM male & female screw lock for rear panel mounting | | 50 |
| MDM 90° angle mounting braket (set of 2) | | CAN/F | set of 2 MDM 90° angle mounting braket | | 16 |
| MDM female screw lock for PCB connectors (set of 2) | | CAN/F | set of 2 MDM female screw lock for PCB connectors | | 16 |
| MDM-37S dust caps | | CAN/F | | | 30 |
| MDM-25S dust caps | | CAN/F | | | 16 |
| MDM-37P dust caps | | CAN/F | | | 29 |
| MDM-25P dust caps | | CAN/F | | | 11 |
| CRYSTAL | | | | | |
| T807-40MHz | TO-5 | CEPE/F | cristal | | 3 |

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| DIODES | | | | | |
| 1N3595US | SMD | MSC/US | switching diode | | 45 |
| 1N5712 | DO-35 | CDI/US | schotky diode | | 30 |
| MICROCIRCUITS | | | | | |
| 7805ALPRP | 28-FP | SEi/US | 16 bits ADC, 10 μ s | | 6 |
| 7846RP | 28-FP | SEi/US | 16 bits DAC, 10 μ s | | 9 |
| AD524SD | 16-DIL | AND/US | instrumentation amplifier | | 33 |
| OP27AJ | TO-99 | AND/US | operational amplifier | | 14 |
| OP400ATC | 28-LCC | AND/US | operational amplifier | | 10 |
| OP467AY | 14-DIL | AND/US | operational amplifier | | 36 |
| LM117H | TO-39 | NSC/US | voltage regulator | | 9 |
| PM139AY | 14-DIL | AND/US | voltage comparator | | 45 |
| UT54LVDS031 | 16-FP | UMT/IUS | line driver (V _{cc} =5V) | | 3 |
| UT54LVDS032 | 16-FP | UMT/US | line receiver (V _{cc} =5V) | | 3 |
| HX6228 | 32-FP | HON/US | sram , 25 ns,128k | | 22 |
| 27C1512RP | 40-DIL | SEi/US | PROM 32k x 16, 200 ns | | 9 |
| TSC21020F | MFP-256 | ATM/F | 32/40 bit floating DSP | | 3 |
| AD630SE | 20-LCC | AND/US | modulator- demodulator | | 6 |
| HS9-508B | 16-FP | INT/US | analog multiplexer | | 6 |
| AD584TH | TO-99 | AND/US | voltage reference | | 10 |
| A54SX32S | 208-CQFP | ACT/US | 16k gates antifuse FPGA | | 6 |
| 54HC04 | 14-FP | STM/F | inverters | | 6 |
| 54HC386 | 14-FP | STM/F | exclusive or gate | | 10 |
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