ECR	Closed	Item	Date Raised	Proposed Change (With Reason)
1	Yes	BCH Main Car	01-Aug-00	Rationalisation of de-coupling capacitors
2	Yes	BCH Main Car	01-Aug-00	Deletion of Charge Pump Circuitry
3	Yes	BCH Main Car	01-Aug-00	Corrections to BPE Interface Timing
4	Yes	BCH Main Car	01-Aug-00	Impedance Matching of Video Data Interface and Pull up Resistor on 10M_CLK
5	Yes	BCH Main Car	01-Aug-00	Change of SOTs to Fixed Values and Changes of Hi-rel Components
6	Yes	BCH Main Car	02-Aug-00	Addition of Parts Missing from XMM-OM Flight Assembly List
7	Yes	BCH CCD Buf	02-Aug-00	Initial Modifications for FM Build
9	Yes	BPE Camera	29-Sep-00	Add read and write lines for safety circuit modification.
10	Yes	HVPSU Brd 2	09-Oct-00	Changes for DEP tube. For Node R52, C48, D38, disconnect the branch wire connection R52 and
11	Yes	HVPSU Brd 3	09-Oct-00	Changes for DEP tube. Remove branch R136 to TP5 (Reynolds connector) as the Reyolds connect
12	Yes	TMPSU O/P	11-Oct-00	Unable to procure 100k resistor packs with eight resistors and one common pin.
13	Yes	TMPSU O/P	11-Oct-00	TMPSU Output card has wrong sex 50 way D type connector.
14	Yes	BPE Selector	20-Nov-00	Due to problems of component availability please replace:
15	Yes	BCH Main Car	08-Dec-00	BCH Main PCB, Correction to BPE data interface timing.
16	Yes	BCH CCD Buf	08-Dec-00	BCH Buffer Card, Improvement in follower stability margin.
17	Yes	TMPSU I/P	08-Jan-01	The hole for the frame mounted components are not big enough at the moment: it is a 75 thou pad a
18	Yes	TMPSU O/P	08-Jan-01	The hole for the frame mounted components are not big enough at the moment; it is a 75 thou pad a
19	Yes	BCH Main Car	10-Jan-01	Elimination of LVDRs on internal supply rails.
20	Yes	BCH Main Car	10-Jan-01	Removal of resistors in series with CCD Image and Store clocks.
21	Yes	BCH Main Car	10-Jan-01	Timing jitter in 60 MHz clock.
24	Yes	HVPSU Brd 4	27-Nov-97	Change resistor R182 from 10k ohms to a link. The reason for this is that the cathode of the intensifi
25	Yes	HVPSU Brd 5	27-Nov-97	Add 3 resistors to this board. Two resistors (SOT) are to be added to the 25V line to allow for the po
30	Yes	BPE Camera	09-Feb-98	R44 should be connected to VDD not GND
31	Yes	BPE Camera	09-Feb-98	The Design Definition Document MSSL/DD/0052.01 specifies jumpers J4, J7, J5, J6. These jumper
32	Yes	HVPSU Brd 3	10-Feb-98	Change resistor R100 from 10K to a link.
33	Yes	HVPSU Brd 4	10-Feb-96	Add R203 which should be 100K, rcr07.
37	Yes	HVPSU Brd 3	18-Feb-98	Change R81 from 2K2 to 5K62
38	Yes	HVPSU Brds 2,	09-Mar-98	Add an insulator for the MDM connector onto the assembly drawings for HVPU Boards 2, 3 & 4.
39	Yes	BCH Main Car	05-Mar-98	Oscillator Update. The 60MHz oscillator and associated circuitry was found to be less than ideal in
41	Yes	BCH Main Car	05-Mar-98	11VDH protection. The circuitry added to isolate the 11 volt supply to the horizontal drivers until the
43	Yes	BCH CCD Buf	11-Mar-98	CCD protection modification. The output FET of the CCD is too heavily loaded when the +25VOD is
44	Yes	BCH CCD Buf	13-Mar-98	Grounding. The radiation shield on the CCD Buffer Card is not connected to the ground plane on th
45	Yes	BCH Main Car	05-Mar-98	54HC374 replacement. The 54HC374 on the data bus from the ADC has not got TTl logic level inpu

ECR	Closed	Item	Date Raised	Proposed Change (With Reason)
46	Yes	BCH Main Car	25-Mar-98	ADC supply modification. The ADC +5.3V supply is fed from an RC filter. This means the VCC sup
47	Yes	BCH Main Car	25-Mar-98	Oscillator assembly modification. The assembly method for the 60MHz oscillator PCB, which was a
48	Yes	BCH Main Car	27-Mar-98	Insulating washer modification. The clearances around metalwork have been violated on the solder
49	Yes	BCH CCD Buf	05-Mar-98	Change of SOTs to fixed values. The two resistors R3 and R5 are specified as SOT. These should
50	Yes	BCH CCD Buf	01-Apr-98	Emitter follower loading modification. The emitter followers on the buffer PCB have been shown to
51	Yes	BCH Main Car	09-Apr-98	Gain Modification. Hajime has found that the camera gain needs to be reduced.
52	Yes	BCH CCD Buf	15-Apr-98	Vertical clock sequence modification. The vertical clocks remain in an unsatisfactory state after a lin
53	Yes	HVPSU Brd 1	16-Apr-98	Earthing of Reynolds connector. The r105r Reynolds connector needs to be earthed. At present th
55	Yes	BCH Main Car	09-Apr-98	11VDH protection, mod II. The circuitry added to isolate the 11V supply to the horizontal drivers unti
56	Yes	Monitor Card	27-Apr-98	Vref-5Vpwr rail stability. The sense voltage of this rail is monitored on the drive side of the Schottky
57	Yes	Mother Card	27-Apr-98	Termination Resistors. Replace the 47R series termination resistors R1, 2, 3, 4, 5 and 6 with 27R.
59	Yes	HVPSU Brd 3	29-Apr-98	Changes for new DEP tube. The following changes need to be made to accomodate the different c
60	Yes	HVPSU Brd 4	29-Apr-98	Changes for new DEP tube. The following changes need to be made to accomodate the different c
61	Yes	TMPSU O/P	11-Jan-01	The following component changes are to prevent oscillation on current monitors,
62	Yes	TMPSU I/P	12-Jan-01	Power diodes, 1N5811, are incorrectly placed on TMPSU input board due to an assembly drawing er
63	Yes	ICU_B	17-Jan-01	Addition of two decoupling capacitors to PCB.
64	Yes	TMPSU O/P	12-Jan-01	To improve regulator stability the following capacitors values are to be increased:-
65	Yes	TMPSU O/P	12-Jan-01	The following SOT resistors are to be changed to the fixed values given:-
66	Yes	ICU_A	17-Jan-01	ICU_A, 1553_CS_N glitch.
67	Yes	ICU_A	17-Jan-01	ICU_A, 12MHz Clock Over/Undershoot.
68	Yes	Filter Card A	20-Dec-00	The Filter Cards from OM are not being remade, but the HVSAFE go and return wires need to be ad
69	Yes	TMPSU O/P	08-Feb-01	Improvement to the response times and reductions in load induced output voltage perturbation on all
70	Yes	TMPSU O/P	08-Feb-01	The following changes allow for the negative output currents to be be monitored correctly.
71	Yes	TMPSU O/P	08-Feb-01	The following changes help prevent output overshoot when the rate of input voltage rise is slew limit
72	Yes	TMPSU O/P	28-Feb-01	This stops an oscillation that was seen on the QM and should be carried out on the FM models.
73	Yes	TMPSU O/P	28-Feb-01	This joins all the isolated 0V returns together in the TMPSU.
74	Yes	TMPSU O/P	28-Feb-01	Run IC22, the analogue multiplexer, from +5V and 0V. Device type 54HC4051.
75	Yes	TMPSU O/P	28-Feb-01	Protect the IC22 (MUX) inputs from over/under voltage.
76	Yes	TMPSU O/P	28-Feb-01	The Filter Wheel and Dichroic motor current limits should be set to 400-450mA.
77	Yes	TMPSU O/P	28-Feb-01	The MAC address has been set to 0x18. This is wrong. After studying pictures of the OM TMPSU th
78	Yes	TMPSU O/P	28-Feb-01	Correction to BOM - R425 should be fitted with a 1K RLR05.
79	Yes	TMPSU O/P	28-Feb-01	This change joins all isolated 0Vs by 10Kohms (as well as links in ECR 73).
80	Yes	TMPSU O/P	28-Feb-01	Temperature cut-out for motors. The value of R302 should be fixed with an RLR05. At the moment t

ECR	Closed	Item	Date Raised	Proposed Change (With Reason)
81	Yes	TMPSU I/P	28-Feb-01	An update to the pin-out of the interconnection between the input and the output cards was only don
82	Yes	TMPSU O/P	28-Feb-01	Wire points were put on the schematic to enable the connection of connector screens to "chassis". T
83	Yes	TMPSU O/P	06-Mar-01	The following change improves biassing within the -5V3 regulator.
84	Yes	TMPSU I/P	07-Mar-01	Changing SOT resistors to fixed value rlr05 types.
85	Yes	TMPSU I/P	07-Mar-01	The following changes improve the switching performance of the regulator.
86	Yes	TMPSU O/P	07-Mar-01	To help improve regulator stability at extreme cold temperatures, add 330nF/50V ck06 capacitors in
87	Yes	HVPSU Brd 3	06-Mar-01	These changes are designed to prevent the output overshoot problem observed in both the XMM-O
88	Yes	HVPSU Brd 5	06-Mar-01	These changes are designed to prevent the output overshoot problem observed in both the XMM-O
89	Yes	TMPSU O/P	06-Mar-01	The following changes improve 5V3 output voltage accuracy.
90	Yes	TMPSU I/P	28-Mar-01	The following change increases the main input bus low voltage hysteresis 'width'. This change helps
91	Yes	TMPSU I/P	28-Mar-01	Improve the heater switching imunity to leakage current and pick up. After conformal coating the bott
92	Yes	BCH Main Car	29-Mar-01	BCH Main Card, +5.2VD power plane constriction.
93	Yes	BCH Main Car	29-Mar-01	BCH Main Card, Power rail adjustments.
94	Yes	BCH Main Car	29-Mar-01	BCH Main Card, Thermal dissipation in horizontal clock drivers.
95	Yes	BCH Main Car	29-Mar-01	BCH Main Card, Video signal gain increase. This ECR supersedes ECR 51.
96	Yes	BCH Buffer Ca	29-Mar-01	BCH Buffer Card, Shielding and decoupling improvements
97	Yes	BCH Buffer Ca	29-Mar-01	BCH Buffer Card, Emitter follower modification.
98	Yes	TMPSU O/P	28-Feb-01	TR37 was wired up incorrectly. This is a BDS18 wall mounted component. The assembly drawing I
99	Yes	TMPSU O/P	12-Mar-01	To improve stability at temperature extremes the following changes should be made.
100	Yes	TMPSU O/P	12-Mar-01	Testing of the QM has resulted in previous ECR's being withdrawn.
101	Yes	TMPSU O/P	27-Feb-01	To reduce base drive current in post regulators and so reduce power dissipation in drive transistors
102	Yes	TMPSU O/P	05-Apr-01	Related to 15V drop out, fit current limit / voltage drop resistors.
103	Yes	ICU_A	02-May-01	When the Debug Port electronics are not being used the state of the signal 'DP_FULL', SK4 pin 14, i
104	Yes	ICU_A	02-May-01	To enable the second 1PPS interrupt timing pulse from ICU-B.
105	Yes	ICU_A	10-May-01	To reduce delay from 'WRENABLE', the signal used to write inhibit the EEPROM's on power down.
106	Yes	ICU_B	15-May-01	Addition of second 1PPS channel.
107	Yes	TMPSU I/P	21-May-01	TR5 and TR8 are going to be wall mounted IRHM9150 not 2N6849 as in the Parts List
108	Yes	TMPSU O/P	21-May-01	JAT to adjust Dichroic motor balast resistor temperature sensing circuit, to ensure that it functions at
109	Yes	TMPSU O/P	21-May-01	JAT to adjust 'Sparnex' current limit in Dichroic circuit, to lower value (300mA ?)
110	Yes	ICU_A	23-May-01	To give added noise immunity to interface control lines.
111	Yes	ICU_A	11-Jun-01	1553 Address series resistor values too high to sink required current.
112	Yes	TMPSU I/P	12-Jun-01	Change made to under-voltage switching circuit to improve transient response.
113	Yes	ICU_B	15-May-01	To allow switching of 1PPS channel.

ECR	Closed	Item	Date Raised	Proposed Change (With Reason)
114	Yes	ICU_B	15-May-01	To give better switching protection to transistor base.
115	Yes	TMPSU I/P	18-Jan-01	D45 1N6492 is incorrect on the Assembly Drawing, it needs to move 180 degrees clockwise
116	Yes	TMPSU O/P	22-Jun-01	The labeling of R287 and R273 on the assembly drawing is incorrect. They are swapped.
117	Yes	HVPSU Brd 2	12-Jun-01	Changing 1uF ck06 capacitors to 0u33F ck06 types in accordance with NASA directive.
118	Yes	HVPSU Brd 3	12-Jun-01	Changing 1uF ck06 capacitors to 0u33F ck06 types in accordance with NASA directive.
119	Yes	HVPSU Brd 4	12-Jun-01	Changing 1uF ck06 capacitors to 0u33F ck06 types in accordance with NASA directive.
120	Yes	TMPSU O/P	28-Jun-01	Change to ECR 61 i.e. ignore previous ECR's concerning the components below and:
121	Yes	HVPSU Brd 2	28-Jun-01	The following change helps prevent output voltage overshoot caused by non zero input commands,
122	Yes	HVPSU Brd 3	28-Jun-01	The following change helps prevent output voltage overshoot caused by non zero input commands,
123	Yes	TMPSU I/P	02-Jul-01	IC's 1,2,3 and 4 are six pin devices and show six pins on the assembly drawing. Drawing office sche
124	Yes	TMPSU O/P	02-Jul-01	Value for R247 on the parts list is both 18k and RLR05C1801 (1k8).
125	Yes	TMPSU O/P	03-Jul-01	The following SOT resistors should be replaced by fixed resitors:
126	Yes	TMPSU I/P	05-Jul-01	Activation of Inner feed-back loop current limiting.
127	Yes	TMPSU I/P	09-Jul-01	During testing of the FM TMPSU a short between Structure and the drain of TR1, a IRHM9150 FET,
128	Yes	TMPSU I/P	31-Jul-01	The changes below reduce the converters switch-on potential and improves it's transient response.
129	Yes	TMPSU I/P	31-Jul-01	To improve the common mode noise suppression the following capacitors must be replaced by short
130	Yes	TMPSU O/P	13-Aug-01	Capacitor C72 appears twice on the parts list, once as a 2n2 and once as a 10n capacitor.
131	Yes	TMPSU I/P	09-Jul-01	Fit the following SOT RLR05 resitors as 220R: R4, R5, R14, R16 .
132	Yes	Lookup	29-Aug-01	Links 1-10 incorrectly numbered on assembly drawing A1-5276-009-6.
133	Yes	TMPSU I/P	30-Aug-01	Apply adhesive (Scotch-weld 1838) under all the ferrite beads to ensure that they are insulated from
134	Yes	TMPSU O/P	30-Aug-01	Apply adhesive (Scotch-weld 1838) under all the ferrite beads to ensure that they are insulated from
135	Yes	Lookup	30-Aug-01	To invert alert signal to monitor card it is necessary to change the transistor buffer type.
136	Yes	BPE Motherbo	30-Aug-01	To improve signal termination change the following resistors:
137	Yes	TMPSU O/P	21-May-01	JAT to investigate cause of 10mA increase in +/-15V supplies at about 30C during cool down.
139	Yes	TMPSU O/P	03-Jul-01	For the Filter Wheel pick-off LED to work correctly, R362 (an SOT resistor) needs to be replaced by
140	Yes	Mothercard	30-Aug-01	When the Mothercard is mounted on the bulkhead jackpost washers on PL1 and SK9 may touch trac
141	Yes	Filter Card B	31-Aug-01	The ground plane on Filter card B runs under the card guides and the D type mounting bracket.
142	Yes	HVPSU Brd 5	31-Aug-01	The HV safe connector is located on the Junction Card at the back end of the UVOT.
143	Yes	Process	10-Sep-01	Due to non-availability of 54HC540 it is necessary to replace part with 54HC240.
144	Yes	TMPSU O/P	29-Oct-01	As a result of NCR 20, a study was conducted to find components that could possibly have been ove
145	Yes	TMPSU I/P	29-Oct-01	As a result of NCR 20, a study was conducted to find components that could possibly have been ove
146	Yes	TMPSU I/P	02-Nov-01	During EMC testing of TMPSU redundant (FM2), a 300MHz parasitic oscillation was emitted from ar
147	Yes	BPE Camera	14-Nov-01	Please change X,Y offset for DEP tube#6 on redundant BPE camera card s/n2

ECR	Closed	Item	Date Raised	Proposed Change (With Reason)
148	Yes	BPE Camera	14-Nov-01	Please change X,Y offset for DEP tube#7 on prime BPE camera card s/n1
149	Yes	TMPSU I/P	28-Nov-01	Please do not fit R27 and R28.
150	Yes	BPE Monitor	10-Dec-01	The following modifications should be implemented to allow all thermistors to be monitored.
151	Yes	BPE Monitor	10-Dec-01	Monitor card Safing System
152		ICU Software	18-Feb-03	The current ICU software uses the fixed position (1023,1023) as the center of all PT windows and of
153		ICU Software	18-Feb-03	The filter wheel (FW) rotation life consumed by the 80-96 PT snapshots expected per day is a signifi
154	Yes	ICU Software	18-Feb-03	The currently proposed pt_config_id table (holding PT "templates" indexed by UVOT_MODE) in the I
155	Yes	ICU Software	25-Feb-03	The addition of compression functionality in the DPU Build 6 software requires that an additional par
156	Yes	ICU Software	26-Feb-03	Modify RTS table to disable high voltage commands for testing.
157		ICU Software	06-Mar-03	Modify the code so that commanded moves to either grism filter will optionally result, in both cases, i
158		ICU Software	31-Mar-03	Add RTSs for thermal vac high voltage testing. (Before August.)
159		ICU Software	31-Mar-03	Re-enable high voltage commands in RTSs for flight. (1 month after launch.)
160	Yes	ICU Software	31-Mar-03	Introduce new package identfier for use in event/error messages issued by the RTS scripts.
161	Yes	dcsgen	04-Apr-03	As an aid to debugging an error in a table, the "Less data than columns" error message should also
162	Yes	dcsgen	04-Apr-03	The "rewriting previously defined EEPROM location" error message should only be displayed once a
163	Yes	ICU Software	28-Apr-03	Event/error messages should be added to summarise the processing of the XRTPOSITION and FO
164	Yes	ICU Software	28-Apr-03	The code to extract the target roll from the FONEXTOBSINFO packet should be removed, as the res
165	Yes	ICU Software	19-Jun-03	It would be more useful to add "R" (the distance) to the XRT POS message rather than send down ju
166		ICU Software	19-Jun-03	The UVOT is requesting that the BAT broadcast a message to the UVOT about the brightness of the
167	Yes	ICU Software	19-Jun-03	Limit violations and "DCS Event Timeout" don't get sent to TDRSS and they are important errors that
168	Yes	ICU Software	19-Jun-03	When the ICU sends a "UVOT modes exhausted" it moves the filter wheel to blocked. This increase
169		ICU Software	19-Jun-03	The AT exposure overhead is 3s and the science output would be better if this could be reduced.
170	Yes	ICU Software	24-Jun-03	The ICU/DPU ICD specifies that when slewing to an AT the following sequence of events should tak
171		ICU Software	22-Jul-03	The final flight PT and AT tables should be loaded to remove the filter wheel wear reduction changes
172		ICU Software	22-Jul-03	Fix the drift values back in memory and make it possible to disable the RTS system.
173		ICU Software	22-Jul-03	Send BAT an RT to RT tc before and after moving the filter wheel.
174		ICU Software	23-Sep-03	The current ICU software adjusts the Image Position and Event Position field value put into the Mode
175		ICU Software	27-Oct-03	If the UVOT is performing a channel boundaries PT and the ICU starts loading the newly calculated
176		ICU Software	27-Oct-03	The state transition SAFE to IDLE is allowed when pointing at the Earth.
177		ICU Software	27-Oct-03	The state transition SAFE to IDLE is allowed when safety alert output is active.
178		ICU Software	27-Oct-03	The failsafe filter wheel stops and table load aborts should be dealt with properly. This could be cons
179		ICU Software	27-Oct-03	Change the response to the safehold bit from RTS 3 to RTS 0x301.
180		ICU Software	27-Oct-03	Need bits in the HK packet for ATs enabled, PTs enabled, SPs enabled as these can't currently be v