NCR	Close	Majo	Item	Date Raise	Non Conformance (likely cause/description/where and when seen)
1	Yes	☐	Stepper Motor	29-Apr-96	Staining on outside surface of a stepper motor
2	Yes	☐	BCH Main Card	14-Mar-97	Tracks on layer 1 (component side) run under connector SK2 (Positronic SDD26F3P0TG). Threaded spa
3	Yes	☐	BCH Main Card	14-Mar-97	Mounting holes surrounding Conhex connectors SK 3 & SK 4 are too small; (B51-053-0000-220)
4	Yes	☐	Filter Card A	17-Mar-97	Some PCB tracks are positioned underneath the Hypertac connector. This should be an exclusion zone.
5	Yes	☐	Filter Card B	17-Mar-97	Some PCB tracks are positioned underneath the Hypertac connector. This should be an exclusion zone.
6	Yes	☐	HV Card 3	25-Mar-97	PCB tracks are positioned under the MDM connector. These are likely to be shorted by the metal body of
7	Yes	☐	HV Card 3	25-Mar-97	One of the nuts on the MDM connector fixing screws shorts two PCB tracks.
8	Yes	☐	HV Card 4	25-Mar-97	PCB tracks are positioned under the MDM connector. These are likely to be shorted by the metal body of
9	Yes	☐	HV Card 4	25-Mar-97	One of the nuts on the MDM connector fixing screws shorts two PCB tracks.
10	Yes	☐	HV Card 2	26-Mar-97	PCB tracks are positioned under the MDM connector. These are likely to be shorted by the metal body of
11	Yes	☐	HV Card 2	26-Mar-97	One of the nuts on the MDM connector fixing screws shorts two PCB tracks.
12	Yes	☐	BCH Buffer Car	27-Mar-97	Pads for chip resistors are too narrow, 1206 style: R1, R2, R3, R4, R5, R6.
13	Yes	☐	BCH Buffer Car	27-Mar-97	Track cut points TCP1, TCP2 are incorrectly configured on the artwork. There is also a short to the groun
14	Yes	☐	BPE Process C	25-Apr-97	Static precautions were violated.
15	Yes	☐	BCH Main Card	28-Apr-97	Static precautions were violated.
16	Yes	☐	BPE Monitor C	28-Apr-97	PCB tracks are positioned under the Hypertac connector.
17	Yes	☐	BPE Lookup Ca	28-Apr-97	PCB tracks are positioned under the Hypertac connector.
18	Yes	☐	BPE Process C	28-Apr-97	PCB tracks are positioned under the Hypertac connector.
19	Yes	☐	BPE Selector C	06-May-97	Capacitor C10 is in a vulnerable position and is liable to be damaged during the integration of the Blue Mo
20	Yes	☐	TMPSU	15-May-97	Documentation specified in paragraph 17 of the specification, not supplied with the delivered model.
21	Yes	☑	TMPSU	15-May-97	EMC Test. Conducted emissions, 28V power common mode.
22	Yes	☑	TMPSU	15-May-97	EMC Test. Conducted susceptibility, output voltages affected.
23	Yes	☑	TMPSU	15-May-97	Surface treratment of box is not an approved process.
24	Yes	☑	TMPSU	15-May-97	External D-type connector not as per mechanical drawing A2/SK/1142 issue 2. Orientation is 180degrees
25	Yes	☑	TMPSU	15-May-97	Each output voltage rail is outside specification for noise and ripple. 100mV-500mV spikes at switching fr
26	Yes	☑	TMPSU	15-May-97	Inrush current exceeds specified figures from section 5.3.
27	Yes	☑	TMPSU	15-May-97	Synchonisation signal interface.
28	Yes	☑	TMPSU	15-May-97	ICB termination incorrect. Two sets of termination resistors are connected in parallel on both the data and
29	Yes	☐	TMPSU	15-May-97	Resonance in 5.3V rail output filter. On no-load, 5.3V output oscillates at 250kHz, 20mV amplitude.
30	Yes	☑	TMPSU	15-May-97	Output voltage too low under load. 5.3V rail reduces to below 5.2V on load.
31	Yes	☑	TMPSU	15-May-97	Whistling. Spurious behavior; unit generates an audible whistle at 14kHz and differential noise on power i
32	Yes	☑	TMPSU	15-May-97	Time variation of system noise performance. System noise seen to degrade after ~30 minutes. Attribute
33	Yes	☑	TMPSU	15-May-97	Output rail 25V @43mA seen to oscillate at 2Hz, 16V-25V, for a few minutes after switch-on, before settli

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34	Yes	☐	Junction Box	08-May-97	Connectivity J01 pin 4 to J02 pin 5, not pin 6 as drawn. J01 pin 16 to J02 pin 6, not pin 5 as drawn. Also
35	Yes	☐	Fibre Taper Sp	30-May-97	Table 1 (page 11), dimension C = 23.5mm, should be 25.5mm. Schott have already noticed the error and
36	Yes	☐	INT-HARN	06-Jun-97	Filter Wheel and Dichroic wiring pinout incorrect.
37	Yes	☐	ICU OMIF	10-Jun-97	Circuit to monitor supply rail voltages on backplane of QM ICU does not function correctly. Circuit exists
38	Yes	☑	DEM	10-Jun-97	Conducted emissions on signal lines; peaks 20dB - 40dB over limit from 2MHz - 50MHz, as shown by fig
39	Yes	☐	OM 1	02-Jul-97	The thermal vacuum temperature limits shown in par 2 are those from EID A and not from the EID B, as t
40	Yes	☑	OM 3	02-Jul-97	The EM harness is without idents and backshells
41	Yes	☑	Junction Box	02-Jul-97	The screen pin bonding resistance >10 mOhm to chassis.
42	Yes	☑	ICU SIBA	02-Jul-97	The screen pin bonding resistance >10 mOhm to chassis.
43	Yes	☐	ICU OMIF	02-Jul-97	For one of the modifications to this PCB, it is not possible to comply with the requirements of PSS-01-728
44	Yes	☐	DEM	02-Jul-97	The Keep Alive functionality was not tested during QM Thermal Vacuum tests.
45	Yes	☐	DEM	31-Jul-97	The ICU-ICB was not tested during the thermal vacuum qualification tests of the DEM at Sandia.
46	Yes	☑	DEM	31-Jul-97	The in-rush current exceeds that specified in EID A par 5.8.1.5.5
47	Yes	☑	Complete OM	31-Jul-97	The in-rush current exceeds that specified in EID A par 5.8.1.5.5
48	Yes	☐	DPU EM S/W	05-Aug-97	After the following command sequence, a DA_BLUE1_S_ALERT (HEX A595) is incorrectly issued by the
49	Yes	☐	BCH Buffer Car	12-Aug-97	Conhex free connectors PL3, PL4: do not crimp onto ASSH cable. Procure correct variant for FM.
50	Yes	☑	OM 1	12-Aug-97	OM 1 house keeping task stops approximately 1 hour 50 mins after starting operational mode. Valid com
51	Yes	☐	ICU SIBA	26-Aug-97	Noise observed on signal lines BCP4INTN and RBIINTN
52	Yes	☐	ICU PROC	27-Aug-97	Noise observed on interupt lines BCP4INTN, RBIINTN and IFINTA (SSI-INT)
53	Yes	☑	TMPSU	05-Sep-97	TMPSU mechanical arrangement does not conform to SK1142 iss 2 as defined in this specification. Jack
54	Yes	☐	ICU PROC	01-Sep-97	Voltage overshoots observed on CLK signal (LK1).
55	Yes	☐	ICU MEM	07-Nov-97	KAL Power Problem. A mechanism has been identified whereby the +5V3 main power of the Memory IC
56	Yes	☑	TMPSU	02-Dec-97	The QM TMPSU has been built to an inferior quality level, as reported in the PA report,
57	Yes	☐	BCH Main Card	19-Dec-97	Blue Camera Head Heat Problem. The ECL logic runs too hot.
58	Yes	☐	ICU PROC	12-Jan-98	Edge MTB connector pin damaged - pin 53 on FM 1 ICU PROC
59	Yes	☐	ICU MEM	12-Jan-98	On some occasions the act of switching off +5V ICU rail, whilst Vkal is on causes the KAL current to incre
60	Yes	☐	OM 1	21-Jan-98	It was noticed that the wires connected to the fine position sensor are under constant strain. This has lead
61	Yes	☑	OM 1	21-Jan-98	The EM OM 1 system stops responding to any communication over the ICB interface when both Sync wir
62	Yes	☐	OM 1 ICU	21-Jan-98	A problem has been found with the operation of the FM redundant ICU above +45 degrees C. Analysis of
63	Yes	☐	BCH Buffer Car	05-Feb-98	BCH Buffer PCB capacitor voltage rating.
64	Yes	☐	BPE Mother Ca	25-Mar-98	Missing link on artwork. Add a wire link from pin 1, socket 9 to pin 1, J3.
65	Yes	☑	EM System	01-Apr-98	Reference NCR XM-NC-DOR-0249, ESD failure on OM 2. OM 2 stopped sending TM and did not respon
66	Yes	☐	BCH Main Card	07-Apr-98	Resistors R212 and R213 appear twice in the BOM and the FM Assembly List. The correct entry should

NCR	Close	Majo	Item	Date Raise	Non Conformance (likely cause/description/where and when seen)
67	Yes	☐	BCH Main Card	09-Apr-98	Diode polarity. Approximately 12 diodes, (1n5712), have been insertled incorrectly because of inadequat
68	Yes	☐	HV Unit	16-Apr-98	High voltage breakdown. During the integration of the prime channel electronics, a high voltage breakdo
69	Yes	☐	BCH Main Card	24-Apr-98	Replacement of 2 ICs. During integration activities some spurious noise was observed and identified as
70	Yes	☐	HV Board 2	24-Apr-98	Malfunctioning transistor. During the testing of this HV tray, the transistor, 2N3700, was found not to wor
71	Yes	☐	HV Board 1	29-Apr-98	Replace Reynolds connector. The investigation from NCR 68 pin pointed the Reynolds connector as the
72	Yes	☐	ICU PROC	06-May-98	Flight PROMS. Fit the Raytheon R29791 flight PROMS as shown on the attached sheet.
73	Yes	☑	EM System	07-May-98	Image Background Noise. On the 2 window image dump, two vertical bands of noise were seen totalling
74	Yes	☑	EM System	07-May-98	OM Converter Sync Signal Drop. The no-load voltage level of the Converter Synchronisation Signal is +
75	Yes	☑	OM 1	08-May-98	Alignment. The imaging performance of the OM telescope sub-system has been measured as two - thre
76	Yes	☐	CSL OGSE	20-Jun-98	ENVIRONMENTAL TESTING AT CSL
77	Yes	☐	OM1 Vibration	20-Jun-98	ENVIRONMENTAL TESTING AT CSL See 2 attached sheets.
78	Yes	☑	OM1 Thermal B	20-Jun-98	ENVIRONMENTAL TESTING AT CSL
79	Yes	☐	TMPSU	21-Jun-98	Noise on TMPSU. Under certain unusual load conditions (~50% above normal), low amplitude oscillation
80	Yes	☑	OM 1	29-Jun-98	Failure of Detector System at -20 degrees C. During the second cycle of the thermal vacuum test at CSL,
81	Yes	☑	TV Test of OM	01-Jul-98	Only five of the six cycles were performed during the environmental test programme at CSL (June/July 19
82	Yes	☑	OM System	28-Aug-98	CRC Failure During Operational Mode Testing. Switching to Operational Mode resulted in checksum erro
83	Yes	☑	OM System	18-Sep-98	Irregular HK interval. The HK interval of the OM should be 10 sec. During testing the interval varied bet
84	Yes	☑	OM System	18-Sep-98	Incorrect Heater Status HK. When OM is in Operational Mode, the heater status is not correctly reflected
85	Yes	☑	OM System	21-Sep-98	Wrong Calibration Curve for -15V. During IST dry run, an indication of -15V line showed -23.4V. The an
86	Yes	☑	OM System	21-Sep-98	Wrong Calibration Curve for +11V TMPSU Current. During IST dry run, reading of +11V current exceed
87	Yes	☐	OM System	01-Sep-98	Filter wheel HK sometimes displays position other than "unknown" prior to finding the datum.
88	Yes	☑	OM System	24-Sep-98	Heater Control Software. The current issue of flight code (XMM-OM/MSSL/SP/0170.04) does not reflect t
89	Yes	☑	OM System	25-Sep-98	Swap unit field in the DPU status word in heartbeat is not reset after a system reboot.
90	Yes	☑	OM System	25-Sep-98	DPU crashes with heavy whitedsp activity, especially during compression and data output.
91	Yes	☑	OM System	25-Sep-98	DPU crashes in ENG 4 with complex images.
92	Yes	☑	OM System	25-Sep-98	Global memory address zero got corrupted after blue event processing.
93	Yes	☑	OM System	25-Sep-98	Bad event address.
94	Yes	☑	OM System	25-Sep-98	ROM code crashes with uploaded codes containing bit errors.
95	Yes	☑	OM System	28-Sep-98	Flat Field Configuration not Implemented
96	Yes	☑	OM System	28-Sep-98	Scrubbing by the Reddsp was not Implemented.
97	Yes	☑	OM System	01-Jun-98	During an ENG Mode 4 exposure, a message is received saying that the window table has been loaded, w
98	Yes	☑	OM System	01-Jun-98	In the event of the DPU unexpectedly resetting, the documented exception packet corresponding to this e
99	Yes	☑	OM System	01-Jun-98	The DPU power down command does not work.

NCR	Close	Majo	Item	Date Raise	Non Conformance (likely cause/description/where and when seen)
100	Yes	☑	OM System	01-Jun-98	The ICU does not issue an exception if an attempt is made to move the Filter Wheel whilst it is already m
101	Yes	☑	OM System	01-Jun-98	If an attempt is made to move the Filter Wheel to a filter position or absolute position prior to the datum h
102	Yes	☑	OM System	01-Jun-98	The Filter Wheel occasionally fails to find datum.
103	Yes	☑	OM System	01-Jun-98	It is possible to enable both heater control tasks at the same time.
104	Yes	☑	OM System	01-Jun-98	The default heater algorithms on startup of Operational Mode are the "open loop" rather than the "closed l
105	Yes	☑	OM System	28-Sep-98	Going to Safe Mode in operational code does not currently Safe the high voltages and Filter Wheel.
106	Yes	☑	OM System	29-Sep-98	Mode transition telecommand (MFN 9001, GOTO SAFE) currently takes two parameters to specify safing
107	Yes	☑	OM System	29-Sep-98	Reading the detector electronics menory was incorrect, due to wrong accessibility test.
108	Yes	☑	OM System	29-Sep-98	Telemetry Packet Number 91404, unsuccessful command execution (type,subtype = 3,4) with code 134 s
109	Yes	☑	OM System	29-Sep-98	Telemetry Packet Number 91402 has an incorrect code and description. It also has a parameter which is
110	Yes	☑	OM System	30-Sep-98	Owing to a change in the Filter Wheel specification, the "Barred" filter position must be changed from 183
111	Yes	☑	OM System	01-Oct-98	The DPU crashes after power off/on using the codes with red scrubbing.
112	Yes	☑	ICU Code	01-Oct-98	If a CRC of a block of length 0 is requested, an acknowledgement will be sent and a normal memory chec
113	Yes	☑	ICU Code	01-Oct-98	If a memory dump of a block of length 0 is requested, an acknowledgement will be sent but no memory d
114	Yes	☑	DPU Code	05-Oct-98	DPU reports clock synchronization error.
115	Yes	☑	DPU Code	05-Oct-98	DPU spontaneous resets following a 30,1 error from the ICU.
116	Yes	☑	OM System	05-Oct-98	The definitions in alias 9270 for the TM parameter H5365 (tracking), are the wrong way round in the TC/T
117	Yes	☑	DPU Code	09-Oct-98	The DPU reports a bad command (A584), whilst uploading DPU codes.
118	Yes	☑	ICU Code	12-Oct-98	Whenever a command is sent to the blue electronics that changes the acquisition mode, the ICU sends a
119	Yes	☑	DPU Code	13-Oct-98	ICU/DPU communication hang seen after 1 exposure.
120	Yes	☑	DPU Code	18-Oct-98	After a power cycle (including KAL) and loading the ICU and DPU codes, the DPU often reports a continu
121	Yes	☑	ICU Code	23-Oct-98	When processing the DP_WDW record issued by the DPU, the ICU extracts the supplied detector window
122	Yes	☑	ICU Code	23-Oct-98	The Makefile for the operational mode Ada code was not delivering the .ads files corresponding to the deli
123	Yes	☑	DPU Code	27-Oct-98	The DPU heartbeat status word's field 9 (0 being the LSB) is designated to indicate the tracking on/off stat
124	Yes	☐	OM System	29-Oct-98	Telecommands H5710 (start autonomous safing task) and H6710 (stop autonomous safing task) should b
125	Yes	☑	ICU Code	03-Nov-98	The ICU crashes and ends up in a status of 0072 after 191 hours.
126	Yes	☑	DPU Code	03-Nov-98	DPU stops communicating at the busy spot after 23 hour run. No heartbeat. DPU not responding to reset
127	Yes	☑	ICU Code	11-Nov-98	OM low resolution flatfield images are needed for monitoring the OM detector performance. The current
128	Yes	☐	ICU Code	01-Dec-98	During the course of testing, it was realised that the number of detector windows included in the DP_WD
129	Yes	☑	ICU Code	14-Dec-98	No telemetry from OM after switch-on after OBDH problems. (Reference Dornier NCR 3028).
130	Yes	☑	DPU Code	14-Dec-98	Blue Fast Mode does not work.
131	Yes	☐	DPU Code	14-Dec-98	DP_WDW format correction.
132	Yes	☑	DPU Code	14-Jan-99	DPU crashes after power off/on using codes with red scrubbing.

NCR	Close	Majo	Item	Date Raise	Non Conformance (likely cause/description/where and when seen)
133	Yes	☐	DPU Code	14-Jan-99	RED_FEC_ARRAY error reporting array allocation problem.
134	Yes	☑	DPU Code	14-Jan-99	Fast mode allocation error with same sampling time.
135	Yes	☑	DPU Code	14-Jan-99	Fast mode data area allocation wrong.
136	Yes	☑	DPU Code	14-Jan-99	RED DSP Forward Error Correction software fails to output the cumulative count of Single Bit Errors corre
137	Yes	☑	ICU Code	14-Jan-99	The icu/fm/oper/dpu_mem_manager.adb is missing a "return TRUE" statement at line 329 in function R
138	Yes	☐	Magnifier Asse	14-Jan-99	During the course of manufacture, two retaining threads in these assemblies were locked using Loctite 22
139	Yes	☑	TMPSU	19-Jan-99	-5V Current Fluctuations. During OM operation on 6 January (during the TB/TV test), the -5V current sho
140	Yes	☑	ICU Code	19-Jan-99	Loss of Telemetry. On January 9, at about 11.25, the image dump had started. Shortly after initiation of t
141	Yes	☑	OM System	19-Jan-99	Missing Time Synchronisation. In the current OM test procedures, no time synchronisation verification is
142	Yes	☑	CSL OGSE	02-Feb-99	Inadequate collimation of light source. When the OM was returned to MSSL, on 27 January 1999, the o
143	Yes	☐	Grisms	05-Feb-99	During qualification vibration testing, grism types 1 & 2 have shown some movement of the elements. An
144	Yes	☑	ICU Code	08-Feb-99	dpu_mem_manager: memory dumps fail because an unnecessary task was not working correctly. Only
145	Yes	☑	DPU Code	08-Feb-99	The PROG memory area is corrupted (repeatably) when the code implemented under ECR 74 is used for
146	Yes	☑	DPU Code	10-Feb-99	In one of the test exposures, e00012, global_memory access, an exception is generated in a somewhat ra
147	Yes	☐	OM System	17-Feb-99	Byte comparison and current (+/-5.3V) comparison discrepancies. During testing of OM ICU s/w FM5 wit
148	Yes	☑	Mirror (Dichrioc	17-Feb-99	At the first opportunity we have had to examine the dichroic mirror, it was noticed that what at first appear
149	Yes	☑	ICU Code	19-Feb-99	icu/fm/oper/icu_memmanager.adb calls icb_driver.put and icb_driver.get, however it would be safer to cal
150	Yes	☑	OM System	19-Feb-99	Start and stop autonomous safing telecommands were removed from the database in compliance with NC
151	Yes	☑	ICU Code	19-Feb-99	12 ICB errors are reported in the HK after the mode transition from Basic to Operational Mode. This is ap
152	Yes	☐	ICU Code	19-Feb-99	Fast HK (SID0) cannot be enabled by the telemetry manager when the science SID packets have been di
153	Yes	☑	ICU Code	22-Feb-99	The ICU fails to send to ground the expected 'illegal parameters' unsuccessful acceptance telemetry pack
154	Yes	☑	ICU Code	22-Feb-99	When commanding 'safe' mode, if the filter wheel has not previously been sent to datum, the safing proce
155	Yes	☑	ICU Code	22-Feb-99	The OM S/W always checks incoming telecommands for a valid CRC, even when the packet header indic
156	Yes	☑	ICU Code	24-Feb-99	An attempt to move the dichroic using command H5650 (start dichroic movement), where the prior H7650
157	Yes	☐	ICU Code	15-Mar-99	icu/fm/oper/Makefile is missing some .ssrc dependencies on the ADAFAST and ADASLOW special compi
158	Yes	☑	ICU Code	15-Mar-99	Loss of HK for one or two frames whilst loading centroid look-up table. Apparently as a side effect of rece
159		☑	DPU Code	15-Mar-99	rev 1.1 of expose.d80011 and rev 1.2 of expose.d80012 can cause a591 errors or a DPU reset.
160	Yes	☑	DPU Code	15-Mar-99	During a clean slate after switching from the ROM code to the loadable code, the DPU gives a a591 about
161	Yes	☑	OM System	16-Mar-99	Whilst ramping up the mcp23 HV from 0 to 1500V on the redundant chain, an execution failure packet wa
162	Yes	☑	OM System	16-Mar-99	After performing an engineering mode 3 exposure, it was noticed that the resulting images did not contain
163	Yes	☑	DPU Code	16-Mar-99	After performing 2 successive DPU engineering mode 3 exposures, a subsequent engineering mode 4 ex
164	Yes	☑	OM System	16-Mar-99	After performing a DPU exposure mode 5 (centroiding confirmation), the image obtained appeared to indi
165	Yes	☑	ICU Code	18-Mar-99	When performing an engineering mode 3 exposure, the expected 'table loaded' packet was not received u

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166		☑	Grisms (trackin	25-Mar-99	The zero order component of the visible grism spectrum is itself spectrally dispersed. This leads to potent
167		☑	Magnifier (track	25-Mar-99	Difficulty was experienced in tracking with the magnifier during the End to End testing at MSSL. This was
168	Yes	☑	Magnifier (enlar	03-Apr-99	The first magnifier to be checked at CSL (2 April 99), showed an enlarged image, as compared to that me
169	Yes	☑	Smearing of Im	04-Apr-99	Smearing of star images has appeared after the OM has been switched on in vacuum for several hours. I
170	Yes	☐	ICU Code	14-Apr-99	Time synchronisation problem. RGS have reported that we must wait for 2 us after freezing RBI time be
171		☑	DPU Code	03-Jun-99	Engineering Mode 4 code (full frame, high resolution) currently outputs data in 16 parts. This is in disagre
172	Yes	☑	OM System	11-Jun-99	Current Drop for OM during S/W Loading. During SFPT-5 S/W up-loading for OM (DPU Code), the powe
173		☑	DPU Code	18-Jun-99	The initialization routine for the DPU output data queue linked list does not initialize the last record correct
174		☑	OM System	21-Jul-99	During the IST on 15/16 July 99, it was observed that the memory area of the CRC table was corrupted w