CRITICAL ITEM LIST

PROJECT: GHU

SYSTEM: CCA

ASSEMBLY NOMENCLATURE: INTERFACE CABLE

ASSEMBLY P/N: 16647G

FMEA REF	REV	NAME, QTY., DRAWING REF. DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	MDTHR/FUNC 2/2 CRITICALITY	RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5		Interface Cable P/N 16647G QTY-1	MODE: Fails to pass audio signals. Loss of earphone and/or microphone functions. CAUSE(s): Electrical wire failure (open or short circuit)	Loss of communication.		DESIGN FEATURES: The interface cable wiring meets the requirements of NSTS 08HD, Standard 95. The wiring is enclosed in Nomex sleeving with a line inside with the wires to provide strain relief. The sleeving and line is attached to the summing module and interface connector. Any force applied will be on the sleeving and line, and not the wires.

CRITICAL ITEM LIST

PROJECT: EHU

SYSTEM: CCA

ASSEMBLY NOMENCLATURE: INTERFACE CABLE

ASSEMBLY P/N: 1660/G

FMEA REF	REV	NAME, QTY., DRAWING REF. DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR/FUNC 2/2 CRITICALITY	RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5						ACCEPTANCE TEST: The acceptance testing verified that all measurable performance characteristics meet the requirements of the end-item specifications. Acceptance testings were performed on the end-item (CCEH).

CRITICAL ITEM LIST

PROJECT: EMU

SYSTEM: CCA

ASSEMBLY NOMENCRATURE: BULKHEAD CABLE

ASSEMBLY P/N: 16647G

FMEA REF	REV	NAME, QTY., DRAWING REF. DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR/FUNC 2/2 CRITICALITY	RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5						QUALIFICATION TESTS: The CCLM was subjected to a qualification test to demonstrate its capability to perform in or after being exposed to the environment it is required to operate as specified in NAS9-13132, Exhibit E, paragraph 5.16.2.1.2. The qualification testing consist of the following test: HUMIDITY: MIL-STD-810, Method 507, Procedure I, was conducted except that the minimum temperature was 68 degrees F, and maximum temperature was 120 degrees F. SHOCK: MIL-STD-810, Method 516, Procedure I and IV, Procedure I, was 20g's for 11 milliseconds and Procedure IV was 53g's for 10 milliseconds. ATMOSPHERIC COMPATIBILITY: The CCLM was operated in an atmosphere of 100% oxygen at a continuous pressure of 6.2 psia for 24 hours. The temperature was maintained at ambient level for 16 hours and then raised to 120 degrees F and maintained for 8 hours. The same procedure was repeated for a pressure level 16.5 psia.

PROJECT: END

SYSTEM: CCA

ASSEMBLY NOMENCLATURE: INTERFACE CABLE

ASSEMBLY P/N: 1664/G

FMEA REF	REV	NAME, QTY., DRAWING AGE, DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR/FUNC 2/2 CRITICALITY RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5					QUALIFICATION TEST (Continued): TEMPERATURE: High and Low- High temperature MIL-STD-810, Method 501, Procedure I, applied except the temperature was raised to 150 Low Temperature - MIL-STD-810, Method 501, degrees F and maintained for a period of not less than 4 hours after stabilization of the CCEM. Low Temperature- MIL-STD-810, Method 501, Procedure I, applied. The temperature was lowered to 0 degrees F and maintained for a period of not less than 4 hours after stabilization. VIBRATION: Vehicle Dynamics Flight Axis (3-40 Hz @ 1 Oct/Min.) 3-7 Hz @ 1.3g Peak 15-20 Hz @ 0.11 Inch D.A. Disp. 20-40 Hz @ 2.3g Peak Lateral Axes (2-20 Hz @ 3 Oct/Min) 2-10 Hz @ 0.14g Peak 10-20 Hz @ 0.035g Peak Sinusodial Evaluation (20-2000 Hz @ 1 Oct/Min) 20-130 Hz @ 0.0047 Inch D.A. Disp. 130-2000 Hz @ 1.5g Peak

CRITICAL ITEM LIST

PROJECT: ENU

SYSTEM: CCA

ASSEMBLY NOMENCLATURE: INTERFACE CABLE

ASSEMBLY P/N: 1664/G

FMEA REF	REV	NAME, QTY., DRAWING REF. DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR/FUNC Z/2 CRITICALITY	RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5						QUALIFICATION TEST (Continued): High Random (1 Min/Axis, 3 Axes) 20-40 Hz @ +9 db/Oct 40-60 Hz @ 0.2 g^2/Hz 60-310 Hz @ -6 db/Oct 310-750 Hz @ 0.004g^2/Hz 750-1500 Hz @ -6 db/Oct 1500-2000 Hz @ 0.001g^2/Hz Composite - 3.4 grms. Low Random (4 Min/Axis, 3 Axes) 20-40 Hz @ +9 db/Oct 40-60 Hz @ 0.025g^2/Hz 60-310 Hz @ 0.001g^2/Hz 750-1500 Hz @ -6 db/Oct 1500-2000 Hz @ 0.000025g^2/Hz Composite - 1.7 grms

CRITICAL ITEM LIST

PROJECT: EMU

SYSTEM: CCA

ASSEMBLY NOMENCLATURE: INTERFACE CABLE

ASSEMBLY P/N: 166476

FMEA REF	REV	NAME, QTY., DRAWING REF., DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR/FUNC 2/2 CRITICALITY	RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5						QUALIFICATION TEST (Continued): EMI: Test Per SL-E-0002 A. CS01 - Limit 1.2 VRMS per Figure 2 of ICDS- HSD-4-0000-DC B. CS02 - Limit 0.22 VRMS C. CS06 - Limit 51V per Figure 3 and 4 of ICDS-HSD-4-0000-DC D. RS03 Tests were also performed in accordance with EMI-MIL-I-26600/EMI 10A. OPERATIONAL TESTS: The following tests verify the microphone has not failed prior to going EVA. KSC: On-Orbiter MRSD V1E0J FLIGHT CHECKOUT: Pre-EVA checkout during a mission.

CRITICAL ITEM LIST

PROJECT: ENU

SYSTEM: CCA

ASSEMBLY NOMENCLATURE: INTERFACE CABLE

ASSEMBLY P/N: 16647G

FMEA REF	REV	NAME, QTY., DRAWING REF. DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR/FUNC 2/2 CRITICALITY	RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5						**QA INSPECTION:** The CCEM is manufactured, assembled and tested to flight-approved JSC drawings and procedures. The drawings have been approved by Quality Engineering, Materials and Structures, and are maintained by the JSC Drawing Control Center. Quality controls are exercised throughout design procurement, planning, processing, fabrication, assembly qualification and acceptance testing. Mandatory inspection points are employed as appropriate at various levels of assembly and tests. Receiving inspection verifies that the parts and components received are as identified in the procurement documents, that no damage has occurred during shipment, and that appropriate data have been received which provides adequate traceability information and identifies acceptable parts. Parts are inspected, as appropriate, throughout manufacture and assembly.

CRITICAL ITEM LIST

PROJECT: EMU

SYSTEM: CCA

ASSEMBLY NOMENCLATURE: INTERFACE CABLE

ASSEMBLY P/N: 1664JG

FMEA REF	REL	NAME, QTY., DRAWING: REF. DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR/FUNC 2/2 CRITICALITY	RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5						QA INSPECTION (Continued): Pre-acceptance test inspection, which includes an inspection of the lower assemblies on completion, a verification of the as built configuration to the design, etc., (mandatory inspection points). FAILURE HISTORY: None OPERATIONAL EFFECTS: o None during an EVA o During a planned EVA mission, a spare CCA is available and can be used if failure is detected in the Pre-EVA phase of the mission. o For an unplanned EVA, redundant is lost.

CRITICAL ITEM LIST

PROJECT: EMU

SYSTEM: CCA

ASSEMBLY NOMENCLATURE: INTERFACE CABLE

ASSEMBLY P/N: 10647G

FMEA REF	REV	NAME, QTY., DRAWING REF. DESIGN	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR/FUNC 2/2 CRITICALITY	RATIONALE FOR ACCEPTANCE
05-1 05-2 05-4 05-5					CREW TRAINING: Comm. Class 2120 EVA Exercises MISSION CONSTRAINT: Loss of communication Loss of EVA	