USA Ground Operations CIL Sheet

Critical Item: 4 Port Broadband Switch Module Back Card   **Criticality Category:** 1
NASA Part No: None   **Total Quantity:** 4
Mfg/Part No: Cisco Systems, Inc. / BPX-SMF-155-4-BC
System: ATM Transmission System (ATXS)

Find No.	Qty	Area	PMN	Baseline	Drawing / Sheet
27416B17A3	1	SSPF	K61-5524-01	068.25	80K58564 / 6
3.04B17A3	1	LCC	K61-5526-01	068.25	80K58945 / 8
4.14B17A3	1	VABR	K61-5525-01	068.25	80K58565 / 6
8.07B17A3	1	CD&SC	K61-5523-01	068.25	80K58944 / 6

Function:

Converts optical signals to electrical signals for data processing.

Failure Mode No. Failure Mode	Failure Cause Failure Effect	Detection Method Time to Effect	Crit Cat
00023.004 Corruption of Data	Electrical Failure / Product Defect / Software Error Invalid data would be sent to the CLCS HMF Set and/or the SDC. Making a critical decision based on invalid data could result in loss of life/vehicle.	None Seconds	1

ACCEPTANCE RATIONALE
Design:
- Worldwide Standards Compliance
  - International
    - International Electrotechnical Commission (IEC) IEC 950, Low Voltage Safety
    - International Electrotechnical Commission (IEC) CISPR22, Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment, Class A, EMC
  - United States
    - Underwriters Laboratory (UL) Listed 1950, Low Voltage Safety
    - Federal Communications Commission (FCC) Part 15, Class A, Electromagnetic Compatibility (EMC)
  - Canada
    - Canadian Standards Association (CSA) C22.2, No. 60950, Safety of Information Technology Equipment
  - Europe
    - European Norm EN60950, Low Voltage Safety (CE Mark)
    - European Norm EN50081-1 and EN50082-1, EMC Emissions and Immunity respectively (CE Mark)
  - Japan
    - Voluntary Control Council for Interference (VCCI) from Information Technology Equipment compatible, Class A, EMC

- Equipment is designed to industry standards.

- Equipment complies with KSC hardware specification 79K35102, "Specification, Backbone ATM Switch."

- Employs a Header Error Check (HEC) field in the data to increase the likelihood of detection of corrupted data during transmission between endstations.

- The ATXS employs all fiber optic cabling between locations which is resistive to outside forces causing corruption of the data passing through it.

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Test:

- All hardware in the BPX switch was verified for proper installation, connectivity, and configuration by 80K58797 Rev.B, "Asynchronous Transfer Mode Switch, Configuration and Verification Procedure." This procedure ran a Bit Error Rate Test (BERT) for each switch.

Inspection:

- Maximo Job Plan 17630 outlines the quarterly preventitive maintenance which inspects the ATXS hardware for any alarm conditions, proper fan operation, and any outside conditions that could effect system performance.

- Continuous monitoring of system performance by a dedicated console per Job Instruction NETS-TRANS-027.

Failure History:

- Current data on test failures, unexplained anomalies, and other failures experienced during ground processing activities can be found in the PRACA database. The PRACA database was researched and no data was found on this component in the critical failure mode.

Operational Use:

Correcting Action	Timeframe
There is no action which can be taken to mitigate the failure effect.	Since no correcting action is available, timeframe does not apply.