## USA Ground Operations CIL Sheet

**Critical Item:** OC-3 Circuit Pack

**NASA Part No:** None

**Mfg/Part No:** Lucent Technologies / LAA10

**System:** Synchronous Optical Network (SONET)

**Criticality Category:** 1

**Total Quantity:** 28

| Find No. | Qty | Area | PMN | Baseline | Drawing / Sheet |
|---|---|---|---|---|---|
| 2, located in slots 5A-7A | 5 | CD&SC | K61-5540 | 068.25 | 80K57608 / 5 |
| 2, located in slots 5A-7A | 5 | SSPF | K61-5541 | 068.25 | 80K58245 / 6 |
| 2, located in slots 5A-7A | 5 | VABR | K61-5542 | 068.25 | 80K57609 / 5 |
| 2, located in slots 5A-7A | 5 | OSB | K61-5543 | 068.25 | 80K58990 / 7 |
| 2, located in slots 8A & 8B | 2 | LCC | K61-5544 | 068.25 | 80K58033 / 6 |
| 2, located in slots 8A & 8B | 2 | PCC | K61-5545 | 068.25 | 80K59046 / 7 |
| 2, located in slots 8A & 8B | 2 | Pad B | K61-5546 | 068.25 | 80K58035 / 6 |
| 2, located in slots 8A & 8B | 2 | Pad A | K61-5547 | 068.25 | 80K58034 / 6 |

**Function:**

Provides a bi-directional low speed interface to convert STS-3 electrical signals to OC-3 optical signals and vice versa during flow processing and launch countdown.

| Failure Mode No. Failure Mode | Failure Cause Failure Effect | Detection Method Time to Effect | Crit Cat |
|---|---|---|---|
| 00030.003 | Electrical failure/product defect/software error | None | 1 |
| Corruption of data | Presentation of invalid data to critical user systems if corrupt packet is not detected during transmission. Making a critical decision based on invalid data could result in loss of life/vehicle. | Seconds | |

## ACCEPTANCE RATIONALE

**Design:**

- Equipment designed to industry standards.
- Underwriters Laboratory (UL) and Canadian Standards Association (CSA) listed.
- Multiple layers of error checking are employed to detect corrupt data packets.
- Dual ring network used where the signal integrity on each ring is monitored. Ring switch will occur on a poor signal indication (loss of signal or signal degredation).

**Test:**

- System was tested during installation.

**Inspection:**

- None.

**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. |