



SLC[®] Series 5 Carrier System

AUA61E DS1 DSX Line Interface Unit — 5SLI5PV (AUA61E)

Features/Functions

- Conforms to appropriate industry standards
- Faceplate FAIL and carrier line failure (CLF) LEDs
- Equalization option settings
- Loopback request enable / disable options
- B8ZS or ZCS line coding
- 32 kb/s or 64 kb/s option
- UL* recognized

* Registered trademark of Underwriters Laboratories Inc.

Description

This data sheet describes the AUA61E DS1 line interface unit (LIU) (COMCODE 108265307, AUA61E) and is intended for the end-user of the unit. The AUA61E is a surface mount version of the AUA61D DS1 line interface unit. The AUA61E LIU replaces all AUA61, AUA61B, AUA61C and AUA61D LIUs and is required for the Mode 2 (concentration) capability of Feature Package B (FPB). This data sheet is being reissued primarily to update the latest CLEI Code and COMCODE information on the AUA61E LIU.

The AUA61E DS1 line interface unit is used in both the remote terminal (RT) and the central office terminal (COT) to provide the interface between the *SLC* Series 5 Carrier System and the DSX-1 cross-connect. The received signal is sent via the RATE switch to either the transmit/receive unit (TRU) for 64 kb/s μ -law pulse code modulation (PCM) operation or to the low bit rate voice (LBRV) transcoder unit (TCU) for 32 kb/s operation.

In the transmit direction, this LIU converts the internal 4.096 Mb/s PCM format to a 1.544 Mb/s DS1 rate. It also inserts the extended super frame (ESF) or super frame (Fs) framing sequence, the signaling bits, and the X.25 or SLC 96 Carrier System [for FPB (Mode 96) RT applications] data link. The LIU pre-equalizes its output so that the signal meets the cross-connect compatibility specification at DSX-1. When operating in its ESF mode, the LIU sends a yellow alarm to the far-end terminal in response to near-end failures.

In the receive direction, this LIU converts the incoming DS1 signal to the internal 4.096 Mb/s format. It also extracts the received ABCD (in ESF only) and ABAB (in Fs) signaling bits. The LIU monitors the received signal for excessive CRC-6 errors (ESF only) or bipolar violations, loss of frame, and loss of signal. Failures are reported to the bank controller. Failures also cause the E-bit to be set (this freezes the signaling state in the channel unit) and, after 2.5 seconds, cause the G-bit to be set (this initiates trunk processing).

The LIU can detect a tip-ground or a ring-ground at its DS1 input. When the AUA61E LIU is used in a COT and the S3 is enabled, this grounded input is interpreted as a request, made at the DSX-1, for an RT remote line loopback; this is intended for use during single-ended T1-line fault locating. When tip or ring is grounded the line loopback is activated and is removed when the tip or ring ground is removed. When not required, or for compatibility with some lightwave multiplexer systems, this ground-sensing capability is switch-defeatable. When the AUA61E LIU is used in the RT, it can do a line loopback in response to a command from the RT bank controller (BC). The LIU does bank loopbacks (if ordered by the BC) so the BC can provide sectionalized failure information.

Figure 1 shows the faceplate diagram for the AUA61E DS1 line interface unit and switch layout. Table 1 lists the environmental specifications. Table 2 lists the power drain requirements and Table 3 lists the edge connections for the AUA61E DS1 LIU.

Table 1. Environmental Specifications

<p>A. Temperature Range (Ambient)</p> <ol style="list-style-type: none"> 1. Operating, per TR-NWT-000057*: in Lucent Technologies cabinet mounted RT, outside ambient temperatures of -40° F with no solar load to +115° F with maximum solar load and maximum power dissipation. Lucent Technologies cabinets are designed to assure that the components within do not exceed their rated temperatures for the above conditions. 2. Storage, per TR-NWT-000057: ambient temperatures of -40° to 140° F. <p>B. Relative Humidity</p> <ol style="list-style-type: none"> 1. Operating, per TR-NWT-000057. For outside ambient temperature 84° F or less, relative humidity of 5% to 95%. For ambient temperatures above 84° F, the relative humidity is limited to that corresponding to a specific humidity of 0.024 pounds of water per pound of dry air. 2. Storage, per TR-NWT-000057: ambient temperatures 84° F or less, 10% to 95%. For ambient temperatures above 84° F, the relative humidity is limited to that corresponding to a specific humidity of 0.024 pounds of water per pound of dry air.
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* Bellcore Technical Reference TR-NWT-000057, Issue 2, January 1993, and all Revisions and Supplements, "Functional Criteria For Digital Loop Carrier Systems," Bell Communications Research

Table 2. Power drain for AUA61E LIU

Supply	Maximum Value
+5 Volts dc	300 mW
-48 Volts dc	100 mW

Installation and Testing

There are switches to set on this unit. Procedures for setting the pre-equalization are given in 915-710-115, *SLC Series 5 Carrier System Application Engineering Practice*.

Faceplate Features and Options

The AUA61E DS1 line interface unit faceplate and circuit board switch locations are shown in Figure 1. The LED indicators on the faceplate are as follows:

FAIL (Red LED): When lit, indicates that a failure has been sectionalized to this LIU.

CLF (Yellow LED): When lit, indicates that a carrier line failure has been sectionalized to the digital facility connecting the COT to the RT.

- **B8ZS/ZCS** option: This switch (B/Z) selects between per-channel zero code suppression (position Z) and the bipolar with 8 zero substitute (position B) line code. This switch should be set per application office records.
- **ENABLE/DISABLE** option: This switch (RLB-ENB/DIS), if it is at the central office and its T1 or R1 is grounded, will cause the AUA61E to request the bank controller to initiate a RT line loopback if the RLB switch is set to enable (ENB). If the RLB switch is set to disable (DIS), the AUA61E will not initiate such a request. This switch RLB-ENB/DIS if used at a remote terminal has no function.
- **EQUALIZATION** option: These three switches (TRANS- 0, 1, 2) select the amount of pre-equalization based on the distance between the bank and the DSX-1 cross-connect. Refer to table A for equalization option settings.

Table 3. AUA61E LIU — Equalization Option Settings

EQUALIZATION OPTION SETTINGS			
TRANS-			DISTANCE TO DSX-1*
2	1	0	FEET
OFF	OFF	ON	0 to 132
OFF	ON	OFF	133 to 265
OFF	ON	ON	266 to 398
ON	OFF	OFF	399 to 532
ON	OFF	ON	533 to 655

* These distances are for ABAM cable used in the central office. Refer to 915-710-115 for calculation for other types of cable used for collocated RT and T1 extension applications.

- **VF CHANNEL RATE** option: This switch (RATE-64/32) allows the selection of 64 kb/s (position 64) or 32 kb/s LBRV (position 32). The standard rate is 64 kb/s.

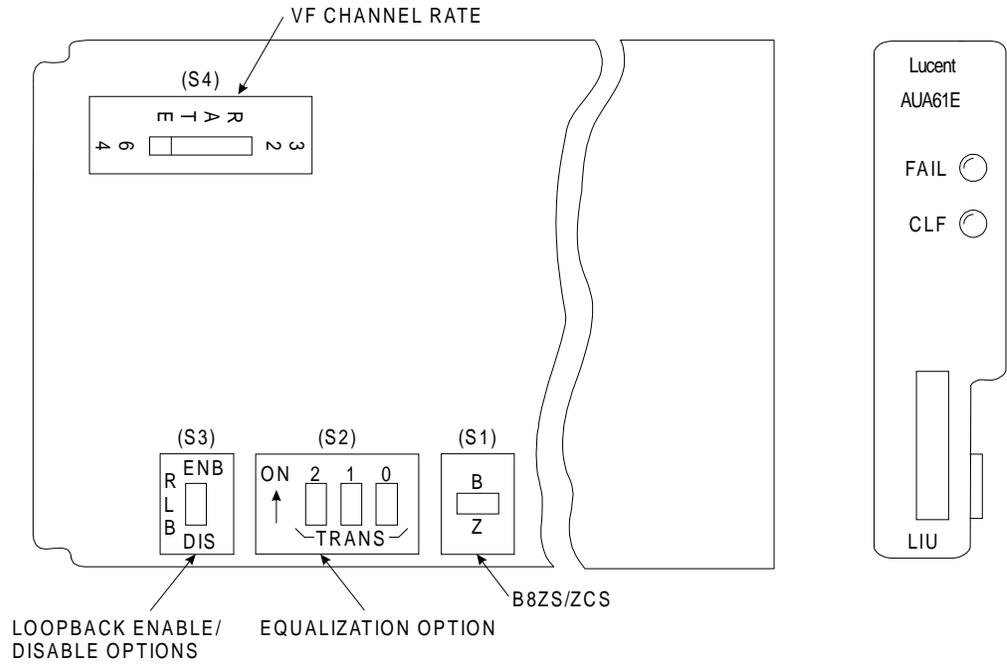


Figure 1. AUA61E LIU Faceplate Diagram and Switch Layout

Table 4. Edge Connections For AUA61E DS1 Line Interface Unit

Finger	Function
1	Frame Ground
5, 31	-48 Volts dc
6, 7, 25	Circuit Ground
18	+5 Volts dc
26	R1 (receive)
27	T1 (receive)
29	R (transmit)
30	T (transmit)

References

The following documents provide additional information about the use of this line interface unit in the *SLC Series 5 Carrier System*:

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|-------------|---|
| 363-205-010 | <i>SLC Series 5 Carrier System Applications and Planning Guide</i> |
| 915-710-115 | <i>SLC Series 5 Carrier System Application Engineering Practice</i> |

Technical Assistance

Follow local procedures for obtaining technical assistance. Lucent Technologies also provides in-hours or emergency out-of-hours help for the *SLC Series 5 Carrier System*. Call the Lucent Technologies Regional Technical Assistance Center at 1-800-225-RTAC.

Ordering Information

Additional copies of this document (363-005-401) are available from the Customer Information Center — call 1-888-584-6366.

Comments

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