

# AUA62B DS1 LINE INTERFACE UNIT - LINE POWERING 5SLI12AAXX

## DATA SHEET

### SLC<sup>®</sup> SERIES 5 CARRIER SYSTEM

The AUA62B DS1 LIU (line interface unit) is used to interface the SLC Series 5 system directly to a T1 line. This LIU is used typically in the Series 5 COT (central office terminal) to power the T1 line repeater connecting the COT to the RT (remote terminal). It is also used in the RT for T1-line back-powering applications.

This practice has been reissued to make minor editorial changes.

Figure 1 is a functional block diagram of the unit, and Figure 2 shows the faceplate, the board outline and the positioning of the switches and indicators.

The received signal is sent via the RATE switch to the TRU (transmit-receive unit) for 64 kb/s  $\mu$ -law PCM (pulse code modulation) operation, or to the LBRV (low bit rate voice) TCU (transcoder unit) for 32 kb/s ADPCM (adaptive differential pulse code modulation) operation.

In the transmit direction, the LIU converts the internal 4.096 Mb/s PCM or ADPCM (LBRV) format to a 1.544 Mb/s DS1 rate. It also inserts the ESF (extended super frame) or Fs framing sequence, the signaling bits, and the X.25 or SLC 96 system (for Mode 96 RT applications) data link. When operating in its ESF mode, the LIU sends a yellow alarm to the far end terminal in response to near end failures. The LIU also has switch-selectable 0 dB, 7.5 dB, 15.0 dB, and 22.5 dB pads to meet route junction level coordination and end-section design requirements. The AUA62B powers the outgoing T1 line with a 60 mA current feed that is voltage limited to -130V during normal operation.

In the receive direction, the AUA62B uses an ALBO (automatic line build-out) and switch-selectable 0 dB

and 7.5 dB pads to provide compatibility with short end sections and allow from 0 dB to 33.5 dB of loss in the end section. The LIU converts the incoming DS1 signal to the internal 4.096 Mb/s format. The AUA62B also extracts the received ABCD (in ESF) and ABAB (in D4/SLC 96 system) signaling bits. It also monitors the received signal for excessive CRC-6 errors (ESF) or bipolar violations (Fs), loss of frame, and loss of signal. Failures are reported to the BC (bank controller). Failures also cause the E-bit to be set (this freezes the signaling state in the channel units) and, after 2.5 seconds, cause the G-bit to be set (this initiates trunk processing). When used in an RT, the AUA62B can loop its DS1 input back to its DS1 output under command of the bank controller. This line loopback is intended for use while single-ended T1-line fault locating is being done from the CO (central office) end of the system.

The LIU does bank loopbacks (if ordered by the BC) to sectionalize failures so that the BC can provide detailed information about failures to the craft.

**TRANSMIT PAD** Option: These four switches (TRANS- 1, 2, 3, 4) select the amount of loss inserted in the transmit path to meet route-junction and end section requirements:

TRANSMIT PAD SETTING vs. INSERTED LOSS				
TRANS				INSERTED
1	2	3	4	LOSS
OFF	OFF	OFF	ON	22.5 dB
OFF	OFF	ON	OFF	15.0 dB
OFF	ON	OFF	OFF	7.5 dB
ON	OFF	OFF	OFF	0.0 dB

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**RECEIVE PAD** Option: These two switches (RCV- 1, 2) insert 0 dB or 7.5 dB of loss in the receive path as needed to meet route-junction and end section design requirements:

RECEIVE PAD SETTING vs. INSERTED LOSS (NOTE)		
1	2	INSERTED LOSS
ON	OFF	0.0 dB
OFF	ON	7.5 dB

**Note:** ON — depress toward the number.

**B8ZS/ZCS** Option: This switch (B/Z) selects between per-channel zero code suppression (position Z) and the bipolar with 8 zero substitution (position B) line code. This switch should be set per applicable office records.

**ESF/Fs** Option: This switch (D/F) selects between the ESF frame format (position F) for SLC Series 5 systems, and the Fs frame format (position D) for SLC Series 5 Mode 96 systems.

**VF CHANNEL RATE** Option: This switch (RATE-64/32) allows the selection of 64 kb/s  $\mu$ -law PCM (position 64) or 32 kb/s ADPCM LBRV (position 32). The standard rate is 64 kb/s.

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

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

**+V, -V, +I, -I** Jacks: The transmit-side line current is measured from +V to -I. The receive-side line current is measured from +I to -V. The line voltage is measured from +V to -V.

Technical assistance for the SLC Series 5 system can be obtained by calling the Regional Technical Assistance Center at 1-800-225-RTAC. This telephone number is staffed 24 hours per day.

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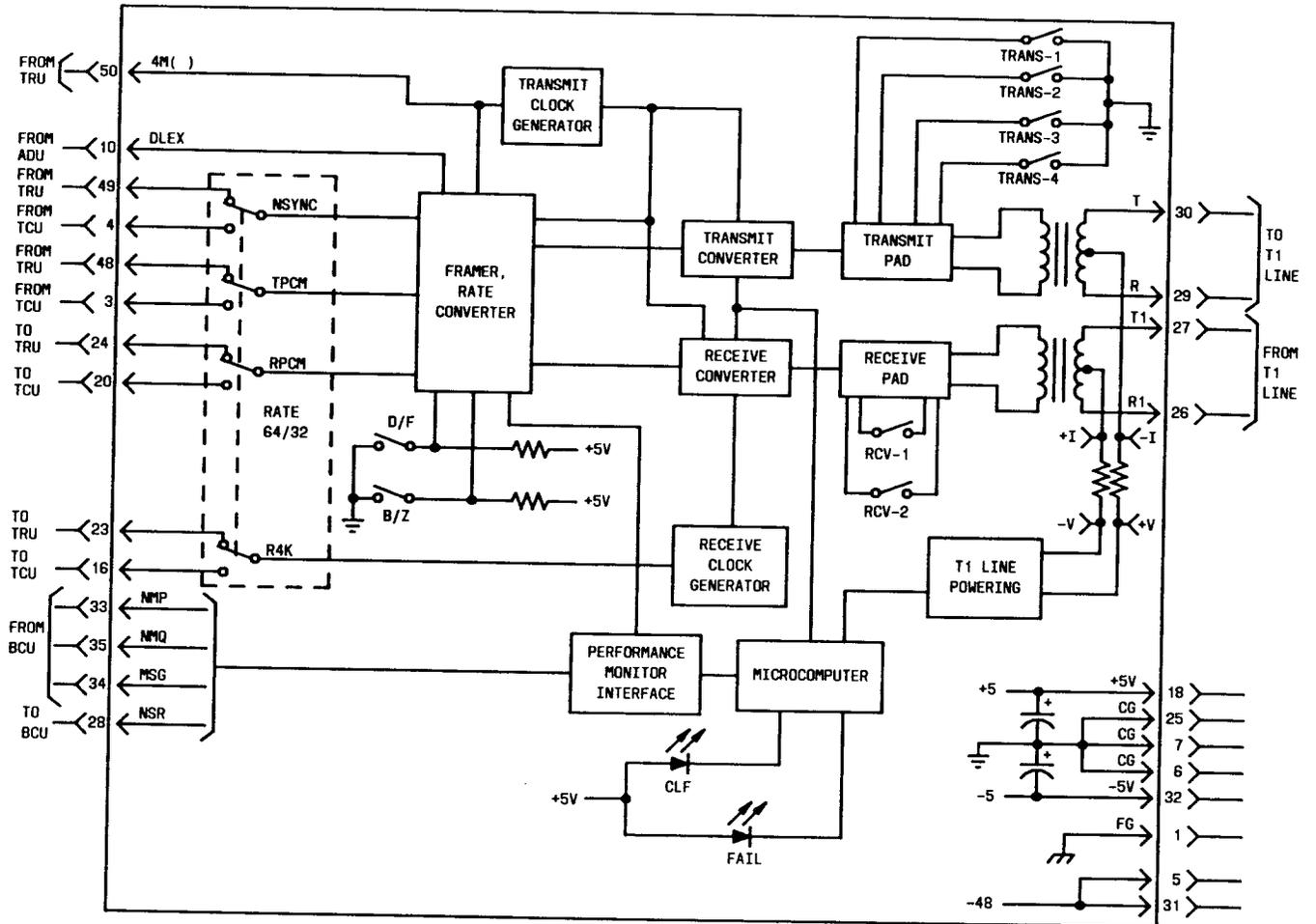


Figure 1—AUA62B Block Diagram

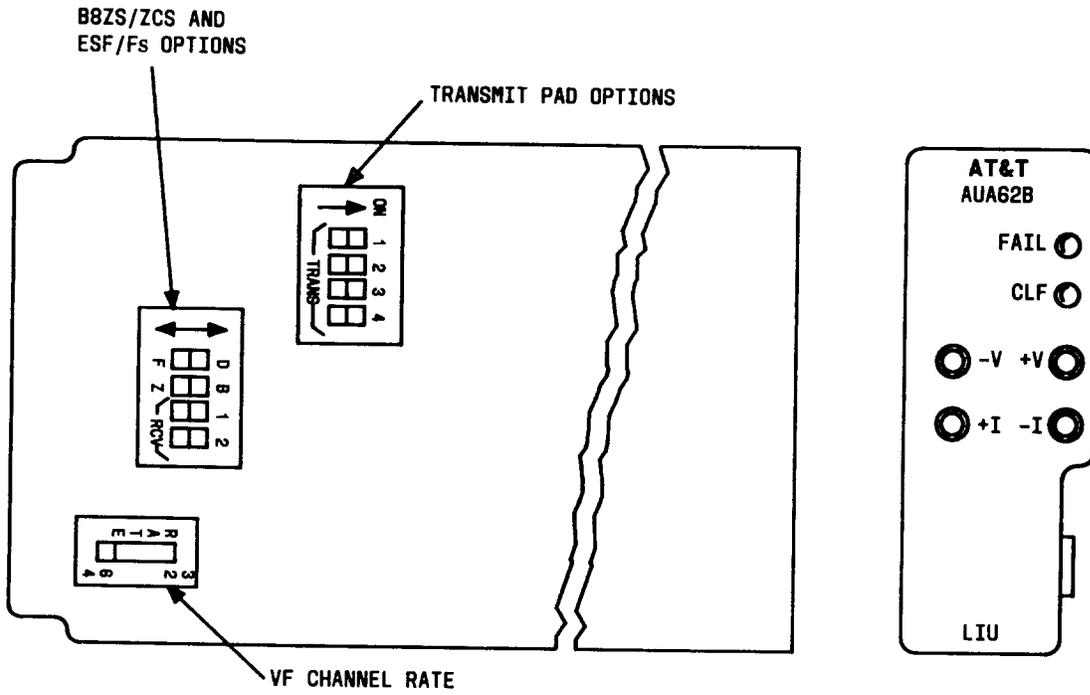


Figure 2—AUA62B Component Layout