

# AUA64C DS1 LINE INTERFACE UNIT - POWER LOOPING 5SLI143AXX

## DATA SHEET

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

The AUA64C DS1 LIU (line interface unit) is used to interface the SLC Series 5 system directly to a T1 line. It is typically used in the SLC Series 5 system RT (remote terminal) to loop the received line powering current back toward the COT (central office terminal). It can also be used in the COT if needed in a particular installation.

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 either the TRU (transmit-receive unit) for 64 kb/s  $\mu$ -law PCM (pulse code modulation) operation, or the LBRV (low bit rate voice) TCU (transcoder unit) for 32 kb/s operation.

In the transmit direction, the LIU converts the internal 4.096 Mb/s PCM or ADPCM (adaptive differential pulse code modulation) (LBRV) format to a 1.544 Mb/s DS1 rate. The AUA64C 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. This 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.

In the receive direction, the AUA64C loops the received T1 line-powering current back to the transmitter output. This looped current powers the other direction of the T1 line. An ALBO (automatic line build-out) and switch-selectable 0 dB and 7.5 dB pads 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 AUA64C also extracts the received ABCD (in ESF) and ABAB (in D4/SLC 96) 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 bank controller. Failures also cause the E-bit to be set (this freezes the signaling state in the channel units and the LIU) and, after 2.5 seconds, cause the G-bit to be set (this initiates trunk processing). When used in an RT, AUA64C can loop its DS1 input back to its DS1 output under command of the bank controller. The line loopback is intended for use while single-ended T1-line fault locating is being done from the CO end of the system.

The LIU does bank loopbacks (if ordered by the bank controller) to sectionalize failures so that the bank controller 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

**RECEIVE PAD** Option: These two switches (RCV- 1,2) insert 0dB or 7.5dB 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	0.0dB
OFF	ON	7.5dB

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

**BBS/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.

**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.

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

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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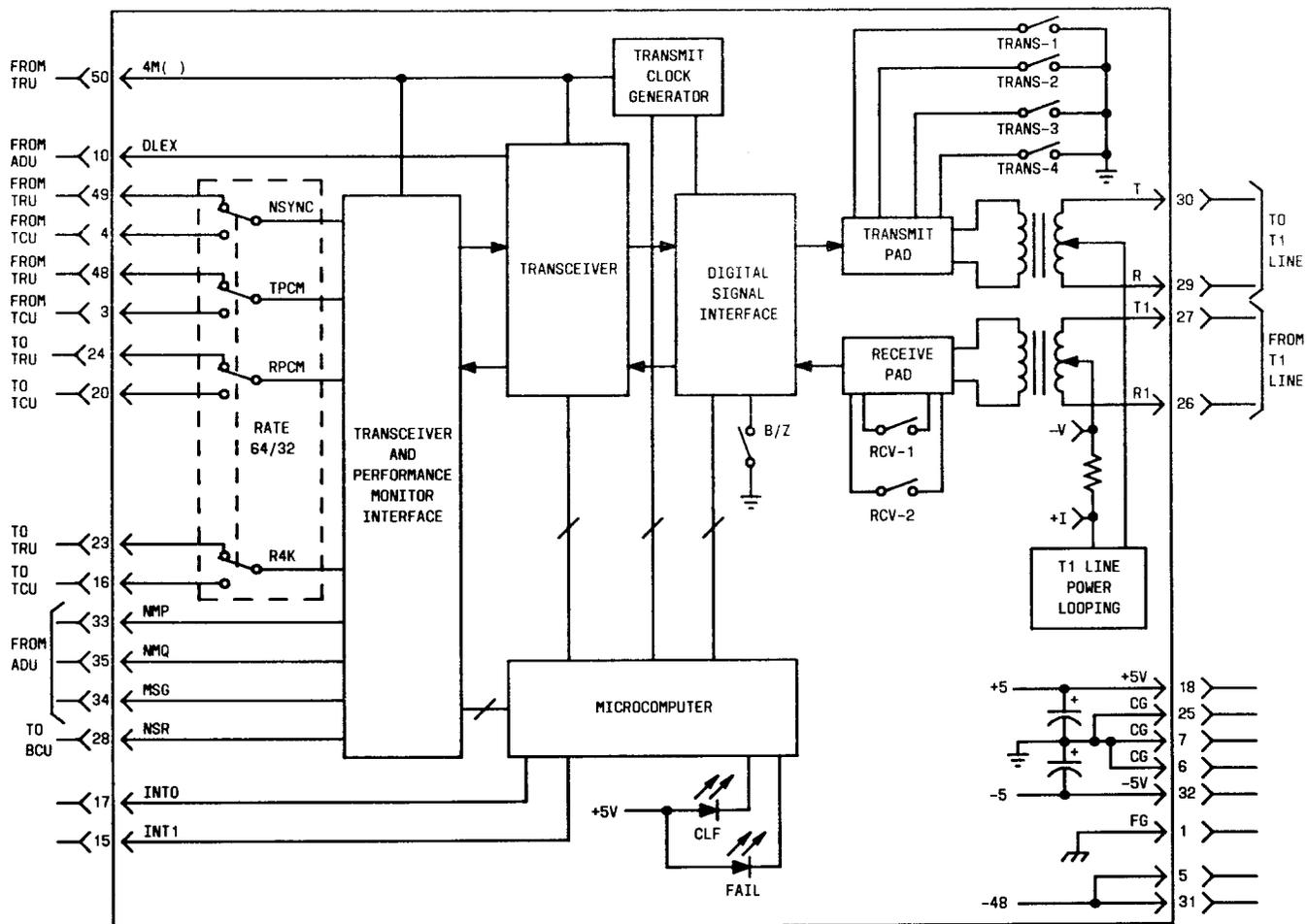


Figure 1—AUA64C Block Diagram

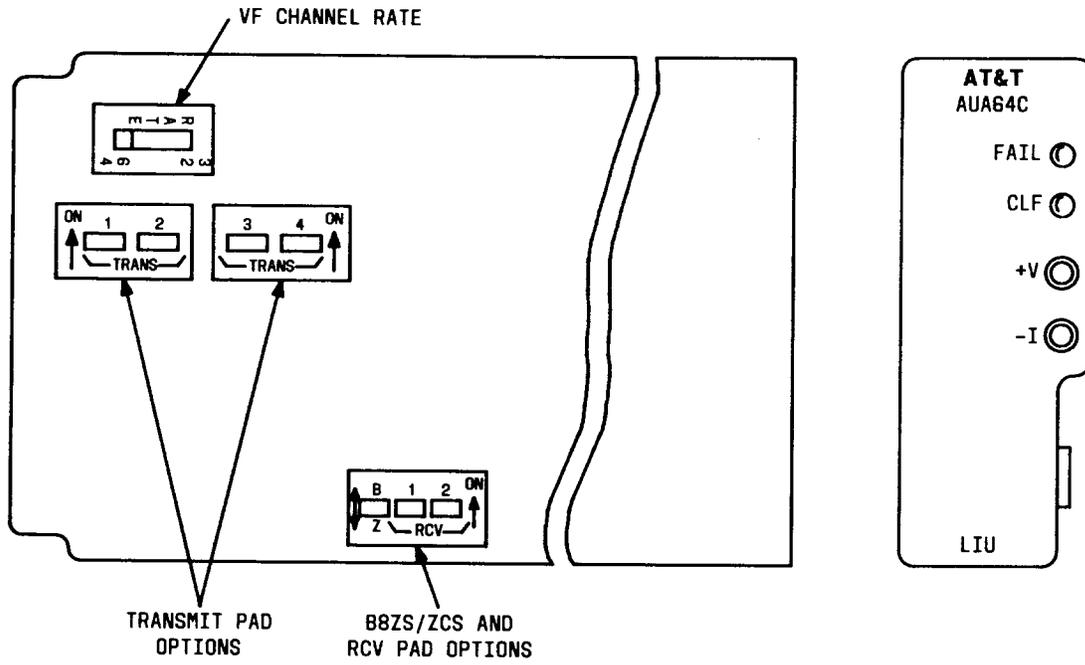


Figure 2—AUA64C Switch Layout and Faceplate