AT&T

SLC® Series 5 Carrier System

AUA142 2-Wire E *SPOTS*® Channel Unit — 5SCU69Z

Data Sheet

This data sheet describes the AUA142 2-wire channel unit (CU) (COMCODE 106018419) and is intended for the end-user of the unit. The AUA142 CU is intended for use in nonlocally-switched ground-start and loop-start special services, 2-wire nonswitched private lines, and direct-inward-dial (DID) trunks. This unit may also be used in locally-switched services.

Figure 1 is a functional block diagram of the unit, and Figure 2 shows the faceplate.

The AUA142 CU and the AUA42 2-wire CU (5SCU690) have the same functions, but the AUA142 has an extra level of protection against a power line being connected across the metallic leads. The AUA142 CU may interface with a switching machine, other transmission equipment, or cable. When it interfaces with cable, the cable must conform to the carrier serving area (CSA) design rules, which are described in AT&T 363-205-100.

The AUA142 channel unit provides two channels of service. Each channel can be used independently of the other to provide any of the following functions — foreign exchange - office end (FXO), dial pulse terminating (DPT), or transmission only (TO).

FXO: The FXO function is used for a loop-start or ground-start application, nonlocally-switched or locally-switched. Typically, nonlocally-switched applications are foreign exchange trunks and lines and off-premises PBX station lines. For the FXO function, the channel unit may be used in either the remote terminal (RT) or central office terminal (COT), depending on the application.

DPT: The DPT function is used for a DID application only, with either dial pulse or multifrequency signaling. For this function, the channel unit is typically located in the RT.

TO: The TO function is used for a private line application, with no DC signaling. For this function, the channel unit may be located in either the RT or COT if it does not face cable. For RT applications, therefore, it may be used only when the RT is at the customer location. The unit may not be used to face cable since it does not provide sealing current to break down a high resistance film which may build up at unsoldered hand-twisted splices.

The AUA142 channel unit has transmission and signaling options which must be set before service can be provided. The unit does not have physical switches — instead, option information must be written into memory registers located on the channel unit. For this purpose, the Series 5 craft interface unit (CIU) J99404TA and bank control unit (BCU) are used. All transmission and signaling options and the function type (FXO, DPT, or TO) for either channel on the unit are set by entering commands into the CIU which then transmits the information to the BCU which stores it in nonvolatile system memory. The BCU then writes the options into the channel unit registers when the channel unit is installed. If the channel unit is already installed, the BCU writes the option information into the channel unit registers immediately after it receives the information from the CIU. Unplugging the channel unit does not erase the option information stored in system memory — reinserting the channel unit causes the options to be rewritten immediately into the channel unit registers by the BCU.

In locally-switched services, the AUA142 channel unit can be tested end-to-end by the maintenance center as if it were a *SPOTS* channel.

The CIU is also used during manual testing of the transmission performance of either channel on the AUA142 channel unit. The procedures for setting options and performing tests with the CIU are described in AT&T 363-205-402. The CIU is described in AT&T 363-205-101.

The transmission and signaling options for the unit, and the range of the options are listed in Table 1.

Table 2 lists the allowable options for each channel function type (FXO, DPT, and TO). The guidelines for selecting option settings for the AUA142 channel unit are provided in AT&T 915-710-116 — the practice also describes the various applications for the unit.

The unit provides two additional features:

- Automatic forward disconnect,
- On-hook transmission during the silent interval of ringing.

The latter feature makes the unit compatible with calling party identification (CPI). Forward disconnect is disabled when on-hook transmission is provisioned.

Compatibility with CPI and the capability of the unit to provide on-hook transmission and toll diversion are the principal reasons why the AUA142 channel unit may have applications in locally-switched services.

The AUA142 CU is end-to-end compatible with the AUA41 (5SCU7D1), AUA141 (5SCU7DZ) and AUA44 (5SCU7C6) 4-wire CUs, the AUA142, AUA42 (5SCU690), AUA36 (5SCU9F0) 2-wire CUs, and with various D4-type CUs. Further compatibility and application information can be found in AT&T 915-710-116.

For the FXO and DPT functions, the unit permanently selects the 2.5-second delayed busy option on trunk processing — for example, 2.5 seconds after receipt of a carrier line failure from the Series 5 system the channel unit will busy out the service. As N Trunk processing does not occur if there is a switch to a protection line.

The AUA142 channel can be used in a Series 5 system equipped for Feature Package B/SS/U, C, D, or Integrated Network Access-Remote Terminal (INA-RT) capability.

BUSY (Red LED): When lighted, this LED indicates one of the channels is in the *busy* state.

Table 1. Range of Settings for AUA142 Channel Unit Options

Option	Range
Hybrid Impedance	900 ohms or 600 ohms
Hybrid Balance	0 to 15 in steps of 1
Transmit Gain	−1.0 dB to 6.75 dB in steps of 0.25 dB
Receive Gain	−8.0 dB to 1.5 dB in steps of 0.25 dB
Equalizer Slope	0 to 7 in steps of 1
Toll Diversion	Yes or No
Signaling Type	Loop start (LS) or ground start (GS)
On-Hook Transmission	Yes or No

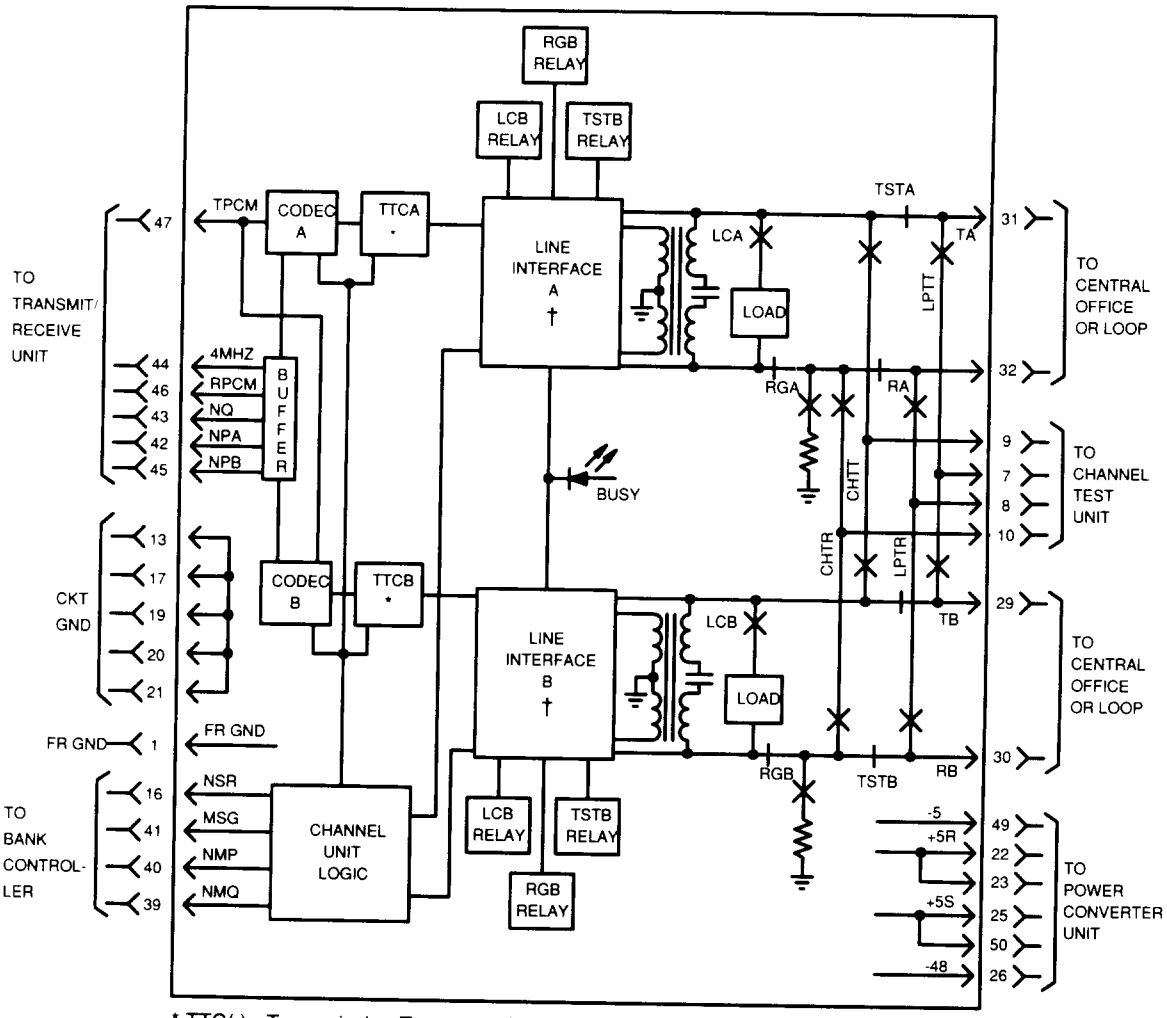
Table 2. Options for Each AUA142 Channel Unit Function

Option	CU Function		
	FXO	DPT	TO
Hybrid Impedance*	✓	✓	✓
Hybrid Balance	✓	✓	✓
Transmit Gain	✓	✓	✓
Receive Gain	✓	✓	✓
Equalizer Slope†	✓	✓	✓
Toll Diversion	✓		
Signaling Type	✓		
On-Hook Transmission‡	✓		

* When the channel unit faces outside plant cable, the hybrid impedance should be set to 600 ohms.

† The 1-kHz gain of the channel unit is independent of the equalizer setting.

‡ For ground-start services, the on-hook transmission option should always be set to NO.



* TTC( ) - Transmission Treatment Chip
A = channel A; B = channel B
† Line Interface can detect 117 volts dc and respond with 333.3 Hz

Figure 1. AUA142 Block Diagram

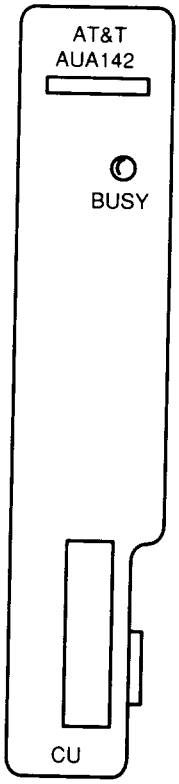


Figure 2. AUA142 Faceplate Diagram

In-hours or emergency out-of-hours technical assistance for the *SLC*® Series 5 Carrier System can be obtained by calling the Regional Technical Assistance Center at **1-800-225-RTAC**.

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