SLC® Series 5 Carrier System

AUA94( ) Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) Channel Unit— 5SC18E0 (AUA94) 5SC4RU0 (AUA94B)

Features/Functions

- FAIL LED on faceplate

- Two channels of ANSI* standard U-DSL ISDN basic rate interface

- Faceplate test access to tip and ring pairs

- Fixed sealing current (AUA94), optional sealing current switch (AUA94B)

- UL† recognized

- Enhanced inventory (AUA94B)

- Conforms to appropriate industry standards

* Registered trademark of American National Standards Institute, inc.

† Registered trademark of Underwriters Laboratories Inc.

Description

This data sheet describes the AUA94( ) integrated services digital network (ISDN) basic rate interface (BRI) channel unit (CU) (COMCODE 104043864, AUA94; and 107966830, AUA94B) and is intended for the end-user of the unit.

The AUA94( ) CU provides two ANSI standard digital subscriber lines (U-DSL) over a non-loaded two wire loop. The AUA94( ) CU operates in the following access systems:

- *SLC*® Series 5 Feature Package 303 (FP303) remote terminal (RT).

- *SLC*®-2000 RT.

- Multi-services distant terminal (MSDT), hosted by a *SLC*-2000 RT/host digital terminal (HDT).

- Network interface units (NIUs) on a Hybrid fiber-coax (HFC) system.

- Switched digital broadband access system (SDBAS) optical network unit (ONU).

- DDM-2000 FiberReach Narrowband Shelf (NBS) hosted on a *SLC*-2000 HDT.

The AUA94( ) operates in the above systems must be integrated into a TR-303[*] digital switch, such as the 5*ESS*® switch with an integrated digital carrier unit (IDCU). The AUA94( ) channel unit can also work with other local digital switches which support TR-303 with ISDN.

The channel unit functions are controlled by the TR-303 Embedded Operations Channel (EOC), which is a message channel operating between the host LDS and the *above* Access Systems.

This data sheet is being reissued to describe the AUA94B channel unit which adds a sealing current option switch, enhanced inventory and full ANSI loop range.

The AUA94B channel unit stores a plug-in inventory record in non-volatile memory available for reading by an inventory compatible host (e.g., *SLC*-2000 Access System). The inventory record includes 10-character *COMMON LANGUAGE*[†] *CLEI*, COMCODE, ECI, Function, Loss, and ID codes.

Figure 1 shows the faceplate diagram for the AUA94B and the sealing current switch. Table 1 lists the environmental specifications and Table 2 lists the power drain of the AUA94( ) CU. Table 3 lists the edge connections for the AUA94( ) ISDN BRI CU.

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[*]   Bellcore Technical Reference TR-NWT-000303 Issue 2, December 1992, and all
        Supplements, Integrated Digital Loop Carrier System Generic Requirements, Objectives,
        and Interface.

[†]   *COMMON LANGUAGE* is a registered trademark and *CLEI*, *CLLI*, *CLCI*, and *CLFI* are
        trademarks of Bell Communications Research, Inc.

Functions

The AUA94( ) CU provides two channels of service, in line terminating (LT) mode, to the network termination type 1 (NT1). Up to two customers are served.

The AUA94 CU must be used in loops that meet carrier serving area (CSA) design rules (up to 12 kft.). The AUA94B CU may be used on loops up to 18 kft. in length (26 awg.).

The AUA94( ) CU uses the U-interface 2B1Q signal to provide a 4-level line code at a data rate of 160 kb/s (80k baud), comprising two B channels and one D channel, plus overhead. The D channel is used for signaling and low-speed packet data. The unit complies with the ANSI standard for a U-interface digital subscriber line.

A microcontroller performs on-board processing and contains the remote inventory data (AUA94B CU only). Channel Unit timing is derived from the system clock.

Transmission Treatment

The channel unit provides 2 ANSI standard digital subscriber lines over metallic facilities.

The channel unit functions are controlled by the TR-303 embedded operations channel (EOC), which is a message channel operating between the host local digital switch and the remote terminal.

Compatibility

The AUA94( ) CU operates only in systems which are operating with a TR303 interface with ISDN. The CU is compatible with the following equipment:

- *SLC* Series 5 FP303 RT (all releases)
- *SLC*-2000 remote terminal Release 4.0 or later
- Host switches which support TR303 with ISDN
- *DDM*-2000 FiberReach NBS hosted by a *SLC*-2000 HDT Release 4.3 or later

- Network interface units (NIUs) of hybrid fiber-coax (HFC-2000) systems
- Optical network unit (ONU) of switched digital broadband access system (SDBAS-2000)
- Multi-services distant terminal (MSDT) hosted by a *SLC*-2000 Access System RT/HDT

Specifications

The AUA94( ) CU conforms to the appropriate criteria of ANSI, Bellcore, FCC, GTE and UL standards.

This AUA94 channel unit can only be used on loops that follow Carrier Serving Area (CSA) design guidelines. The AUA94B CU may be used on loops up to 18 kft. in length (26 awg.).

For further specification information, consult 363-208-000, *SLC*-2000 Access System, Applications, Planning, and Ordering Guide.

Table 1.   Environmental Specifications

<table>
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A. Temperature Range (Ambient)

   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.

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B. Relative Humidity

   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 AUA94( ) ISDN CU

Condition	Value (± 0.2 W)
All channels idle, no NT1s[*] connected:	0.8 W
One NT1 connected, no sealing current:	1.0 W
One NT1 connected, one or both sealing current switches on:	1.3 W
Two NT1s connected, no sealing current:	1.2 W
Two NT1s connected, One sealing current switch on:	1.5 W
Two NT1s connected, both sealing current switches on:	1.8 W

   *   Network termination, layer 1

Installation and Testing

There are no option switches on the AUA94 ISDN BRI channel unit. The AUA94B ISDN BRI channel unit has option switches to control sealing current, whereas the AUA94 CU has fixed sealing current.

The AUA94( ) CU connects the subscriber line to the bank channel test unit (CTU) for metallic loop testing. The unit can not be tested by the pair gain test controller (PGTC) or the extended test controller (XTC).

The AUA94( ) CU supports B1, B2, D, and 2B+D loopbacks through the TR-303 embedded operations channel (EOC). The channel unit also supports DSL performance monitoring and a remote inventory feature (AUA94B CU only)

Faceplate Features

The AUA94B integrated services digital network (ISDN) basic rate interface (BRI) channel unit faceplate is shown in Figure 1. The AUA94B CU has selectable sealing current, whereas the AUA94 CU has constant sealing current. The AUA94B CU has a sealing current switch, but the AUA94 CU has no sealing current switch. The following LED indicator is located on the faceplate.

FAIL (Red LED): The FAIL LED lights when the following condition(s) exist:

- RESET: If the CU is in a reset state and cannot exit, the FAIL LED remains on.

- POWER-UP: The FAIL LED comes on during power-up, the system requests the CU self test to be run, and the system shuts off the LED if the tests conclude properly. The LED remains on if there are errors detected during the self-test.

- LED TEST: The LED is turned on by the system during the LED test

U-DSL O / E faceplate switch: The faceplate switch selects maintenance access to either the odd (O) or even (E) U-DSL tip/ring interface of the channel unit.

RJ-45 faceplate Jack: The RJ-45 faceplate jack allows for manual testing of the channel unit with a 2B1Q line tester set for network termination (NT) mode operation

⚠ **CAUTION:**
The standard connector for ISDN is the RJ-45 (8-pin) connector, and forcing another type connector into the AUA94( ) faceplate jack can result in damage to the jack pins.
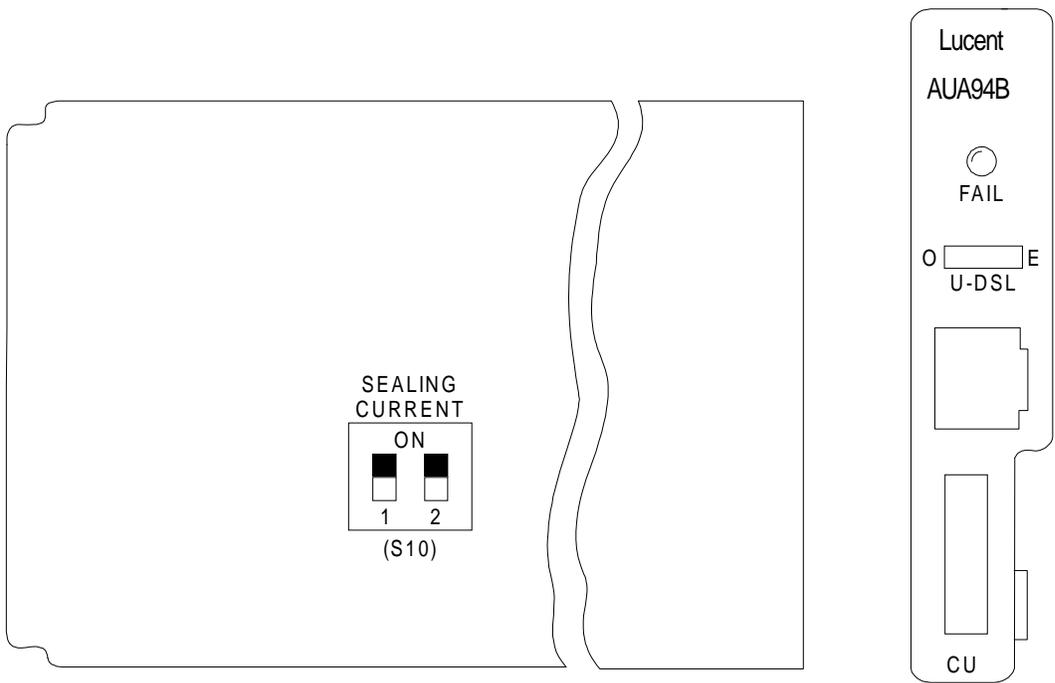
Figure 1.   AUA94B Faceplate Diagram and Sealing Current Switch

Table 3.   Edge Connections For AUA94( ) ISDN BRI Channel Unit

Finger	Function
1	Frame Ground
13, 17, 20, 21	Circuit Ground
22, 23, 25, 50	+5 Volts dc
26	-48 Volts dc
29	TB (Tip Even)
30	RB (Ring Even)
31	TA (Tip Odd)
32	RA (Ring Odd)

ISDN Test Access

The AUA94( ) channel units use the ISDN standard RJ45 jack on the faceplate for tip/ring access to an ISDN test set.

References

The following documents provide additional information about the use of this channel unit in the *SLC Series 5 Carrier System* and the *SLC*-2000 Access System:

363-205-010	*SLC Series 5 Carrier System Applications and Planning Guide*
363-205-402	*SLC Series 5 Carrier System Channel Unit Installation and Testing*
363-208-000	*SLC*-2000 *Access System Application, Planning, and Ordering Guide*
363-208-001	*SLC*-2000 *Access System User/Service Manual*
363-208-003	*SLC*-2000 *Access System Command and Message Manual*

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 and the *SLC*-2000 Access System. Call the Lucent Technologies Regional Technical Assistance Center at 1-800-225-RTAC.

Ordering Information

Additional copies of this document (363-005-135) are available from the Customer Information Center — call 1-888-582-3688.

Comments

Comments about this document can be directed to:

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