

When used back-to-back (COT-to-RT with a different model ISDN channel unit, set the other unit's options as follows:

- Service = 2B +D
- Zero Byte Substitution (ZBS) = ON

Other functions of the AUA operate as follows:

- Sealing current is automatically applied in RT applications
- Channel bank slot and counting sequence are detected automatically
- Standard processing of the Embedded Operations Channel (EOC) is provided in ISDN applications

5. **Perform Installer Connections.** Installer connections for the drop-side ports of the AUA to the metallic loop are made via the connector cables of the channel bank. The drop side is connected to the first wire pair of the AUA's physical slot. All other connections required by the AUA, including power, are integral to the channel bank.

6. **Mount the AUA.** After setting all the switches to the correct/applicable cable positions and performing installer connections, insert the AUA into its proper slot in the shelf.

7. **SLC-2000 Provisioning**

- Using the SLC-2000 craft interface, address the appropriate system, terminal, and slot #, then enter the appropriate system, terminal, and slot#, then enter the appropriate CLEI (5SCJ1JE = COT & 5SC1HE = RT applications [SLC2000 ISDN unit])
- Enter 2B+D for ISDN service (or B for Uniprot 2W DDS service)

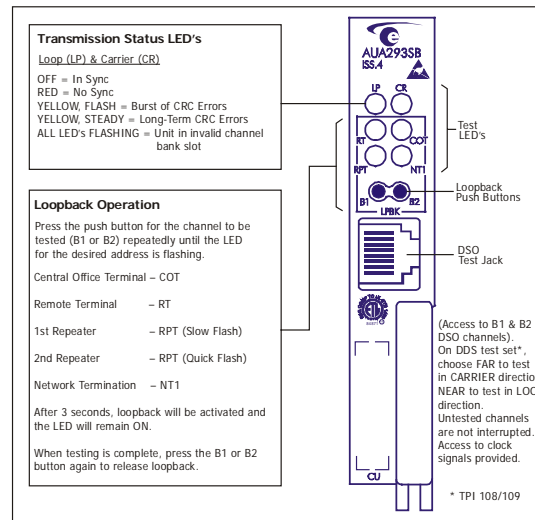
8. **Verify Power.** Verify the presence of power at the AUA.

9. **Front Panel Operation & Testing.** Perform testing per local company practice. Overall testing of the ISDN circuit is performed by the ISDN switch. Maintenance procedures can be executed locally from the front panel to test the AUA and downstream equipment. See Figure 3 and the procedures outlined in the AUA293SB14 practice 030-101486.

3. **TECHNICAL & CUSTOMER SERVICE**

If technical or customer assistance is required, contact Engenuity Communications by calling or using one of the following options:  
 Voice: 630-761-1892  
 Voice: 800-980-3266  
 Email: [sastin@engenuitycommunications.com](mailto:sastin@engenuitycommunications.com)

Visit the Engenuity World Wide Web site at <http://www.engenuitycommunications.com> for additional information about Engenuity.



4. **SPECIFICATIONS & FEATURES**

The electrical specifications are listed below, the ordering information is shown in Table 3, and the physical specifications are shown in Table 4.

- A. **U Interface:** 2B1Q
- B. **Network Interface:** 3-DSO format
- C. **Embedded Operational Channel:** Recognizes and responds to EOC control codes per Bellcore TR-NWT-000397 Iss. 3, and TR-TSY-000829 requirements
- D. **Timing:** Derived from composite clock (64 Kb/s and 8Kb/s)
- E. **Facility Impedance:** 135 Ohms nominal
- F. **Sealing Current:** Constant 10mA DC
- G. **Power:** -48VDC and +5VDC supplies
- H. **Power Consumption:** 1.5 Watts, nominal
- I. **Lightning & Power Cross:** Meets TR-TSY-001089 Lightning & Power Cross and UL1459 requirements
- J. **Safety:** Meets applicable UL1459 and Bellcore GR-1089-CORE requirements.

Features

- Meets ANSI T1 601-1992 Layer 1 requirements; meets TR-NWT-000397 ISDN Basic Access Requirements; Meets TR-NWT-000393 DSL basic requirements and TR-TSY-000829 EOC operations Interface requirements. Meets applicable requirements of Bellcore GR-1089-CORE; UL1459 compliant
- SLC and SLC-2000 compatible
- Switch optioned for COT or RT applications
- Adaptive 3-DSO format
- 18 Kft. Nominal range
- Compatible with multiple feature packages, with or without upgraded common equipment
- LEDs indicate loop & carrier transmission status & loopback status
- Front panel DSO access for testing w/standard DDS test equipment
- Front panel local & downstream loopback control of individual B channels
- Remote loopback of 2B+D, 2B or individual B channels
- Advanced testing capability in IDB5000 Series channel banks
- Distinct DC test signatures for LUNT & LULT configurations
- Segmented or path (default) performance monitoring
- Zero Byte Substitution (ZBS)
- Sealing current

| Model      | Description   |
|------------|---|
| AUA293SB14 | SLC-5 ISDN Basic Rate Interface. CLEI Code: 5SC6CBRBA. CPR: C70311. Barcode: 115515 |
| NUL193     | SLC-5 ISDN Auxiliary Unit.  |
| AUA000     | SLC-5 Blank Card.   |

*\*CLEI is a trademark of Telcordia Technologies*

Table 3. Ordering and Option Information

| Feature          | U.S.                       | Metric       |
|------------------|----------------------------|--------------|
| Height           | 3.5 in.                    | 8.9 cm       |
| Width            | 0.64 in.                   | 1.6 cm       |
| Depth            | 9.8 in.                    | 24.9 cm      |
| Weight (approx.) | 5.8 oz.                    | 164.4 g      |
| Operating Temp.  | -49° to 149°F              | -45° to 65°C |
| Humidity         | 0 to 95% (no condensation) |              |

Table 4. Physical Specifications



Figure 1. Front View of the AUA293SB4

## 1. GENERAL

### 1.1 Document Purpose

This document facilitates the installation of Engenuity's AUA293SB Issue 4 SLC® - 5/SLC-2000 ISDN Basic Rate channel unit, shown in Figure 1. See Engenuity's practice # 030-0101486 for additional product information.

-NOTE-  
Hereafter, the AUA293SB4 may be referred to as the "AUA."

### 1.2 Document Status

This Revision A Installation Guide replaces the previous 055-016700 Installation Guide, includes a general format update, and updates the company contact information. Revision B updates CLEI information.

### 1.3 Product Purpose

The AUA293SB allows ISDN service to be easily extended through Lucent SLC®-5, SLC-2000, or Engenuity IDB5000 Series channel banks. The unit can be installed in COT or RT applications and is end-to-end compatible with other standards-compliant channel units. The AUA293SB also can be used with Westell's Uniport™ Remote Unit installed at the customer premises to deliver DDS service over the 2-wire loop.

Section AUA-293-SB0-303  
Equipment Issue 4  
July 2008

# Installation Guide- AUA293SB Issue 4 SLC®-5/SLC-2000 ISDN Basic Rate Channel Unit

## 1.4 Product Mounting Location

The AUA293SB mounts in one channel unit position of a Lucent SLC-5, SLC-2000, or Engenuity IDB5000 Series terminal shelf assembly (or equivalent). See Part 2 for further installation information.

## 1.5 Channel Bank BCUs Requiring NUL Card

The Engenuity NUL193 is used to support ISDN applications in older SLC-5 systems, (the NUL193 is not used in SLC-2000, IDB5000, or DDS applications). To determine if an NUL193 is needed, identify the model number of the channel bank's Bank Control Unit (BCU), then consult Table 1. Note that SLC-5 Feature Packages A, B-Mode 2, and D do not support ISDN, with or without the NUL193.

| BCU's Requiring NUL193 |           | BCU's Not Requiring NUL193 |
|------------------------|-----------|----------------------------|
| MC97771A1              | MC97755A1 | MC97724A1                  |
| MC97776A1              | MC97726A1 | MC97724A1B                 |
| MC97725A1              | MC97756A1 | MC97776A1B                 |
|                        |           | MC97755A1B                 |

Table 1. Bank Control Unit (BCU) Model Numbers

**CAUTION - STATIC-SENSITIVE**

This product contains static-sensitive components! Proper electrostatic discharge procedures must be followed to maintain personal and equipment safety. Do not store near magnetic, electromagnetic or electrostatic fields. Always store or ship units in the original static-protective packaging.

- CAUTION -

Use care when installing and removing modules - do not force into place. If a card resists insertion, remove it and check for debris near the connectors and mounting slots, then gently re-insert the card.

-PRECAUTIONARY STATEMENT-

Never install telephone wiring during a lightning storm. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations. Never touch uninsulated telephone wires/terminals unless the telephone line is disconnected at the network interface. Use caution when installing or modifying telephone lines.

-CAUTION-

Use care when installing and removing modules - do not force into place. If a card resists insertion, remove it and check for debris near the connectors and mounting slots, then gently re-insert the card.

## 2. INSTALLATION

The AUA should be installed according to local company practices; however, if none exist, the unit may be installed as described below.

1. **Follow ESD Precautions.** Use/observe proper Electro-Static Discharge precautions and procedures whenever handling the AUA.

2. **Unpack and Inspect.** Gently unpack the AUA and visually inspect it for damage (report damages to shipping company and to Engenuity).

3. **Determine Slot Configurations.** In ISDN applications, the AUA uses 3 DS0 channels to transport 2B+ D service over the carrier. The diagrams in Figure 2 show the channel assignments and card placement in a SLC-5 shelf. Each example is applicable to any SLC-5 tri-group (group of 3 physical slots: 1/2/3, 4/5/6, 7/8/9, or 10/11/12). Note the following:

- A unit configured for ISDN cannot be installed in the 3<sup>rd</sup> slot of a SLC-5 tri-group.
- Local loop connections are made to the odd wire pair of the slot occupied by the AUA.
- When installed in a SLC-2000 or IDB5000 system, the AUA and its associated DS0s occupy any single slot.
- For DDS/Uniport applications, the AUA is configured for single B channel operation (*no required special placement rules*).

4. **Set Switch Options.** Two switch options are located on the AUA's printed circuit board and must be set prior to mounting.

| Switch | Setting | Function  |
|--------|---------|---|
| S2-1   | COT     | Unit installed in a Central Office Terminal (COT)                         |
|        | RT      | Unit installed in a Remote Terminal (RT)                                  |
| S2-2   | ISDN    | ISDN application (2B+D)   |
|        | DDS     | DDS application (B1 only), with Westell Uniport at customer premises end. |

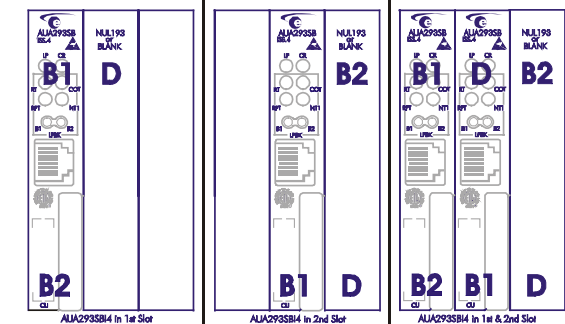


Table 2. PCB Option Switch Settings