



SLC[®] Series 5 Carrier System

**AUA159() (RT) SPOTS[®] Channel Unit-
5SC1WW9 (AUA159),
5SC1W09 (AUA159B),
5SC1WK9 (AUA159C)**

Features/Functions

- Meets appropriate industry standards
- Compatible with universal voice grade (UVG) requirements in TR-NWT-000057
- Automatic level compensation (ALC)
- Compatible with calling number delivery (CND) and calling name delivery (CNAM) services (AUA159B or AUA159C recommended)
- Automatically provides ground- or loop-start service
- Automatically provides POTS or special service loss profile
- On-hook transmission (OHT) (see Table 1)
- Supports *CLASS** services
- Supports Line Side Answer Supervision (LSAS)
- Fast forward disconnect
- No option switches
- Faceplate test access to tip and ring for both channels
- Faceplate BUSY LEDs
- *UL*† Recognized

* Service mark of Bell Communications Research, Inc.

† Registered trademark of Underwriters Laboratories Inc.

Description

The AUA159() channel unit (COMCODE 106018591 for AUA159, 106903396 for AUA159B and 107184798 for AUA159C), also known as a UVG unit, is designed for 2-wire POTS and locally-switched special service. This unit provides two channels of service and is located at the remote terminal (RT). It is equipped with ALC which adds loss when connected to shorter loops. This feature optimizes the loss level for ranges of metallic extensions up to 900 Ω for POTS, or across the carrier serving area (CSA) for locally-switched special service. If a digital loop carrier (DLC) is replacing long metallic loops, the ALC feature minimizes the loss contrast experienced on cutover. The AUA159() furnishes a current feed interface to the customer loop and provides a fast forward disconnect feature [the RT disconnects when the central office (CO) open battery interval is longer than 50 ms].

The selection of the POTS or special services loss profile is determined by the far-end channel unit or provisioning of the digital line unit. If the special services loss characteristic shown in Table 2 is desired for a loop-start circuit (for example, CO centrex), the CO termination must be a *SPOTS*[®] channel unit or a digital line unit provisioned for the *SPOTS* channel unit interface. The greater on-hook loss of the AUA159B relative to the AUA159 enhances its compatibility with CND and CNAM services. The AUA159C differs from the AUA159B by having slightly less on-hook loss that improves impulse noise margin and assures CO-to-customer premises on-hook loss of less than 13 dB, and by providing reverse loop current feed (reverse battery) capability.

When signalled by the AUA39B, *SPQ* 340 or integrated local digital switch, the AUA159C provides reverse loop current feed, which supports the new Line Side Answer Supervision (LSAS) feature of business POTS services. Reverse battery signals "smart" coin telephones that the called party has answered the call and to start billing.

The unit stores in nonvolatile memory an inventory record (including its 10-character *CLEI** code) available for reading by a compatible operations support system (OSS).

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

Compatibility

The AUA159() is compatible with all SLC® Series 5 Carrier System feature packages and with the SLC-2000 Access System. The far-end termination can be any of the following units:

- AUA32 SPOTS channel unit
- AUA39() SPOTS channel unit
- AUA31 POTS channel unit
- AUA38() POTS channel unit
- SLC 96 WP10() POTS channel unit
- SLC 96 WP36() SPOTS channel unit
- SLC-2000 SPQ®300 POTS channel unit
- SLC-2000 SPQ340 SPOTS channel unit
- 5ESS® switch digital carrier line unit (DCLU)
- 5ESS switch integrated digital carrier unit (IDCU)

The AUA159C supports Line Side Answer Supervision (LSAS) when used with an AUA39B, SPQ340, or suitably programmed integrated local digital switch.

Table 1. AUA159() On-Hook Transmission Compatibility

<u>CO</u>	<u>Signaling</u>	<u>Direction</u>	<u>Application</u>		
WP10					
WP10B	LS	COT→RT	CND	MWI	MR*
WP10C					
AUA38()					
WP10D	LS	COT↔RT	CND	MWI	MR
WP36()	LS/GS	COT→RT	CND	MWI	MR*
AUA39	LS†/GS				
AUA39B	LS/GS	COT↔RT	CND	MWI	MR
INTEGRATED:					
POTS CU mode	LS	DCLU↔RT	CND	MWI	MR
SPOTS® CU mode	LS/GS	DCLU↔RT	CND	MWI	MR

* Meter must present off-hook termination when responding to poll.

† For the AUA39, with a 5ESS® switch, set GNDREF option to YES for correct ring trip.

Legend:

LS — Loop-start

GS — Ground-start

CND — Calling number delivery

MWI — Visual message waiting indication

MR — Meter reading

Specifications

Table 2 lists the electrical and transmission specifications that supplement or highlight the detailed information found in Chapter 6 of the Series 5 Applications And Planning Guide, 363-205-010. The parameters are off-hook unless specified otherwise. Table 3 lists the environmental specifications.

Table 2. Salient AUA159() Electrical and Transmission Specifications
(End-to-end performance specified with AUA38() or AUA39() at COT, terminated with $900 \Omega + 2.16 \mu\text{F}$.)

Parameter	POTS	Special Services
Loop resistance (excluding telset)	0 to 900Ω	CSA
1 kHz VF loss between CO and network interface (NIF) at customer location, customer premises equipment (CPE) off-hook	4 dB to 8 dB	2 dB to 5 dB
1 kHz VF loss, AUA159() only, CPE off-hook	1.4 dB to 6 dB	0.0 dB to 3.4 dB
Nominal VF loss, on-hook, AUA159() only		
AUA159	2.8 dB	2.8 dB
AUA159B	4.9 dB to 9.5	6.1 dB to 9.5 dB
AUA159C	3.4 dB to 8 dB	4.6 dB to 8 dB
First installed, telset on-hook		
AUA159	2.8 dB	2.8 dB
AUA159B	6.5 dB	6.5 dB
AUA159C	5 dB	5 dB
Return loss at COT (reference Z of $900 \Omega + 2.16 \mu\text{F}$, AUA159() terminated at voice frequencies with $900 \Omega + 2.16 \mu\text{F}$ for POTS or TR-57 CSA test loops for special services, DC resistance of loop terminations $< 430 \Omega$, CPE on-hook or off-hook)	ERL > 18 dB SRL > 10 dB	ERL > 10 dB SRL > 5 dB
Return loss at RT (reference Z of $600 \Omega + 2.16 \mu\text{F}$, CO terminated with $900 \Omega + 2.16 \mu\text{F}$, DC resistance of 0Ω , CPE on-hook or off-hook)	ERL > 18 dB SRL > 10 dB	ERL > 19 dB SRL > 11 dB
Frequency response (loss relative to 1004 Hz, end-to-end)	300 Hz to 3000 Hz: -0.5 dB to $+1.0$ dB 3200 Hz: -0.5 dB to $+1.5$ dB	
Structural impedance, (hybrid impedance, output impedance)		$600 \Omega + 2.16 \mu\text{F}$
Impulse noise at a threshold of 47 dB _{rnC0} for 15 minutes		≤ 15 counts

Table 3. Environmental Specifications

Temperature Range (Ambient)

Operating -40° to 85°C (-40° to 185°F)
Storage -40° to 85°C (-40° to 185°F)

Relative Humidity, Noncondensing

5% to 95%

Installation and Testing

There are no switches to set on this unit. Procedures for testing the unit are given in AT&T 363-205-402 (TOP).

The AUA159(), in all its applications, is compatible with mechanized loop testing (MLT) and the pair gain test controller (PGTC) and extended test controller (XTC) test systems.

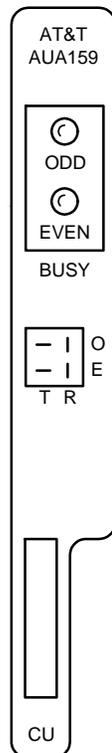
The faceplate jack provides easy test access to the tip (T) and ring (R) of both the odd (O) and even (E) channels.

Faceplate Features

Figure 1 shows the AUA159 faceplate and edge connectors. The faceplates of the AUA159B and AUA159C are similar. Faceplate features of the AUA159() include faceplate busy LEDs and faceplate jack test access to the tip (T) and ring (R) of both the odd and even channels through the ITT RTG16L2H15A channel unit faceplate test cord (COMCODE 405755208).

ODD BUSY (Red LED): The odd channel is busy when lighted.

EVEN BUSY (Red LED): The even channel is busy when lighted.



Edge Connections	
Finger	Function
1	Frame Gnd
2	Ringing Gnd
17, 20, 21	Circuit Gnd
19	Inventory
25, 50	+ 5 Volts dc
26	-48 Volts dc
27	-20 Hz Ringing
29	Tip Even
30	Ring Even
31	Tip Odd
32	Ring Odd
49	-5 Volts dc

Figure 1. AUA159 Faceplate and Edge Connections

References

The following documents provide additional information about the *SLC Series 5 Carrier System* and the *SLC-2000 Access System*:

- AT&T 363-205-010 *SLC Series 5 Carrier System Application and Planning Guide.*
- AT&T 363-205-402 *SLC Series 5 Carrier System Channel Unit Installation and Testing.*
- AT&T 363-208-000 *SLC-2000 Access System Application and Planning Guide.*
- AT&T 915-710-116 *SLC Series 5 Carrier System Channel Unit Application and Prescription Setting.*

Technical Assistance

Follow local procedures for obtaining technical assistance. AT&T also provides in-hours or emergency out-of-hours help for the *SLC Series 5 Carrier System*. Call the AT&T Regional Technical Assistance Center at **1-800-225-RTAC**.

Ordering Information

Additional copies of this document (AT&T 363-005-304) are available from the Customer Information Center — call 1-800-432-6600.

Comments

Comments about this document can be directed to:

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