SLC® Series 5 Carrier System

AUA105( ) (RT) Transmit/Receive Unit (TRU) — 5SPQAAL (AUA105), 5SPQABU (AUA105B)

This data sheet describes the AUA105( ) transmit/receive unit (TRU) (COMCODE 104194550 for AUA105 or 106972094 for AUA105B) and is intended for the end-user of the unit. The AUA105( ) TRU is used in the *SLC*® Series 5 Carrier System Feature Package B (FPB) and Feature Package C with AutoCut (FPC/AC) remote terminal (RT). This unit provides the interface between two digroups of channels (for example, 24 AUA58 dual-channel POTS units), and the digital facility interface [two DS1 LIUs (line interface units) and one LSU (line switch unit)]. It also provides an interface to the DTU (digital test unit) AUA18/AUA19 if installed in the bank.

This data sheet is reissued to add information for the AUA105B TRU which supports hitless routine drop testing with the Teradyne *4TEL** remote measurement unit (RMU). The AUA105B is fully backward compatible with and supersedes the AUA105 TRU [(rated discontinued availability (DA)] in all applicable configurations.

Table 1 lists RT applications using the AUA105( ) TRU. Figure 1 shows the faceplate of the AUA105( ) TRU.

When used with the MC97771A1 or MC97776A1( ) bank control unit (BCU), the AUA105( ) can replace the AUA22 TRU in FPB and is used for Mode 1 or Mode 2 (concentrated) applications. When used with the MC97771A1 or MC97776A1( ) BCU and the AUB27( ) alarm display unit (ADU), the AUA105( ) TRU may be used to provide Mode 1 or Mode 2 capability with craft interface unit (CIU) provisioning of special service channel units (CUs) in the FPB configuration.

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When used with the MC97771A1 or MC97776A1( ) BCU and the AUB27( ) ADU, the AUA105( ) TRU may be used in place of the AUA21 TRU in FPC/AC RT configurations to provide the capability for automatic cutover to an integrated FPB Mode 1 RT with the continued capability for CIU provisioning of special service CUs.

When used with an MC97776A1B BCU, the AUA105B TRU supports hitless routine metallic drop testing. The enhanced TRU and BCU are only required when the site is equipped for nightly drop testing by the Teradyne *4TEL* RMU in conjunction with the AUA176 line test translator (LTT) and ED7C719-30 line test fan-out (LTF) units.

The AUA105( ) TRU must be used to provide the 2:1 concentration for FPB Mode 2. It provides *SLC* 96 Carrier time assignment unit (TAU) functions, to concentrate a dual digroup (48 channels) of CUs (channel units) to a single DS1 facility, serving 24 channels. The AUA105( ) is installed in the TRU slot of the RT bank, and in Mode 2 requires a single LIU for transmission to/from the DS1 line.

In FPC/AC operation the AUA105( ) uses D4 polling; in FPB (Mode 96) operation it uses D1D polling. The mode of operation is under BCU control.

The TRU synchronizes all the plug-ins serving a 48-channel shelf of the *SLC* Series 5 Carrier System bank.

In the transmit direction, the AUA105( ) sends the channel polling signals to the CUs, gets the transmit PCM (pulse code modulation) bit stream from the CUs in each digroup, and time division multiplexes the channels into a 4.096 Mb/s PCM format for each digroup. In FPB Mode 1 or FPC/AC, the TRU dual feeds the formatted signals to the two LIUs and to the LSU. The TRU also receives the 4 kb/s data link from the bank controller (BC) and inserts it into the transmitted signal.

In the receive direction the TRU receives 4.096 Mb/s PCM from both the LIUs and LSU. The TRU selects among these inputs based on instructions from the BCU. The BCU distributes the two PCM formatted signals and channel polling control signals to the two digroups. The TRU also extracts the 4 kb/s data link from the received signal and sends it to the BC.

In FPB and FPC/AC, the AB shelf TRU inserts in and extracts out of the A digroup DS1 signal a data link for use by the bank controller. FPB uses the derived bit-oriented data link described in TR-08; FPC/AC uses a derived X.25 message-oriented data link. The A digroup data link carries alarm, maintenance, and protection switching data (the FPC/AC data link carries additional information) between the RT and COT or switch for the system. In FPB Mode 2 systems, the A digroup data link carries, in addition to the above mentioned data for the system, AB shelf channel assignment and deassignment data for use by the concentration controller on the AB shelf TRU. In FPB Mode 2 systems, the CD shelf TRU embeds in the C digroup DS1 signal a second data link. This second data link carries CD shelf channel assignment and deassignment data

for use by the concentration controller on the CD shelf TRU.

In Mode 1, the TRU receives three 4 kHz clocks — one from each of the two LIUs with which it works, and one from the LSU. The TRU automatically selects one of these clocks as a reference and phase locks its voltage controlled oscillator (VCXO) to that reference. The VCXO generates a 4.096 MHz clock. In FPB Mode 2, time slot assignments in a shelf are made by the time slot interchanger (TSI) on the shelf's TRU. Channel units in the AB shelf are assigned timeslots on the A digroup DS1 by the AB shelf TRU. Channel units in the CD shelf are assigned timeslots on the C digroup DS1 by the CD shelf TRU. In all other modes direct maps of time slots are made between the corresponding shelf digroups.

The following LED indicators are located on the faceplate of the AUA105( ) TRU.

FAIL (Red LED): When lighted, this LED indicates a failure has been sectionalized to this TRU.

ON PROT (Two Yellow LEDs): When lighted, this indicates that the digroup to which the associated arrow is pointing is currently being carried by the protection line.

SPL (Red LED): When lighted in Mode 2, this indicates that a special service channel unit has been plugged into the wrong slot.

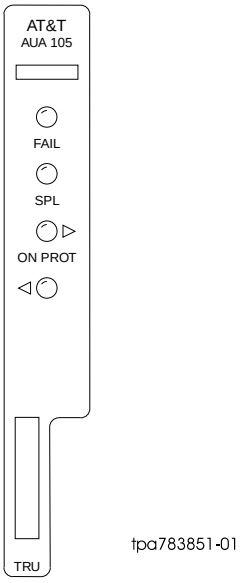

Figure 1. AUA105 TRU Faceplate

Table 1. FPB/FPC/FPC–AutoCut Applications

Service Configurations (Notes 1 and 2)	BCUs			ADUs		TRUs			LIUs
	MC97724A1	MC97771A1 MC97776A1	MC97776A1B (Universal BRITE II)	AUB24	AUB27( )	AUA22	AUA109	AUA105(_)	AUA61(_) AUA62(_) AUA64(_)
FPB Without Provisionable Specials:									
FPB/U/M1	✓			✓		✓			Any Series
		✓	✓	✓	✓	✓	✓	✓	
FPB/U/M2		✓	✓	✓	✓			✓	*D* Series
FPB/I/M1	✓			✓		✓			Any Series
		✓	✓	✓	✓	✓	✓	✓	
FPB/I/M2		✓	✓	✓	✓			✓	*D* Series
FPB with Provisionable Specials:									
FPB/SS/U/M1		✓	✓		✓	✓	✓	✓	Any Series
FPB/SS/U/M2		✓	✓		✓			✓	*D* Series
FPB/SS/I/M1		✓	✓		✓	✓	✓	✓	Any Series
FPB/SS/I/M2		✓	✓		✓			✓	*D* Series
FPC and FPC with AutoCut: (Notes 3 & 4)									
FPC/AC (Note 5)		✓	✓		✓		✓	✓	*C* or *D* Series
FPC			✓	✓	✓				Any Series

Notes:

1. Where more than one unit is checked for a particular configuration, any of the units checked may be used.
2. In all cases, Mode 2 capability can be converted to Mode 1 by changing the ADU option setting and adding two LIUs.
3. The MC97771A1 and MC97776A1() BCUs in FPC and FPC/AC support all FPC services except the DCU. The MC97756A1 BCU supports the DCU.
4. The MC97755A1B must be used in the FPC COT to support BRITE.
5. FPC/AC automatically cuts to FPB/SS/M1. By installing D LIUs and AUA105( ) TRU, the RT will be equipped for later conversion to Mode 2.

Abbreviations:

ADU — Alarm Display Unit
BCU — Bank Control Unit
DCU — Digital Connectivity Unit
FPB — Feature Package B
FPC/AC — Feature Package C-AutoCut
I — Integrated
LIU — Line Interface Unit
M1 — Mode 1
M2 — Mode 2 (Concentrated)
SS — Special Services (Provisionable)
TRU — Transmit/Receive Unit
U — Universal

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**.

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