SLC® -2000 Access System

SPQ®336 (COT) Quad DPO Channel Unit — SACPCC0

Features/Functions

- Meets appropriate industry standards for DID service
- Compatible with locally-switched loop reverse battery signaling requirements in TR-NWT-000057
- No option switches
- Faceplate BUSY LEDs
- Faceplate test access to tip and ring for four channels
- Enhanced inventory readout
- UL* Recognized

* Registered trademark of Underwriters Laboratories Inc.

Description

This data sheet describes the *SPQ*336 central office terminal (COT) quad direct-inward-dial (DID) channel unit (CU) (COMCODE 107580409) and is intended for the end-user of the unit. The *SPQ*336 CU is a current feed (CF) unit that provides the dial pulse originate (DPO) function between the DID trunk circuit of a central office and the *SLC* -2000 Access System. The *SPQ*336 COT Quad DPO channel unit can also be used for non-locally switched DID applications, where it provides the analog interface between the dial pulse terminate (DPT) end of a trunk circuit and the loop carrier system. Examples of carrier circuits providing the DPT trunk interface would include the J98726BB 2-wire DPT channel unit.

The *SPQ*336 channel unit can provide four channels of service and will always

be located at the COT end of the channel. The remote terminal (RT) end of the channel may be terminated by an *SPQ*456 DID channel unit or an *SPQ*442 channel unit.

The *SPQ*336 detects loop closure information from either the central office (CO) or DPT type trunk circuit and transmits this information digitally to the RT. Similarly, the *SPQ*336 receives digitally encoded reverse battery signaling information from the RT and applies this signaling toward the CO or DPT type trunk circuit.

The *SPQ*336 channel unit is a voice-frequency unit that provides 0 dB gain in both the transmit and receive directions. The solid-state voice path interface is designed with a structural impedance that provides high return loss against 875 ohms in series with 2.16 microfarads. This interface is not hardened and cannot face the outside plant. During the idle condition, the channel unit codecs are powered down, while the microcomputer continually monitors signaling and bank controller information.

The *SPQ*336 CU stores in non-volatile memory a complete plug-in inventory record including its 10-character *COMMON LANGUAGE*[1] *CLEI* code.

Figure 1 shows the faceplate diagram and edge connector functions for the unit. Table 1 lists the electrical and transmission specification for the *SPQ*336/ *SPQ*456 pair.

Facility Failure

When the bank controller notifies the channel unit that a facility failure has occurred, the *SPQ*336 CU responds by transmitting a no loop closure code to the RT and applying a 2.5 second normal/reverse battery wink toward the CO or DPT trunk circuit to disconnect the switch and then to busy out the channel.

Test Access

Local test access to the *SPQ*336 CU is available through the faceplate test jack. Remote test access is not available.

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

Compatibility

The *SPQ*336 channel unit is supported by Release 3.3 (or later) of the *SLC*-2000 Access System in a universal configuration. The far-end termination can be any of the following units.

- *SPQ*456 quad DPT channel unit
- AUA56( ) dual DPT channel unit
- AUA42( ) dual E *SPOTS*® channel unit, DPT function code
- *SPQ*442 quad E *SPOTS* channel unit, DPT function code

The CO side of the *SPQ*336 channel unit is compatible with a DID trunk circuit of the local switch and with the DPT end of an inter-central office carrier circuit.

Specifications

Table 1 gives the electrical and transmission specifications for an *SPQ*336/*SPQ*456 channel unit pair.

Table 1. *SPQ*336/*SPQ*456 Electrical and Transmission Specifications

Parameter	Condition	Value
1 kHz VF loss* off-hook (± 0.5 dB typical, ± 1.0 dB max)		0 dB, 2.5 dB
Frequency response (loss relative to 1004 Hz)	Frequency range 60 Hz 400-2800 Hz	 > 21 dB -0.5 dB to +0.75 dB
Gain Tracking† (loss relative to 0 dBm0)	-37 dBm0 to +3 dBm0 -50 dBm0 to -37 dBm0	± 0.5 dB max. (± 0.25 dB avg.) ± 1.0 dB max. (± 0.5 dB avg.)
Return loss at COT‡		ERL ≥ 18 dB, SRL ≥ 12 dB
Return loss at RT§		ERL ≥ 19 dB, SRL ≥ 12 dB
Idle channel noise (at the COT and RT)		20 dBrnC max.
Impulse noise	Measure at 47 dBrnC0 for 15 min.	≤ 15 counts
Overload at the COT and RT	+3 dBm0	≤ 0.5 dB extra loss
Signal-to-distortion	0 dBm0 to -30 dBm0 -30 dBm0 to -40 dBm0 -40 dBm0 to -45 dBm0	> 33 dB > 27 dB > 22 dB
System generated tones	0 < f < 16 kHz	< -50 dBm0
Single frequency distortion	0 - 12 kHz, 0 dBm0 1004 - 1020 kHz, 0 dBm0	< -28 dBm0¶ < -40 dBm0**
Intermodulation distortion (4-tone method, -13 dBm0 input)	A-B (R2) product 2A-B (R3) product	> 43 dB > 44 dB
Data pulse distortion peak-to-average ratio (P/AR)		>90
Cross talk (0 dBm0 input, 200 Hz to 3400 Hz)	C-message weighting	≤ -65 dBm0

* Measured as the inserted connection loss (ICL) with the RT terminated in 600 ohms and with the COT terminated in 900 ohms.

† At 1004 Hz, off-hook

‡ Measured with respect to 900 ohms +2 µF with the RT end terminated in 600 ohms +2 µF.

§ Measured with respect to 600 ohms +2 µF with the COT end terminated in 900 ohms +2 µF.

¶ At any other frequency, 0 to 12 kHz.

** At any other frequency, 0 to 4 kHz.

Installation and Testing

There are no switches to set on this unit. Procedures for testing the unit are given in AT&T 363-208-001 Issue 5 *SLC*-2000 *Access System User/Service Manual.*

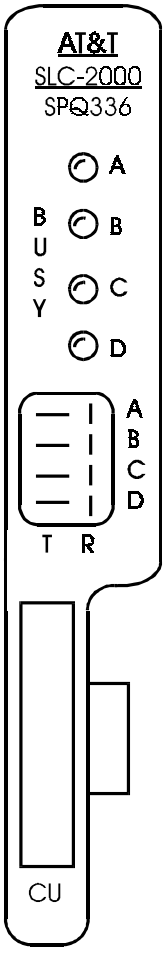
The faceplate jack provides easy test access to the tip (T) and ring (R) of all four channels (A, B, C, D) through the channel unit faceplate test cord adapter part number CiPT-5 from CI Network Products; (708-806-6300).

Faceplate Features

The *SPQ336* has one test access faceplate jack and four red LED indicators. Refer to Figure 1 for faceplate and edge connections.

The faceplate LEDs indicate as follows:

- **A BUSY** (Red LED): When lit, indicates that the A channel is busy.
- **B BUSY** (Red LED): When lit, indicates that the B channel is busy.
- **C BUSY** (Red LED): When lit, indicates that the C channel is busy
- **D BUSY** (Red LED): When lit, indicates that the D channel is busy



Edge Connections	
Finger	Function
1	Frame Gnd
2	Ringing Gnd
3	T 3rd channel
4	R 3rd channel
5	T 4th channel
6	R 4th channel
17, 20, 21	Circuit Gnd
22, 23, 25, 50	+5 Volts DC
26	-48 Volts DC
27	Ringing
29	T 2nd channel
30	R 2nd channel
31	T 1st channel
32	R 1st channel
49	-5 Volts DC

Figure 1. *SPQ*336 Faceplate Diagram and Edge Connections

References

The following documents provide additional information about the *SLC*-2000 Access System:

AT&T 363-208-000	*SLC*-2000 *Access System Application, Planning, and Ordering Guide*
AT&T 363-208-001	*SLC*-2000 *Access System User/Service Manual*
AT&T 363-005-343	*SPQ456* (RT) Quad DPT Channel Unit Data Sheet

Technical Assistance

Follow local procedures for obtaining technical assistance. AT&T also provides in-hours or emergency out-of-hours help for the *SLC*-2000 Access System. Call the AT&T Regional Technical Assistance Center at 1-800-225-RTAC.

Ordering Information

Additional copies of this document (AT&T 363-005-334) 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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