PG-Flex*Plus* CPOTS 6 Channel Central Office POTS Channel Unit – Quick Installation Guide

Overview

The FPC-806 CPOTS card provides the Central Office (CO) Plain Old Telephone Service (POTS) function in the PG-Flex*Plus* distributed DLC platform.

Features

Features supported by the FPC-806 include:

- Six Central Office (CO) POTS interfaces
- Loop Start/Ground Start (LS/GS) and Direct Inward Dialing (DID) services
- MLT and Subscriber Drop Testing support

Applications

When used in conjunction with the supported system configurations, the FPC-806 enables the system to create a universal DLC Central Office Terminal (COT) that accepts POTS interfaces from the switch and multiplexes the POTS onto channelized DS1s for transport to remote DLC locations. The following applications can be supported with the FPC-806:

- Universal DLC COT to DLC Remote Terminal
- Universal DLC COT to 3rd Party Remote DLCs
- System Support for DID

Universal DLC COT to DLC Remote Terminal

The system can be deployed in a universal configuration using POTS interfaces into the switch as an option to using digital DS1s. In this configuration, a system shelf populated with FPC-806 CPOTS cards operates as the DLC COT providing VF POTS interfaces to the switch. The COT multiplexes the voice channels onto DS1s that terminate on a remote system shelf. The remote system shelf can be placed in a CO, CEV or outdoor cabinet; anywhere that the DS1 facility can be delivered.

When operating in universal mode, back-to-back with a remote system CO shelf, the remote shelf communicates the drop testing results through overhead communications to the CO shelf where the MLT reads the TR-909 signatures from the CO shelf.

Using the overhead communications in the universal configuration allows the system to support drop testing without the need for a metallic bypass pair to the remote shelf.

The 96 channels delivered to the system Remote shelf can be directly dropped off at the shelf via the FPR-806 or delivered to subtended line-powered, micro-DLC remotes ranging from four to 24 channels in size.

Universal DLC COT to 3rd Party Remote DLCs

Using the FPC-806 POTS cards, the system can also function as a DLC COT to a 3rd party DLC remote using industry standard TR-08 channel bank interfaces. Automated MLT testing is not supported through the combination of the system and 3rd party DLC remote

System Support for DID

The system supports DID to a Private Branch eXchange (PBX). DID can be served in a universal system configuration where the DID lines enter the CO shelf through FPR-806 cards and the PBX interfaces to the remote system shelf through the FPC-806 cards.

Front Panel

Figure 1 shows the FPC-806 List 1 front panel and Table 1 describes the front panel LEDs.

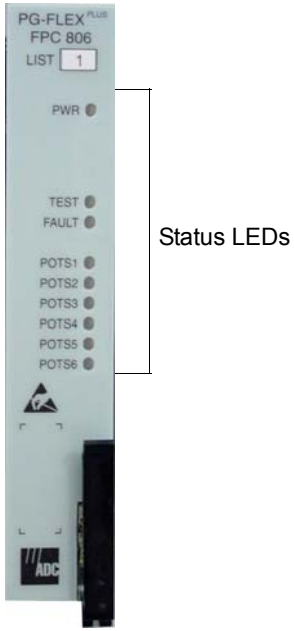

Figure 1. FPC-806 Front Panel

Table 1. FPC-806 Front Panel LEDs

LED	Color	State	Function
PWR	Green	On	Receiving power
		Off	Not receiving power
TEST	Yellow	Flashing	Subscriber Drop Testing is in progress
		Off	No Subscriber Drop Testing in progress
FAULT	Red	On	Fault in the FPC-806
		Flashing	PMX-744 removed
		Off	No fault is detected
POTS# (# = 1 – 6)	Green	On	Off Hook
		Ring Cadence Flash	Channel is ringing
		Slow Flash	Channel is in test
		Off	Channel is idle

Table 2 lists the LED indications for the FPC-806 diagnostic and maintenance modes.

Table 2. FPC-806 Diagnostic Indicators

Indicator	Description	Action
PWR LED On, all other LEDs flashing	FPC-806 is running in Boot Mode	Application software must be reinstalled. Contact Product Support for additional information.
PWR LED On, all other LEDs sequencing downward	Software download to FPC-806	Wait for download to complete and FPC-806 to restart
Fault LED On, All other LEDs Off	FPC-806 hardware failure	Replace FPC-806

INSTALLATION

You can install the FPC-806 in any slot except the three positions labeled COMMON, MUX 1 and MUX 2. Refer to the cabling tables provided in the COTS documentation for slot and Telco cabling assignment. Observe that all LEDs briefly blink on and then off, with the exception of the PWR LED that remains On.

CONFIGURATION

Refer to the FPC-806 Technical Practice for detailed information on configuring the FPC-806.

System Configurations Supporting the FPC-806

Table 3 summarizes the supported cards for an universal DLC configuration in which the FPC-806 is used to provide VF POTS interfaces to the switch.

Table 3. System Supported Shelf and Card Configurations

Catalog Number	Description	Notes
	PG-Flex*Plus* Shelf	
PCS-719 L1A	23” Shelf	1
PCS-719 L3	23” Shelf with DS3 UNI Support	1
PCS-718 L1	19” Shelf	2
PCS-718 L2	19” Shelf, Wire-Wrap	2
	Management Options	
AMU-912 L1	Management Unit	
	T1 Multiplexer Options	
PMX-744 L1B	8-Port DS1 Multiplexer	
	Line Unit Options	
FPC-806 L1	6-Port CPOTS	

1. PCS-719 with 16 LU slots has 96-channel POTS capacity
2. PCS-718 shelf with 12 LU slots has 72-channel POTS capacity

SUBSCRIBER DROP TESTING

The FPC-806 provides the interface to initiate a subscriber drop test on the corresponding six subscriber tip and ring pairs located at the remote terminal. Simultaneous testing of multiple tip and ring pairs is not supported. Tests performed are detailed in Table 4.

Table 4. DC Resistive Signatures

Test	Failure Condition
RT Equipment Failure	RT detected, but no response from RT
Foreign Voltage on Drop	TG or RG > 10 Vrms TG or RG > 6 Vdc
All Tests OK	No failure detected
Ringer Test	REN > 5.0 or REN < 2.0
Resistive Fault on Drop	TG, RG or TR ≥ 150 kΩ
Receiver Off-Hook	Phone is off-hook
Hazardous Potential on Drop	TG or RG > 50 Vrms TG or RG > 135 Vdc
COT/RT Facility Failure	RT not detected

Note: The resistive signatures on the AMU-912 are biased to -14 Vdc.

FAULT ISOLATION AND TROUBLESHOOTING

Table 5 provides fault isolation and troubleshooting for the FPC-806.

Table 5. Fault Isolation and Troubleshooting

LED	State	Probable Cause	Solution
PWR	On	OK	
	Off	• No input power • Shelf power fuse blown • FPC-806 processor stopped	• Verify fuses on bay fuse panel • Check input power on the COTS Shelf battery terminations • Remove and re-insert FPC-806 • Replace the FPC-806
FAULT	On	Problem with FPC-806	Replace the FPC-806
	Flashing	PMX-744 card missing from shelf	Make sure PMX-744 is installed
	Off	OK	

SPECIFICATIONS

Table 6 lists the specifications for the FPC-806.

Table 6. FPC-806 Specifications

Category	Item	Value
Electrical	Input Voltage	-42 Vdc to -56.5 Vdc
	Input Power	Less than 40 W with four lines off hook and two lines ringing 5 REN each
POTS Specifications	Analog Impedance	900 Ω
	DC Off-Hook Resistance	1 k Ω (max)
	DC On-Hook Resistance	4 m Ω (min)
	Ringer Load	0.9 REN @ 20 Hz (max)
	Ringer Detection at COT	65 Vrms @17 to 53 Hz
	Resistive Signature	Tip-Ground: 162 k Ω Ring-Ground: 162 k Ω Tip-Ring: 37.4 k Ω
POTS Interface	Supports Loop Start/Ground Start (LS/GS) POTS	
Environmental	Elevation	-200 ft. to 13,000 ft. -60 m to 4,000 m
	Temperature	-40° F to +150° F -40° C to +65° C
	Humidity	5% to 95% (non-condensing)
Compliance	NEBS	SR-3580 Level 3
	ESD	Per GR-1089-CORE
	Power Cross and Lightning Surge	Per GR-1089-CORE
	Human Safety	UL-1950 for Restricted Access
	Emissions Radiation and Immunity	GR-1089-CORE for Class A equipment
Physical	Height	5.5 in. (14.0 cm.)
	Width	1.1 in. (2.8 cm.)
	Depth	10.25 in. (26.0 cm.)
	Weight	0.6 lbs. (0.27 kg.)

Limited Warranty

Product warranty is determined by your service agreement. Refer to the ADC Warranty/Software Handbook for additional information, or contact your sales representative or Customer Service for details.

FCC Class A Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by ADC voids the user's warranty.

All wiring external to the product(s) should follow the provisions of the current edition of the National Electrical Code.

Technical Support

Technical assistance is available 24 hours a day, 7 days a week by contacting the ADC Technical Assistance Center (TAC) at:

Telephone:	800.366.3891 (toll-free in the U.S. and Canada)
E-mail:	wsd_support@adc.com
Knowledge Base:	http://adc.com/Knowledge_Base/index.jsp
Web:	www.adc.com

Revision History

Rev	Date	Revisions
01	3/24/2003	Initial Release

PG-Flex*Plus*
CPOTS 6 Channel
CO POTS Channel Unit
Quick Installation Guide

Section SCP-FPC806-010-01Q
Issued March 24, 2003

1260298

This document applies to the following products:

Model	List	CLEI
FPC-806	1	VAL4T20E~~

ISO 9001
DNV
DNV Certification, Inc.
Certificated Firm

ADC®