PMC VoIP PRI Expansion card

Teldat Dm602-I

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Warranty

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Chapter 1 About This Guide

This installation guide contains the step by step instructions you need to follow to correctly install, uninstall and replace the PMC-1PRI expansion card in the ATLAS router family.

1.1 Supported Devices

The information contained in this installation guide only applies to the PMC-1PRI expansion card.

1.2 Warnings and notes

Observe the warnings and instructions given in this manual to avoid and prevent injuries or damage during installation and maintenance. Please follow the security procedures and guidelines when working near electrical equipment. The warnings and notes are provided in each chapter as appropriate.

1.3 Who should read this manual?

This manual should be read by installers and network administrators who need to install, configure or maintain networks. This guide assumes that the installer is familiar with network electronics and technologies.

1.4 What is in this manual?

This installation guide contains the following information:

- Description of the general characteristics of the PMC-1PRI expansion card.
- Description of the steps that need to be carried out to install the PMC-1PRI expansion card in the ATLAS routers.
- Description of the PMC-1PRI expansion card LEDs and connector pinouts.

1.5 How is the information organized?

This document aims to provide all the information necessary for installing the PMC-1PRI expansion card in the ATLAS router family.

- PMC-1PRI expansion card characteristics.
- PMC-1PRI expansion card connectors.
- Requirements prior to installation.
- Installing the PMC-1PRI expansion card.

1.6 Technical Support

Teldat SA offers a technical support service.

Contact information:

Web: http://www.teldat.com

Tel.: +34 918 076 565

Fax: +34 918 076 566

Email: support@teldat.com

1.7 Related documentation

Dm605-I *PMC Expansion Cards ATLAS 60 Installation*.

Dm748-I *Software Updating*.

Dm770-I *VoIP Interfaces.*

ATLAS router family installation manuals.

The manufacturer reserves the right to make changes and improvements to the appropriate features in both the software and hardware of this product, modifying the specifications of this manual without prior notice.

The images presented on the front and back panels of the devices are provided as an information guideline. Some small modification can exist in the actual device.

Chapter 2 PMC-1PRI expansion card

The PRI ISDN interface is a digital interface that allows you to establish multiple calls over a physical interface, at a rate of 64 or 56 Kbps. The number of calls depends partly on the type of interface (up to 30 calls over an E1 interface and up to 23 for a T1 interface) and partly on the number of time-slots reserved for the calls.

The PMC-1PRI expansion card contains a primary access. From a behavioral viewpoint, it can operate as E1 with ITU-T Q.931 (both in user and network formats), QSIG and R2 signaling. Only audio calls are supported.

By default, the interface is configured to operate as E1 without specifying any signaling or the number of channels assigned to calls.

Note

T1 interfaces are currently not supported for this type of card.

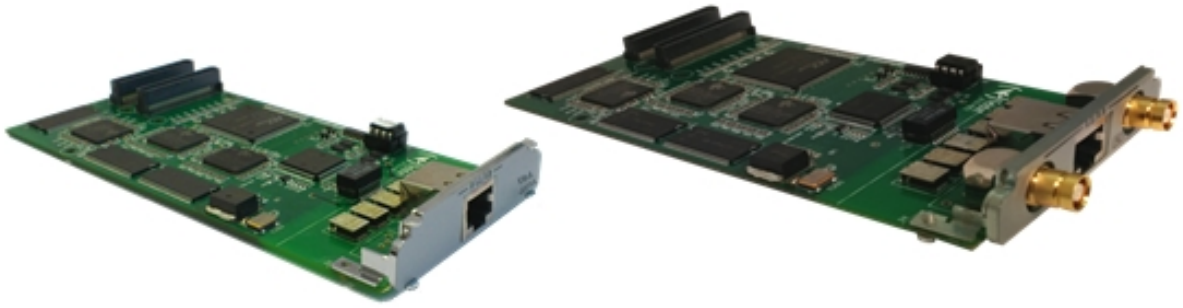

Fig. 1: PMC-1PRI Card

2.1 PMC-1PRI expansion card: Characteristics

The main characteristics of the PMC-1PRI expansion card are as follows:
PMC-1PRI Card: Characteristics

Ports	• 1 RJ-45 port. • 2 coaxial connectors (depending on the type of card).
Standards	ITU-T • G.711 • G.729A • G.723.1
Channels	30 simultaneous voice channels with any codec.
Speed	2 Mbps duplex.
Other characteristics	• Echo cancellation. • Silence detection. • DTMF detection (*"Dual-Tone Multi-Frequency").* • Includes all the necessary codec chips.

2.2 PMC-1PRI expansion card: Connectors

Figure 2shows the front board of the two types of PMC-1PRI cards:

Fig. 2: Front of the PMC-1PRI Cards

The front board elements are as follows:

Elements Table for the Front of the PMC-1PRI Cards

Item	Description
A	E1/T1. RJ45 connector.
B	E1/T1. Tx, coaxial connector for transmission.
C	E1/T1. Rx, coaxial connector for reception.

Chapter 3 Installing the PMC-1PRI expansion card

This chapter provides information on how to install and uninstall the PMC-1PRI expansion card in the ATLAS routers.

This information includes:

- Requirements prior to installation.
- Instructions on how to install or replace a PMC-1PRI expansion card.

3.1 Requirements prior to installation

To configure the card, you must be able to access the ATLAS router through a console or a Telnet connection. For further information, please see the section on “Connecting for configuration” found in the ATLAS router installation manuals.

For PMC cards to operate properly, load the appropriate firmware file for each card in the router.

If the firmware has not been loaded in the device before installing the card, you can determine what firmware file you need.

3.1.1 Determining the firmware file

There are two options to determine the firmware file needed for the PMC card installed:

3.1.1.1 FTP “quote site listfirmwares” command

The FTP command **quote site listfirmwares** returns a list with the names of the firmware files needed for the device to operate properly:

```
ftp> quote site listfirmwares
211 fw00000X.bfw
ftp>
```

3.1.1.2 The “system firmwares-required” Monitoring command

The **system firmwares-required** (monitoring menu) displays the same information as the previous command, but in the local console:

```
+system firmwares-required

List of required firmwares for detected hardware
------------------------------------------------
   Filename                       Description
-------------- ------------------------------------------------
 fw00000X.bfw   VoIP Audiocodes ACXXXX v.xxxx
+
```

Once the necessary firmware file has been detected, load it in the device through an FTP connection.

For further information on how to load firmware files in the router, please see manual “*Dm748-I Software Updating”* .

3.2 Installing or replacing the PMC-1PRI expansion card

To install or replace a PMC-1PRI expansion card, please see the generic installation manual for PMC cards that match the ATLAS router model where the installation is being carried out.

Chapter 4 LEDs and connector Pinouts: Description

This chapter provides information on the PMC-1PRI expansion card LEDs and connector pinouts.

4.1 PMC-1PRI expansion card: LEDs

The PMC-1PRI expansion card doesn't have any LEDs of its own.

4.2 Connector Pinouts

The PMC-1PRI expansion card is equipped with an RJ-45 connector or with one RJ-45 and two coaxial connectors.

4.2.1 RJ-45 Connector

The following figure shows the RJ-45 connector pinouts. This is normally used in balanced connections with an impedance of 120 Ohms.

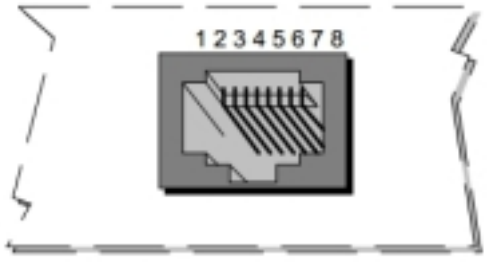

Fig. 3: RJ-45 connector pinouts

Table 3 shows the information associated to each connector pinout:

RJ-45 connector pinouts

RJ-45 pinouts	Signal
1	Rx+
2	Rx-
3	--
4	Tx+
5	Tx-
6	--
7	--
8	--

From the card's point of view, TX signals are considered outgoing and RX signals incoming.

We recommend that you use a 26 AWG cable at the very least. This may be supplied with the card itself or be described in the safety instructions.

Warning

To reduce the risk of fire, only use a 26 AWG cable or a cable with a larger diameter.

Note

The RJ45 to BNC adapter cable cannot be used together with this card.

4.2.2 Coaxial connector

This is normally used in unbalanced connections with an impedance of 75 Ohms.

Appendix A Regulatory compliance and safety information

A.1 Translated Safety Warnings

	To reduce the risk of fire, only use a 26 AWG cable or a cable with a larger diameter.
	Чтобы снизить риск воспламенения, используйте только кабель 26 AWG или кабель большего диаметра.
	Pour réduire le risque d'incendie, utilisez uniquement un câble 26 AWG ou de diamètre plus grand.
	Para reducir el riesgo de incendio, utilice sólo un cable 26 AWG o de un diámetro mayor.

A.2 Compliance

A.2.1 FCC Statement

A.2.1.1 Federal Communications Commission Interference

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, forcing the user to bear the cost of any potential repair.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

A.2.1.2 FCC Part 68 Notice

This equipment complies with Part 68 of the FCC rules and the requirements adopted by ACTA. On the bottom of this equipment is a label that contains, among other information, a product identifier (US:TLDOTNANPMC-1PRI). If requested, this number must be provided to the telephone company.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. However, if no prior notice can be given, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will let you know in advance so you can make all necessary modifications to maintain uninterrupted service.

If you experience trouble with this equipment, please disconnect it from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. Please follow instructions for repairing if any (e.g. battery replacement section). Otherwise, do not alternate or repair any parts of device that have not been specified.

If the telephone company requests information on the equipment connected to their lines, please give them:

(a) The telephone number this unit is connected to,

(b) The ringer equivalence number [NAN]

(c) The USOC jack required [RJ48C], and

(d) The FCC Registration Number [TLD]

Items (b) and (d) appear on the label. The ringer equivalence number (REN) is used to calculate the number of devices that can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5). If too many devices are attached, they may not ring properly.

A.2.1.3 Service Requirements

In the event of equipment malfunction, all repairs must be performed by our Company or an authorized agent. It is the responsibility of users requiring service to report the need for service to our Company or to one of our authorized agents. Contact details can be found at:

http://www.part68.org//tteDetails.aspx?id=95241

A.2.2 IC Statement

A.2.2.1 CAN ICES-3 (A)/NMB-3(A)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled “Digital Apparatus” (ICES-003) issued by the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: “Appareils Numériques,” NMB-003 édictée par le ministère des Communications.

A.2.2.2 IC Notice

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications.

Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.

The Ringer Equivalence Number (REN) refers to the maximum number of devices that can be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas cinq.