TBC1-1SS Expansion Card

bintec Dm622

Legal Notice

Warranty

This publication is subject to change.

bintec offers no warranty whatsoever for information contained in this manual.

bintec is not liable for any direct, indirect, collateral, consequential or any other damage connected to the delivery, supply or use of this manual.

Table of Contents

Chapter 1 About This Guide

This installation guide contains the step by step instructions that you need to follow in order to correctly install, uninstall and replace the TBC1-1SS expansion card in the bintec RM3000 / RM5000 / RM7000 routers.

1.1 Supported Devices

The information contained in this installation guide only applies to the TBC1-1SS 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 system administrators who are responsible for installing, configuring or maintaining 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:

- A description of the general characteristics of the TBC1-1SS expansion card.
- A description of the steps to carry out to install the TBC1-1SS expansion card.
- A description of the TBC1-1SS expansion card LEDs and the pinouts for their connectors.

1.5 How is the information organized?

This document aims to provide all the information necessary for installing the TBC1-1SS expansion card in the bintec RM3000 / RM5000 / RM7000 routers.

- TBC1-1SS expansion card characteristics.
- TBC1-1SS expansion card connectors.
- Requirements prior to installation.
- Installing the TBC1-1SS expansion card.

1.6 Technical Support

bintec elmeg offers a technical support service. Device software can be upgraded on a regular basis for maintenance purposes and for new features.

Contact information:

Web: http://www.bintec-elmeg.com

Tel. No.: +49 - 911 - 9673 0

Fax: +49 - 911 - 688 0725

Email: support@bintec-elmeg.com

1.7 Related documentation

bintec Dm569-I *bintec RM3000 Installation.*

bintec Dm705-I *bintec Generic Serial Interfaces.*

> **Note**
>
> 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 showing the front and back panels of the device are for information purposes only. Some small modifications may exist in the actual device.

Chapter 2 TBC1-1SS Expansion Card

A serial port is a physical serial communication interface through which information, sent or received, is transferred one bit at a time over the same cable.

Depending on the type of transmission, the serial ports can be synchronous or asynchronous. In this particular case, the mode is configurable.

For further information about configuration commands, please see manual bintec Dm705-I *bintec Generic Serial Interfaces.*
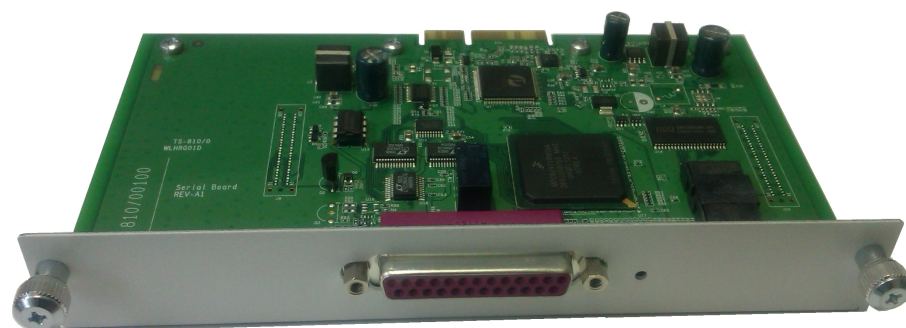
Fig. 1: TBC1-1SS Card

2.1 TBC1-1SS Expansion Card: Characteristics

The main characteristics of the TBC1-1SS expansion card are as follows:

TBC1-1SS Card: Characteristics

Port	1 DB-25 port.
Standards	• V.24 • V.35 • X.21 *Configurable through software.
Speed	Up to 2 Mbps full-duplex.
Operating modes	Depending on the cable: • DTE *(Data Terminal Equipment)* . • DCE *(Data Circuit-Terminating Equipment)* .

2.2 TBC1-1SS Expansion Card: Connectors

Figure 2 shows the front board of the TBC1-1SS card:

Fig. 2: Front of the TBC1-1SS Card

The front board elements are as follows:

Elements Table for the Front of the TBC1-1SS Card

Item	Description

A	DB-25 connector.
B	Lateral screws to screw in the cable.
C	LED.

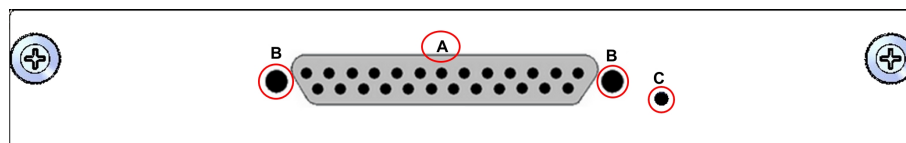# Chapter 3 Installing the TBC1-1SS expansion card

This chapter provides information on how to install and uninstall the TBC1-1SS expansion card in the bintec RM3000 / RM5000 / RM7000 routers.

This information includes:

- Requirements prior to installation.
- Installing or replacing a TBC1-1SS expansion card.

3.1 Requirements prior to installation

To configure the card, you must be able to access the bintec RM3000 / RM5000 / RM7000 router through a console or a Telnet connection. For further information, please see the *Connecting for Configuration* section under the *bintec Dm569-I bintec RM3000 Installation* manual.

3.2 Installing or replacing the TBC1-1SS expansion card

To install or replace a TBC1-1SS card, please see the *Expansion Slot* section in the *bintec Dm569-I bintec RM3000 Installation* manual.

Chapter 4 LEDs and Connector pinouts: Description

This chapter provides information on the TBC1-1SS expansion card LEDs and the connector pinouts.

4.1 TBC1-1SS expansion card: LEDs

The TBC1-1SS expansion card has one LED:
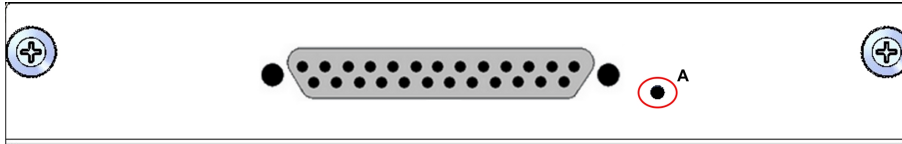
Fig. 3: TBC1-1SS Card: LEDs

LEDs Table of the TBC1-1SS Card

LED	Description
A	Off -> Card not detected. On -> Card detected.

4.2 Connector Pinouts

The TBC1-1SS card has one DB-25 connector.

4.2.1 DB-25 Connector

Figure 4 shows the DB-25 connector pinouts:
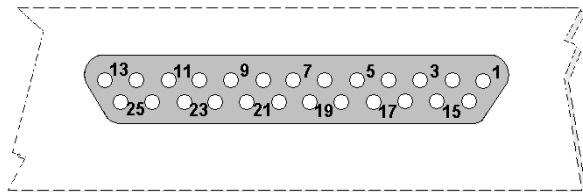
Fig. 4: DB-25 Connector Pinouts

Table 4 shows the information associated to each connector pinout:
Connector Pinouts

Signal (as DTE)	Towards DTE	Towards DCE	Female DB25
RxD_a	←	←	2
RxD_b	←	←	14
TxD_a	→	→	3
TxD_b	→	→	16
RxC_a	←	→	17
RxC_b	←	→	19
TxC_a	←	→	15
TxC_b	←	→	18
RTS_a	→	→	8
RTS_b	→	→	12

Signal (as DTE)	Towards DTE	Towards DCE	Female DB25
CD_a	←	←	4
CD_b	←	←	11
DTR_a	→	→	6
CTS_a	←	→	5
CTS_b	←	→	13
GND	GND	GND	7
GROUND			1+CHASSIS
CAB	←	←	25 [1]

4.2.2 Definition of the pigtail to use depending on the required norm

V.24 DTE Cable

Male DB25	V.24 DTE	Female DB25
1, Chassis	Ground	1, Chassis
2	RxDa	3
3	TxDa	2
4	CDa	8
5	CTSa	5
6	DTRa	20
7, 25	GND	7, 25
8	RTSa	4
15	TxCa	15
17	RxCa	17

Table 5. V.35 DCE Cable

Male DB25	V.35 DCE	Female Winchester
1, Chassis	Ground	A, Chassis
2	RxDa	P
3	TxDa	R
4	CDa	C
5	CTSa	D
6	DTRa	E
7	GND	B
8	RTSa	F
14	RxDb	S
15	TxCa	Y
16	TxDb	T
17	RxCa	V
18	TxCb	AA
19	RxCb	X

V.35 DTE Cable

[1] Pinout 25 must be connected to GND so the card knows it has a **DTE** cable connected and consequently behaves as such.

Male DB25	V.35 DTE	Male Winchester
1, Chassis	Ground	A, Chassis
2	RxDa	R
3	TxDa	P
4	CDa	F
5	CTSa	D
6	DTRa	H
7, 25	GND	B
8	RTSa	C
14	RxDb	T
15	TxCa	Y
16	TxDb	S
17	RxCa	V
18	TxCb	AA
19	RxCb	X

X.21 DCE Cable

Male DB25	X.21 DCE	Female DB15
1, Chassis	Ground	1, Chassis
2	RxDa	2
3	TxDa	4
4	INDa	3
7	GND	8
8	CONTa	5
11	INDb	10
12	CONTb	12
14	RxDb	9
17	CLKa	6
16	TxDb	11
19	CLKb	13

X.21 DTE Cable

Male DB25	X.21 DTE	Male DB15
1, Chassis	Ground	1, Chassis
2	RxDa	4
3	TxDa	2
5	INDa	5
7, 25	GND	8
8	CONTa	3
13	INDb	12
12	CONTb	10
14	RxDb	11
17	CLKa	6
16	TxDb	9
19	CLKb	13

Null-Modem Cable or Adapter

Male DB25	DCE-DTE	Female DB25
1, Chassis	Ground	1, Chassis
2	RxDa	3
3	TxDa	2
4	CDa	8
5	CTSa	5
6	DTRa	20
7, 25	GND	7
8	RTSa	4
11	CDb	12
12	RTSb	11
13	CTSb	13
14	RxDb	16
15	TxCa	15
16	TxDb	14
17	RxCa	17
18	TxCb	18
19	RxCb	19
Male DB25	DCE-DTE	Female DB25

Chapter 5 Regulatory compliance and safety information

5.1 Manufacturer Information

Brand	bintec
Manufacturer	bintec elmeg
Country	Germany
Postal Address	Suedwestpark 94
	90449 Nuremberg
	Germany
International Phone	+49 - 911 - 9673 0

5.2 WEEE Information

The waste container symbol with the >X< indicates that the device must be disposed of separately from normal domestic waste at an appropriate waste disposal facility at the end of its useful service life.

Das auf dem Gerät befindliche Symbol mit dem durchgekreuzten Müllcontainerbedeutet, dass das Gerät am Ende der Nutzungsdauer bei den hierfür vorgesehenenEntsorgungsstellen getrennt vom normalen Hausmüll zu entsorgen ist.

El símbolo del contenedor con la cruz, que se encuentra en el aparato, significa que cuando el equipo haya llegado al final de su vida útil, deberá ser llevado a los centros de recogida previstos, y que su tratamiento debe estar separado del de los residuos urbanos.

5.3 REACH

In compliance with the REACH Candidate List, the delivered product and product packaging do not contain chemicalsubstances above a concentration limit of 0.1% weight by weight (w/w). This declaration will be updated wheneverany changes occur or other chemical substances are added to the REACH Candidate List. Information is currentlyprovided to consumers upon request.

5.4 EC Declaration of Conformity

English (EN)	This equipment is in compliance with the essential requirements and other relevant provisions of: Directive 2014/30/EU (EMC) Directive 2014/35/EU (LVD) Directive 2011/65/EU (RoHS) of the European Parliament
Spanish (ES) Español	Este dispositivo cumple con los requisitos esenciales y con las normas correspondientes de las siguientes directivas: Directiva 2014/30/UE (EMC) Directiva 2014/35/UE (LVD) Directiva 2011/65/UE (RoHS) del Parlamento Europeo
German (DE) Deutsch	Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 2014/30/UE (EMC) Richtlinie 2014/35/UE (LVD) Richtlinie 2011/65/UE (RoHS) des Europäischen Parlaments.

Note

Directive 2014/30/EU (EMC) replaces Directive 2004/108/EC (EMC) on 20th April 2016

Directive 2014/35/EU (LVD) replaces Directive 2006/95/EC (LVD) on 20th April 2016

The EC declaration of conformity and additional product documentation can be accessed here: http://www.bintec-elemg.com

5.5 CE Marking

This equipment is in conformity with the CE procedures and marking.

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5.6 FCC Statement

5.6.1 Federal Communications Commission Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

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

This device 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.

5.7 IC Statement

5.7.1 CAN ICES-3 (B)/NMB-3(B)

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

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