TBC1-2SS SERIAL WAN EXPANSION CARD

Installation Manual

Legal Notice

Warranty

This publication is subject to change.

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

bintec elmeg 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 Manual

This installation guide contains step by step instructions on how to correctly install, uninstall and replace the **TBC1-2SS** expansion card in the bintec RM3000 / RM5000 / RM7000 router family.

1.1 Supported Devices

The information provided in this installation manual only applies to the **TBC1-2SS** SERIAL WAN EXPANSION CARD.

1.2 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.

1.3 Warning 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.

1.4 What is in this manual?

This installation guide contains the following information:

- A description of the general characteristics of the **TBC1-2SS** expansion card.
- A description of the steps to carry out to install the **TBC1-2SS** card in the bintec RM3000 / RM5000 / RM7000 routers.
- A description of the **TBC1-2SS** 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 **TBC1-2SS** expansion card in the bintec RM3000 / RM5000 / RM7000 router family.

- **TBC1-2SS** expansion card characteristics.
- **TBC1-2SS** expansion card connectors.
- Requirements prior to installation.
- Installing the **TBC1-2SS** 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 Dm705-I *Generic Serial Interfaces*

bintec Dm748-I *Software Updating*

bintecDm569-I *bintec RM3000 Installation.*

> **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 TBC1-2SS expansion card

This manual focuses on the **TBC1-2SS** 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, serial ports can be synchronous or asynchronous. In this particular case, the transmission mode is configurable.

For further information about configuration commands, please see manual bintec Dm705-I *bintec Generic Serial Interfaces.*
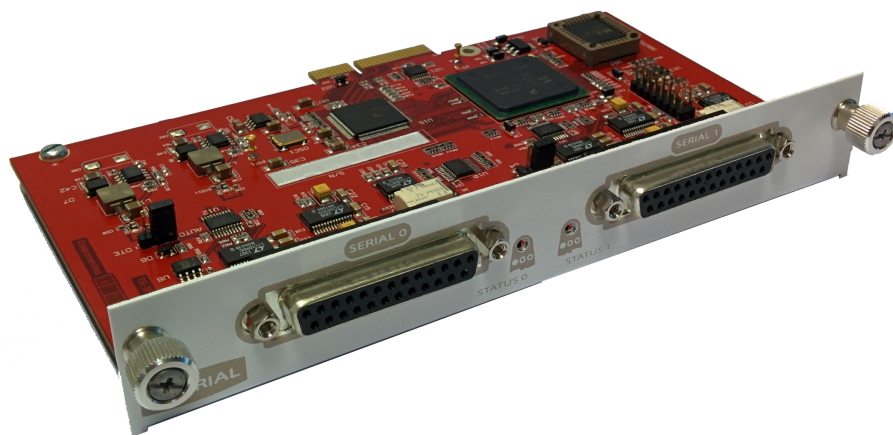
Fig. 1: **TBC1-2SS card**

2.1 TBC1-2SS expansion card: Characteristics

The main characteristics of the **TBC1-2SS** expansion card are as follows:
TBC1-2SS card: Characteristics

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

2.2 TBC1-2SS expansion card: Connectors

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

Fig. 2: **Front of the TBC1-2SS card**

The front board elements are as follows:

Elements table for the front of the TBC1-2SS card

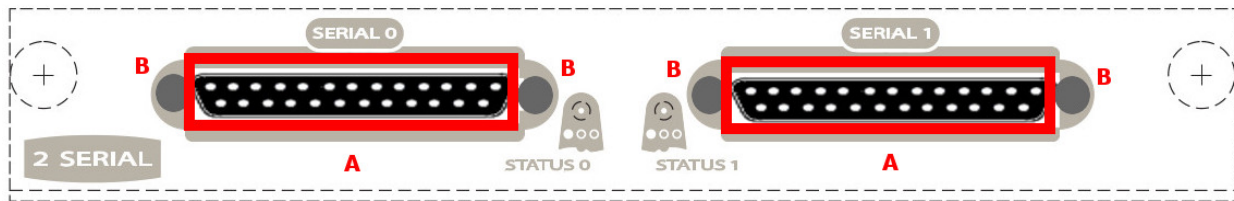| Item	Description
A	DB25 Serial connectors.
B	Lateral screws to screw in the cable.

Chapter 3 Installing the TBC1-2SS expansion card

This chapter provides information on how to install and uninstall the **TBC1-2SS** expansion card in the bintec RM3000 / RM5000 / RM7000 routers.

This information includes:

- Requirements prior to installation.
- Installing or replacing a **TBC1-2SS** 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 TBC1-2SS expansion card.

To install or replace a **TBC1-2SS** card, please see the *Expansion Slot* section in the *bintec Dm569-I bintec RM3000 Installation* manual.

Chapter 4 LEDs, jumpers and connector pinouts: Description

This chapter provides information on the **TBC1-2SS** expansion card LEDs, jumpers and connector pinouts.

4.1 TBC1-2SS expansion card: LEDs

The **TBC1-2SS** expansion card has two LEDs, one for each port.
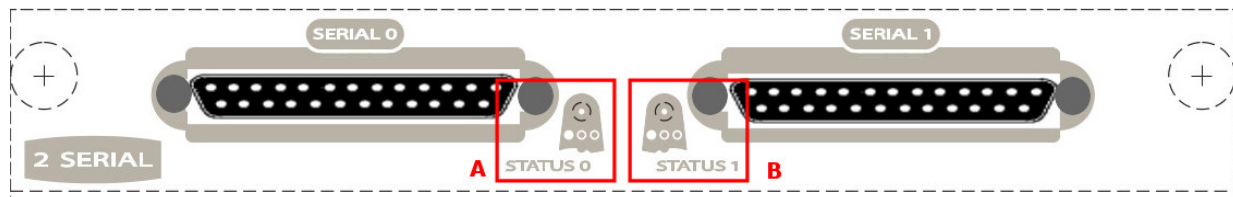
Fig. 3: **TBC1-2SS: LEDs**
LEDs table of the TBC1-2SS card

Item	Description
A, B	On => Card detected.
	Off => Card not detected.

4.2 Configuration jumpers

The **TBC1-2SS** expansion card has two internal configuration jumpers to configure the operation mode behavior for each port. The following image shows their locations:
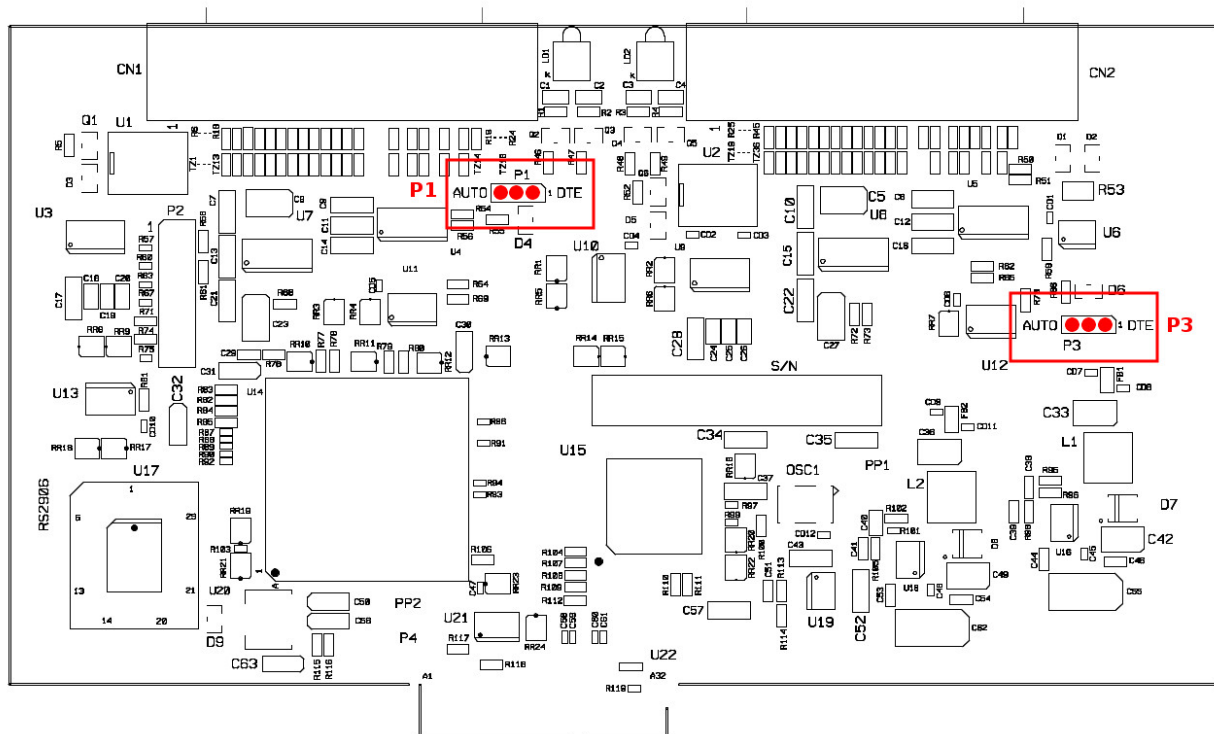
Fig. 4: **TBC1-2SS card:** *Configuration jumpers*

Configuration jumpers table of the TBC1-2SS card

Item	Description
P1	NONE => SERIAL 1 port is configured as DCE. DTE => SERIAL 1 port is configured as DTE. AUTO => SERIAL 1 port behavior is defined by the connected cable.
P3	NONE => SERIAL 0 port is configured as DCE. DTE => SERIAL 0 port is configured as DTE. AUTO => SERIAL 0 port behavior is defined by the connected cable.

4.3 Connector pinouts

The **TBC1-2SS** expansion card has two DB25 connectors.

4.3.1 DB-25 Connector

The following figure shows the DB-25 connector pinouts.
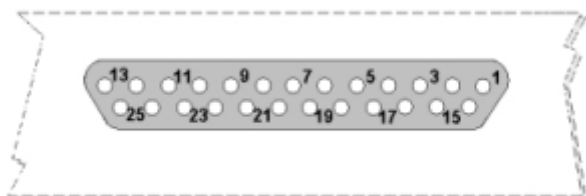
Fig. 5: **DB-25 Connector Pinouts**

The following table shows the information associated to each connector:
TBC1-2SSDB-25 Connector Pinouts

Signal (as DTE)	Towards DTE	Towards DCE	DB25 FEMALE
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	-->	-->	3
RTS_b	-->	-->	3
CD_a	<--	<--	3

CD_b	<--	<--	3
DTR_a	-->	-->	3
CTS_a	<--	-->	3
CTS_b	<--	-->	3
GND	GND	GND	7
GROUND			1+CHASSIS
CAB	<--	<--	25 (see note)

Note

Pinout 25 must be connected to GND so that the card knows it has a "DTE" cable connected and be-haves accordingly.

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

V24 DTE Cable

DB25 MALE	V.24 DTE	DB25 MALE
1, Chassis	Ground	1, Chassis
2	RxD_a	3
3	TxD_a	2
4	CD_a	8
5	CTS_a	5
6	DTR_a	20
7, 25	GND	7, 25
8	RTS_a	4
15	TxC_a	15
17	RxC_a	17

V35 DCE Cable

DB25 MALE	V.35 DCE	Winchester FEMALE
1, Chassis	Ground	A, Chassis
2	RxD_a	P
3	TxD_a	R
4	CD_a	C

5	CTS_a	D
6	DTR_a	E
7	GND	B
8	RTS_a	F
14	RxD_b	S
15	TxC_a	Y
16	TxD_b	T
17	RxC_a	V
18	TxC_b	AA
19	RxC_b	X

V35 DTE Cable

DB25 MALE	V.35 DTE	Winchester MALE
1, Chassis	Ground	A, Chassis
2	RxD_a	P
3	TxD_a	R
4	CD_a	F
5	CTS_a	D
6	DTR_a	H
7, 25	GND	B
8	RTS_a	C
14	RxD_b	T
15	TxC_a	Y
16	TxD_b	S
17	RxC_a	V
18	TxC_b	AA
19	RxC_b	X

X21 DCE Cable

DB25 MALE	X.21 DCE	DB15 FEMALE
1, Chassis	Ground	1, Chassis
2	RxD_a	2
3	TxD_a	4

4	IND_a	3
7	GND	8
8	CONT_a	5
11	IND_b	10
12	CONT_b	12
14	RxD_b	9
17	CLK_a	6
16	TxD_b	11
19	CLK_b	13

X21 DTE Cable

DB25 MALE	X.21 DTE	DB15 MALE
1, Chassis	Ground	1, Chassis
2	RxD_a	4
3	TxD_a	2
5	IND_a	5
7, 25	GND	8
8	CONT_a	3
13	IND_b	12
12	CONT_b	10
14	RxD_b	11
17	CLK_a	6
16	TxD_b	9
19	CLK_b	13

Null-Modem Cable or Adapter

DB25 MALE	V.35 DTE	DB25 FEMALE
1, Chassis	Ground	1, Chassis
2	RxD_a	3
3	TxD_a	2
4	CD_a	8
5	CTS_a	5
6	DTR_a	20

7, 25	GND	7
8	RTS_a	4
11	CD_b	12
12	RTS_b	11
13	CTS_b	13
14	RxC_a	16
15	RxD_b	15
16	TxD_b	14
17	RxC_a	17
18	TxC_b	18
19	RxC_b	19

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 chemical substances above a concentration limit of 0.1% weight by weight (w/w). This declaration will be updated whenever any changes occur or other chemical substances are added to the REACH Candidate List. Information is currently provided 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-elmeg.com

5.5 CE Marking

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