Installation & User Guide

Version - 4 Nov 2006

Contents

Notices

Package Contents

The unit will be supplied with RJ45 Type connector
A. GSM-Route BRI
B. Power Supply Unit
C. 2 x GSM Antenna for GSM-Route BRI 2 or
   1 x GSM Antenna for GSM-Route BRI 1
D. Unit Fixings
E. Fixing Templates
F. Installation Guide
G. Safety Earth cable, (SEG Safety Earth Ground)
H. 1 x 2 meter RJ45 connection cable

Declaration of Conformity

Applicant: TelecomFM Ltd.
Address: 895 Plymouth Road, Slough SL1 4LP,
Berkshire, U.K.

Product: GSM-Route BRI

This equipment complies with the European R&TTE Directive no. 1999/5/EC on radio and telecommunication terminal equipment.

TelecomFM Signed.....
May 2003 Roger Lewington

Guarantee

The GSM-Route BRI is supplied with a 1-year return to base warranty which covers any defect in manufacturing and design. No other warranties whatsoever are given.

If a faulty unit is required to be returned within the terms of the warranty a completed Returns Form (p.13) should be attached and returned with the faulty unit.

TelecomFM shall accept no liability for any error or damages of any kind resulting from the use of this document or equipment it relates to.

No responsibility is assumed by TFM for the use or reliability of the GSM-Route BRI when used in a situation or with other equipment not supplied or specified by TFM.

The wording in this document may change from time to time. Please refer to the TelecomFM web site www.telecomfm.co.uk for the latest release.

Document Control

Document Control

Date	Version	Change	Authority
April 2003	1	1st release of document	CJH/TB
Dec 2003	2	Auto-configuration added	CJH/TB
Jan 2006	3	WEEE Directive symbol & Added Updated Troubleshooting Guide	CH
Nov 2006	4	RoHS & PCT symbols added	CH

Safe and Efficient Use

Guidelines for Safe Use of the GSM-Route BRI:
Please read this information before connecting the GSM-Route BRI. The instructions are intended for your safety. Please follow these guidelines. If you have any doubts as to the units proper function or use please refer to the telecomFM user guide, or contact TelecomFM customer services.

Recommendations for safe use of the product:

- Do not expose the product to liquid or moisture
- Do not expose the product to open flames
- Do not attempt to modify the product
- Do not use the product near medical equipment without requesting permission from your treating physician or authorised medical staff
- Do not use the product when in, or around aircraft, or areas showing the sign "turn off two way radio".
- Do not use the product in an area where the potential explosive atmosphere exists.

Power Supply:

Connect the AC power supply adapter only to designated power sources.

Radio Frequency (RF) exposure and Specific Absorbsion Rate (SAR)

The GSM-Route BRI is a low power radio transmitter and receiver. When turned on it emits low levels of radio frequency energy. Governments around the world have adopted international safety guidelines. ICNIRP (International Commission on Non-Ionizing Radiation Protection) and IEEE (The Institute of Electrical and Electronic Engineers) have developed guidelines to establish the permitted levels of radio wave exposure for the general population. Specific Absorption Rate (SAR) is the unit of measurement for the amount of radio frequency absorbed by the body when using a mobile phone. For GSM terminal equipment an MPE calculation is used to determine the safe working distance from the Terminal during normal use. The values stated are determined at the highest certified power levels in laboratory conditions. Actual radiated levels during normal use may be well below this value. This is because the RF transmitter is designed to work at minimum power where ever possible.

TelecomFM GSM-Route BRI meets the legal requirements of ICNIRP encompassed within the following standards:

The GSM-Route BRI complies with European standards EN 50383:2003, EN 50392:2002 and EN50385:2002 and with Council Recomendation 1999/519/EC relating to human exposure to RF energy. In accordance with these standards and in order to maintain safe levels of exposure to RF Energy. The GSM-Route BRI and its antenna, during use, must be placed at a distance greater then 13.45 CM from the human body.

Overview

Intended Use

The GSM-Route BRI is connected to the customer's ETSI standard basic rate ISDN terminal equipment and, an ETSI standard basic rate ISDN network.
The GSM-ISDN can also be configured to work on ISDN trunk ports where basic rate ISDN is not available.

The GSM-Route BRI will auto detect if an ISDN circuit is present. If GSM-Route BRI detects that an ISDN circuit is not available, the unit will be configured for this setting.

The GSM-Route BRI will Auto detect Point to Point or Point to Multi-Point On connection of an ISDN circuit.

The GSM-Route BRI will direct outgoing calls either over the Mobile Network or the ISDN network according to its configuration.

Incoming calls from the GSM network will be directed to the customer's terminal equipment

Power Failure

In the event of loss of power to the unit, the ISDN lines connected through the GSM-Route BRI, will connect the customer's terminal equipment by means of a "Metallic" by-pass mechanism.

Mobile Signal Failure

In the event of the loss of the GSM network the unit may be configured to reroute the calls over ISDN.

ISDN Signal Failure

In the event of disconnection from the ISDN network, calls which were routed across the mobile network will continue to do so.

Power Supply

The GSM-Route BRI operates from a nominal 100-240v. AC supply, 47-63 Hz..

The Power Supply Unit (PSU) supplied with the GSM-Route BRI is fully compliant with:

UL1950,
TUV EN60950,
BS7002,
CSA22.2.

Please ensure that you use the power supply reference part no. KWM24F-OX01, as supplied with the GSM-Route BRI

Warning

Do not attempt to work on the GSM-Route BRI with the mains connected

Safety Instructions

Failure to follow all instructions may result in improper operation of the GSM-Route BRI and/or the risk of electrical shock.

All installation personnel should consult the information contained in this manual before attempting to install this product.

All installation engineers should adhere to the following instructions:

1. The GSM-Route BRI should only be installed or maintained by qualified personnel who have been trained by TelecomFM or one of there certified representatives.

2. The GSM-Route BRI should only be installed according to the instructions in this manual.

3. Do not attempt to connect the GSM-Route BRI whilst the associated PABX is in use.

4. Do not attempt to install the GSM-Route BRI during an electrical storm.

5. Use caution when installing or modifying ISDN lines when connecting to the GSM-Route BRI

6. The mains AC power socket or switched spur outlet should be installed near to the GSM-Route BRI and should be easily accessible.

7. Connect the power supply lead to the GSM-Route BRI before switching on the power.

8. Ensure that the GSM-Route BRI is bonded to Safety Earth Ground using the earth cable provided (see fig 2) page 8

Standard Installation

Siting the GSM-Route BRI

Select a suitable location to install the GSM-Route BRI in order to optimise the signal strength

- on, or near an exterior wall,
- close to a window
- on the top floor of the building.
- at least 1 metre away from other sensitive electronic equipment.

The signal strength will be degraded if you install the GSM-Route BRI antennae:

- on walls that contain a large amount of wiring, steel, or metal construction material.
- on walls with unusually thick masonry.
- in metal buildings or in rooms with large areas of metal.

You must NOT

- install your GSM-Route BRI outdoors.
- expose the GSM-Route BRI to water or moisture, i.e. basements or outbuildings.
- expose the GSM-Route BRI to direct sources of heat or cold e.g. air conditioning, heaters or direct sunlight
- cover or place obstructions on or around the unit's antenna(e).

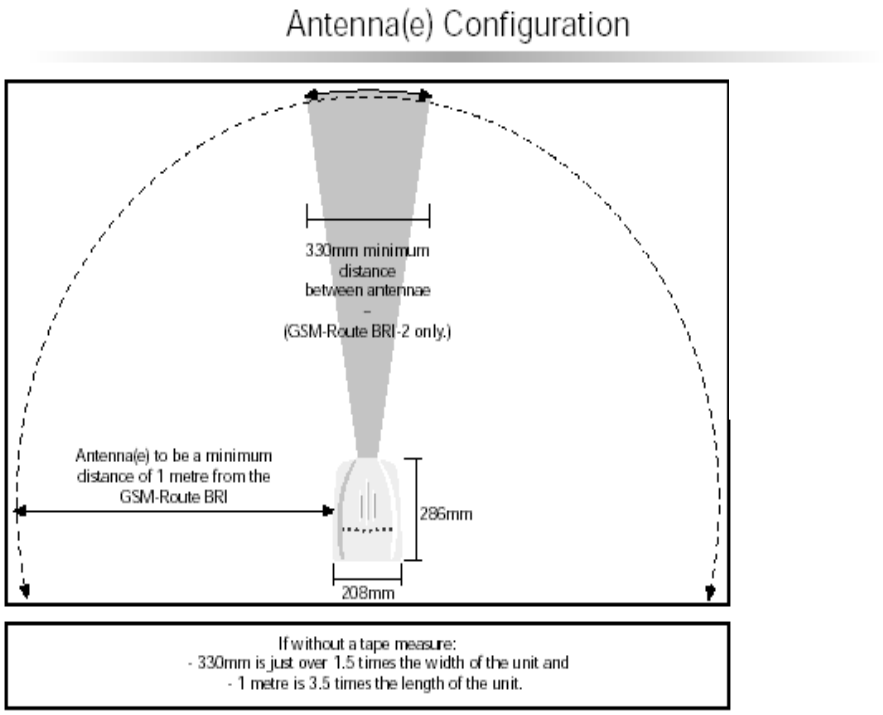

Figure 1

Standard Installation

Tools Required

The minimum tools required to carry out an installation of a single GSM-Route BRI is as follows:

ISDN Test Telephone,

Screwdriver,

Power Drill

RJ45 Crimp tool

Pre-Installation

Prior to the commencement of installation work, Check with the customer that.

1. - the supporting paperwork is correct,

2. - the ISDN circuit/ports detailed on the paperwork is/are correct,

3. – the customer is in agreement with the proposed siting of the GSM-Route BRI.

4. - SIM cards are available for installation.

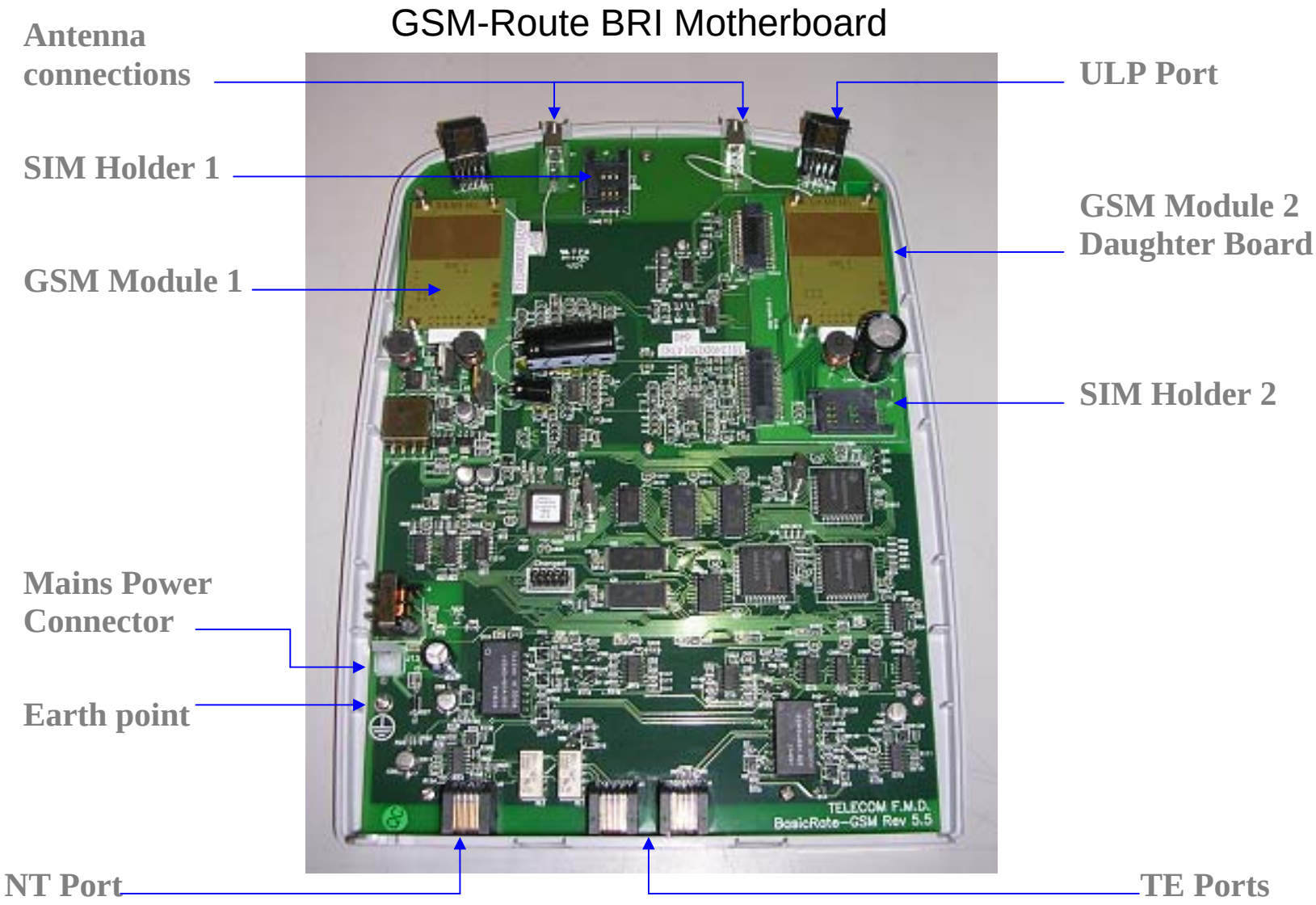
GSM-Route BRI Motherboard
Antenna connections
SIM Holder 1
GSM Module 1
Mains Power Connector
Earth point
NT Port
ULP Port
GSM Module 2 Daughter Board
SIM Holder 2
TE Ports
TELECOM F.M.D.
BasicRate-GSM Rev 5.5

Figure 2

Standard Installation

Locating GSM-Route BRI

1. Neatly locate and mount the GSM-Route BRI in the agreed position using the fixing template. Ensure that the wall is flat and the chassis is not bowed or misaligned.
2. Connect the Safety Earth Ground.
3. Connect Antennae (see figure 1 page 6)
4. Insert SIM cards into the SIM holders (see figure 2 page 8)

Power LED Sequence

1. Power up the unit. When power is connected the amber LED 3 will be lit. During the first 15 seconds the GSM-Route BRI will auto detect if an ISDN circuit is available and what protocol it is set for (Point to Point) or (Point to Multi – Point) then it will reset the unit with the correct settings.

- When the GSM Module(s) are connecting to a network its status LEDs 24 & 25 will produce long flashes (600ms/600 ms On/Off).
- If the GSM module has no SIM card inserted its status LEDs 24 or 25 will flash 'SOS' on its associated LED.
- When a GSM module has logged onto a network its status LEDs 24 & 25 will produce short flashes (75ms/3s On/Off).
- If the Basic Rate ISDN interface is activated the status LEDs 20 & 21 will produce short flashes (75ms/3s On/Off).
- When the Terminal Equipment Interface is activated the status LEDs 22 & 23 will produce short flashes (75ms/3s On/Off).
- The signal strength on Module 1 is displayed on LED 18. (See signal strength Indication)
- The signal strength on Module 2 is displayed on LED 19. (See signal strength Indication)

LED Indication Status LEDs

Power status – Amber	LED 3
GSM Module 1 status -Green	LED 24
GSM Module 2 status -Green	LED 25
ISDN customer side B1 Red	LED 22
ISDN customer side B2 Red	LED 23
ISDN network side B1 Red	LED 20
ISDN network side B2 Red	LED 21
Signal strength Module 1	LED 18
Signal strength Module 2	LED 19

Signal Strength Indication

During power up, LEDs 18 & 19 will flash once every 6 seconds while looking for a base station.

After this time the LEDs will flash independently according to the signal received, as below:

0 - 1	flash = poor signal strength
2 – 4	flash = average signal strength
4 – 8	flash = good signal strength

For guidance purposes you require a minimum of two flashes. If there is only one flash then you will need to adjust the antenna(e) or find a more suitable location for the GSM-Route-BRI

Standard Installation

Connecting the ISDN

1. Connect the customer's Terminal Equipment to the GSM-Route BRI TE RJ45 port using a straight through RJ45 cable.

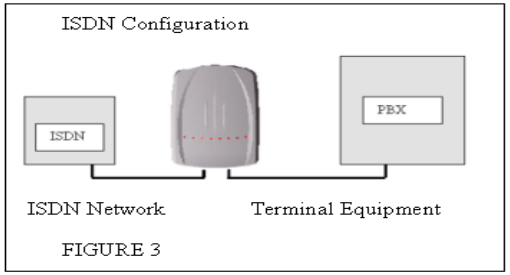

FIGURE 3

2. If a connection to the ISDN network is required, connect the standard basic rate ISDN to the GSM-Route BRI NT RJ45 port using a straight through RJ45 cable. The unit will reset after 15 seconds then automatically configure itself to the ISDN circuit.(see figure 3)

Connecting to ISDN Trunk ports

3. If no connection to an ISDN circuit is required, Connect the ISDN Trunk Port of the PBX to the GSM-Route BRI TE RJ45 port using a straight through RJ45 cable. The unit will reset after 15 seconds then automatically configure itself to this setting. (see figure 4)

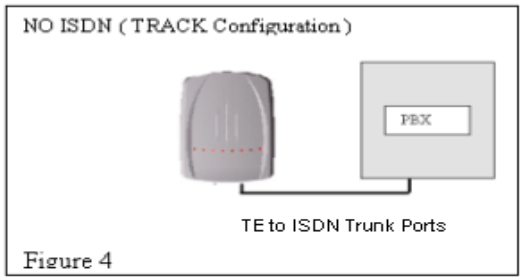

Figure 4

Cable PIN-OUTS

1. If you are required to make up straight through RJ45 cables, the pin-out are as below

Pin Number	
Connector A	Connector B
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8

Standard Installation (Configuring the unit)

Programming Via a Local Digital Management Centre If Applicable (ISDN circuit Connected)

1 If the unit is to be remotely managed, contact your designated Remote Management Center and inform them as to the template to be used.

2 When you initiate a call home either connect your ISDN phone to the TE port direct, or access the PBX and proceed with the following:

Off-hook

Dial '0000' or Dial '0##1' (Only applicable if in the routing code)

On-hook

3 This will dial the call home number that is in the configuration map.

4 When connected the two Green Status LED's 24 & 25 will flash intermittently indicating that data is being transfer to and from the device during the programming sequence. LED 24 represents transmitted data, LED 25 represents receiving data. Once the programming sequence is complete the Green Status LEDs will return to reflecting the modules' status.

Programming Using the Unmanaged Local Programmer If Applicable (No ISDN circuit Connected)

1. If the unit is **NOT** remotely managed and has not been pre-programmed you will need to locally program the unit.
Please refer to the Unmanaged Local Programming Guide or contact the distributor from who you brought it from

.

Service Port Tailoring of GSM-Route BRI

It is possible to change or confirm various parameters of the GSM-Route BRI in Service Mode Subject to the Revision of Software Installed.
See Service Port Mode Documentation supplied with the product

Testing the GSM-Route BRI

1. Make an outgoing test call over module 1. Once Connected the Red Status LED corresponding to the channel being used will come on. The Green Status LED for module 1 will come on showing that the call has been routed correctly. A confidence tone will be heard at this stage.

2. Make an outgoing test call over module 2. Once connected the Red Status LED corresponding to the channel being used will come on. The Green Status LED for module 2 will come on showing that the call has been routed correctly. A confidence tone will be heard at this stage.

3. Make an incoming call to each GSM module.

Before Leaving Site

Contact your local support center for a clear code. (If Applicable)

The support center will confirm that test calls have been made over each GSM Module.

Advise the Customer of their new GSM numbers.

Fill in all site documentation, obtain an acceptance signature from the customer and leave a copy of the documentation with the customer. This will be the site record.

GSM-Route BRI Trouble Shooting Guide

PROBLEMS	RECOMMENDATIONS
GSM-Route BRI will not power up.	Check the lead into the chassis Check the Power Supply Unit Check for mains power
Unit will not dial home over ISDN.	Check that the ISDN circuit is live
Unit will not dial home over GSM	Check that the SIMs are live Check Management Programming ISDN set to false with correct GSM number
Unit will not route	Check for confidence tone when dialing out Check programme with TFM help desk (If applicable) Check programming with Unmanaged local Programmer (If applicable)
Misrouting problems	Verify programme with TFM help desk (If applicable) Force new download by dialing 0001 or 0000 If not managed check programming with Unmanaged local Programmer
No Incoming ringing	Check ISDN circuit is live
One-way transmission	Check respective network
Noise Is Heard during calls	The GSM may be too close other electronic devices
Reception over GSM is Poor	Check signal strength and location Check aerial installation and positioning
Not connecting to GSM trunks when Dialing out through PBX	Check that they are in the correct trunk group with cyclic hunting
Green LEDs 24&25 flash SOS	Check SIM card Check SIM is seated correctly in SIM holder Check programming
RED LEDs 20&21 not lit	Check ISDN circuit is live and connected
RED LED 26 flashing on/off	Check ISDN circuit is live and connected
RED LEDs 22&23 not lit	Check terminal equipment is connected (PBX)

Returns Form

Unit Serial No.	

Date Of Installation	

Return Date	

Returned From

Company Address	
	Post Code

Fault Details

Returns Number……..