

Cinterion BGS2T (RS232) Terminal Starter Kit

Getting Started Guide



BGS2T (RS232) Terminal Starter Kit Contents

PLEASE NOTE – KIT CONTENTS MAY VARY ACCORDING TO ORIGIN AND THE INTENDED COUNTRY OF OPERATION

From here-on the Cinterion BGS2T (RS232) Terminals will be referred to as 'GSM Terminal'.

Reference Documents

[1] Cinterion BGS2T Hardware Interface Description

[2] Cinterion BGS2T AT Command Set

Specifications

Mains In-Line Power Supply Unit

Input: 100 to 240 Volts a.c., 50 to 60 Hz. 0.4 Amps

Output: 15 Volts D.C. Regulated, 1.0 Amps Max

Power Rating: 15W

The 6-way Universal Jack for connecting to the Terminal is has the IGN_ON pin wired to the +15V supply. This configuration will automatically start the Terminal when power is applied.

Cinterion GSM Terminal: Further documentation regarding the GSM Terminals is provided on the included CD-ROM. For the latest information and specifications for all GSM Terminals please refer to the Cinterion web-site <http://www.cinterion.com>

Requirements

Software

The GSM Terminal requires a host device to control operation via the devices' Serial Interface.

Suitable devices are Personal Computers with Windows and Linux operating systems and other host devices with suitable interfaces and control software.

For systems which do not have an available RS232 Serial Data connection a USB to RS232 converter may be used. Associated driver software must be pre-installed prior to using the GSM Terminal.

Windows software drivers are available so that PCs with Serial Ports can utilise the Windows dial-up networking application to make voice and data calls. Device software drivers are not required if the GSM Terminal is connected via a USB to RS232 converter device.

If a Windows PC is to be used for initial evaluation and testing suitable Terminal Emulation Software will be required to send and receive information to and from the GSM Terminal.

Windows Hyper-terminal software is suitable for initial device testing and evaluation. Although this software is no-longer supplied as standard on the latest Windows systems (e.g. Windows 7) the application program and two associated .DLL files can be copied over to a PC with the later OS and run directly from the installed directory.

Alternatively, and for more advanced evaluation, other Terminal Emulation programs are available which incorporate easier configuration and scripting capabilities.



SIM Cards

To make and receive voice & data calls, a GSM SIM card will be required. A SIM card provided by any GSM network where reception is available is suitable, either pre-paid or contract type.

Most SIM cards also allow the GSM Terminal to access the GPRS service for data communications if this is available from the network provider.

IMPORTANT NOTE: Some GSM Network Service Providers do not automatically enable by default (or provide) a Circuit-Switched-Data (CSD) service. CSD calls are GSM Terminal-to-Terminal or Landline Modem (or Visa-Versa) calls created by dialling the receiving device's number in the same way as for a voice call, but for the purpose of data-transfer. CSD calls are not to be confused with accessing a GPRS service for data transfer.

The CSD service may need to be requested and enabled on the SIM card(s) being used. If CSD is not enabled, the GSM terminal will register onto the GSM network (for voice calls), but will report an error (No Carrier) when trying to open the CSD call.

NOTE: SIMs that are configured for only '3G' operation, without the provision of back-up via 2/2.5G may not work in the GSM Terminal.

Getting Started - Initial Set-up

Start by removing and checking that all items required are available to hand. In addition to the items provided in the starter Kit (Table 1, Above), a Mains Fig-8 Power cable will be required. Also required are a SIM card to permit registration onto the GSM network and making/receiving calls and a USB to Serial converter if using a USB connection on the host computer.

1. **Antenna.** Locate the antenna with SMA connector and insert this into the antenna connector on the GSM Terminal and rotate the hexagon nut to secure the antenna.



2. **Insert a SIM card.** As the BGS2T does NOT use a SIM card holder / tray mechanism, SIMs are inserted directly into the SIM slot in the GSM Terminal. The SIM holder is of the 'push-push' type with auto-locking.

On the underside of the GSM Terminal an image depicts the correct orientation of the SIM Card when viewed from the underside. See image on the right.

Insert the SIM Card with the correct orientation and push all the way in. It will be necessary to use fingernails or a small tool to fully insert the card into Terminal until it can be pushed no further. A small click may be noted. After releasing the pressure, the SIM card should remain locked in the GSM Terminal.

An internal mechanism retains and locks the SIM card in place.

Removal is possible by pushing the SIM card back into the Terminal and releasing it such that it will then be possible to completely remove the SIM card by hand.



3. **Serial Data Cable.** Connect the male end of the Serial Data cable (9-way 'D' connector) to the 9-way 'D' connector on the GSM Terminal and the other end to the computer or USB-to-Serial adaptor.

4. **Power Supply Cable.** Plug the power supply DC output cable into the GSM Modem and you mains cable with Fig-8 connector into the PSU and switch on.

Start the Terminal emulation software such as HyperTerminal on the PC, and make sure that the software is configured to work with the correct COM port (or Virtual COM port) to which the GSM Terminal is connected. Windows Device Manager (Control panel -> System - > Device Manager) may help determine which COM port is being used if you are not aware.



Check and confirm that the COM port is configured as follows:

Data Rate:	115,200 Bit per second
Data bits:	8 bits
Parity:	None
Stop Bits:	1
Flow Control:	Hardware

Enter the Attention command as follows: **AT** ↵

You should see the letters AT echoed back and visible in the Terminal Emulation software, and the response from the GSM Modem: **OK**

If the communication cannot be established with the GSM Terminal, first check the following:

- Check that the LED is flashing on the GSM modem, indicating it is powered OK
- Check the RS232 connection between the Computer and the GSM Modem
- Check and verify the configuration of the COM port used on the Computer

Getting Started - Testing the Terminal

It is assumed that the communication between a computer and the GSM Terminal has been established.

At this stage, and to help with initial evaluation, an understanding of the LED function can be useful. The following table indicates the status indicated by the various LED flash patterns

LED mode	Operating status of MC55i Terminal
Permanently off	MC55i Terminal is in one of the following modes: <ul style="list-style-type: none"> • POWER DOWN mode • ALARM mode • NON-CYCLIC SLEEP mode • CYCLIC SLEEP mode with no temporary wake-up event*
600 ms on / 600 ms off	Limited Network Service: No SIM card inserted or no PIN entered, or network search in progress, or on-going user authentication, or network login in progress
75 ms on / 3 s off	IDLE mode: The Terminal is registered to the network (monitoring control channels and user interactions). No call in progress
75 ms on / 75 ms off / 75 ms on / 3 s off	One or more GPRS contexts activated
500 ms on / 25 ms off	Packet switched data transfer in progress
Permanently on	Depending on type of call: <i>Voice call</i> : Connected to remote party <i>CSD call</i> : Connected to remote party or exchange of parameters while setting up or disconnecting a call

Table 2. Operating status indicated LED indicator

* When a temporary wake-up event (for example URC, call, packet switched transfer) occurs in CYCLIC SLEEP mode the LED flashes. See Chapter AT+CFUN provided in [2] for details on SLEEP modes and wake-up events.

For initial evaluation and to further confirm functionality consider trying the following commands.

This is not provided as an exhaustive list, but a guide to determine that GSM Terminal is operating correctly and a starting point for further evaluation of the device and AT Commands. See [2].

AT+SMSC= : ALWAYS use this command to turn off the GSM Terminal. The GSM Terminal will detach from the network and power down in a controller way. Internal functions (such as writing to Flash Memory!!) will terminate correctly prior to the device entering the power down state. The GSM Terminal will issue the response '**^SHUTDOWN**' and power may then be removed.

AT+CGMI= : Check the Modem type when serial link is OK. See also: **ATI=**

AT+CSQ= : verify the received signal strength.

AT+CREG=?= : verify the registration of the Terminal on the GSM network.

ATD<phone number>;= :to initiate a voice call.

ATD<phone number>= :to initiate a CSD call.

ATA= : to receive an incoming call.

ATH= : to hang up (end of call).

AT+CPIN␣=xxxx :to enter a PIN code xxxx (if activated).

NOTE: To send an SMS using the simplest method, the Terminal has to be changed to SMS Text Mode using the command: **AT+CMGF=1**␣ it is also necessary to check the SMS service centre number is set using **AT+CSCA?**␣

To send an SMS from the GSM Terminal use:

AT+CMGS=<destination_number>␣
enter_message_at_the_prompt [Ctrl-Z]

Further Reading

For further information regarding the GSM Terminal and the AT Commands for control see the documents [1], [2] referenced above.

For advice regarding more advanced features and applications see the support section of the Cinterion Web-site <http://www.cinterion.com>