

GT863-3GG Product Description

80269ST10077a Rev.0 - 2010-09-22





APPLICABILITY TABLE

PRODUCT

GT863-3GG



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1. Introduction

1.1. Scope

Scope of this document is to give an overview of the technical specific for the GT863-3GG Terminal.

1.2. Audience

This document is intended for customers who are evaluating the GT863-3GG Terminal

1.3. Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Telit Technical Support Center (TTSC) at:

TS-EMEA@telit.com

TS-NORTHAMERICA@telit.com

TS-LATINAMERICA@telit.com

TS-APAC@telit.com

Alternatively, use:

http://www.telit.com/en/products/technical-support-center/contact.php

For detailed information about where you can buy the Telit modules or for recommendations on accessories and components visit:

http://www.telit.com

To register for product news and announcements or for product questions contact Telit Technical Support Center (TTSC).

Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.

Telit appreciates feedback from the users of our information.



1.4. Text Conventions



<u>Danger - This information MUST be followed or catastrophic equipment failure or bodily injury may occur.</u>



Caution or Warning — Alerts the user to important points about integrating the module, if these points are not followed, the module and end user equipment may fail or malfunction.



Tip or Information – Provides advice and suggestions that may be useful when integrating the module.

All dates are in ISO 8601 format, i.e. YYYY-MM-DD.

1.5. Related Documents

- UC864 Software User Guide, 1vv0300767
- Easy GPRS User Guide, 80000ST10028
- UC864 AT Commands Reference Guide, 80304ST10041a
- Premium FOTA Management Product Description 80287ST10048a
- PFM Application Note 8000nt10013a
- PFM Certification Program Application Note 8000nt10022a

1.6. Document History

Revision	Date	Changes
0	2010-09-22	First issue



2. Product Description

2.1. Product Overview

Aim of this document is the description of features, functions and interfaces of the **Telit GT863-3GG Terminal Family** which is a complete modem solution for wireless m2m applications allowing tri-band 850/1900/2100MHz UMTS/HSDPA and quad band GSM/GPRS/EDGE network availability with the addition of an integrated full 12-channel high sensitivity GPS receiver.

Terminal core engine is Telit module UC864-G also fully backward compatible with existing EDGE and GSM/GPRS networks through accomplished quad-band radios. Since this Terminal is ready for use as a subsystem for wireless connections, Safety Information and basic instructions for taking the GT863-3GG Terminals into operation are included, as well as guidance to other documentation and practical hints for the first steps.

The GT863-3GG Terminals can be remotely controlled by AT command and is compliant with:

- Hayes standard AT command set
- 3gpp TS 27.007 specific AT command and WCDMA/GPRS specific commands.
- 3gpp TS 27.005 specific AT commands for SMS (Short Message Service) and
- CBS (Cell Broadcast Service)
- FAX Class 1 compatible commands

Moreover, the **Telit GT863-3GG** supports also Telit proprietary AT commands for special purposes. For a more information about AT commands supported by **GT863-3GG** please refer to document UC864 AT Commands Reference Guide, code 80304ST10041a.

EASY GPRS® Embedded

Telit GT863-3GG embeds TCP/IP stack and DNS query protocol. Static and dynamic IP allocation, PPP and UDP as well as FTP Client are supported. Developers just need to add Telit Proprietary AT commands to establish a TCP/IP connection through the WCDMA/EDGE/GPRS network.

EASY FREQUENCY SCAN® Function

Telit GT863-3GGincludes a dedicated set of AT commands to scan all the GSM channels, reporting all available parameters. With EASY FREQUENCY SCAN® the GSM network coverage at the location of the GT863-3GG Terminal can be examined even without inserted SIM in order to select the provider with the best field strength, the most channels or base transceiver stations and to optimize the terminal position.





2.2. Product Features

Feature	Implementation
Incorporates Telit UC864-G module	The Telit module handles all GSM/UMTS processing for, signal and data within the GT863-3GG.
Frequency bands	Quad band: GSM 850/900/1800/1900/ Tri-band UMTS 850/1900/2100MHz
Power supply	Single supply voltage 5V to 30V
Operating temperature	-20°C to +65°C ambient temperature
Physical	Dimensions: 83mm x 64m x 33m Weight: 180g
RoHS, WEEE	All hardware components are fully compliant with the EU RoHS and WEEE Directives
3 GPIO inputs 1 ADC input	inputs 0-24V 1 input ADC up to 11V with voltage divider of 1:5.75
Communication	RS232 /USB
GPS	Telit UC864-G embedded GPS 12 channels fully integrated GPS



2.3. Installation

Before securing the modem take into account the amount of additional space required for the mating connectors and cables that will be used in the application.

- Where access is restricted, it may be easier to connect all the cables to the modem prior to securing it in the application.
- Securely attach the GT863-3GG Terminal to the host application using two 3mm diameter pan-head screws.

2.4. Environmental requirements

The Telit GT863-3GG terminal is compliant with the applicable 3gpp reference documentation TS 25.101 Release 2004-03.

2.4.1. Temperature range GT863-3GG

	GT863-3GG	Note	
	-20 ~ +55°C	The module is functional in all the temperature range, and it fully meets the ETSI specifications.	
Operating temperature	-30 ~ +65°C	The module is functional in all the temperature range. Temperatures outside the range –20°C ÷ +55°C,	
		might slightly deviate from ETSI specifications.	
Temperature in not functional conditions ¹	-40 ~ +85°C		

2.4.2. RoHS compliance

The **GT863-3GG Terminal** is fully RoHS (Restriction of Hazardous Substances) compliant to EU regulation.

¹ Functional: the module is able to make and receive voice calls, data calls, SMS and make data traffic.





2.4.3. Documentation and User Guides

In order to get more detailed information on hardware and software features please consult different user guides for UC864. They're available on http://www.telit.com



3. Power Supply

The power supply of the **GT863-3GG** Terminal has to be a single voltage source of POWER 5V-30V capable of providing a peak during an active transmission. The power supply recommended being any safety approved power supply certified IEC 60950-1 or EN 60950-1 or UL 60950-1 with limited output current up to 2A.

3.1. Supply voltage requirements

The DC power supply must be connected to the POWER input:

Input voltage range 5 - 30V DC Nominal Voltage 12V DC

The measurement was realized by 4 different Voltages (5 V, 12V, 24 V and 32 V).

3.2. Power Consumption

The typical current consumption of the GT863-3GG expressed in mA is:

GT863-3GG – GPS switched Off				
GT863-3GG	a 5V	@12V	a 24V	a 32V
Terminal switched off	9	8	11	12
On, network connection (Idle mode) ²	24	16	15	16
On, network connection (Idle mode) ³	35	21	18	18

GT863-3GG – GPS switched ON				
GT863-3GG	a 5V	@12V	a 24V	a 32V
On, network connection (Idle mode) ²	100	50	34	32
On, network connection (Idle mode) ³	110	55	37	34

³ Impedance 4,7kΩ



² High impedance





NOTE:

In case that power supply equipment is to be ordered, its conformity needs to be verified with the mains supply voltage, frequency, connector type and other national requirements (e.g. certifications) in the countries of its use.



4. Operating Frequency

The operating frequencies in GSM, DCS, PCS, WCDMA modes are conform to the GSM specifications.

Mode	Freq. TX (MHz)	Freq. RX (MHz)	Channels (ARFC)	TX - RX offset
E-GSM-900	890.0 - 914.8	935.0 - 959.8	0 – 124	45 MHz
E-03M-700	880.2 - 889.8	925.2 - 934.8	975 - 1023	45 MHz
GSM-850	824.2 - 848.8	869.2 – 893.8	128 - 251	45 MHz
DCS-1800	1710.2 - 1784.8	1805.2 - 1879.8	512 – 885	95 MHz
PCS-1900	1850.2 - 1909.8	1930.2 - 1989.8	512 - 810	80 MHz
WCDMA-2100	1922.4 - 1977.6	2112.4 - 2167.6	Tx : 9612-9888 Rx : 9662-9938	190MHz
WCDMA-850	826.4-846.6	871.4-891.6	Tx : 4132-4233 Rx : 4357-4458	45MHz
WCDMA-1900	1852.4-1907.6	1932.4-1987.6	Tx : 9262-9538 Rx : 9662-9938	80MHz

4.1. Transmitter output power

WCDMA850/1900/2100

The GT863-3GG transceiver modem in WCDMA-2100 (2100 MHz) operating mode are class 3 in accordance with the specifications which determine the nominal 0.25W peak RF power (+24dBm) on 50 0hm.

GSM-850 / 900 (GSM/GPRS mode)

The GT863-3GG transceiver modem in GSM-850/900 operating mode are class 4 in accordance with the specification which determine the nominal 2W peak RF power [+33dBm] on 50 0hm.

GSM850/900(EGPRS mode)

The GT863-3GG transceiver modem in GSM850/900(850,900 MHz) operating mode are class E2 in accordance with the specifications which determine the nominal 0.5W peak RF power (+27dBm) on 50 Ohm.

DCS-1800 / PCS-1900 (GSM/GPRS mode)

The GT863-3GG transceiver modem in DCS-1800/PCS-1900 operating mode are of class 1 in accordance with the specifications which determine the nominal 1W peak RF power (+30dBm) on 50 0hm.





DCS1800/PCS1900(EGPRS mode)

The GT863-3GG transceiver modem in DCS1800/PCS1900(1800 ,1900 MHz) operating mode are class E2 in accordance with the specifications which determine the nominal 0.4W peak RF power (+26dBm) on 50 0hm.

4.2. Reference sensitivity

WCDMA-850/1900/2100

The sensitivity of the GT863-3GG wireless modem according to the specifications for the class 3 portable terminals is -108.2 dBm typical in normal operating conditions.

GSM-850 / 900

The sensitivity of the GT863-3GG wireless modem according to the specifications for the class 4 GSM-850/900 portable terminals is -107dBm typical in normal operating conditions.

DCS-1800 / PCS-1900

The sensitivity of the GT863-3GG wireless modem according to the specifications for the class 1 portable terminals DCS-1800 / PCS-1900 is -106 dBm typical in normal operating conditions.



5. GPS Features

The **GT863-3GG** has an integrated 12 channels, low consumption & high sensitive, GPS receiver.

GPS receiver works in standalone mode, but the handset is ready to implement, In standalone mode, the handset demodulates the data directly from the GPS satellites and it requires no server interaction and works out of network coverage.

As main features of such GPS receiver, we can mention:

- Simultaneous GPS and Voice/Data
- High sensitivity for indoor reception, up to -157dBm (with active antenna)
- Extremely fast TTFF's at low signal levels
- Supports 12-Channel GPS L1 1575.42 MHz
- Accuracy: 3m (CEP68: 68% Circular Error Probable)
- GPS NMEA 0183 output format
- Date WGS-84
- Dedicated GPS AT commands
- Low power consumption

5.1. GPS Sensitivity*

Time to first fix				
Hot start Autonomous < 1s				
Warm start Autonomous < 32s				
Cold start	Autonomous < 40s			
Sensitivity				
Tracking Up to -157 dBm				



* NOTE:

Performance will vary depending on environment, antenna type, signal conditions, satellite geometry, and handset implementation





6. GT863-3GG Terminal Interface Description

6.1. Overview

GT863-3GG provides the following connectors for power supply, Interface and antennas:

- 1. SMA connector (female) for GSM/WCDMA antenna
- 2. 4-pole 3mm Micro Mate-N-LOK connector for power supply
- 3. SIM card holder
- 4. 9-pole (female) SUB-D plug for RS-232 serial interface or RS485
- 5. PWR led and Status Led
- 6. 6-pole RJ11 plug (female) for GPIO's and ADC
- 7. 5-pole mini-USB type B plug
- 8. SMA connector (female) for GPS antenna



Figure 1: **GT863-3GG** side A view



Figure 2: **GT863-3GG** side B view



6.2. Block Diagram GT863-3GG

Figure 3 shows a block diagram of a sample configuration that incorporates a **GT863-3GG** and typical accessories.

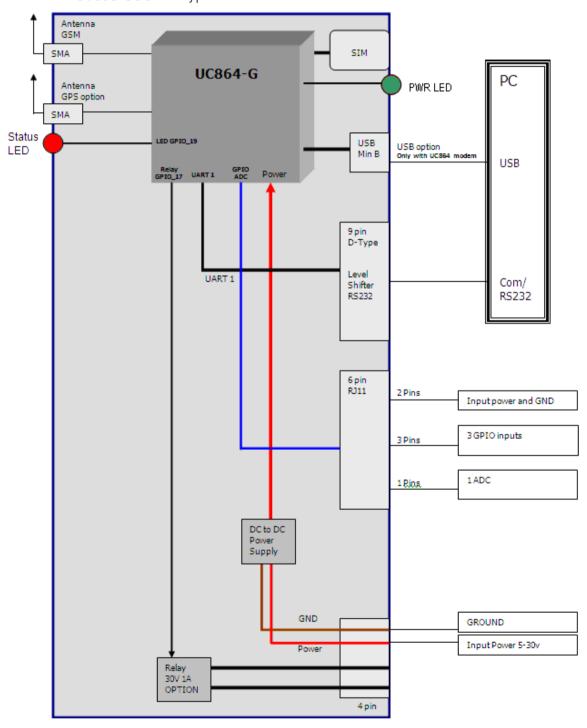


Figure 3: Block diagram





6.3. Power plug

The type of the receptacle assembled on the **GT863-3GG** Terminal is 4 pin Micro Mate-N-LOK 3mm from MOLEX. Mating headers can be chosen from the MOLEX Micro Mate-N-LOK Series. For latest product information http://www.molex.com

Pin	Signal name	Use
1	POWER	Input Power supply range 5-30V
2	-	-
3	GND	Ground
4	-	-

Table 1: Pin assignment of the plug for power supply

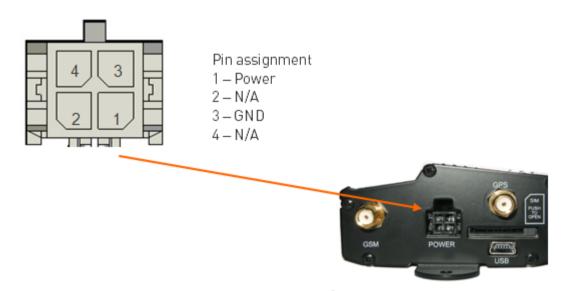


Figure 4: Male 4-pole plug for power supply.

6.3.1. Supply voltage requirements

The DC power supply must be connected to the POWER input:

- Input voltage range 5 30V DC
- Nominal Voltage 12V DC
- Power Supply current rating: max. 2A @12V
- Power Supply ripple: max. 120mV
- Input current in idle mode: 20mA @ 12V
- Input average current in communication mode: 100mA @ 12V





6.4. Serial ports

6.4.1. RS-232 Interface

The serial interface of the **GT863-3GG** Terminal is intended for the communication between the GSM module and the host application. This RS-232 interface is a data and control interface for transmitting data, AT commands and providing multiplexed channels. EMC immunity complies with the vehicular environment requirements according to EN 301 489-7.

The user interface of the **GT863-3GG** Terminal is accessible from a Data Terminal Equipment DTE connected to the RS232 interface and it is managed by AT commands according to the GSM 07.07 and 07.05 specification and the supported commands are listed in the AT Commands Reference Guide.

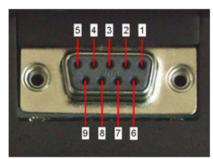


Figure 6: Pin assignment RS-232

Pin no.	Signal name	I/O	Function of application
1	DCD	0	Data Carrier Detected
2	RXD	0	Receive Data
3	TXD	1	Transmit Data
4	DTR	1	Data Terminal Ready
5	GND	-	Ground
6	DSR	0	Data Set Ready
7	RTS	1	Request To Send
8	CTS	0	Clear To Send
9	RING	0	Ring Indication

Table 2: D-Sub 9-pole female RS232 (D-Sub 9-pole female)

Connector type on the terminal is:

- RS-232 through D9-pin female
- Baud rate from 300 to 115.200 bit/s
- Short circuit (to Ground) protection on all outputs.
- Input voltage range: -12V to +12V





6.4.2. USB Interface

GT863-3GG Terminal includes an integrated universal serial bus (USB) transceiver, compliant with USB 2.0 specifications and supporting the USB Full-Speed (12 Mb/s) mode. In HSDPA (High Speed download Packet Access) mode, the downlink data speed rates up to 7.2Mbps. Hence OEMs need to interface GT863-3GG to applications in full-speed (12Mbits/s) mode

Connector type is Mini-USB type B.

6.5. GPIO Interface

The GPIO interface provides via 6 pins RJ11 connector the following options:

- 3 inputs 2 GPIO digital.
- 1 input ADC.
- 1 power pin and 1 digital Ground pin

Pin assignment 1 – Digital GND

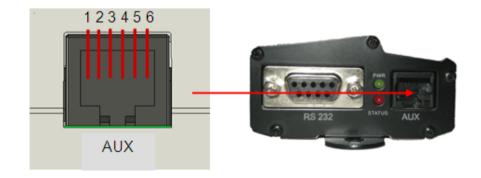
2-GPIO 16

3-GPIO 14

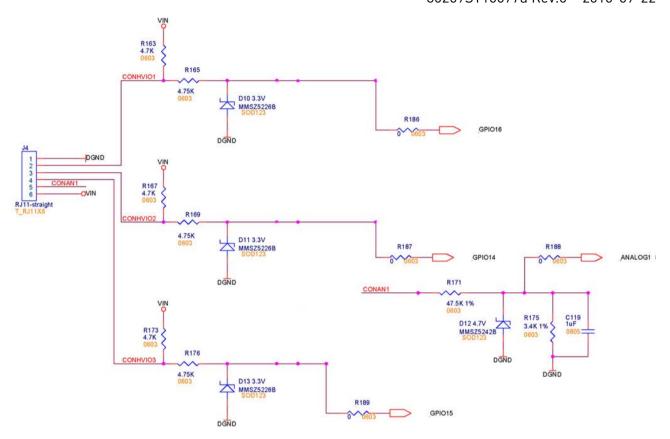
4-GPIO 15

5 - ADC1

6 - Power VIN







6.6. Status LED

Red LED displays the network status of the GT863-3GG.

Red LED status	Device Status
permanently on	a call is active
fast interrupt sequence (period 0,5s, Ton 1s)	Net search / Not registered / turning off
slow interrupt sequence (period 0,3s, Ton 3s)	Registered full service
permanently off	device off

Table 3: RED LED Status





Green LED Suggested application displays the operating status of **GT863-3GG** The Green LED control by GPIO-19 of the Telit modem

Green LED status	Device Status
permanently ON	Unit active
fast interrupt sequence (period 1s, Ton 1s)	Error: Net search / Not registered
OFF for 1s and then ON	Unit get phone call
permanently OFF	device off

Table 4: Suggested application for GREEN LED Status

6.7. Antenna Type

6.7.1. GSM/WCDMA antenna

The antenna that the customer chooses to use should fulfill the following requirements:

Frequency range	Depending by frequency band(s) provided by the network operator, the			
Trequency range	customer shall use the most suitable antenna for that/those band(s)			
	70 MHz in GSM850, 80 MHz in GSM900, 170 MHz in DCS & 140 MHz PCS			
Bandwidth	70 MHZ in WCDMA850, 80 MHz in WCDMA900, 140 MHz in WCDMA1900			
	& 250 MHz in WCDMA2100 band			

We recommended 4 types of GSM antennas with SMA connector:

- 900/1800Mhz 2.5dBm 3 meter cable part number EZantenna2.5db3M9001800.
- 850/1900Mhz 2.5dBm 3 meter cable part number EZantenna2.5db3M8501900.
- 900/1800/1900Mhz 1dBm 5 cm 90 degree SMA part number EZantenna1db5m90018001900SMA.
- 900/1800/1900Mhz 1dBm 5 cm for internal assembly part number EZantenna1db3M90018001900int.



6.7.2. GPS antenna

The active GPS antenna should fulfill the following requirements:

Frequency range	1575.42 MHz(GPS L1 band)
Bandwidth	+/- 2 MHz

The supply voltage to the active GPS antenna is provided by the GT863-3GG.

6.8. SIM Interface Characteristics

The GT863-3GG Terminal is fitted with a SIM card reader designed for 1.8V and 3V SIM cards. It is the flip-up type which is lockable in the horizontal position and is accessed through a removable panel.

The **Telit GT863-3GG Terminal** has an enhanced SIM card reader with a sensor that allows detecting of a "hot" removal of the SIM, therefore the SIM can be extracted and re-inserted while the module is still on.



NOTE:

On the **Telit GT863-3GG Terminal** the sensing of a hot removal of the SIM is not supported during power saving mode (AT+CFUN=5).

6.8.1. SIM card precautions

Before handling the SIM card in your application, ensure that you are not charged with static electricity. Use proper precautions to avoid electrostatic discharges.

- When the SIM card hatch is opened, the SIM card connectors lie exposed under the SIM card holder. *Caution!* Do not touch these connectors! If you do, you may release an electrical discharge that could damage the modem or the SIM card.
- When designing your application, the SIM card's accessibility should be taken into account. We always recommend that you have the SIM card protected by a PIN code. This will ensure that the SIM card cannot be used by an unauthorized person.





7. Software Features

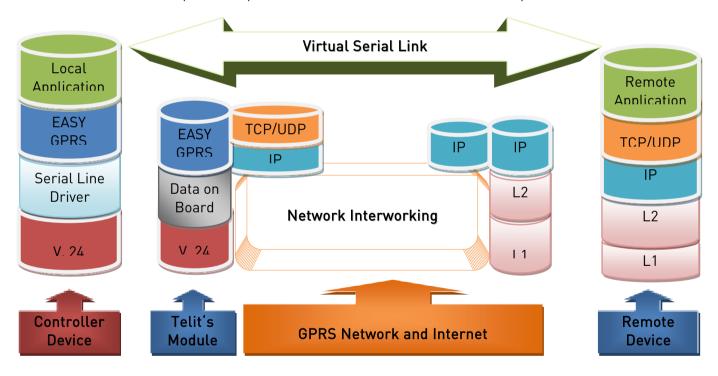
7.1. Enhanced EASY GPRS Extension

7.1.1. Overview

The EASY GPRS feature allows a user of the **Telit GT863-3GG Terminal** to contact a device in the Internet and establish with it a raw data flow over the WCDMA/EDGE/GPRS and Internet networks.

This feature can be seen as a way to obtain a "virtual" serial connection between the Application Software on the Internet machine involved and the controller of the **Telit GT863-3GG Terminal**, regardless of all the software stacks underlying.

An example of the protocol stack involved in the devices is reported:



This particular implementation allows to the devices interfacing to the **Telit GT863-3GG Terminal** the use of the WCDMA/EDGE/GPRS and Internet packet service without the need to have an internal TCP/IP stack since this function is embedded inside the module.

The EASY GPRS overcomes some of the known limitations of the previous implementation and implements some new features such as:





- Keep the WCDMA/EDGE/GPRS context active even after the closing of a socket, allowing the application to keep the same IP address;
- Also Mobile terminated (incoming) connections can be made, now it is possible to receive incoming TCP connection requests;
- A new internal firewall has been implemented in order to guarantee a certain level of security on internet applications.

7.1.2. EASY GPRS definition

The EASY GPRS feature provides a way to replace the need of an Internet TCP/IP stack at the terminal equipment side. The steps that will be required to obtain a virtual serial connection (that is actually a socket) to the Internet peer are:

- configuring the WCDMA/EDGE/GPRS Access
- configuring the embedded TCP/IP stack behaviour
- defining the Internet Peer to be contacted
- request the WCDMA/EDGE/GPRS and socket connections to be opened (host is connected)
- exchange raw data
- close the socket and WCDMA/EDGE/GPRS context

All these steps are achieved through AT commands.

As for common modem interface, two logical status are involved: command mode and data traffic mode.

- In Command Mode (CM), some AT commands are provided to configure the Data Module Internet stack and to start up the data traffic.
- In data traffic mode (Socket Mode, SKTM), the client can send/receive a raw data stream which will be encapsulated in the previously configured TCP / IP packets which will be sent to the other side of the network and vice versa. Control plane of ongoing socket connection is deployed internally to the module.

For more detailed information regarding WCDMA/EDGE/GPRS please consult Easy GPRS User Guide and AT Commands Reference Guide.



7.2. CMUX

CMUX (Converter-Multiplexer) is a multiplexing protocol implemented in the Telit module that can be used to send any data, SMS, fax, TCP data.

7.2.1. Product architecture

The Multiplexer mode enables one serial interface to transmit data to four different customer applications. This is achieved by providing four virtual channels using a Multiplexer (Mux).

This is especially advantageous when a fax/data/GPRS call is ongoing. Using the Multiplexer features, e.g. controlling the module or using the SMS service can be done via the additional channels without disturbing the data flow; access to the second UART is not necessary.

Furthermore, several accesses to the module can be created with the Multiplexer. This is of great advantage when several independent electronic devices or interfaces are used.

To access the three virtual interfaces, both the GSM engine and the customer application must contain Mux components, which communicate over the multiplexer protocol.

In Multiplexer mode, AT commands and data are encapsulated into packets. Each packet has channel identification and may vary in length.

7.2.2. Implementation feature and limitation

- 7.10 CMUX Basic Option used
- CMUX implementation support four full DLCI (Serial Port)
- Every CMUX instance has its own user profile storage in NVM
- Independent setting of unsolicited message.
- Every CMUX instance has its own independent flow control

NOTE: More details about the Multiplexer mode are available in the Cmux Product Specification





7.3. SAP: SIM Access Profile

7.3.1. Product architecture

The SAP feature allows the module to use the SIM of a remote SIM Server. This feature is implemented using special AT Command on a Virtual circuit of the CMUX interface.

7.3.2. Implementation feature

- SAP is based on 7.10 CMUX Basic Option used
- Only SAP Client features
- Logic HW flow control is recommended on the Virtual instance selected for the SAP command.

7.3.3. Remote SIM Message Command Description

The module sends request commands to the client application through a binary message that is crowned in the CMUX message. The client application shall extract the message and send it to the SAP server, through the appropriate protocols (e.g. by RFCOMM, that is the Bluetooth serial port emulation entity).

The client application shall extract all the messages sent by SAP server and put them in the CMUX message, to sent to the module.

The module satisfies the following feature requirements:

- Connection management
- Transfer APDU
- Transfer ATR
- Power SIM on
- Report Status
- Error Handling

Every feature needs some procedures support:



Feature	Procedure	
Connection Management	Connect	
	Report Status	
	Transfer ATR	
	Disconnection Initiated by the Client	
	Disconnection Initiated by the Server	
Transfer APDU	Transfer APDU	
Transfer ATR	Transfer ATR	
Power SIM on	Power SIM on	
	Transfer ATR	
Report Status	Report Status	
Error Handling	Error Response	

Report Status, Disconnection Initiated by the Server and Error Response are independent messages sent by server. The other procedures consist of couples of messages, started by client.



NOTE:

More details about the SAP are available in the SAP User Guide.

7.4. PFM (Premium FOTA Management)

Premium FOTA Management (PFM) provides a cost-effective, fast, secure and reliable way for wirelessly update the firmware on mobile devices, ensuring that embedded software is up-to-date with the latest enhancements and features. Customers, who want to benefit from this service, must pass through the Telit certification program, where Telit will assist the customer in validating the correct implementation of FOTA.

7.4.1. 5.2.1 FOTA (Firmware Over The Air)

Telit, which has signed a partnership agreement with the worldwide leader of Firmware OTA technology Red Bend, has integrated its unique vCurrent® Mobile client software for use in its m2m product portfolio. Telit is therefore able to upgrade its products by transmitting only a delta file, which represents the difference between one firmware version and another.





All Telit modules, starting from SW version 8.01.x06, support Over-the-Air firmware update. Note that this service will be enabled only after signing specific agreement with Telit.

See http://www.telit.com/en/infinita-services.php for details.

7.5. AT Command Interface

The Telit GT863-3GG Terminal can be driven via the serial interface using the standard AT commands4. The Telit GT863-3GG Terminal is compliant with:

- 1. Hayes standard AT command set, in order to maintain the compatibility with existing SW programs.
- 2. 3gpp TS 27.007 specific AT command and WCDMA/GPRS specific commands.
- 3. 3gpp TS 27.005 specific AT commands for SMS (Short Message Service) and
- 4. CBS (Cell Broadcast Service)
- 5. FAX Class 1 compatible commands

Moreover the Telit GT863-3GG Terminal supports also Telit proprietary AT commands for special purposes.

The UC864-G module AT Commands Reference Guide document, shows a detailed description of all supported AT commands and how to use the AT commands with the Telit GT863-3GG Terminal through some example scripts.



NOTE:

We remind you that when you consult the AT Commands Reference Guide referring to the UC864-G please consider that due to the limitations of the GT863-3GG Terminal, such as no access to GPIO, not all AT Commands can be implemented.

⁴ The AT is an ATTENTION command and is used as a prefix to other parameters in a string. The AT command combined with other parameters can be set up in the communications package or typed in manually as a command line instruction.





8. Service and SW / Firmware Update

The RS232 serial interface on the Terminal used for the communication with a PC can also be used to update the Telit GT863-3GG Terminal firmware (Software). The firmware update can be done with a specific software tool provided by Telit that runs on windows based PCs.

8.1. Xfp Tool

The firmware update of the module can be performed with the Xfp Tool provided by Telit. It runs on Windows based PCs. It erases the flash memory content, then it downloads the new firmware on the flash memory.

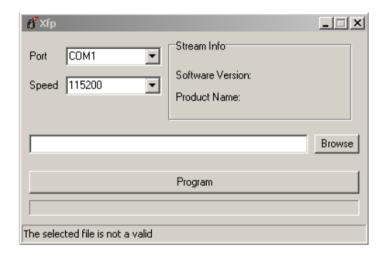
8.1.1. Step-by-Step Upgrade Procedure

To update the GT863-3GG firmware, follow the procedure:

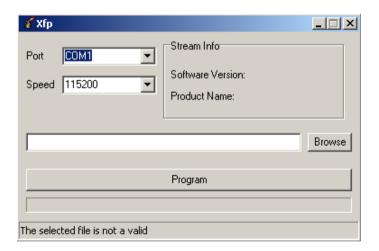
- 1. collect information about the GT863-3GG and Software version using the following
 - a. AT commands:
 - b. AT+CGMR<cr>, returns the Software version information;
- 2. AT+CGMM<cr>, returns the GT863-3GG identification.
- 3. Switch OFF the terminal.
- 4. Run the Xfp.exe tool, the following windows are displayed. Power OFF the module if needed then press OK button.







1. After pressing OK button on the screen is displayed only the following windows.

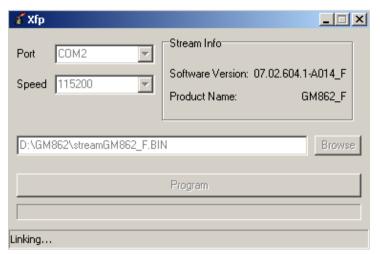


2. After selecting COM port, speed⁵ and stream file (stream files holds new firmware) press Program button, a flashing blue bar appears on the displayed window. The following window is displayed on the screen.

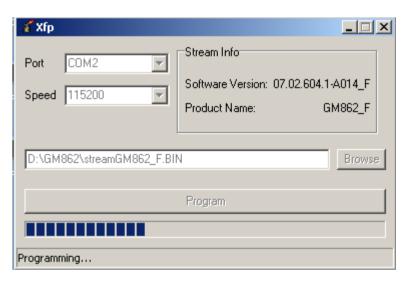
⁵ To use speed greater than 115200 Bps a dedicated hardware on PC is needed.





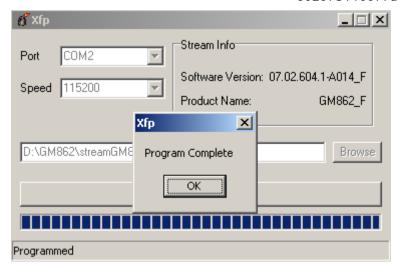


3. After powering ON the module the following window is displayed on the screen. The programming is in progress

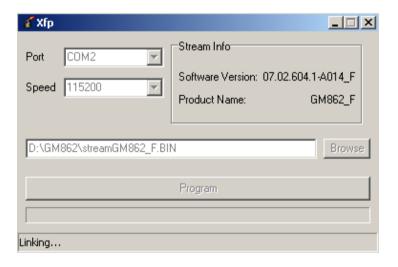


4. The following window is displayed on the screen when the module is successfully programmed.





5. After selecting COM port, speed6 and stream file (stream files holds new firmware) press Program button, a flashing blue bar appears on the displayed window. The following window is displayed on the screen.

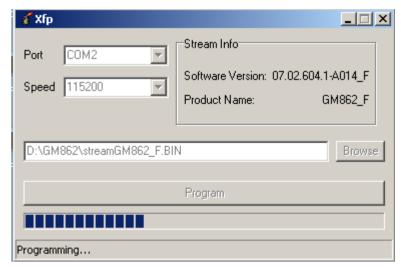


6. After powering ON the module the following window is displayed on the screen. The programming is in progress

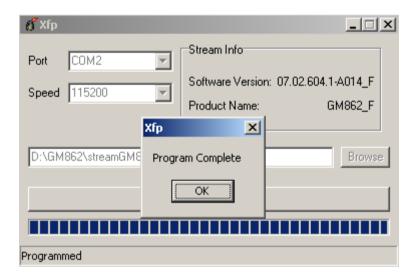
⁶ To use speed greater than 115200 Bps a dedicated hardware on PC is needed.







7. The following window is displayed on the screen when the module is successfully programmed.



8. Now the GT863-3GG is programmed with the new firmware. Press OK button and exit the tool.



9. Product specified approval for CE

Name: Industrial GSM/UMTS Communication unit

Model: GT863-3GG

Reference standard(s):

Radio Note: test only for GC864 module

Number	Market	Standard	Procedure
1	Europe	EN 301 511 V9.0.2	Spurious Emissions testing

EMC

Number	Market	Standard	Procedure
2	Europe	EN 301 489-7 V1.2.1	partial testing and report
3	USA	47 CFR part 15:06 sb.B	Verification

Safety

Number	Market	Standard	Procedure
4	Europe	EN 60950-1:06	DoC



10. SAFETY RECOMMANDATIONS

READ CAREFULLY

Be sure the use of this product is allowed in the country and in the environment required. The use of this product may be dangerous and has to be avoided in the following areas:

- Where it can interfere with other electronic devices in environments such as hospitals, airports, aircrafts, etc.
- Where there is risk of explosion such as gasoline stations, oil refineries, etc. It is responsibility of the user to enforce the country regulation and the specific environment regulation.

Do not disassemble the product; any mark of tampering will compromise the warranty validity. We recommend following the instructions of the hardware user quides for a correct wiring of the product. The product has to be supplied with a stabilized voltage source and the wiring has to be conforming to the security and fire prevention regulations. The product has to be handled with care, avoiding any contact with the pins because electrostatic discharges may damage the product itself. Same cautions have to be taken for the SIM, checking carefully the instruction for its use. Do not insert or remove the SIM when the product is in power saving mode. The system integrator is responsible of the functioning of the final product; therefore, care has to be taken to the external components of the module, as well as of any project or installation issue, because the risk of disturbing the GSM network or external devices or having impact on the security. Should there be any doubt, please refer to the technical documentation and the regulations in force. Every module has to be equipped with a proper antenna with specific characteristics. The antenna has to be installed with care in order to avoid any interference with other electronic devices and has to guarantee a minimum distance from the body (20 cm). In case of this requirement cannot be satisfied, the system integrator has to assess the final product against the SAR regulation.

The European Community provides some Directives for the electronic equipments introduced on the market. All the relevant information's are available on the European Community website:

http://europa.eu.int/comm/enterprise/rtte/dir99-5.htm

The text of the Directive 99/05 regarding telecommunication equipments is available, while the applicable Directives (Low Voltage and EMC) are available at:

http://europa.eu.int/comm/enterprise/electr_equipment/index_en.htm

