

EZ864 UMTS Terminal Telit Cellular GSM Engine



Version: 01.01

EZ864 UMTS Terminal_HD_V01.01 06.Mar.2008

Hardware Interface Description

1. Hardware Features of the EZ864 UMTS Terminal

| Feature | Implementation |
|---------------------------|--|
| Incorporates UC864 module | The Telit UC864 UMTS module handles all GSM processing for, signal and data within the EZ864 UMTS Terminal. |
| Frequency bands | Quad band: GSM 900/1800/2100MHz |
| Power supply | Single supply voltage 5V to 30V |
| Operating temperature | -20°C to +70°C ambient temperature |
| Physical | Dimensions: 83mm x 64m x 33m Weight: 150g |
| RoHS, WEEE | All hardware components are fully compliant with the EU RoHS and WEEE Directives |
| 4 GPIO inputs | 4 input zones or can be set to: <ul style="list-style-type: none">• 2 outputs 250ma each• 2 inputs for 4-20ma sensors |
| 1 internal relay | 1 relay 1A 30V maximum |

2. Interface Description

2.1 Overview

EZ864 UMTS Terminal provides the following connectors for power supply, Interface and antennas:

1. SMA connector (female) for GSM antenna
2. 4-pole 3mm Micro Mate-N-LOK connector for power supply, Internal relay output
3. SIM card holder
4. 9-pole (female) SUB-D plug for RS-232 serial interface
5. Led GSM and GPIO
6. 6-pole RJ11 plug (female) for GPIO



Figure 1: EZ864 UMTS Terminal side A view



Figure 2: EZ864 UMTS Terminal side B view

2.3 Power Supply

The power supply of the EZ864 UMTS Terminal has to be a single voltage source of POWER 5V-30V capable of providing a peak during an active transmission. The EZ864 UMTS Terminal is protected from supply voltage reversal. An internal fuse ensures an electrical safety according to EN60950. This fuse is not removable. A fast acting fuse 0.8A with melting is necessary to use with the EZ864 UMTS Terminal at a 24V power supply system for vehicles. The power supply must be compliant with the EN60950 guidelines.

| Pin | Signal name | Use |
|-----|-------------|--------------------------------|
| 1 | POWER | Input Power supply range 5-30V |
| 2 | Relay | Internal Relay leg A |
| 3 | GND | Ground |
| 4 | Relay | Internal Relay leg B |

Table 1: Pin assignment of the plug for power supply and relay

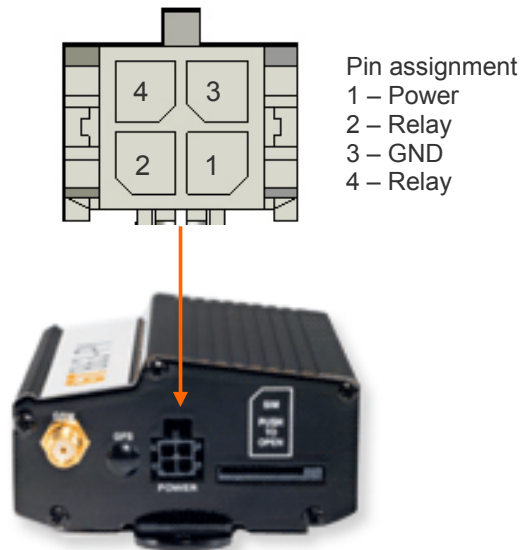


Figure 4: Male 4-pole plug for power supply and Relay output.

2.3.1 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: min. 1,2A @12V
- Power Supply ripple: max. 120mV
- Input current in idle mode: 20mA @ 12V
- Input average current in communication mode: 100mA @ 12V

2.4 RS-232 Interface

The serial interface of the EZ864 UMTS 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 EZ864 UMTS 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.

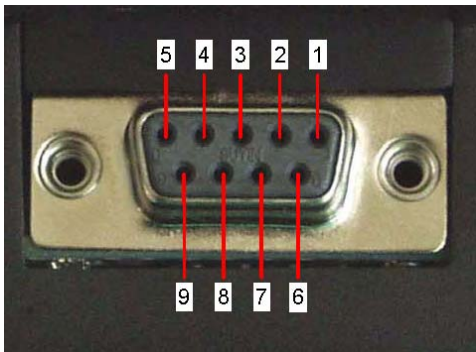


Figure 5: Pin assignment RS-232 (D-Sub 9-pole female)

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

Table 2: D-Sub 9-pole female RS232

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

2.5 GPIO Interface

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

- 2 analog inputs or 2 GPIO digital, internal jumpers selection.
- 2 open collector outputs or 2 GPIO digital, internal jumpers selection.
- 1 input power and 1 Ground

Pin assignment

- 1 – GND
- 2 – ADC1 or GPIO1
- 3 – ADC2 or GPIO2
- 4 – Open collector 1 or GPIO 3
- 5 - Open collector 2 or GPIO 4
- 6 – Input Power (12v)

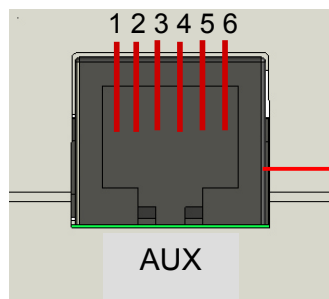


Figure 6: GPIO RJ11 plug (6-pole female)

2.6 GPIO Selection

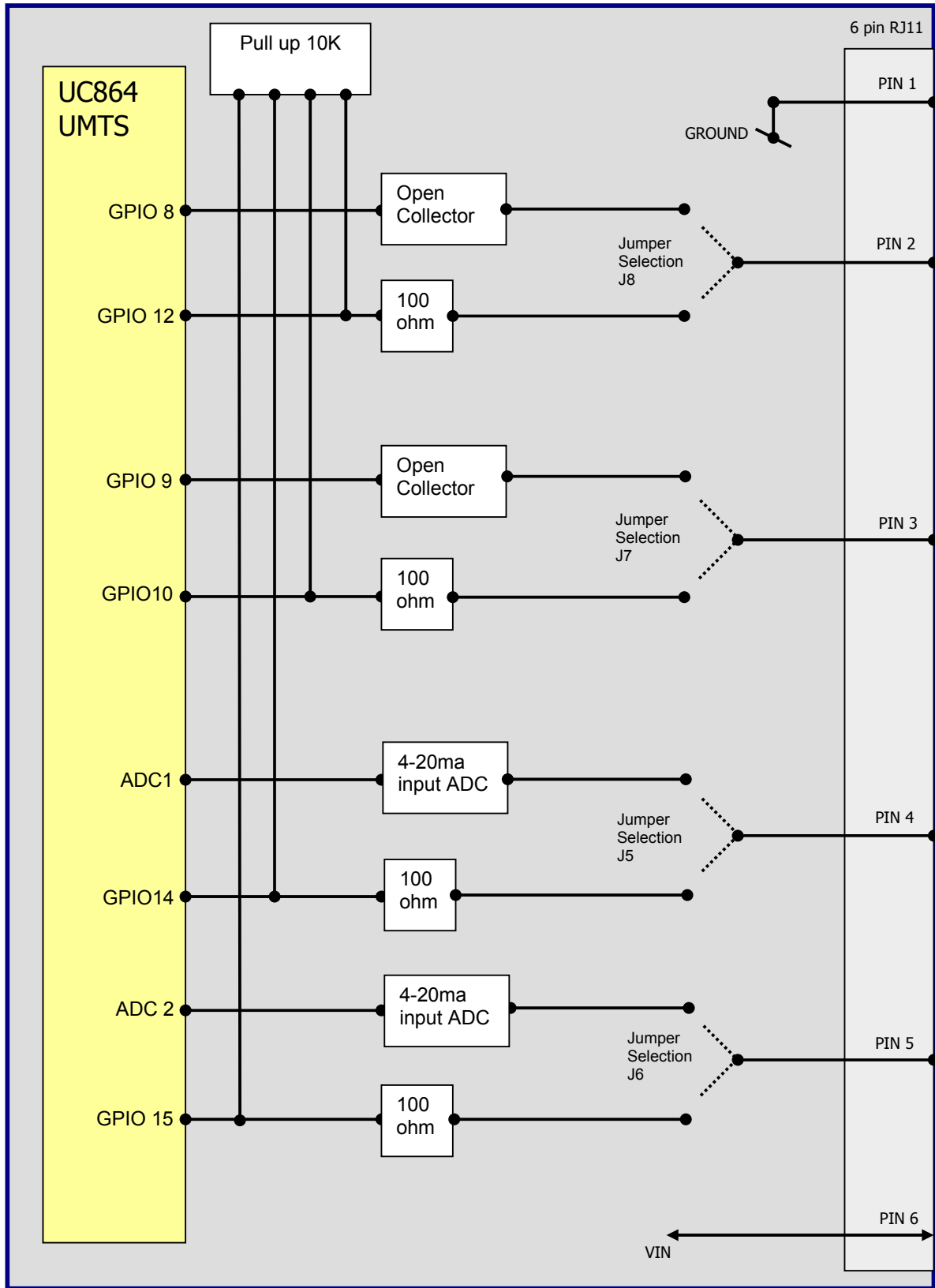


Figure 7: GPIO RJ11 plug setup options

2.9 Status LED

Red LED displays the network status of the EZ864 UMTS Terminal.

| 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 displays the operating status of EZ864 UMTS

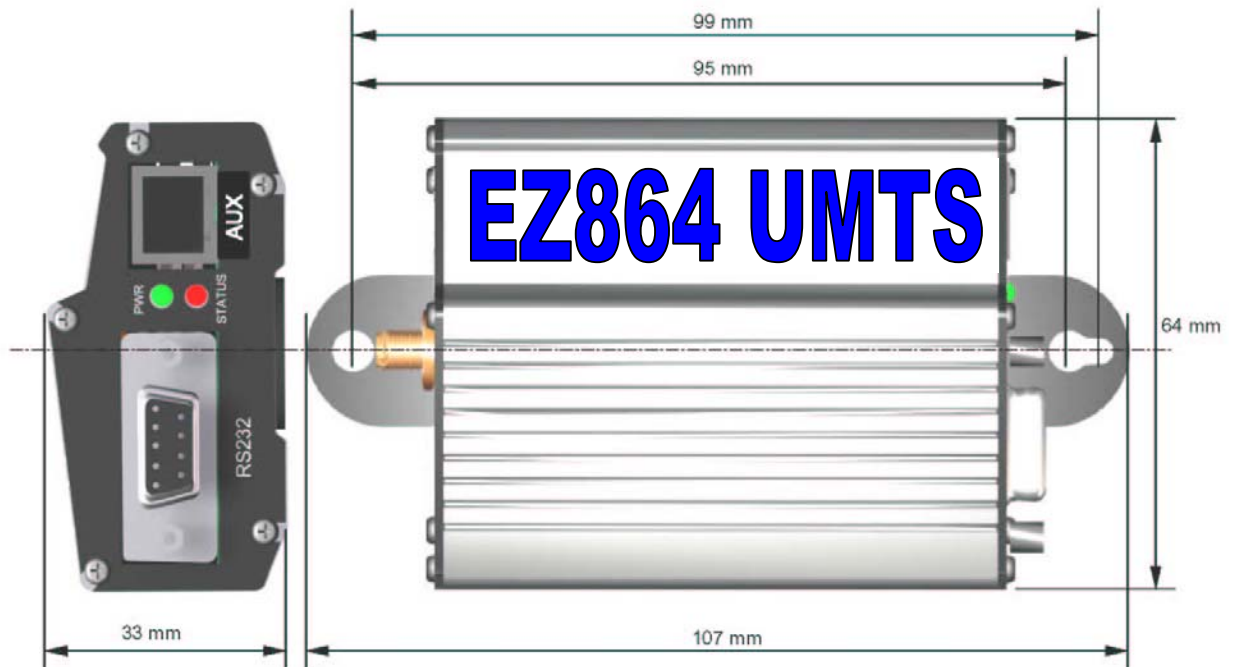
| Green LED status | Device Status |
|---|------------------------------------|
| permanently ON | Unit active |
| fast interrupt sequence (period 1s, Ton 1s) | Error: Net search / Not registered |
| OFF for 1s and then ON | Unit get phone call |
| permanently OFF | device off |

Table 4: Suggested application for GREEN LED Status

4. Mechanical Characteristics

| | |
|---------------------------------|--|
| Weight | 150g |
| Dimensions (max) L x W x H | 83mm x 64 x 33mm |
| Temperature range | -20°C to +70°C ambient temperature |
| Protection class | IP40 Avoid exposing EZ864 Terminal to liquid or moisture |
| Mechanical vibrations Amplitude | 7.5mm at 5-200Hz sinus |
| Air humidity | 5% - 85% |
| Class of flammability | UL94 HB |
| Casing material | Aluminum |

Table 5: Mechanical characteristic



5.2 Power Supply

This chapter provides specifications for the power supply which serves the Terminal. The power supply we recommended is 12V 1.2A part number EZ12V1.2A. The type of the receptacle assembled on the EZ864 UMTS 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>

5.2 GSM antenna

This chapter provides specifications for the GSM antennas which serves the Terminal.

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. 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 guides 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

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