



Wireless solutions
for M2M world

USER GUIDE

GSM modem iRZ Q2406B





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1. Introduction

1.1. Document description

This document is intended for experienced PC users and describes the hardware of the iRZ Q2406B E modem and the order of operation with it.

1.2. Service information

Document version		Issue date	
1.0.1		22.06.2015	
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1.3. Safety restrictions

Restrictions on the use of the device near other electronic devices:

- Turn the modem off in hospitals or when located near medical equipment such as pacemakers, hearing aids and so on. Interference for medical equipment may occur
- Turn the terminal off when on an airplane. Take measures to avoid accidental turning on
- Turn the modem off in the vicinity of gas stations, chemical plants, and places where demolition work is conducted. Interference for technical devices may occur
- At a close range, the modem may produce interference for television sets and radio transmitters

Maintenance requirements:

- Protect the modem against external hazards (high temperatures, caustic chemicals, dust, water and so on)
- Keep the modem safe from blows, falls, and strong vibrations
- Do not attempt to take apart or modify the modem on your own. Such actions will void your warranty

Note: Make sure you follow the operation manual for this device. Improper use of the device will disqualify your warranty.



2. General Information

2.1. Device assignment

The iRZ Q2406B modem is a stand-alone GSM modem designed for transmission of data, text and fax messages. It is well-designed for mobile Internet access, as well as for industrial applications: telemetry, wireless data collection from sensors, remote surveillance and signalling.

The modem management is realized with the standard AT commands. The terminal is equipped with the light-emitting diodes enabling to keep track of connection state and emergencies.

2.2. Complectation

Complete set of the GSM modem iRZ Q2406B:

- terminal iRZ Q2406B;
- factory box.

2.3. Parameters

Basic parameters:

- bands: 900/1800 MHz;
- power output:
 - 2W EGSM 900;
 - 1W GSM 1800;
- GPRS class 10;
- BCCH support;
- built-in TCP/IP stack;
- MS class B;
- CSD up to 14.4 kbps;
- SMS;
- USSD;
- voice;
- fax group 3: class 1;
- Open AT parameters: Flash memory 32MB, SRAM 4MB (32/4).

Electric power supply:

- power supply voltage 9 to 30 V;
- max. absorbed current:
 - with power supply voltage +12 V — 300 mA;
 - with power supply voltage +24 V — 150 mA.



Physical parameters:

- size, max. 76 x 77 x 31 mm;
- weight, max. 100 g.;
- operating temperature range: -20°C to +50°C;
- storage temperature range: -40°C to +65°C.

Interfaces:

- 4-pins Micro-Fit connector (power supply, GPIO, INTR);
- DB15 connector – communication cable, interface RS232, audio interface;
- SMA connector – GSM antenna.



2.4. Device appearance

The Q2406B modem is a compact device designed in a durable and light aluminium case. The device appearance is presented in fig. 2.4.1 and fig. 2.4.2:

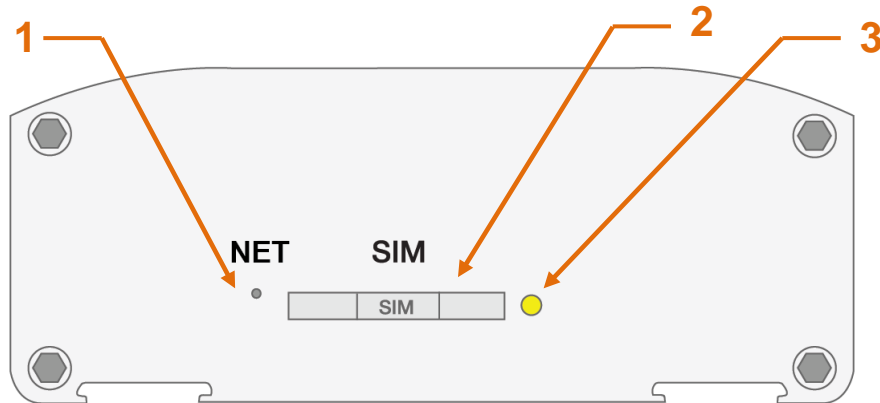


Fig. 2.4.1. Front view

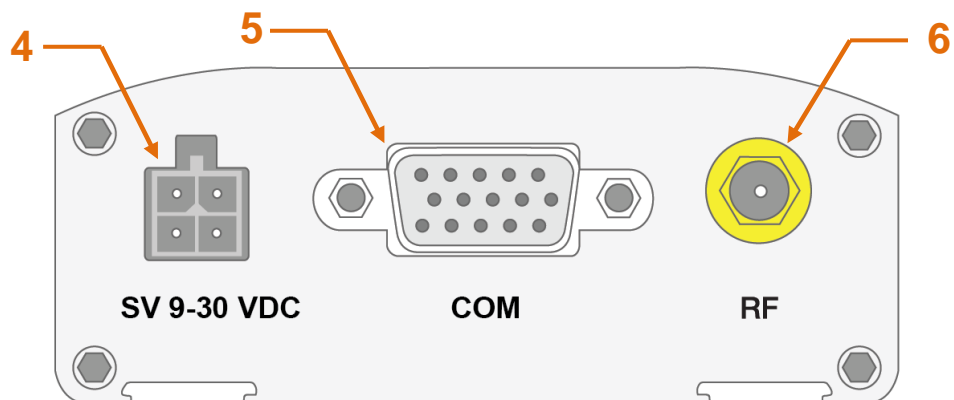


Fig. 2.4.2. Back view

The numbers in the figures illustrate:

1. network LED indicator;
2. SIM card tray;
3. SIM card eject button;
4. Micro-Fit connector (power supply, GPIO, INTR);
5. DB15 connector for RS232 data cable and audio interface connection;
6. SMA connector for GSM antenna connection.



2.5. Interfaces

2.5.1. DB15 connector (RS232, audio interface)

It is used for the modem management, data transmission. RS232 exchange protocol, factory setting: connection speed of 115200 bps, 8-N-1. It is also used for an audio headset connection.

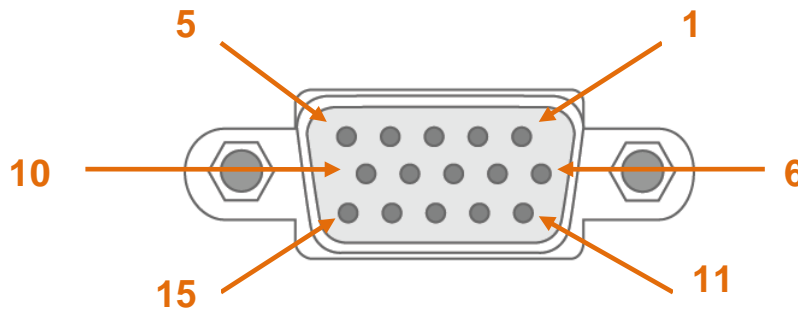


Fig. 2.5.1. DB15 connector

Table 2.5.1: DB15 connector pin assignments

Pin	Signal	Direction	Purpose
1	DCD	Modem-PC	indicates presence of DTE to DCE
2	TXD	PC-Modem	data transmission
3			not used
4	MICP	PC-Modem	microphone uncomplemented input and microphone power supply
5	MICN	PC-Modem	microphone complemented input
6	RXD	Modem-PC	data reception
7	DSR	Modem-PC	data set ready
8	DTR	PC-Modem	data terminal ready
9	GND	Ground	system case
10	SPKP		headphone uncomplemented output
11	CTS	Modem-PC	ready for sending
12	RTS	PC-Modem	request to send
13	RI	Modem-PC	calling indicator
14	RESET	PC-Modem	reset, active low
15	SPKN	Modem-PC	headphone complemented output

Audio headset parameters:

- microphone current - 0.5 mA;
- microphone power voltage - 100 mA;
- loudspeaker impedance - 32 Ohm.



2.5.2. Micro-Fit connector (power supply, GPIO, INTR)

Micro-Fit connector is used for supplying power to modem. Also 2 keys for power grounding and 2 ADC channels are made for output connectors.

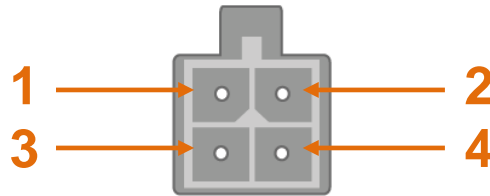


Fig. 2.5.2. Power supply connector

Table 2.5.2: Power supply connector pin assignments

Pin	Signal	Purpose
1	Vcc	Positive pole of a constant power voltage. Protected by a fuse and overvoltage protection circuit (at input power supply over 30V) and incorrect polarity.
2	GND	Equipment case, ground.
3	INTR	Interrupt input, active low level. Operates the GSM module 16m output.
4	GPIO	Digital input/output. When used as an input (current load of 10mA): <ul style="list-style-type: none">■ Low level (0–0,5 V), the GSM module 18th output state is logical "1";■ High level (3–5 V), the GSM module 18th output state is logical "0". When used as an output: <ul style="list-style-type: none">■ At the GSM module 20th output state logical "1" connector pin-out is connected to ground;■ At the GSM module 20th output state logical "0" connector pin-out is in the third position.



2.6. The modem status indication

The modem is provided with LED indication for displaying the connection state.

Table 2.6.1: Connection state indication

Indication mode		Operation mode
Off-state	○○○○○○○○○○○○	The modem is turned off
Always on	●●●●●●●●●●	The modem is not registered to the network
200 ms on / 2 s off	●○○○○○○○○○○	The modem is registered to the network
200 ms on / 600 ms off	●○○●○○●○○	Transmitting data



3. Connection and configuration

3.1. Connection

It is necessary to insert a SIM card into the modem before supplying power (it is recommended to use a SIM card with the removed PIN code). For this you need to:

- remove a SIM card tray pressing the eject button (fig. 2.4.1.);
- insert a SIM card into the SIM card tray;
- insert the SIM card tray into the modem.

Do not apply much force when inserting a SIM card.

Connect a GSM antenna and a switching cable. Supply power to the modem, Micro-Flit connector (fig. 2.4.2). If a SIM card is unlocked, the modem is automatically registered after power supply. As soon as the registration is complete the modem switches to an operation mode, the indicator blinks (table 2,6.1).

Note: A GSM antenna, switching cables and a power supply unit are not included.

3.2. Management and turn-off

The modem management is realised by the standard AT commands, as well as by the commands patented by WAVECOM. Additional information and support can be found on the websites www.radiofid.ru or www.irz.net.

You can turn off the modem in the following ways:

- using software AT commands;
- powering off.



4. Support

New document versions and software are available using:

St. Petersburg	
The company's website:	www.radiofid.ru
Phone number in St. Petersburg:	+7 (812) 318 18 19
E-mail:	support@radiofid.ru

Our support team is ready to assist you with any questions you might have when installing, configuring or solving issues with our equipment.