

GW-USB-13

IQRF USB Gateway with OLED

User's Guide



Simple way to smarter wireless solutions

Description

GW-USB-13 is an IQRF gateway with USB connectivity and OLED display.

It is a part of the IQRF platform intended as an interface between USB and an IQRF network or a portable interface between a human and an IQRF network.

It allows to visualise and setup parameters in given application. GW-USB-13 is a generic equipment, i.e. the hardware is fixed and the user can realize specific functionality by software only.

Applications should be developed using the DS-PAGER development set.



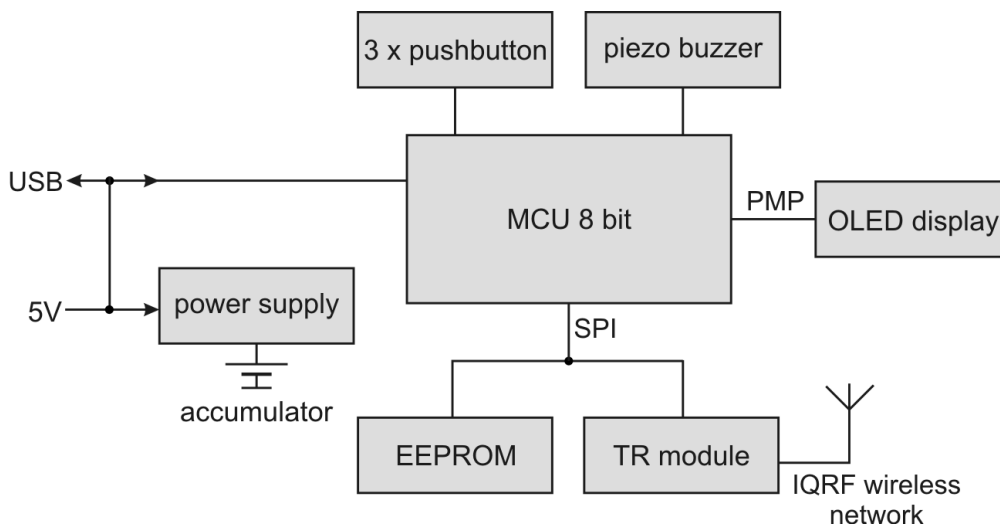
Applications

- Home automation
- Portable controllers and pagers
- Diagnostic tool
- Portable service tool for IQRF network management

Key features

- OLED display 1", 96 x 64 pixels, white
- 8b microcontroller
- USB v2.0 interface
- EEPROM memory
- 3 pushbuttons
- Piezo buzzer
- IQRF transceiver module
- On-board PCB antenna
- Backup accumulator
- Very low power consumption in Sleep mode

Block schematics



Electrical specifications*(typical values unless otherwise stated)*

Power supply	5.0 ± 0.35 V DC
Accumulator	LIP-552240 (Li-Pol 3.7 V, 400 mAh)
Display	OLED 1", 96 x 64 pixels, white
USB	V2.0 Compliant SIE
Supply current	
operational	18 mA to 35 mA, 25 mA ¹ typical (depends on display contrast and number of active pixels)
standby	11 µA ²
accumulator charging	85 mA
Temperature range	0 °C to +70 °C
Frequency range	868 MHz or 916 MHz (SW selectable)
RF output power	1.3 mW
Supported TR modules	TR-52B and highers, without integrated antenna
Antenna	PCB antenna on the GW board. It must be connected (soldered) by the user.
Dimensions	93 mm x 42 mm x 14 mm
Weight	42 g ³

Note 1: This current is increased due to charging in case of external supply (depended on the accumulator state).

Note 2: All peripherals shut down.

Note 3: Including accumulator and TR module.

Absolute maximum ratings

Stresses above those values may cause permanent damage to the device. Exposure to maximum rating conditions for extended periods may affect device reliability.

Supply voltage (VCC)	5.5 V
Storage temperature	-40 °C to +85 °C

Hardware

GW-USB-13 is a generic equipment, i.e. the hardware is fixed and the user can realize specific functionality by software only. Detailed information for designers is available in the DS-PAGER development set.

Power supply

GW-USB-13 is intended to be supplied via micro USB connector, either from PC or from the adapter. The accumulator serves as a backup for external power source and should be charged from it.

Sleep mode

It is possible to switch off all functions and peripherals for current consumption minimizing, especially in idle or while supplied from the accumulator. GW power is not switched off, the Sleep mode is used instead of this.

EEPROM memory

Capacity: 64 kb, serial interface SPI (shared with the TR module), 1 000 000 erase/write cycles (typ.).

Pushbuttons

Functionality of all three pushbuttons is fully under software control.

Beeper

The functionality is fully under software control.

TR module

The transceiver module is inserted in SIM card connector. User program should be uploaded by an external programmer outside the GW or inside the GW using RF PGM wireless upload (RF PGM should be enabled in external programmer first) – see the AN009 Application note.

Antenna

GW uses the built-in PCB antenna module board.

Caution: To enable TR removal, the GW is delivered with TR module not connected to the antenna. It should be soldered by the user before usage.

Case

The plastic case is limited to a very few number of open/close cycles only.

Tip: The TR module can be uploaded via RF PGM with the case closed.

Interfaces and connectors

interface	pins	connector type
USB	5	Micro USB
Accumulator	2	Soldering stripes
Charger	2	Via Micro USB connector
TR module	8 1	SIM connector Through hole soldering for antenna connection

Software

GW-USB-13 software should be developed with the DS-PAGER development set. Detailed information for designers is delivered with it.

Pack list

- GW-USB-13 with Demo application programmed (in Sleep mode)
- TR-52B with E07-SPI example programmed, inserted in SIM connector, not connected to the antenna, switching to the RF PGM after reset disabled
- Accumulator (soldered)
- Micro USB cable

Ordering codes

- GW-USB-13 Gateway GW-USB-13, 868 MHz as well as 916 MHz

Recommended options

- DS-PAGER Development set for GW-USB-13
- MI-TI-A6-microUSB Wall adapter for charging from mains.

Document history

- 100726 Revised, TR-52B inside. Related development set renamed to DS-PAGER.
- 090825 Related development set renamed to DK-GW-USB-13-xxx.
- 090626 Just visual aspects improved
- 090514 First release

Sales and Service

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Partners and distribution

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Complies with Directive 2002/95/EC (RoHS)



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On-line support: <http://iq-esupport.com>



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