

# **GW-USB-13A**

**IQRF USB Gateway with OLED**

## **User's Guide**



Smarter wireless. Simply.

## Description

GW-USB-13A 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-13A is a generic equipment, i.e. the hardware is fixed and the user can implement specific functionality by software only.

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



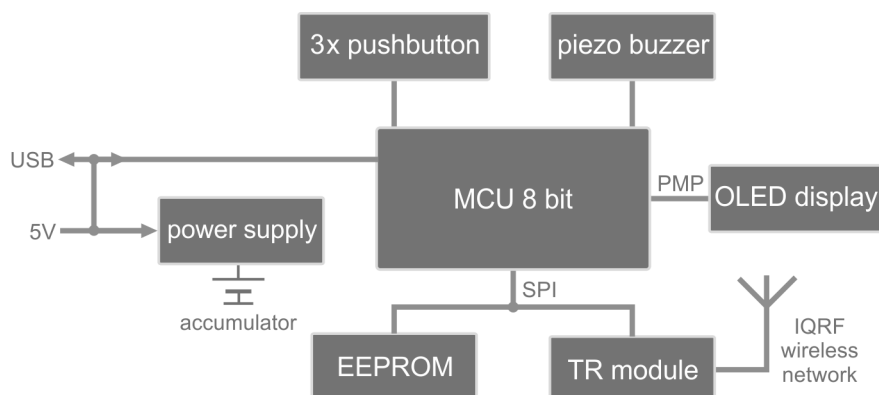
## Applications

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

## Key features

- OLED display 1", 128 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



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<b>Electrical specifications</b>	<b>(typical values unless otherwise stated)</b>
Power supply	5.0 ± 0.35 V DC
Accumulator	LIP-552240 (Li-Pol 3.7 V, 400 mAh)
Display	OLED 1", white, 128 x 64 pixels. Viewing area 120 x 64 pixels only.
USB	V2.0 Compliant SIE
Supply current	
operational	18 mA to 35 mA, 25 mA <sup>1</sup> typical (depends on display contrast and number of active pixels)
standby	11 µA <sup>2</sup>
accumulator charging	85 mA
Temperature range	
operational	0 °C to +60 °C
accumulator charging	0 °C to +45 °C
Frequency range	868 MHz or 916 MHz (SW selectable)
RF output power	1.3 mW
Supported TR modules	TR-52B and higher, 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 <sup>3</sup>

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**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.

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### **Absolute maximum ratings**

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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

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**Hardware**

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

**Power supply**

GW-USB-13A 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 RFPGM wireless upload (RF PGM should be enabled in external programmer first) – see the IQRF IDE help.

**Antenna**

PCB antenna built-in GW-USB-13A board.

**Case**

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

**Tip:** The TR module can be uploaded wirelessly via RFPGM 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

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**Software**

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

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**Pack list**

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- GW-USB-13A with Demo application programmed (in Sleep mode)
- TR-52D with E07-SPI example programmed, inserted in SIM connector, switching to the RFPGM after reset disabled.
- Accumulator (soldered)
- Micro USB cable

**Ordering codes**

- GW-USB-13A                    Gateway GW-USB-13A, 868 MHz/916 MHz SW selectable

**Recommended options**

- DS-PAGER                    Development set for GW-USB-13A
- TY-A6A                      Wall adapter for charging from mains

**Document history**

- 140331                      TR-52D inside.
- 120313                      Upgraded to GW-USB-13A with OLED 128 x 64.
- 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                      GW-USB-13, first release.

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# Sales and Service

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Please visit [www.iqrf.org/partners](http://www.iqrf.org/partners)

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## Quality management

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*Complies with Directive 2002/95/EC (RoHS)*



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