

GW-USB-03

FW v2.00

IQRF USB Gateway

User's Guide

- GW-USB-03-868
- GW-USB-03-916



Simple way to smarter wireless solutions

Description

GW-USB-03 is an IQRF gateway with USB connectivity. It is intended as an interface between IQRF network and PC.

The user can realize specific functionality by software for internal TR module. Applications should be developed using the CK-USB-02 development kit.



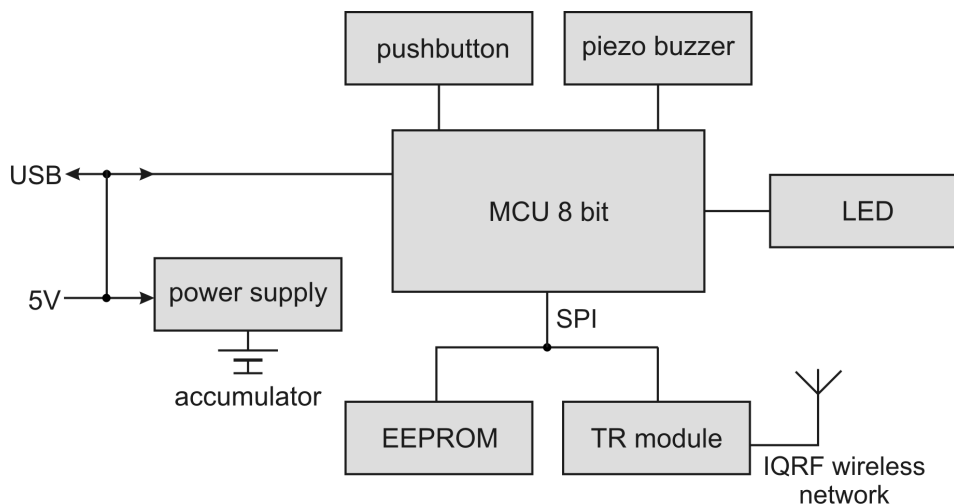
Applications

- IQRF – PC interface
- Home automation
- Diagnostic tool
- Portable service tool for IQRF network management

Key features

- PC connectivity via USB v2.0 interface
- TR module with on-board antenna
- Programming via USB and IQRF IDE
- Bidirectional RF communication
- High performance
- 8b microcontroller, bootloader for firmware upgrade
- 1 pushbutton, 1 LED
- EEPROM memory
- Piezo buzzer
- 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	Li-Pol 3.7V, 400mAh
USB	V2.0 Compliant SIE
Supply current	
operational	17 mA ¹
standby	10 µA ²
accumulator charging	85 mA
Temperature range	0 °C to +70 °C
Supported TR modules	TR-868-31B or TR-916-31B and higher
Antenna	PCB on GW board
Frequency band	868 MHz or 916 MHz
RF output power	according to TR module, programmable
EEPROM memory	64 kb, SPI, 1 000 000 erase/write cycles (typ.)
Dimensions	93 mm x 42 mm x 14 mm
Weight	39 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

The user can realize specific functionality by software for the TR module. Applications should be developed using the CK-USB-02 development kit. For detailed information refer to CK-USB-02 User's guide.

Power supply

GW-USB-03 is intended to be supplied via micro USB connector, either from PC or from the adapter. The accumulator serves just as a backup for external power source and should be charged from it.

Sleep mode

While supplied from the accumulator for more than 20 s, the GW is turned to power saving mode with all functions and peripherals switched off. Wake-up (normal operation) is reestablished just after reconnecting supply to USB connector. GW power is never completely switched off, the Sleep mode is used instead of this.

EEPROM memory

Capacity 64 kb, serial interface SPI, shared with the TR module. Reserved for special applications.

Pushbutton and LED

Functionality of the pushbutton and the LED is similar to CK-USB-02 (S2, LED2).

Beeper

For multiple IQRF IDE instances, it identifies the GW connected to given USB port (by clicking IQRF logo on IDE screen).

TR module

The TR-31B wireless IQRF transceiver module or higher, 868 MHz or 916 MHz, in SIM card format, with PCB antenna on GW board.

Case

The plastic case is limited to a very few number of open/close cycles only. User program can be uploaded into the TR module without opening the box.

Software

Firmware for the MCU inside the GW is fixed but can be upgraded by the user using the code provided by IQRF manufacturer. Refer to IQRF Application note *AN008 – Firmware upgrade* for details.

TR module functionality is fully user programmable. Factory default is E07-SPI (one of basic IQRF examples). Programming and uploading the code is similar to CK-USB-02.

Pack list

- GW-USB-03, in Sleep mode
- TR-31BA-868 or TR-31BA-916, with E07-SPI example programmed, inserted in SIM connector
- Accumulator (soldered)
- Micro USB cable
- Printed Brief User's manual

Recommended options

- MI-TY-A6-microUSB Switching power supply

Ordering codes

- GW-USB-03-868 Gateway GW-USB-03, 868 MHz
- GW-USB-03-916 Gateway GW-USB-03, 916 MHz
- DK-GW-USB-03-868 Developemnt kit for GW-USB-03, 868 MHz
- DK-GW-USB-03-916 Developemnt kit for GW-USB-03, 916 MHz

Document history

- 100113 User programming allowed for TR module only.
Firmware upgradable by the user using a code provided by IQRF manufacturer.
Product names slightly simplified.
- 090626 GW-USB-03 as generic module.
- 090514 First release.

Sales and Service

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