

DK-PGM-01

IQRF Universal Development kit

User's Guide

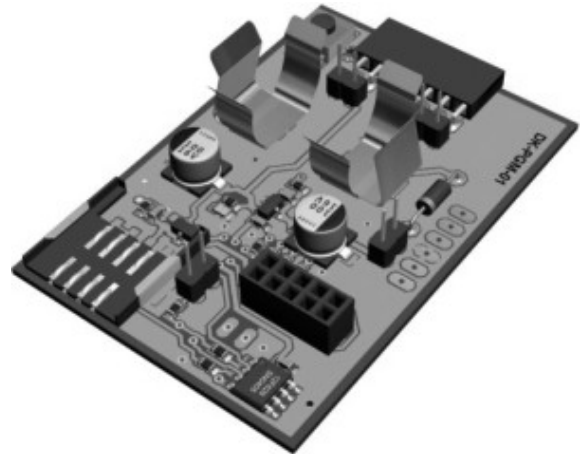


Simple way to smarter wireless solutions

Description

DK-PGM-01 is an IQRF universal development and debugging kit. It is primarily intended for development but it can also serve as a final device for some applications. This portable kit supplied from battery also allows easy RF range testing.

DK-PGM-01 is compatible with IQRF application examples.



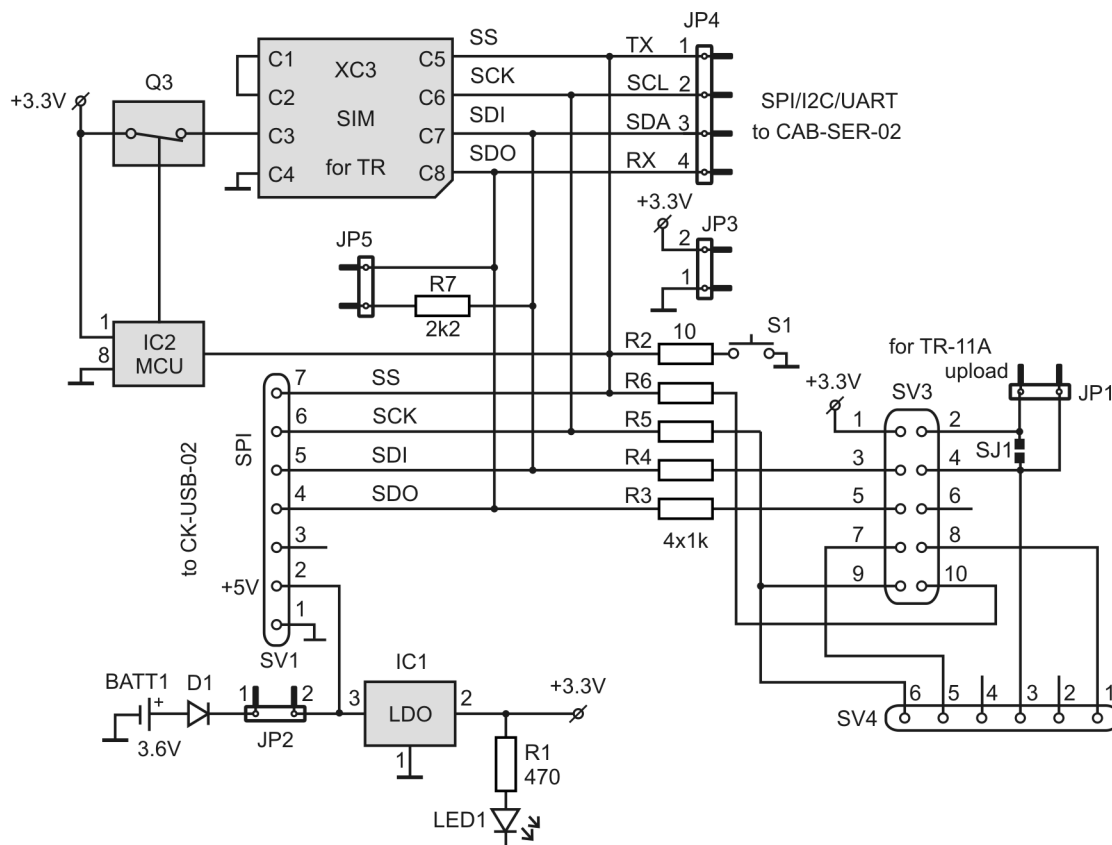
Applications

- IQRF application development
- IQRF examples execution
- Portable kit for range testing

Key features

- SIM connector for IQRF TR module
- Interface to CK-USB-02 (including power supply, SPI and programming capability)
- Interface to RS-232 via optional CAB-SER-02 cable
- Supplied from battery or from external 5 V source
- Power on jumper, power on LED indication
- TR I/Os available via various connectors and pads
- Dual row connector for TR-11A

Simplified schematics



Electrical specifications

(typical values unless otherwise stated)

Power supply	3.6 V DC battery, ½ AA sized (via the battery holder) or 3.3 V to 5.3 V DC via the SV1 connector (typically 5 V from CK-USB-02)
Supply current	4 mA (without TR module)
Temperature range	0 °C to +70 °C
Supported TR modules	TR-11A and all TR modules in SIM card format
Dimensions	60 mm x 40 mm x 20 mm
Weight	14 g (without battery 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:	5.5 V
Storage temperature:	-40 °C to +85 °C

Hardware

Power supply

DK-PGM-01 should be supplied from ½ AA battery 3.6V, the BL-ER14250 or BL-ER14250M is recommended. For TR-52B modules only the BL-ER14250M (with higher drain current and lower capacity) is suitable. The battery is connected when the JP2 jumper is set. Alternatively, the kit can be connected to the CK-USB-02 kit via the SV1 connector and supplied from it (5 V). The supply voltage is internally converted by LDO to 3.3 V. It is available on the JP3 output connector and indicated with LED1. It is continually connected to the TR module connectors XC3 and SV3 via the Q3 switch.

The kit is delivered without a battery.

Pushbutton

User pushbutton is available on the SS pin (C5) of the TR module. It is active low and weak pull-up is provided by the IC2 MCU. Functionality fully depends on the user software in TR module.

LED

LED1 indicates supply voltage (typically 3.3 V) on the LDO output.

TR module

TR-11A and all SIM-sized IQRF transceiver modules are supported. After connecting the kit to the CK-USB-02 programmer via the SV1 connector the TR module in SIM or SV3 socket can be programmed. Battery must be disconnected during programming. The JP1 jumper must be set for TR-11A programming.

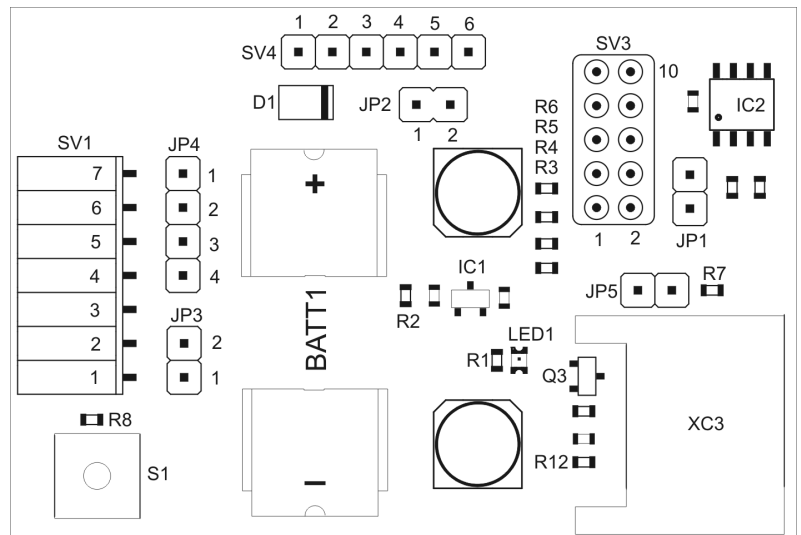
MCU

The IC2 MCU is intended for special applications only.

Connectors and interfaces

- XC3** SIM card connector for TR modules
- SV3** Dual row connector for TR-11A
- SV1** For CK-USB-02 connection. It can also serve as SPI interface and power supply input.
- JP1** Set the jumper on (or connect the SJ1 soldering pads on the bottom of the board) for TR-11A programming.
- JP2** Battery connection
- JP3** 3.3 V output. Power supply and ground for RS-232 via the CAB-SER-02 cable.
- JP4** SPI, I2C and UART interface. The CAB-SER-02 cable enables the RS-232 connection.
- JP5** To set the TR module in programming mode after power on. For special purposes only.

Connectors, pins and pads can also be used for universal I/Os and other interconnection according to user needs with respect to the circuitry – see the simplified schematic and board layout above.



Software

Except of functions mentioned above, the IC2 MCU provides no other operation and is reserved for special applications only. Thus, DK-PGM-01 functionality depends just on the software in TR module which is fully under the user's control.

IQRF application examples, either basic or several advanced are optimized for this kit.

Pack list

- DK-PGM-01kit
- 1 jumper
- Battery is not included

Recommended options

- BL-ER14250 Battery 1.2 Ah
- BL-ER14250M Battery 0.8 Ah, higher drain current (for TR-52B, TR-53B, ...)
- CAB-SER-02 RS-232 interfacing cable

Ordering code

- DK-PGM-01 IQRF universal development kit

Document history

- 100114 First release

Sales and Service

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Partners and distribution

Please visit www.iqrf.org/partners

Quality management

ISO 9001 : 2000 certified

*Complies with ETSI directives EN 30279 V.1.2.1:99, ETS 30683:97, ETSI EN 301489-1:00,
ETSI EN 300220-1:00, ETSI EN 300390-2V.1.1.1:00*

Complies with FCC directives FCC CFR, Title 47, Part 15, Section 15.209, FCC CFR, Title 47, Part 15, Section 15.249

Complies with Directive 2002/95/EC (RoHS)



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