

DK-EVAL-03

IQRF development kit

User's Guide

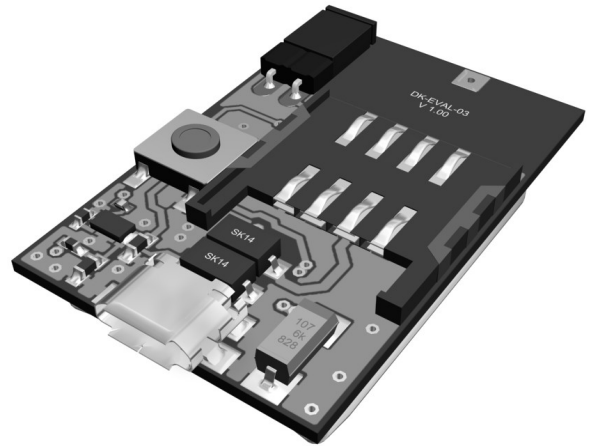


Simple way to smarter wireless solutions

Description

DK-EVAL-03 is a universal development kit for IQRF wireless applications with transceiver modules TR-52B. Very small size, accumulator and low cost make this kit ideal for use in network systems.

The user can realize specific functionality by software for internal TR module.



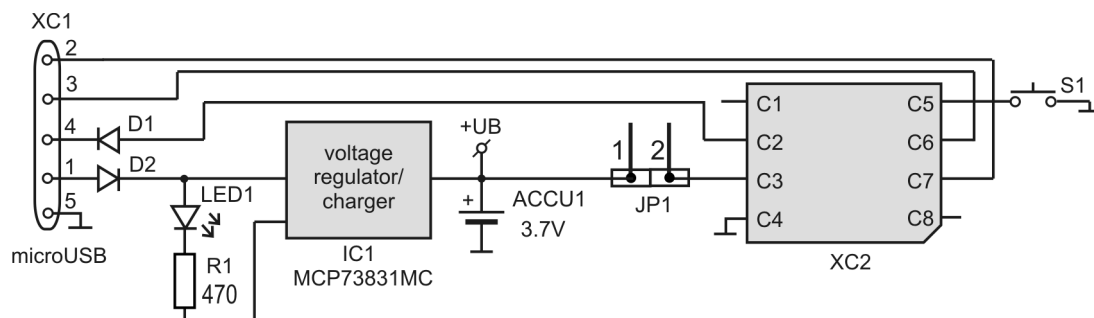
Applications

- For TR-52B
- Network development
- Huge IQMESH testing and debug
- Battery powered and portable wireless systems

Key features

- SIM connector for TR module
- 1 pushbutton (with wake-up on change capability)
- Up to 3 I/Os available on USB connector
- I²C interface via USB connector
- Voltage output to supply low power peripherals, sensors etc.
- Accumulator and internal charger
- Charged via microUSB connector
- Optional DK-PWR-01 power supply board supports operation and charging up to 5 kits
- Charge status LED indication
- Space saving, low cost

Simplified schematics



Electrical specifications

(typical values unless otherwise stated)

Power supply	
accumulator	LIP502030, 3.7 V, 240 mAh
external source / charger	5.0 V to 6.0 V DC via micro USB connector
Supply current	
operational	< 100 nA (without TR module, not charged)
charging	50 mA max.
Voltage output	
with TR having LDO out enabled	2.8 V ± 0.1 V, 100 mA
with TR having LDO out disabled	2.1 V to 2.8 V, 5 mA
Temperature range	0 °C to +70 °C
Supported TR modules	TR-52B(A)
Dimensions	36 mm x 23 mm x 11 mm
Weight	8 g

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:	6.0 V
Storage temperature:	-40 °C to +85 °C

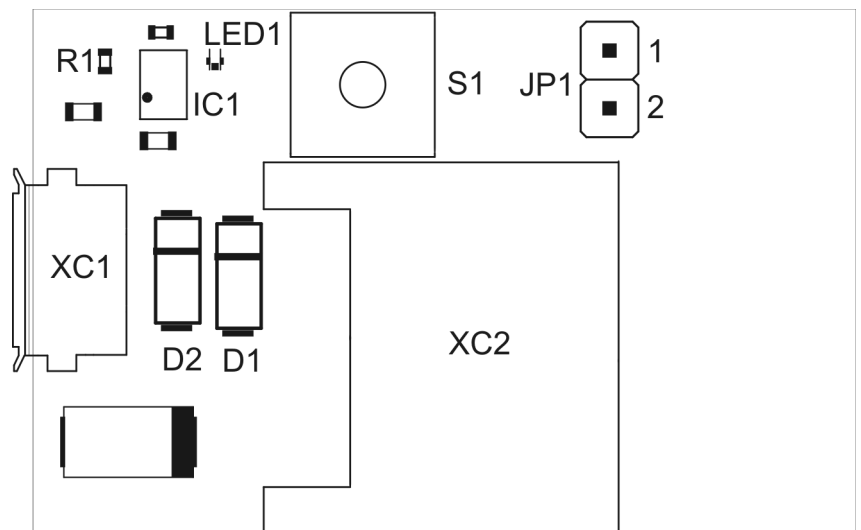
Hardware

Power supply

DK-EVAL-03 is supplied from accumulator or from external power source which also serves as a charger. The TR module is supplied when the JP1 jumper is set. Charging is indicated by LED1, (LED is switched off when fully charged). Do not connect DK-EVAL-03 to PC USB port.

Voltage output

Voltage output is intended to supply low power peripherals, sensors etc. via the USB connector, pin 4. It is provided by the TR module inserted in SIM connector via the C2 pin. Therefore, the TR module should have the LDO output enabled (recommended, default disabled) or the C2 pin configured as output and driven high (which allows significantly lower voltage and load).



Digital I/Os

Two digital lines are connected between the TR module (pins C6 and C7) and the USB connector (pins 3 and 2). They can be used for I²C communication or as general purpose I/Os.

If the voltage output is not used the C2 pin can also be used as digital output. Note that this output can be driven high only due to the D1 protective diode.

Pushbutton

User pushbutton S1 is available on the C5 pin of the TR module. It is active low and weak pull-up should be provided by the TR module inserted in SIM connector. Therefore, the TR module should have the C5 pin configured as input with internal pull-up. It is arranged by OS by default. Wake-up on change on this pin can also be configured by user software.

Pack list

- DK-EVAL-03 board (without a TR-module)
- Accumulator (soldered)
- 1 jumper (power on switch)

Recommended options

- MI-TY-A6-microUSB Switching power supply with microUSB connector
- DK-PWR-01 Power supply board (to supply and charge up to 5 kits)

Ordering code

- DK-EVAL-03 IQRF universal development kit, low cost

Document history

- 100705 Completely revised and updated.
- 100615 Battery type corrected
- 100118 First release

Sales and Service

Corporate office

MICRORISC s.r.o., Delnicka 222, 506 01 Jicin, Czech Republic, EU
Tel: +420 493 538 125, Fax: +420 493 538 126, www.microrisc.com

Partners and distribution

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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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