

# **DK-EVAL-03**

**IQRF development kit**

## **User's Guide**

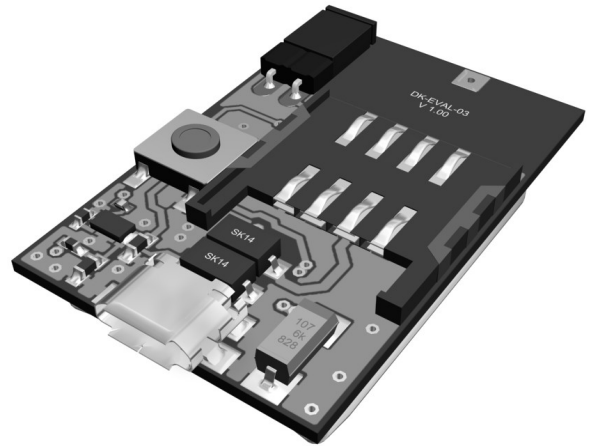


**Simple way to smarter wireless solutions**

## Description

DK-EVAL-03 is a universal development kit for IQRF wireless applications. 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.



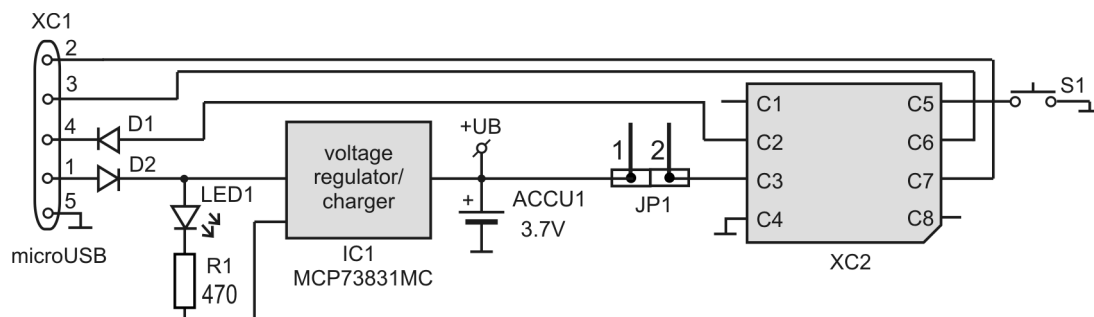
## Applications

- Network development
- Huge IQMESH testing and debug on one bank
- 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
- 3 V 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
- Compatible with the DK-EVAL-03-TMP board with digital temperature sensor
- 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.
3 V voltage output (depends on TR module)	
with LDO out enabled	2.8 V ± 0.1 V, 100 mA
with LDO out disabled	2.1 V to 2.8 V, 5 mA
Temperature range	0 °C to +70 °C
Supported TR modules	All TR modules in SIM card format
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:	5.7 V
Storage temperature:	-40 °C to +85 °C

## Hardware

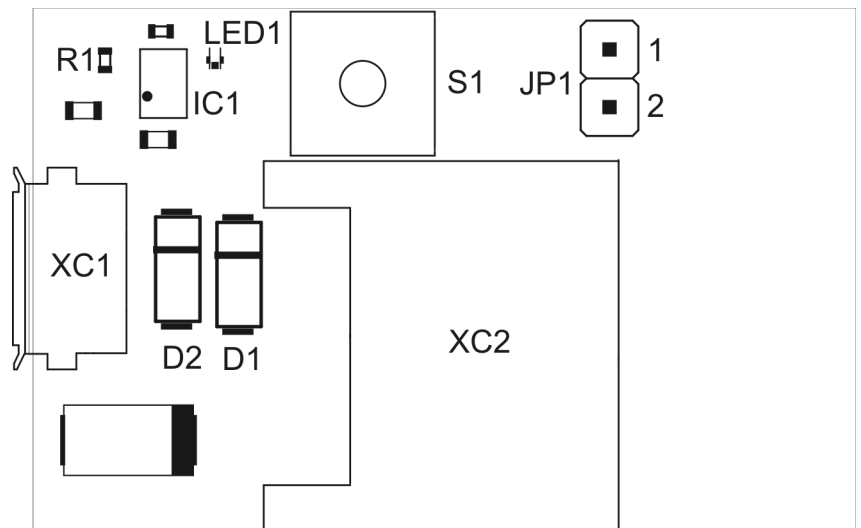
### Power supply

DK-EVAL-03 is supplied from accumulator or from external power source which also serves as a charger. The accumulator is connected when the JP1 jumper is set. Charging is indicated by LED1.

### 3 V voltage output

3 V 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) or the C2 pin configured as output and driven high (which allows significantly lower load).

*Note:* TR-21A, TR-31B and TR-32B have the LDO output default enabled, while TR-52B and higher ones have it disabled.



### 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 3 V 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. Wake-up on change on this pin can also be configured by user software.

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**Pack list**

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- DK-EVAL-03 board
- Accumulator (soldered)
- 1 jumper

**Recommended options**

- MI-TY-A6-microUSB      Switching power supply
- DK-PWR-01                Power supply board (for 5 kits)
- DK-EVAL-03-TMP        Development board with digital temperature sensor

**Ordering code**

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

**Document history**

- 100615                      Battery type corrected
- 100118                      First release

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# Sales and Service

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## Partners and distribution

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

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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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