

DK-EVAL-04

IQRF development kit

User's Guide



Description

DK-EVAL-04 is a universal development kit for IQRF wireless applications with transceiver modules. 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.



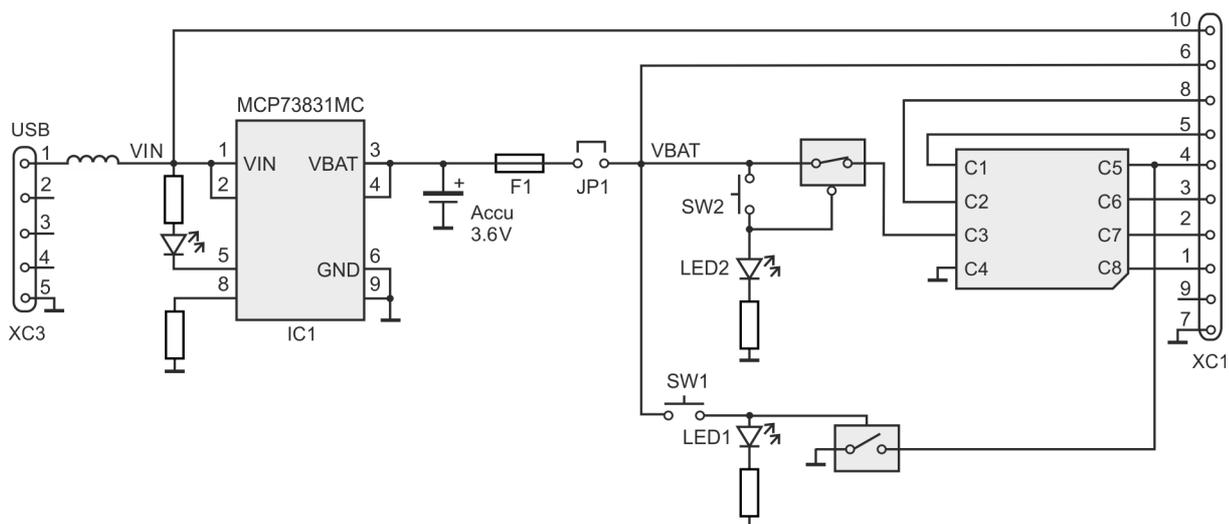
Applications

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

Key features

- Compatible with IQRF DDC kits (Development Daisy Chain)
- SIM connector for TR module
- 2 pushbuttons, wake-up on button press capability
- 3 indication LEDs
- 6 I/Os
- Accumulator and internal charger
- Charged via microUSB connector
- Voltage output to supply low power peripherals, sensors etc.
- Optional DK-PWR-01 power supply board to support operation and charging up to 5 kits available
- Space saving

Simplified schematics



Electrical specifications

(typical values unless otherwise stated)

Power supply	
accumulator	LIP552240, 400 mAh, nominal voltage 3.7 V, range 2.75 V to 4.2 V
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.
Temperature range	0 °C to +45 °C
Supported TR modules	TR-52B and higher, in SIM card format
Dimensions	48 mm x 27 mm x 11 mm
Weight	17 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 LED3. For external power source the micro USB connector XC3 is intended.

Pushbuttons

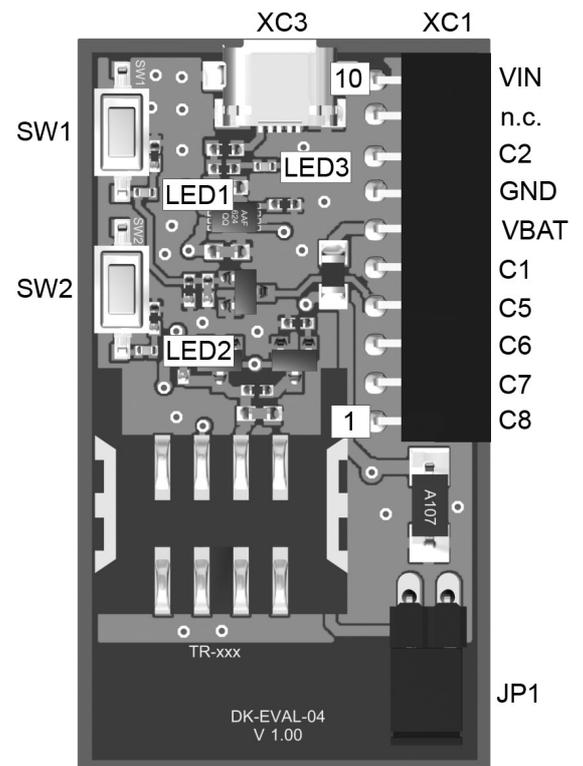
- User pushbutton SW1 is available on the C5 pin of the TR module. It is active low and weak pull-up should be provided by the TR module inserted in SIM connector. Therefore, the TR module should have the C5 pin configured as input with internal pull-up. It is arranged by OS by default. Wake-up on change on this pin can also be configured by user software.
- Reset pushbutton SW2 TR module is disconnected from power supply when the SW2 pushbutton is pressed.

LEDs

- LED1 and LED2 are on when the appropriate pushbutton is pressed
- LED3: charging indication. LED3 is on during charging.

Interface connector

Interface connector XC1 makes SIM I/O pins, power supply and ground accessible. It is compatible with IQRF DDC development kits.



Caution: The TR module can be plugged / unplugged into / from the SIM connector while powered off only.

Tip: Use the SW2 pushbutton for this. The TR module is not powered while the SW2 pushbutton is held.

Caution: DK-EVAL-04 layout is optimized for space savings during development of network applications with a lot of nodes on a table. Thus, this kit is not intended for range tests using TR modules with internal PCB antenna (e.g. TR-52BA, the range is shortened for ~30% in this case). For range test use external antenna (e.g. TR-52B and AN-03).

Product information

Pack list

- DK-EVAL-04 board (without a TR-module)
- Accumulator (soldered)
- 1 jumper (power on switch)

Recommended options

- TY-A6A Switching power supply with USB A connector
- CAB-USBABMICRO-100 Cable for TY-A6A power supply
- DK-PWR-01 Power supply board (to supply and charge up to 5 kits)

Ordering code

- DK-EVAL-04 IQRF universal development kit

Document history

- 120926 Temperature range corrected.
- 120921 Accumulator voltage range added. Bug in pin 6 description fixed.
- 120208 Bug in description of XC1 and XC3 connectors fixed. New power adapter.
- 110419 Caution concerning range test added
- 110210 First release

Sales and Service

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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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