

DK-31BA

IQRF Development kit with relays

User's Guide

- DK-31BA-868
- DK-31BA-916



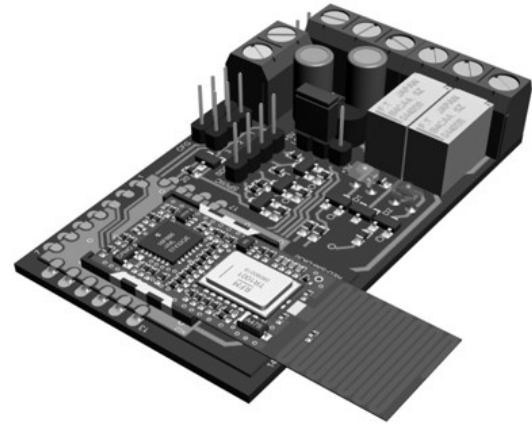
Simple way to smarter wireless solutions

Description

DK-31BA is a kit with two relays and IQRF wireless communication. It is primarily intended for development but it can also serve as a final device for some applications.

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

Relays can be controlled via RF e.g. using programmable IQRF remote controller RC-03. Demo software for this configuration is available. Network applications can be developed using the DK-RC-03 development kit.



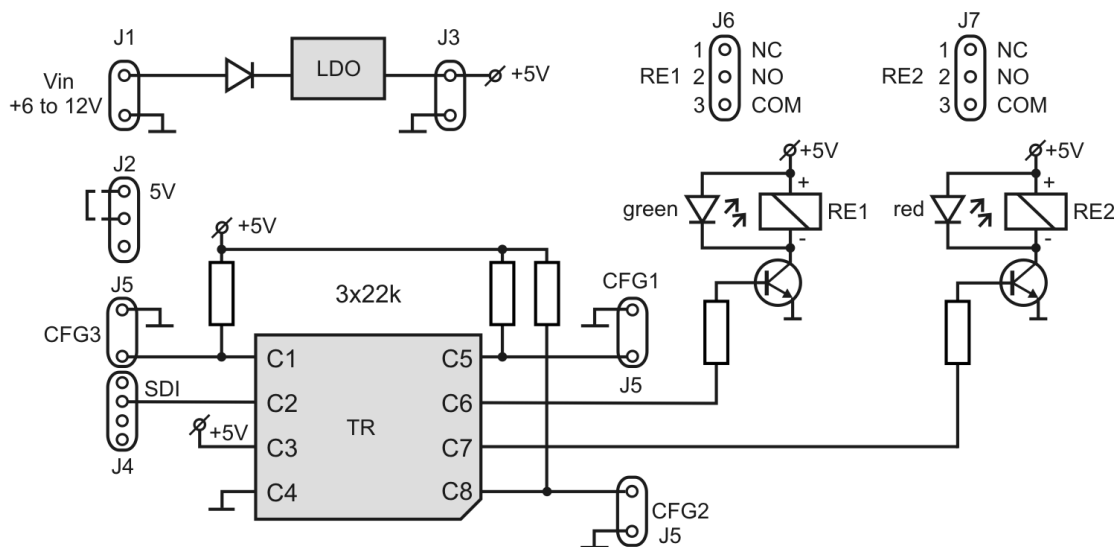
Applications

- Smart houses
- Automation
- Motor control

Key features

- IQRF transceiver module with on-board PCB antenna
- 2 relays 1 A
- 2 state indicating LEDs
- 6 V to 12 V DC input power
- Up to 4 general purpose I/Os and 3 configuration inputs
- 5 V logic levels

Simplified schematics



Electrical specifications*(typical values unless otherwise stated)*

Power supply	6.0 to 12 V DC, 100 mA
Supply current operational	4.5 mA
relay switching	33 mA (additional current per relay, for 7 V to 12 V power supply)
Temperature range	0 °C to +70 °C
Frequency band	868 MHz or 916 MHz (according to the TR module)
RF output power	according to the TR module, SW programmable
Supported TR modules	TR-31B(A)-868 or TR-31B(A)-916 and higher
Relays	Fujitsu Takamisawa FTR-B4CA4.5Z
Dimensions	57 mm x 34 mm x 15 mm
Weight	22 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:	15 V
Storage temperature:	-40 °C to +85 °C

Hardware

Power supply

DK-31BA is supplied from external power source via the clamp connector J1. The supply voltage is internally converted to 5 V. It is available on the J3 connector. Jumper on the J2 connector should be in the 5 V position (affects the SDI I/O pin only).

Relays

Ultra miniature slim type relays, 150 V, 1 A.

LEDs

LEDs indicate states of the relays (LED on if the NO contact connected).

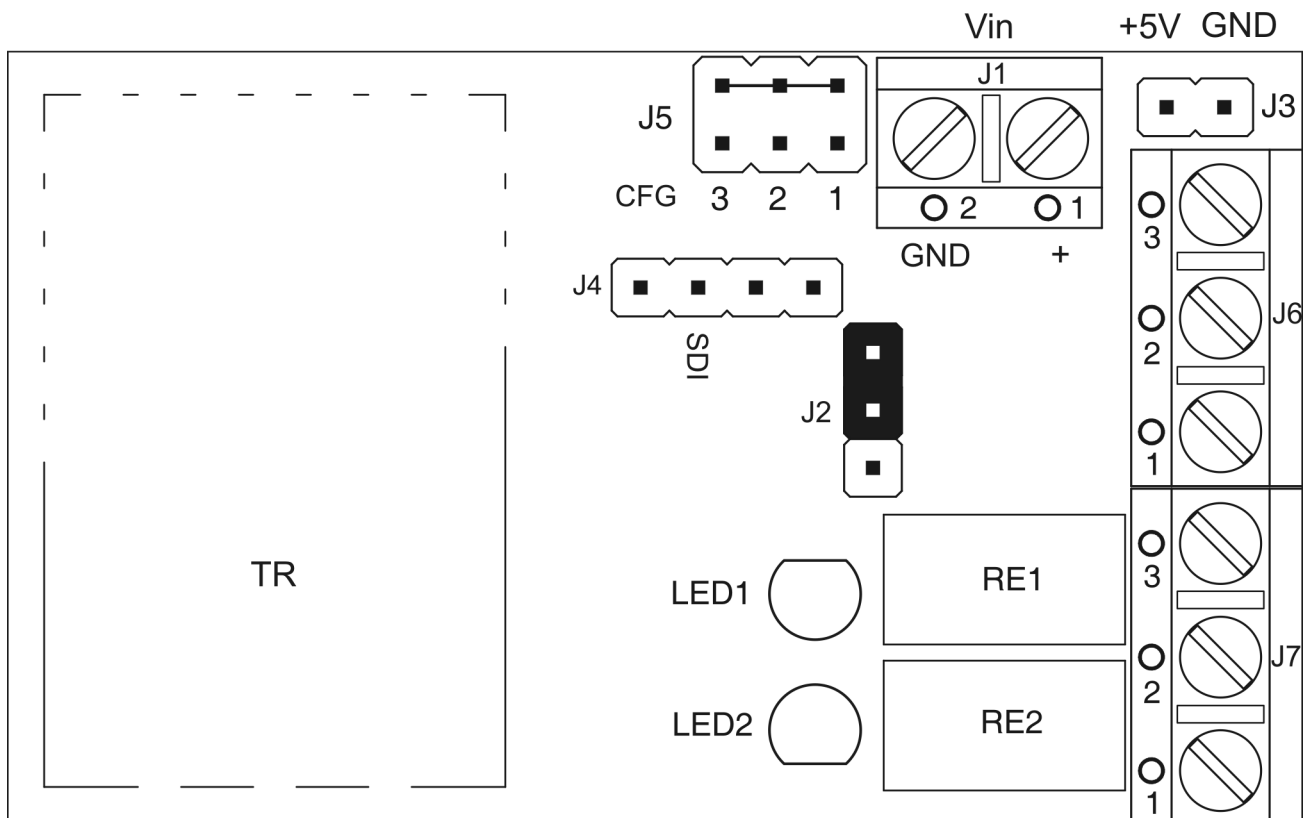
TR module

Wireless IQRF transceiver module TR-31B or higher, in SIM card format. User program should be uploaded using some of standard IQRF programmers (e.g. CK-USB-02), either wireless or in the programmer.

I/Os and Configuration inputs

CFG1, CFG2 and CFG3 pins can be used as standard I/Os or configuration inputs (via jumpers). The functionality fully depends on user software.

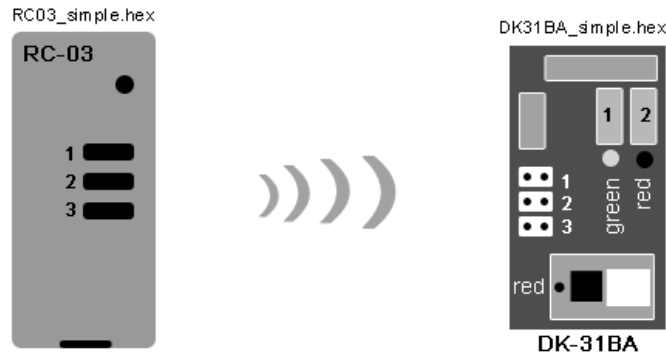
Pin SDI on the J4 connector is a standard I/O.



Software

Relay control demo application

DK-31BA is delivered with demo program controlling relays from the RC-03 standard IQRF programmable remote controller. Source code `DK-31BA_simple.c` is available on IQRF website. Refer to RC-03 User's guide for description.



Pack list

- DK-31BA relay kit
- TR module in requested frequency band, with demo example programmed, inserted in SIM connector
- 4 jumpers

Recommended options

- IQRF remote controller RC-03

Ordering codes

- DK-31BA-868 Developemnt kit 868 MHz
- DK-31BA-916 Developemnt kit 916 MHz

Document history

- 100116 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

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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