

# **IQRF-BB-02**

**IQRF Breakout board**

**User's guide**



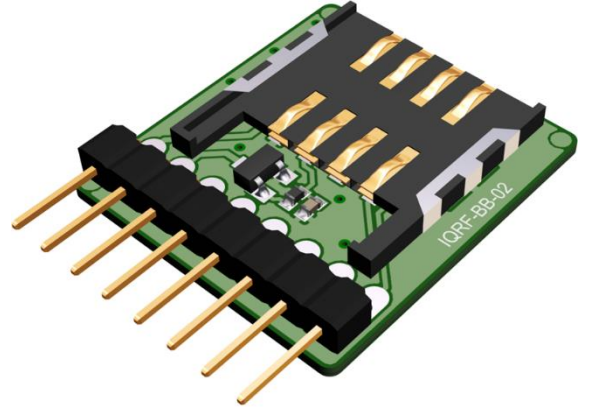
## Description

IQRF-BB-02 breakout board is a development adapter for connecting an IQRF TR transceiver to any device with 3 V or 3.3 V logic.

It enables easy development with platforms like ChipKIT™, BeagleBone, Raspberry Pi and others.

Interconnectivity by individual single-wire cables ensures absolute versatility.

IQRF-BB-02 is intended especially for applications using IQRF SDK (Software Development Kit) and DPA framework for wireless applications without TR programming. However, it can be used in any SW application.



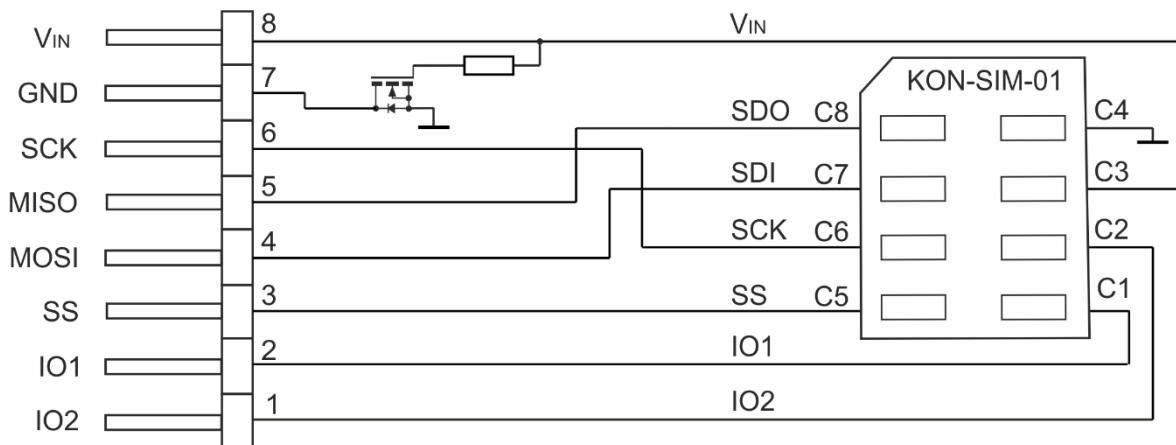
## Key features

- Enables arbitrary interconnection
- 3 V as well as 3.3V logic supported
- Protection against inverted power supply polarity
- 8 pins, 6 TR I/Os
- SIM card connector with metallic holder for TR transceiver
- Compatible with TR-72D, TR-52D, TR-62D, TR-53B and TR-52B

## Applications

- IQRF wireless development with any 3 V or 3.3 V device
- ChipKIT, BeagleBone, Raspberry Pi and similar boards
- IQRF SDK plug and play support
- RF connectivity in many fields
- Internet of Things

## Schematic



Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications.

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**Electrical specifications**
*Typical values unless otherwise stated*

Supply voltage ( $V_{IN}$ )	3.0 V to 3.4 V (See datasheet of TR transceiver used)
Operating temperature	-40 °C to +85 °C
Size (L x W x H)	29.8 mm x 20.8 mm x 5.5 mm

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**Absolute maximum ratings**

Stresses above listed maximum values may cause permanent damage to the device and affect device reliability. Functional operation at these or any other conditions beyond those specified is not supported.

Supply voltage ( $V_{IN}$ )	4.0 V (See datasheet of TR transceiver used)
Storage temperature	-40 °C to +85 °C
Ambient temperature under bias	-40 °C to +85 °C

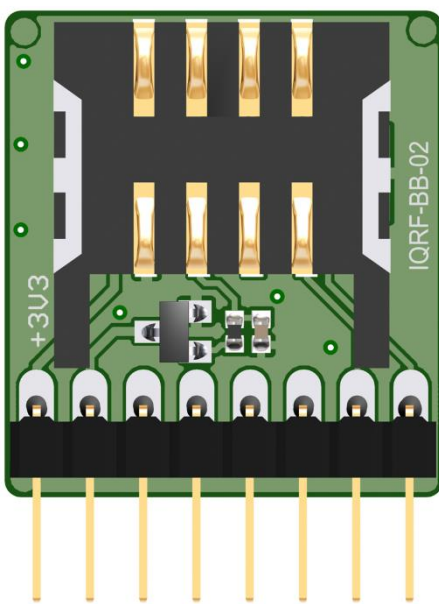
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**Hardware**
**Basic components**

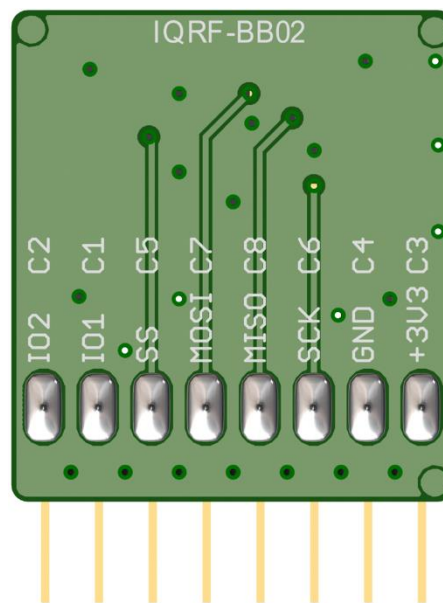
Part	Type
<b>Interface connector</b>	8 pin single row male connector for square 0.635 mm, 2.54 mm pitch pins
<b>SIM connector</b>	KON-SIM-01
<b>Protection against inverted power supply polarity</b>	Based on IRLML2502 MOSFET

## Pins

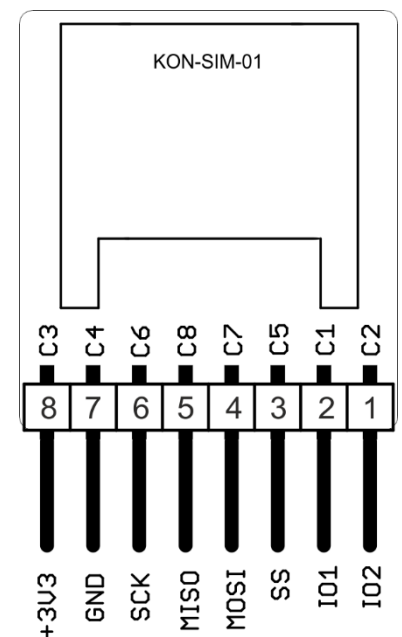
Interface connector		TR SIM connector	
Pin	Name	Pin	Description (See datasheet of given TR transceiver)
1	IO2	C2	I/O
2	IO1	C1	I/O
3	SS	C5	SPI Slave select input, UART TX output
4	MOSI	C7	SPI SDI input, I2C data input/output
5	MISO	C8	SPI SDO output, UART RX input
6	SCK	C6	SPI / I2C clock input/output
7	GND	C4	Ground
8	V <sub>IN</sub>	C3	Power supply



Top view

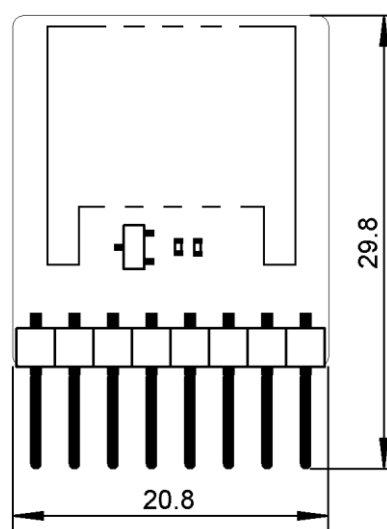


Bottom view



Pinout

## Dimensions



Top view. Units: mm.

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**Application**

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See IQRF video tutorial set on [www.iqrf.org/videos](http://www.iqrf.org/videos).

**Application software**

See IQRF SDK (Software Development Kit) for usage IQRF with 3-rd party devices programmable under Java or C/C++.

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**Product information**

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**Ordering codes**

IQRF-BB-02                      IQRF breakout board, without interconnecting cables

**Hardware revision**

- v1.01                              First release. With silkscreen IQRF-SHIELD-02-MCP.

**Document history**

- 151124                              First release

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# Sales and Service

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## Corporate office

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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 : 2009 certified*

*Complies with directives 2011/65/EU (RoHS) and 2012/19/EU (WEEE).*



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**On-line support: [support@iqrf.org](mailto:support@iqrf.org)**

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