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dresden elektronik

RaspBee™

Datasheet

- The RaspBee is a ZigBee addon board for the Raspberry Pi (RPi). By using the RaspBee, the Raspberry Pi becomes a full functional wireless node which can be seamlessly integrated into Zigbee networks.
- Designed to interconnect with the RPi standard user header the RaspBee features a slim size. Hence the RPi still fits into the most housings available on the market.
- The RaspBee contains a powerful radio module with integrated PA/LNA. Together with the assembled onboard chip antenna which has been optimally tuned this ensures a superior RF performance.
- Available in two variants: “premium” (with ZigBee firmware) and “basic” (without firmware). In delivery condition both board options include a bootloader for simple firmware updates.
- Running on the RPi the deCONZ software facilitates ZigBee network control and monitoring. Even custom firmware solutions are possible.
- Mainly the RaspBee is designed to handle ZigBee Light Link (ZLL) and ZigBee Home Automation (ZHA) applications in connection with the RaspBee firmware and RPi software deCONZ.

Top and bottom view

Plugged on Raspberry Pi

Technical Data

Dimensions	48.0 x 16.5 x 12.0 mm
Operating temperature	- 40 to +85°C
Controls and display elements	2x LED (red, green)
Power supply	4.5 to 5.5 VDC
Power consumption @ 5.0 VDC	TX: 215 mA | RX: 32 mA
Connections	12-pin 100 mil 2-row socket,
Antenna	Chip ceramic antenna
Antenna gain	+1.3 dBi (peak) | - 0.5 dBi (average)
Antenna diversity	Yes (coax connector not assembled)
External front end connection	No
Range	Up to 500 m (line of sight *)
Frequency range	2.4 GHz
Transmit power	Max. +21 dBm **
Receiver sensitivity	-105 dBm (250 kbit/s)
Communication standard	IEEE 802.15.4
Data rate (gross)	250 kbit/s, 500 kbit/s, 1 Mbit/s, 2 Mbit/s
Microcontroller	ATmega256RFR2
Transceiver	Integrated
RF frontend	Integrated
Interfaces	UART, GPIO
Certification	CE, ETSI, FCC

Technical Data

* depending on the transmit power

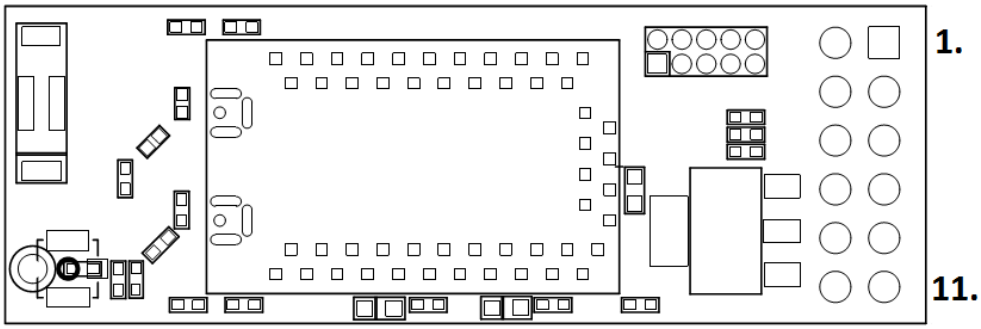
** The ZigBee firmware limits this to +3 dBm. Obey national restrictions if using custom firmware.

Pin Assignment

Pin Assignment

1:	Vin	5.0 V supplied by RPi	7:	RXD	UART RX
2:	NC		8:	NC	
3:	NC		9:	TXD	UART TX
4:	NC		10:	GND	Ground
5:	GND	Ground	11:	SW1	GPIO for RaspBee
6:	NC		12:	RESET	Reset Signal for RaspBee

NC: not connected



Pin assignment RaspBee

For detailed dimensions and notes to be applied please refer to the user manual.

Order Information

Scope of delivery	**Part number**
RaspBee premium (ZigBee Firmware)	BN-600052
RaspBee basic (without Firmware ***)	BN-600053

Related products

FLS-PP Power PWM	BN-600039
FLS-A 0/1-10V Bus	BN-600038
FLS-P PWM Dim Control	BN-600037
FLS-RPC Dimmer	BN-600050

Options

Board options

Radio module deRFmega256-23M12	BN-600013

*** Downloading and running the ZigBee firmware is possible, the network will be limited to five end devices however.

More detailed information about all variants can be found in the user manual.
Order online: https://shop.dresden-elektronik.de

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