MULTI-RF BOARD

Radio modem module

Version: 1.0

1 Information on this Document

Validity

This document is valid for the Multi-RF Board of type HM-MRFB.BG1. You will find the type designation on the type label on top of the Multi-RF Board.

Purpose

This document is for the certification of the Multi-RF Board. The document summarizes the technical data of the Multi-RF Board as well as information regarding FCC and IC Compliance of the Multi-RF Board.

2 Multi-RF Board

The Multi-RF Board is a radio modem module. It allows the data exchange in WPAN radio networks. The Multi-RF Board contains two radio systems:

- ZigBee radio system in 2.4 GHz ISM band
- 868.3 MHz radio system (automatically deactivated for the USA and Canada)

The Multi-RF Board has its own internal voltage controller. The antennas are integrated and strongly attached to the printed circuit board. No external antenna can be connected.

Mechanical Data

Width x height x depth	$1\,^{1}/_{4}$ in. x 4 $^{1}/_{4}$ in. x $^{29}/_{32}$ in. (30 mm x 108 mm x 23 mm)

Voltage supply

Voltage supply via	2 x 5-pole pin header
Input voltage	5 V
Current consumption	< 250 mA

Terminals

Number of 2 x 5-pole pin headers	1

Communication

Data transmission via	2 x 5-pole pin header
Interface	SPI interface with 3.3 V logic
Pulse frequency of the interface	max. 1 MHz

ZigBee radio system in 2.4 GHz ISM band

Frequency range	2 405 ... 2 480 MHz
Number of frequency channels	16
Distance of frequency channels	5 MHz
Bandwidth of the radio signal	2 MHz
Transmitting power	+17 dBm
Standard for radio transmission	IEEE 802.15.4
Selection of antenna (antenna diversity)	automatically
Selection of the frequency channel	automatically

868.3 MHz radio system*

Frequency	868.3 MHz

*This radio system is automatically deactivated for the USA and Canada.

3 FCC and IC Compliance Information

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le onctionnement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications made to this equipment not expressly approved by SMA America, Inc. may void the FCC authorization to operate this equipment.

RF Exposure Statement

Radiofrequency Radiation Exposure Information:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 8 in. (20 cm) between the radiator and your body.