



# **B&R radio board**

## **"RFM-1-BTWNF" - integration manual**

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## I Versions

Version	Date	Comment	Edited by
1.0	Aug 16, 2017	First Edition	Falch B.
2.0	Aug 25, 2017	1.1, 1.2, 1.3, 1.4, 1.5, 1.6	Falch B.
3.0	Nov 13, 2017	1, 1.1, 1.3, 1.6	Falch B.

Table 1: Versions

## II Distribution

Name	Company, Department	Amount	Remarks

Table 2: Distribution

## III Safety Notices

Safety notices in this document are organized as follows:

Safety notice	Description
Danger!	Disregarding the safety regulations and guidelines can be life-threatening.
Warning!	Disregarding the safety regulations and guidelines can result in severe injury or heavy damage to material.
Caution!	Disregarding the safety regulations and guidelines can result in injury or damage to material.
Information:	Important information used to prevent errors.

Table 3: Safety notices

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## 1 integration guide

The B&R wireless board can only be installed in B&R units and is to be connected via a cable with 2 USB interfaces, which must be short-circuit-proof (no fire hazard).  
The circuit board may be glued, screwed or other mounting methods on the Touch Screen, display, metal, plastic or other surfaces. There are no additional basic conditions which must be complied for the connection with a cable to the USB interface. Only B&R is allowed for this integration.

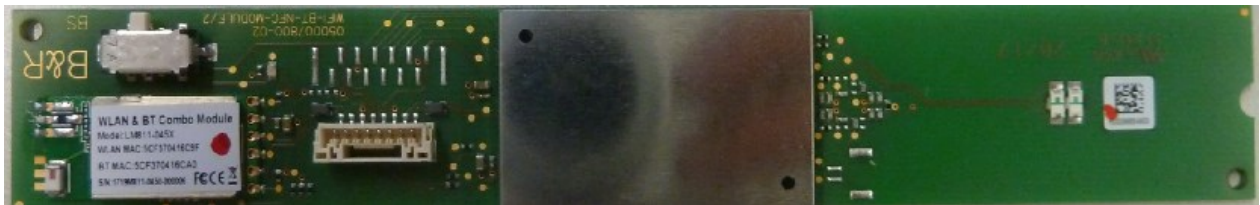


Figure 1: B&R wireless board „RFM-1-BTWNF“

### 1.1 Technical data

Operating temperature: 0°C to +75°C surrounding temperature  
USB supply voltage: +5VDC ±5%

#### WLAN

WLAN interface between different PC systems in an industrial environment.

Frequency: 2.4 GHz - 2.4835 GHz  
Transmitter power: max. 17 dBm

#### Bluetooth

Bluetooth interface between different PC systems in an industrial environment.

Frequency: 2.4 GHz - 2.4835 GHz  
Transmitter power: Max. 10 dBm

#### Short range device (SRD: NFC/RFID)

Short range interface between PC systems and tags in an industrial environment.

Frequency: 13.56 MHz  
Transmitter power: max. 1dBm

### 1.2 software / driver

The B&R wireless board works under Windows 10 which supports the Realtek 8723BU chipset for the WLAN/ Bluetooth part and the TWN4 for the NFC/RFID part.

In addition all needed drivers can be downloaded from the B&R homepage

(<https://www.br-automation.com/>).

### 1.3 identification

The complete end-device must contains following labels or engraved or lasered informations for the declaration of the B&R wireless board "RFM-1-BTWNF" (for example on the Automation panel device):

contains FCC ID: 2ADJV-RFM-1-BTWNF  
contains IC: 12444A-RFM1BTWNF  
contains FCC ID: VVX811-04XX  
contains IC: 10531A-LM811



Figure 2: CE, FCC label

The B&R wireless board has to be part of the bill of material of the complete end device and must be identifiable by the serial number of the complete end device.

### 1.4 RF exposure

From the view point of FCC RF exposure complians with a separation distance of 5mm between the antenna and each bodies.

For Europe the radio board complians to the RF exposure with no efforts to operation distance between human bodies (head, hand, ..) and antenna.

### 1.5 CE conformity

The complete end-device must be conform to the radio equipment directive RED 2014/53/EU. In this case an end-device must comply the immunity and emission requirements up to 6GHz according to EN 303 446-2.

### 1.6 FCC and IC

B&R products satisfy EMC requirements for operation in the USA and Canada and are compliant with FCC and IC regulations. This has to be verified with every device in which this B&R wireless board "RFM-1-BTWNF" should be installed. Corresponding "Radio Frequency Interference Statements" for the USA and Canada:

<b>USA:</b> Federal Communications Commission (FCC)	This device complies with Part 15 of the FCC Rules and with Industry Canada license 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.
<b>Canada:</b> Industry Canada (IC)	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 fonctionnement.

If products are also equipped with an RFID read/write unit, it must be approved for operation in the USA and Canada. These types of products are identified by a sticker with "Contains FCC ID:" and " IC" on the RFID read/write unit. In addition to the additional sticker for products with an RFID read/write unit, the requirements below also apply.

#### **Information:**

**Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

#### **Information:**

**This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.**

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