



B&R wireless board "RFM-2-NF"

Integration Guide

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I Version information

Version	Date	Comment	Responsible
1.0	2019-04-02	First Edition	R. Sevcik.

Table 1: Versions

II Distribution

Name	Company, Department	Amount	Comment
Fr. Musat	CSA Group Bayern GmbH	1	N/A

Table 2: Distribution

III Organization of 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 property.
Caution!	Disregarding the safety regulations and guidelines can result in injury or damage to property.
Information	This information is important for preventing errors.

Table 3: Safety notices

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1 Introduction

This document provide integration instructions and should be used when integrating a module in a host product. The full modular transmitter RFM-2-NF can be integrated into a variety of products. The necessary steps for a correct integration and necessary testing are described in this document based on the document "GUIDANCE FOR MODULAR TRANSMITTER INSTRUCTION MANUALS AND TCB CERTIFICATION APPLICATION REVIEWS" from February 1, 2019.

2 Integration instructions

2.1 Mounting of the board, connecting to PC

The integration into B&R products, but also into OEM products or private label products produced by B&R must be done by trained B&R stuff only. Typical electronic manufacturing environment recommended.

The B&R wireless board RFM-2-NF may be glued, screwed or positioned with other mounting methods (e.g. clips) on the touch screen, the display, plastic parts or any other surfaces inside the host. The antenna is part of the board, so no additional mounting steps, adjusting, settings or testing is necessary.

The wireless board is then connected by a USB-cable with a Standard-USB-Connector to a PC on one of its standard USB jacks. Because of using a standard USB interface no additional requirements on safety, grounding, functionality and reliability of the connection must be taken into account. No testing required.

To operate the wireless board RFM-2-BTW, the appropriate driver must be installed. These drivers can be found on the B&R homepage <https://www.br-automation.com/>.

For the combination of host and RFM-2-NF no further RF-testing in respect to national rules is necessary, so there is no need that the host manufacturers do further RF-testing. Depending on the type of host and its marking indicating EMC-compliance, it may be necessary that EMC compliance of the host with integrated RFM-2-NF is verified. This is under the responsibility of the host manufacturer.

No additional marking of the B&R wireless board RFM-2-NF necessary.



Figure 1: B&R wireless board „RFM-2-NF“ with USB-Cable

2.2 List of applicable guidelines, standards, rules

Domain/country	References
EU domain	Radio Equipment Directive 2014/53/EU
FCC Domain	<p>FCC Rules and Regulations Part 15, Subpart C - Intentional Radiators</p> <p>Part 15, Subpart C, Section 15.203 Antenna requirement</p> <p>Part 15, Subpart C, Section 15.204 External radio frequency power amplifiers and antenna modifications</p> <p>Part 15, Subpart C, Section 15.207 Conducted limits</p> <p>Part 15, Subpart C, Section 15.209 Radiated emission limits, general requirements</p> <p>Part 15, Subpart C, Section 15.215 Additional provisions to the general radiated emission limitations</p> <p>Part 15, Subpart C, Section 15.225 Operation within the band 13.110 - 14.010 MHz</p> <p>FCC Rules and Regulations Part 1, Subpart I - Procedures Implementing the National Environmental Policy Act of 1969</p> <p>Part 1, Subpart I, Section 1.1310 Radiofrequency radiation exposure limits</p> <p>Part 1, Subpart 2, Section 2.1093 Radiofrequency radiation exposure evaluation: portable device</p>

2.3 Specific operational conditions

There are no specific use conditions that are applicable to the B&R wireless board RFM-2-NF when integrated into a host.

2.4 Modifications

Any modification of the B&R wireless board RFM-2-NF require new approvals. Host manufacturers are not allowed to modify the B&R wireless board RFM-2-NF or its components.

2.5 RF-Exposure condition

Because of the low power nature of the B&R wireless board RFM-2-NF, there are no application conditions or limitations for host product manufacturer to use the module. So no additional RF statement needed for the host product manufacturer to put in the manual.

2.6 Label and compliance information

The host and/or the complete end-device must contains following label or optional engraved marking or laser marking for the North America-Domain and a CE for the EU-Domain.

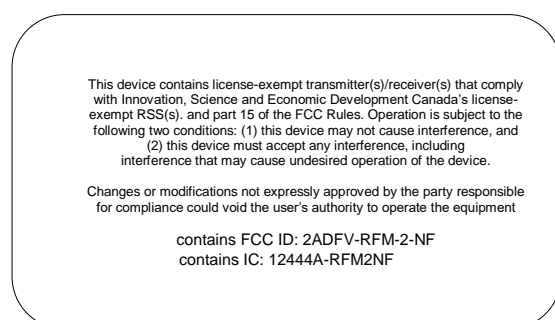


Figure 2: Layout proposal marking of host for the North American Domain

2.7 User manual information

The user manual should contain the following information:

Domain/Country	Information
EU	This product is in conformity with the protection requirements of the EU Council Directive 2014/53/EU.
USA	<p>This device complies with Part 15 of the FCC rules. Operation is subjected 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.</p> <p>Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.</p> <p>NOTE: This equipment has been tested and found comply with the limits of Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. 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. Operation of this equipment in a resident area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.</p>
Canada	<p>This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p>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.</p>

2.8 Additional aspects

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.

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