CTHINGS.CO®
EDGE IOT SOLUTIONS

WIRELESS MODBUS BRIDGE (NRF52840)

Datasheet. Release 1.0

One solution to bring your MODBUS infrastructure to wireless network

Wireless - Modbus Bridge is a compact DIN-rail mounted solution enabling users to bring existing MODBUS network into wider, wireless system. It allows to monitor and control **RS-485 MODBUS** devices. One **Wireless - Modbus** Bridge supports 2 independent RS-485 physical interfaces making it an ideal choice for both half and full duplex systems. It has switchable 120 Ohm termination on each line making it easy to mount at any place of the existing network. The device can operate using internal or external antenna. Software controls the RF switch inside.

Wireless connectivity is provided by multiprotocol nRF52840 MCU offering connectivity protocols like: Wirepas 2.4 GHz MESH, Bluetooth LE, Bluetooth Mesh, Thread, Zigbee, 802.15.4, ANT ready.

SPECIFICATIONS

Key parameters	• **DIN-rail mounted** • Industry standard 24 V power supply • 2 independent RS-485 channels • **Selectable 120 Ohm termination on each line** • Multiple wireless standards supported • Dimensions: 71 x 89 x 65 mm • Operating temperature range: 0 °C to +50 °C (non condensing) • Built-in antenna and SMA connector. Software controlled RF switch • **CE Class-A** certified & **RoHS compliant** device

PARAMETERS	VALUE
Power supply	24 V DC
Supply current	100 mA (max)
RS-485 termination	None or 120 Ohms, selectable
Wireless technology	Multiprotocol nRF52840: Wirepas 2.4 GHz MESH Other Firmware options possible: Bluetooth LE, Bluetooth mesh, Thread, Zigbee, 802.15.4, ANT
RS-485 lines protection	• ±16-kV HBM Protection • ±12-kV IEC61000-4-2 Contact Discharge • +4-kV IEC61000-4-4 Fast Transient Burst
Antenna	Built-in antenna and SMA connector. Internal RF switch to select antenna controlled by software
Operating temperature	0 °C to +50 °C (non condensing)
Warranty	2 Years

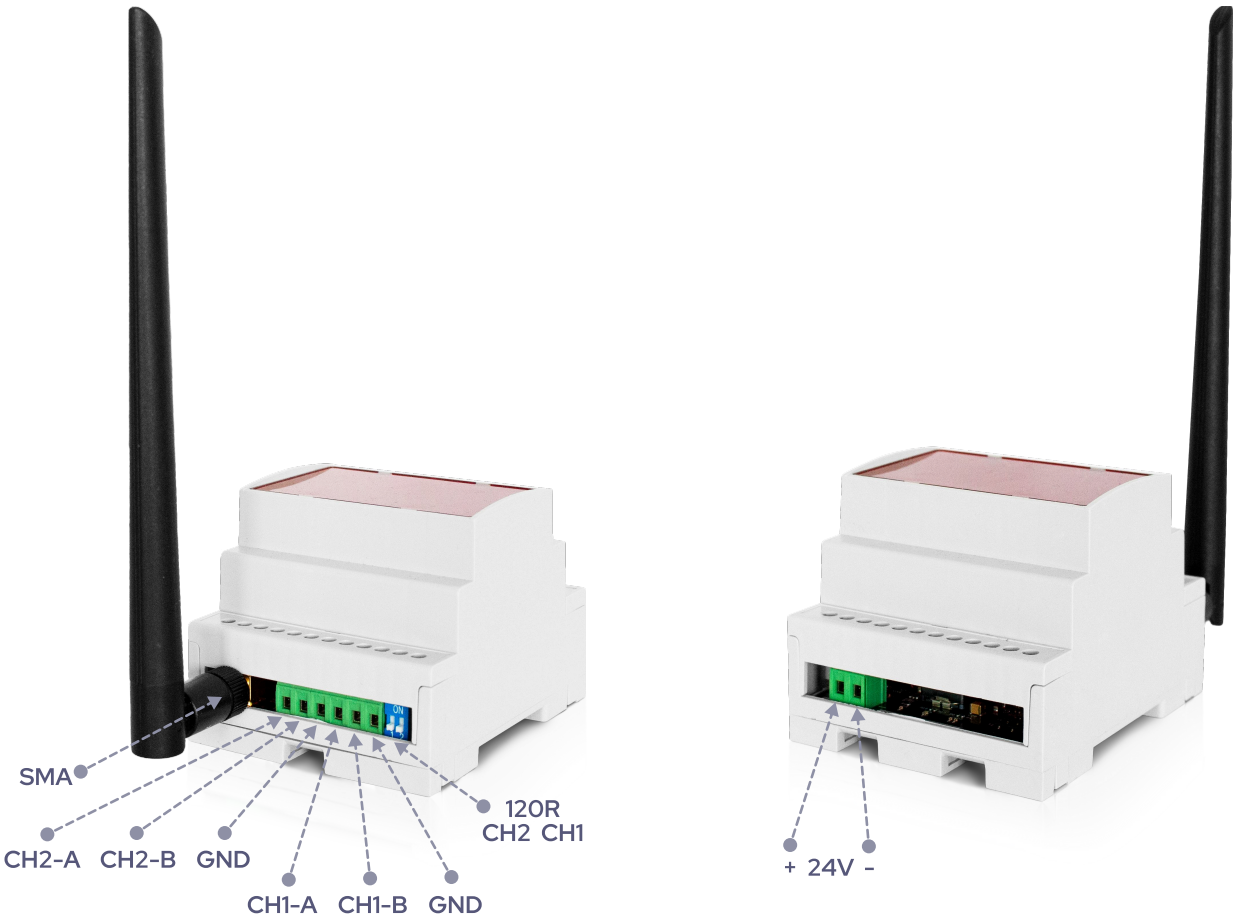
SPECIFICATIONS	
Use Cases	The Wireless - Modbus Bridge is an ideal choice for several common applications: • Bringing industry 4.0 standards to existing installations • Connecting MODBUS applications to cloud platforms for predictive maintenance • Remote access to your industrial applications • Industry 4.0: digital retrofitting, enhanced maintenance, remote operations, automation • Smart Metering: remote and wireless data collection • HVAC systems requiring bi-directional communication

Certifications

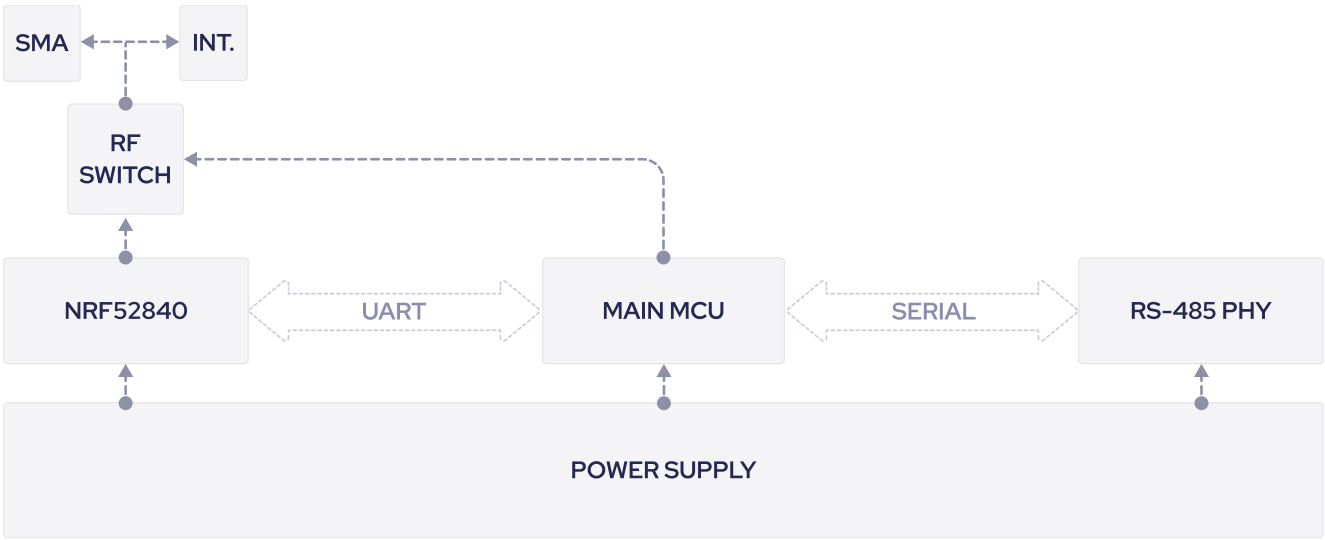
The CTHINGS.CO® Wireless - Modbus Bridge is CE Class-A & EU RoHS Directive Compliant. The Device Has Been Tested To Meet The Following Electromagnetic Compatibility Standards:

PARAMETERS	VALUE
Electromagnetic emissions	• Conducted emission: EN 55022, EN 55014-1, EN 55011 • Radiated emission up to 6 GHz • Harmonic current emission: EN 61000-3-2 • Voltage fluctuations and flicker: EN 61000-3-3
Immunity to electromagnetic interference (EMI):	• Electrostatic discharge (ESD) immunity: EN 61000-4-2 • Radiated electromagnetic field immunity: EN 61000-4-3 • Electrical fast transient / burst immunity: EN 61000-4-4 • Surge immunity: EN 61000-4-5 • Conducted disturbance immunity: EN 61000-4-6 • Power frequency magnetic field immunity: EN 61000-4-8 • Pulse magnetic field immunity: EN 61000-4-9 • Voltage dips & short interruptions: EN 61000-4-11

External Connectors



Block Diagram



Confidentiality

This document is based on information provided by CTHINGS.CO Sp. z o.o. (the "Company"). It is being communicated on behalf of the Company to you solely for information and for the exclusive use of the selected persons to whom it is addressed for the purpose of their considering whether to proceed with a further analysis of a potential transaction (the "Transaction") involving the Company. This document should not be used for any other purpose. This document is strictly confidential and cannot be disclosed, revealed, reproduced or redistributed, in whole or in part, by or to any other person without the prior written consent of the Company.

All rights reserved

Disclaimer

The information herein is believed to be correct as of the date issued. The Company will not be responsible for damages of any nature resulting from the use or reliance upon the information contained herein. The Company makes no warranties, expressed or implied, of merchantability or fitness for a particular purpose or course of performance or usage of trade. Therefore, it is the user's responsibility to thoroughly test the product in their particular application to determine its performance, efficacy, and safety. Users should obtain the latest relevant information before placing orders.

Unless The Company has explicitly designated an individual product as meeting the requirement of a particular industry standard, The Company is not responsible for any failure to meet such industry standard requirements.

Unless explicitly stated herein this document, The Company has not performed any regulatory conformity test. It is the user's responsibility to assure that necessary regulatory conditions are met and approvals have been obtained when using the product. Regardless of whether the product has passed any conformity test, this document does not constitute any regulatory approval of the user's product or application using the product.

Nothing contained herein is to be considered as permission or a recommendation to infringe any patent or any other intellectual property right. No license, expressed or implied, to any intellectual property right is granted by The Company herein.

The Company reserves the right to at any time correct, change, amend, enhance, modify, and improve this document and/or products without notice. This document supersedes and replaces all information supplied prior to the publication hereof.