# DATA SHEET RC1180HP-MBUS3

# Wireless M-Bus Multi-Mode RF Transceiver Module (EN 13757-4:2012)

# **Product Description**

Radiocrafts

Embedded Wireless Solutions

The RC1180HP-MBUS3 RF Transceiver Module is a compact surface-mounted high performance module with embedded Wireless M-Bus protocol. The module has a UART interface for serial communication and configuration, and a one-pin antenna connection. The module is pre-certified for operation under the European radio regulations for license-free use and measures only 12.7 x 25.4 x 3.5 mm with shielding. When used with quarter-wave antennas a line-of-sight range of typ 1200 meter can be achieved. The RC1180HP-MBUS meets the Wireless M-Bus specification S, T and R2 modes, and operates in 12 channels in the 868 MHz frequency band.

#### **Applications**

- Wireless M-Bus
- Automatic Meter Reading (AMR)
- Advanced Metering Infrastructure (AMI)
- Electricity meters
- Gas and Water meters
- Heat meters, Heat cost allocators
- Readers and concentrators

# Features

- Embedded Wireless M-Bus protocol supporting EN 13757-4:2012 mode S, T, C and R2
- 12.7 x 25.4 x 3.7 mm compact module for SMD mounting
- Easy to use UART interface for communication and configuration
- Wide supply voltage range, 2.0 3.6 V
- Enhanced reception performance with LNA and SAW filter to reduce interference from LTE
- SAW filter selectivity for
  - LTE band 8(897 MHz) > 60 dB
  - LTE band 20(847 MHz) > 40 dB
- Ultra low power modes for extended battery lifetime
- 2 channels (868.3, 868.95 MHz) in mode S, T and C
- 10 channels in mode R2 (868.03 + n x 0.06 MHz)
- Configurable Manufacturer ID and serial number
- Conforms with EU RED directive (EN 300 220, EN 301 489, EN 60950)

## **Quick Reference Data**

Parameter	RC1180HP-MBUS	Unit
Frequency bands	868.0 - 870.0	MHz
Number of channels	12	
Data rate	4.8, 32.768, 100	kchip/s
Max output power	27 <sup>1</sup>	dBm
Sensitivity, R/S/T	-110/-106/-105	dBm
Supply voltage	2.0 – 3.6	Volt
Current consumption, RX / TX	27 / 120 <sup>2</sup>	mA
Current consumption, SLEEP	Тур 1	uA
Temperature range (S and T mode)	-40 to +85	°C



<sup>&</sup>lt;sup>1</sup> Limited to 14 dBm ERP based on RED directive

<sup>&</sup>lt;sup>2</sup> Based on 14 dBm output power

#### RC1180HP-MBUS vs. RC1180-MBUS

The RC1180HP-MBUS is an enhanced version of the RC1180-MBUS with higher output power.

Power level	Output power	Current consumption in TX [mA]
1	0	52
2	10	85
3	16	120
4 (N.A.)	24	370
5 (N.A.)	27	490

All other parts of datasheet for RC1180-MBUS is applicable to RC1180HP-MBUS.

# **Document Revision History**

Document Revision	Changes	
1.0	Firstrelease	
1.10	Update to reflect changes related to HW revision 3.xx	

## Product Status and Definitions

Current	Data Sheet Identification	Product Status	Definition
Status			
	Advance Information	Planned or under development	This data sheet contains the design specifications for product development. Specifications may change in any manner without notice.
	Preliminary	Engineering Samples and First Production	This data sheet contains preliminary data, and supplementary data will be published at a later date. Radiocrafts reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
x	No Identification Noted	Full Production	This data sheet contains final specifications. Radiocrafts reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
	Obsolete	Not in Production	This data sheet contains specifications on a product that has been discontinued by Radiocrafts. The data sheet is printed for reference information only.

#### Disclaimer

Radiocrafts AS believes the information contained herein is correct and accurate at the time of this printing. However, Radiocrafts AS reserves the right to make changes to this product without notice. Radiocrafts AS does not assume any responsibility for the use of the described product; neither does it convey any license under its patent rights, or the rights of others. The latest updates are available at the Radiocrafts website or by contacting Radiocrafts directly.

As far as possible, major changes of product specifications and functionality, will be stated in product specific Errata Notes published at the Radiocrafts website. Customers are encouraged to check regularly for the most recent updates on products and support tools.

#### **Trademarks**

All trademarks, registered trademarks and product names are the sole property of their respective owners.

#### **Life Support Policy**

This Radiocrafts product is not designed for use in life support appliances, devices, or other systems where malfunction can reasonably be expected to result in significant personal injury to the user, or as a critical component in any life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness. Radiocrafts AS customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Radiocrafts AS for any damages resulting from any improper use or sale.

#### Radiocrafts Webpage

For more info go to our web page : <u>https://radiocrafts.com/</u> There you can find Knowledge base and Document Library that includes Application notes, Whitepapers, Declaration of Conformity, User Manuals, Data Sheet and more.

## **Contact Information**

Web site: www.radiocrafts.com Email: <u>radiocrafts@radiocrafts.com</u>

Address: Radiocrafts AS Sandakerveien 64 NO-0484 OSLO NORWAY

Tel: +47 4000 5195 Fax: +47 22 71 29 15 E-mail: sales@radiocrafts.com

© 2020, Radiocrafts AS. All rights reserved.