

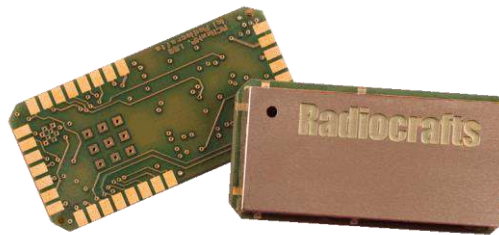
Wireless M-Bus Multi-Mode RF Transceiver Module (EN 13757-4:2012)

Product Description

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-MBUS3 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-MBUS3	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 ¹	dBm
Sensitivity, R/S/T	-110/-106/-105	dBm
Supply voltage	2.0 – 3.6	Volt
Current consumption, RX / TX	27 / 120 ²	mA
Current consumption, SLEEP	Typ 1	uA
Temperature range (S and T mode)	-40 to +85	°C

¹ Limited to 14 dBm ERP based on RED directive

² 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	First release
1.10	Update to reflect changes related to HW revision 3.xx

Product Status and Definitions

Current Status	Data Sheet Identification	Product Status	Definition
	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.

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