

## RC1700HP-MBUS High Power RF Module at 169 MHz

**ADVANCE INFORMATION**  
 This document contains information on a new product. Specifications and information herein are subject to change without notice.

### Product Description

The RC1700HP-MBUS is part of a compact surface-mounted Wireless M-Bus module family that measures only 12.7 x 25.4 x 3.3 mm. The module contains a communication controller with embedded wireless MBUS protocol software supporting the new prEN13757-4:2011 Mode N and is pre-certified for operation under the European regulations.

### Applications

- AMR, Automatic Meter Reading
- Asset Tracking and Tracking
- Telemetry stations
- Fleet management



### Features

- High Power, long range (20 km Line-Of-Sight)
- Industry leading Wireless M-Bus protocol stack
- Completely Shielded
- Pin compatible with the low cost family RC11XX (including –MBUS, –KNX and RC232 versions) and 2.4 GHz versions RC2500/2500HP from Radiocrafts
- 12.7 x 25.4 x 3.3 mm compact module for SMD mounting
- 2.5 – 3.8 V supply voltage, ultra low power modes
- Conforms with EU R&TTE directive (EN 300 220, EN 301 489, EN 60950)

### Part Name Overview

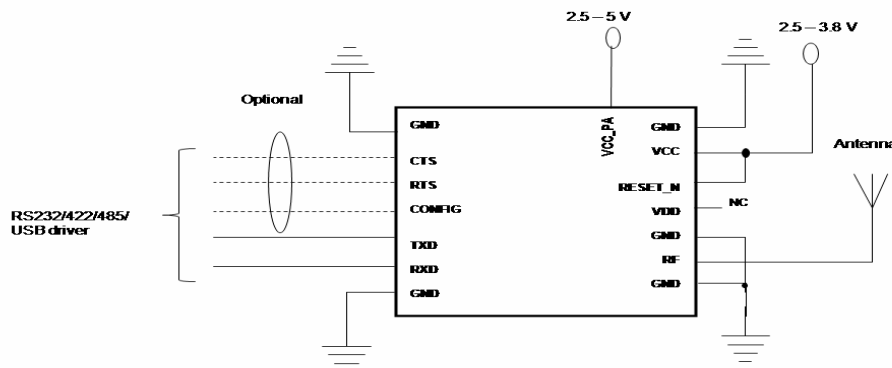
RC module	RF Frequency band	Max output power	VCC_PA
RC1700-MBUS*	169 MHz	+14 dBm	N.C
RC1700MP-MBUS*	169 MHz	+24 dBm	N.C
RC1700HP-MBUS	169 MHz	+27 dBm	+5V

\*Availability TBD

### Specifications (3.0V, 25°C)

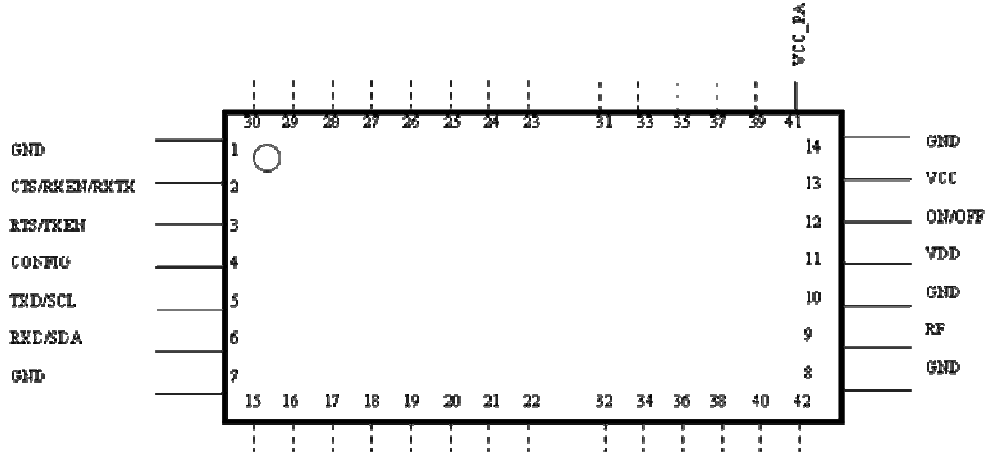
		Min	Typ	Max	Unit
RC1700HP:	Frequency Range	169.4		169.475	MHz
	Frequency tolerance (12.5 kHz)			+/-1,5	kHz
	Frequency tolerance (50 kHz)			+/-4.25	kHz
	Number of 12.5 kHz channels		6		
	Number of 50 kHz channels		1		
	Number of 25 kHz channels		3		
	RF Data rate/modulation (12.5 kHz)		2.4/GFSK		kbps
	RF Data rate/modulation (12.5 kHz)		4.8/GMSK		kbps
	RF Data rate/modulation (50 kHz)		38.4/4GFSK		kbps
	RF Data rate/modulation (25 kHz)		TBD		kbps
UART baud rate	2400		230400	Baud	
TX mode:	Output Power (programmable)	-20		27	dBm
	2 <sup>nd</sup> /3 <sup>rd</sup> harmonic	-54			dBm
Rx Mode:	Sensitivity (2.4 kbps)		-123		dBm
	Blocking, +/- 1 MHz	30	74		dB
	Blocking, +/- 2 MHz	35	79		dB
	Blocking, +/- 10 MHz	60	81		dB
	Adjacent Channel Rejection		52		dB
	Alternate Channel Selectivity		57		dB
Power Supply:	Supply Voltage (VCC)		2.5	3.8	V
	Supply Voltage (VCC_PA)		2.5	5	V
	Current Consumption, RX		22		mA
	Current Consumption, TX, 27 dBm		280	300	mA
	Current Consumption, TX, 24 dBm		180	200	mA
	Current Consumption, TX, +14 dBm		43	45	mA
	Current Consumption, Power Down		1	2	µA
Temperature range:		-40		+85	°C

### Application Circuit:



Note that the VCC\_PA pin is only connected to 5V for the RC1700HP to achieve +27 dBm. If VCC\_PA is connected to VCC the max output power for the RC1700HP is +24 dBm. For RC1700 and RC1700MP the VCC\_PA should be left open (not connected).

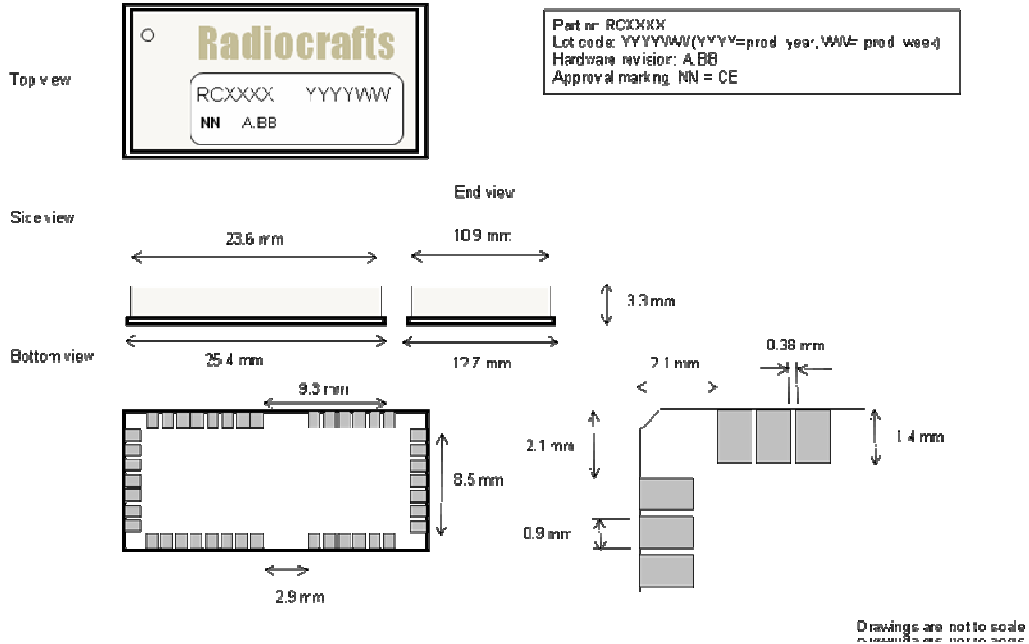
## Pin Assignment



## Pin Description

Pin no	Pin name	Description
1	GND	System ground
2	CTS/RXTX	UART Clear to Send / RXTX control (RS485)
3	RTS/SLEEP	UART Request to Send
4	CONFIG	Configuration Enable. Active low.
5	TXD	UART TX Data
6	RXD	UART RX Data
7	GND	System ground
8	GND	System ground
9	RF	RF I/O connection to antenna
10	GND	System ground
11	VDD	Not Connected, Internal Regulator Output
12	Reset	RESET_N. Active Low
13	VCC	Supply voltage input. Internally regulated.
14	GND	System ground
41	VCC_PA	Supply voltage input for Power Amplifier stage. Connect to 5V or VCC for RC1700HP and leave open for RC1700/RC1700MP. When VCC_PA connected to VCC for RC1700HP the max output power is limited to +24 dBm.
17-42	I/O	For future use and test status pin, Do not connect

## Mechanical Drawing



## Mechanical Dimensions

The module size is 12.7 x 25.4 x 3.3 mm

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