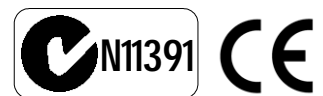
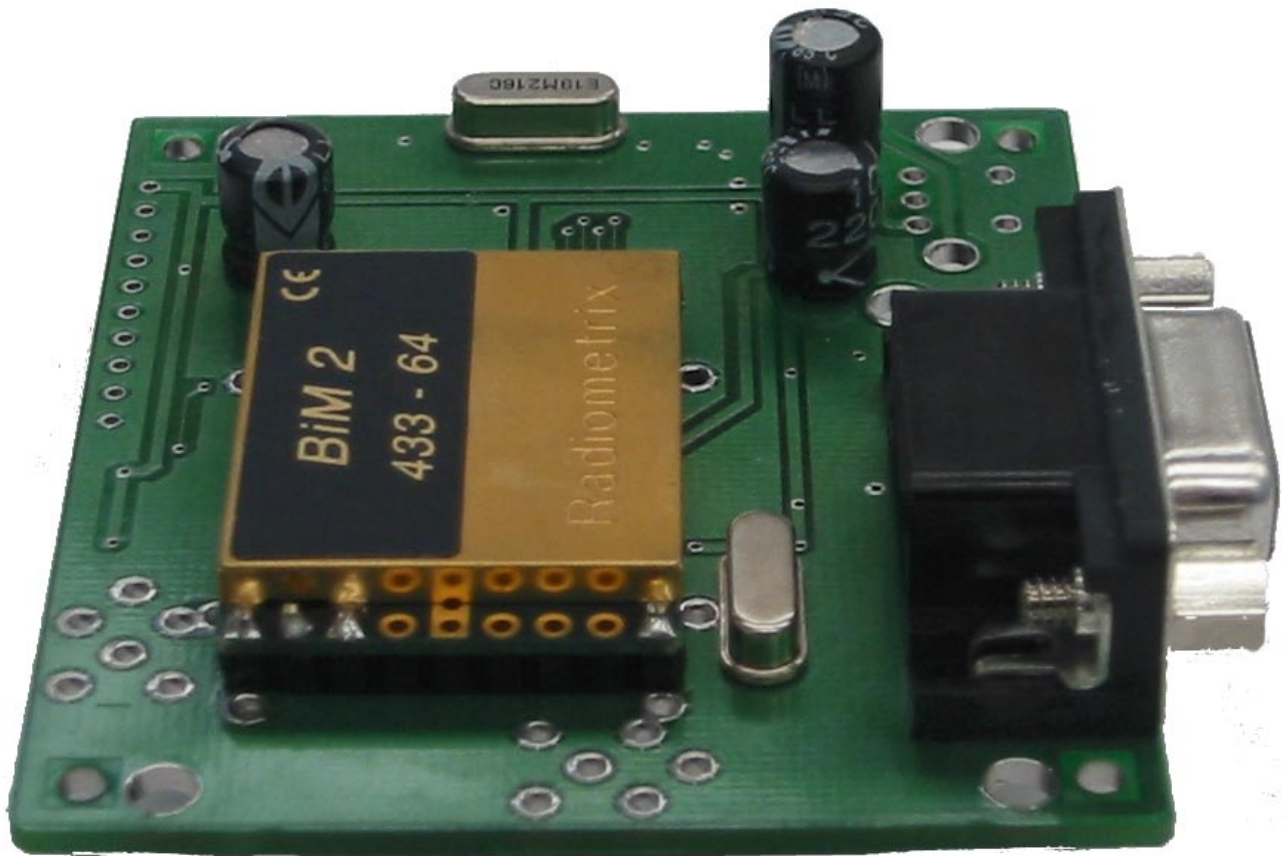


# RM-232-433BB UHF Radio Modem Bare Board Supplement



**Embedded Communications Systems**

*Specialists in Embedded RF Data Communications,  
Monitoring and Control Systems*

# Copyright Notice

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***embeddedcomms*** RM232 Radio Modem Bare Board Supplement

## Disclaimer

This manual has been validated and reviewed for accuracy. The information and descriptions it contains are accurate for the ***embeddedcomms*** RM-232-433 Bare Board UHF Radio Modem at the time of this manual's publication. However, succeeding products and manuals are subject to change without notice. Embedded Communications Systems assumes no liability for damages incurred directly or indirectly from errors, omissions or discrepancies between the radio modem and the manual.

These radio devices may be subject to radio interference and may not function as intended if interference is present. Systems should be designed to tolerate such interference.

RF transmission power levels are subject to regulatory approval in countries; consequently, it is possible that some radio modem functionality is not provided in your country.

## Trademarks

***embeddedcomms*** is a trademark of Embedded Communications Systems Pty Ltd.

## Radio and EMC Regulations

The user of the RM-232-433 Bare Board UHF Radio Modem must satisfy all relevant EMC and other regulations applicable in the intended country of use.

The Intrastate commodity code for the radio module used in the RM-232-433 UHF Radio Modem is: 8542 4090.

The radio module conforms to EN 300-220-1 & ETS 300-683 standards.

## Problem Reporting and Feedback

To report operational problems, documentation problems, or suggested product enhancements please visit our web site at <http://www.embeddedcomms.com.au/> and fill in the feedback form provided on the Contact page.

All information supplied to Embedded Communications Systems will be treated in the strictest of confidence.

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# Chapter 1

## Introduction

This supplement covers the RM-232-433 Bare Board UHF Radio Modem. It details both the physical and interface properties of the bare board modem.

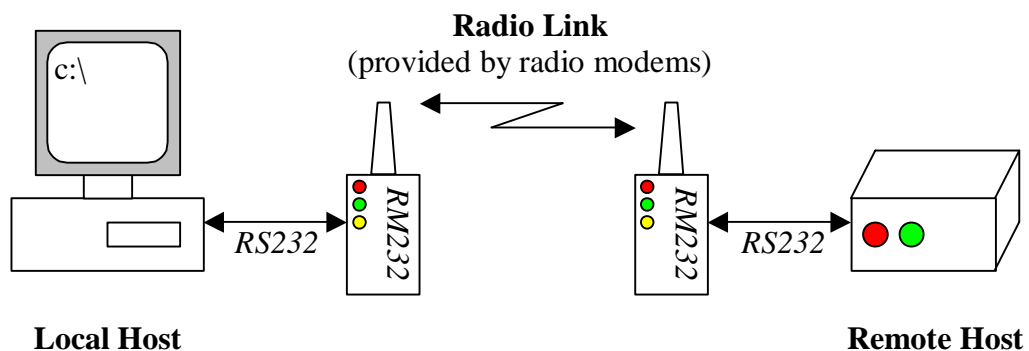
This manual should be read and in conjunction with the RM232-433 Users Guide.

### RM-232-433BB UHF Radio Modem

The RM-232-433BB UHF Radio Modem provides the capability of a short range, reliable wireless point-to-point RF data communications link.

The RM-232-433BB can be embedded in a variety of end user data communications products that require a simple to use invisible wireless data link. The RM-232 is designed to interface to a variety of host devices. These devices include computers, PDA's, personal organisers, PLC's, data loggers, SCADA devices and intelligent control & transducer systems.

The RM-232-433 radio modem is a fully self-contained radio modem module, requiring only an external 12VDC power source to operate. The UHF radio module used in the radio modem has been selected to meet the requirements of unlicensed operation, and is therefore acceptable for use in many countries.



### Radio Modem Features

- Reliable point-to-point RF link.
- Supports point-to-multipoint broadcast networks.
- User selectable serial DTE speed (600 to 115200bps).
- Selectable flow control of hardware/software/none.
- User selectable on-air throughput (600 to 14400bps).
- On-air data encryption, error checking and data acknowledgements.
- Low operating current. Auto standby mode.
- Configurable as a network repeater for extended range.
- Built-in configuration software. Remote over-air configuration.
- Built in configuration and diagnostic functions.

## Chapter 2 Technical Information

This chapter provides detailed information for the RM-232-433BB.

### Interface Connections

The RM-232-433/BB provides two RS232 interface connector options, being either a 9 pin D style female connector or a 10 way box header.

The following table shows the connector pin out for the radio modem as a DCE device. Also shown are both the 9 pin and 25 pin DTE interface connectors.

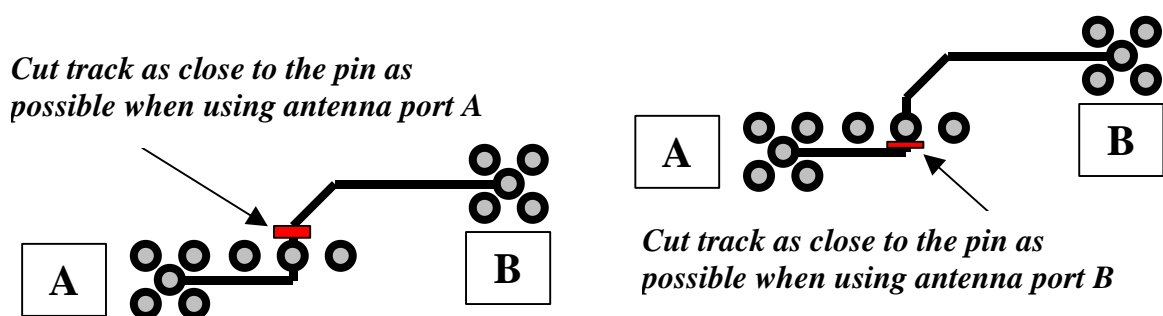
Signal Name	PC (DTE) 25way	PC (DTE) 9way	RM-232-433/BB (DCE) 9pin	RM232-433/BBH (DCE) 10pin
+12VDC*	-	-	1	1
RXD	3	2	2	3
TXD	2	3	3	5
RTS	4	7	7	4
CTS	5	8	8	6
DTR	20	4	4	7
GND	7	5	5	9, 10
Not connected	All others	1,6,9	1,6,9	2,8

\* Power supplied on pin #1 is not a standard RS232C signal.

### Antenna Connector Port

As supplied from the manufacturer, an antenna connector is not fitted. The type and style of antenna connector is left to the end user to select and install.

The RM-232-433/BB offers two mounting positions for an antenna connector. Depending on the mounting position selected for use, the other must be disconnected as shown in the following diagrams.



**The PCB track should be cut depending on which antenna port is being used.**

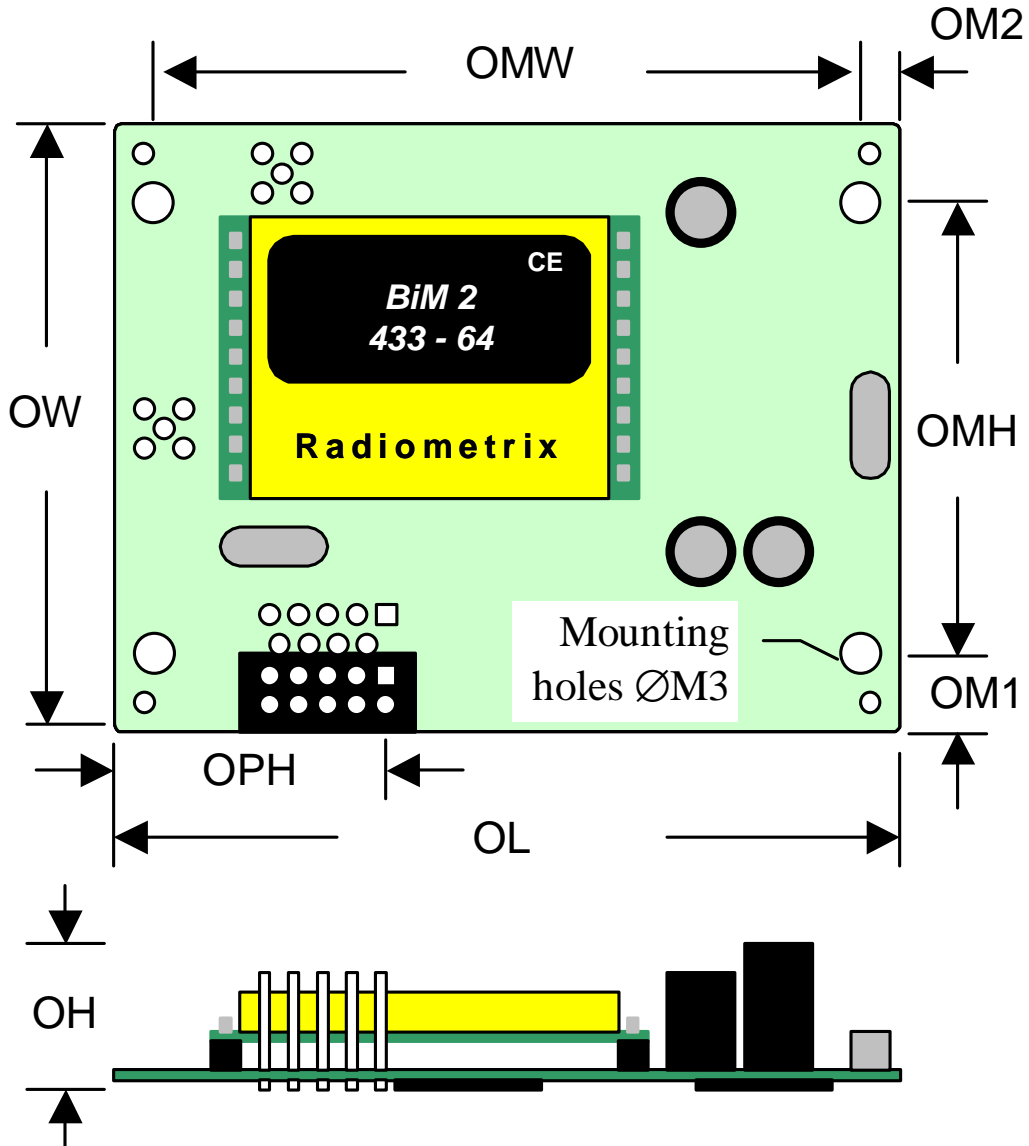
It is recommended to use a sharp hobby knife or electric engraving tool to cut the track as close to the point shown in the diagram. Failure to cut the PCB track as shown can result in up to 2dB loss in signal strength from the radio module.

This track can be cut at the time of manufacture on request, depending on which antenna port is to be used.

## Physical Dimensions

The following diagram and table give the overall dimensions of the bare board radio modem. Note the diagram shows the RM-232-433BB fitted with a 10 pin box header. The D9 connector is fitted directly over the top of the header connector.

### RM-232-433/BB Dimensions



Mechanical Details	Typical	Units
<b>Bare Board</b>		<b>mm</b>
Length (dimension OL)	63.5	mm
Width (dimension OW)	56.0	mm
Height (dimension OH)	15.8	mm
Mounting holes width (dimension OMW)	41.0	mm
Mounting holes length (dimension OML)	57.5	mm
Mounting holes position 1 (dimension OM1)	7.5	mm
Mounting holes position 2 (dimension OM2)	3.0	mm
Pin header from edge (dimension OPH)	26.5	mm