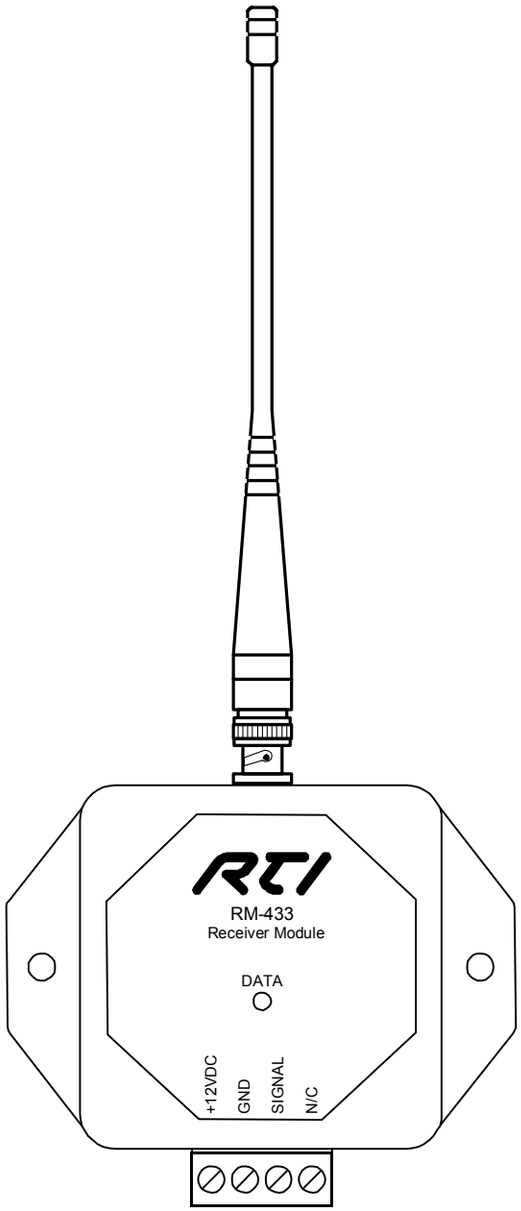
RM-433
Radio Frequency Receiver Module

RM-433

Operation & Installation Guide

v1.0



Introduction

The *RM-433* is a radio frequency receiving device that operates at 433MhZ. It is designed to receive signals that are transmitted by RTI universal system controllers.

The *RM-433* contains a microprocessor that monitors all received signals so that RF noise and data from non-RTI transmitters is filtered out. When valid RTI data is detected, the *RM-433* passes the signal through its output driver which allows the data to travel long distances over wire. The output driver is compatible with industry standard infrared repeating systems, and can be wired together with those systems or with additional *RM-433* units. This allows RTI control systems to be controlled from almost any location with either IR or RF transmitters.

The *RM-433* does not directly control A/V components - it is for communicating to RTI control systems only.

Before using the *RM-433*, please read and follow all of the instructions in this guide.

Product Contents

Contents of the *RM-433* sales kit include the following items:

- One (1) RM-433 radio frequency receiver module.
- One (1) flexible 1/2-wave whip antenna.
- One (1) 10 ft. (3m) hook-up wire.
- One (1) operation manual.

Features and Benefits

The *RM-433* utilizes an innovative design concept that makes it an ideal solution for professionally installed RTI control systems:

- Reliable RF reception due to matched antenna, connector, and PCB.
- Modular design that allows multiple *RM-433* units to be wired together. This allows for any desired coverage area.
- Output signal is compatible with industry standard infrared repeating systems. This allows multiple IR and/or RF receivers to be wired together into an RTI control system.
- No dedicated power supply required. Power is derived directly from the RTI control system.
- A feedback LED confirms operation.
- Available only to professional system integrators.

Operation

The *RM-433* is designed to operate with an RTI universal system controller and central control system. It receives RF data that was transmitted by the universal system controller, converts it to an electrical signal, and transfers it to the central control system using 3-conductor wire. Power is derived from the control system, and no programming or setup is required.

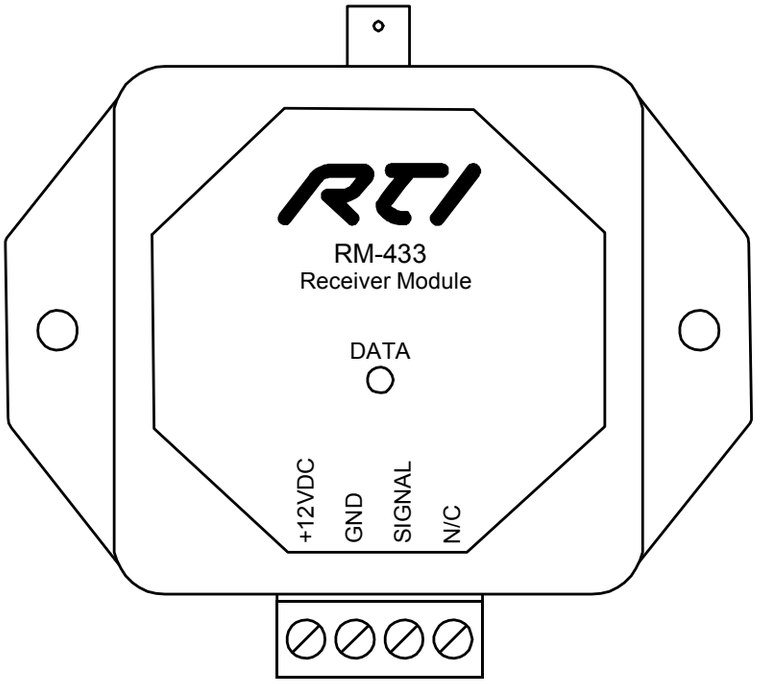
While power is applied to the *RM-433* it will constantly monitor the air for signals modulated at 433MhZ. The Data feedback LED indicates the presence of these signals:

DATA LED

Off = No 433MhZ signal detected
Red = Noise or invalid data detected
Green = Valid data detected

Whenever the Data LED is green the *RM-433* is sending the received data through its output driver. If the Data LED is off or red, the output driver is shut off. This prevents noise that is being received by one *RM-433* from interfering with valid data that is being output by another *RM-433* (if they are wired together to the same control system).

Connector Reference



+12VDC: Positive power supply connection. Connect to +12VDC on RTI control system.

GND: Common ground connection. Connect to GROUND on RTI control system.

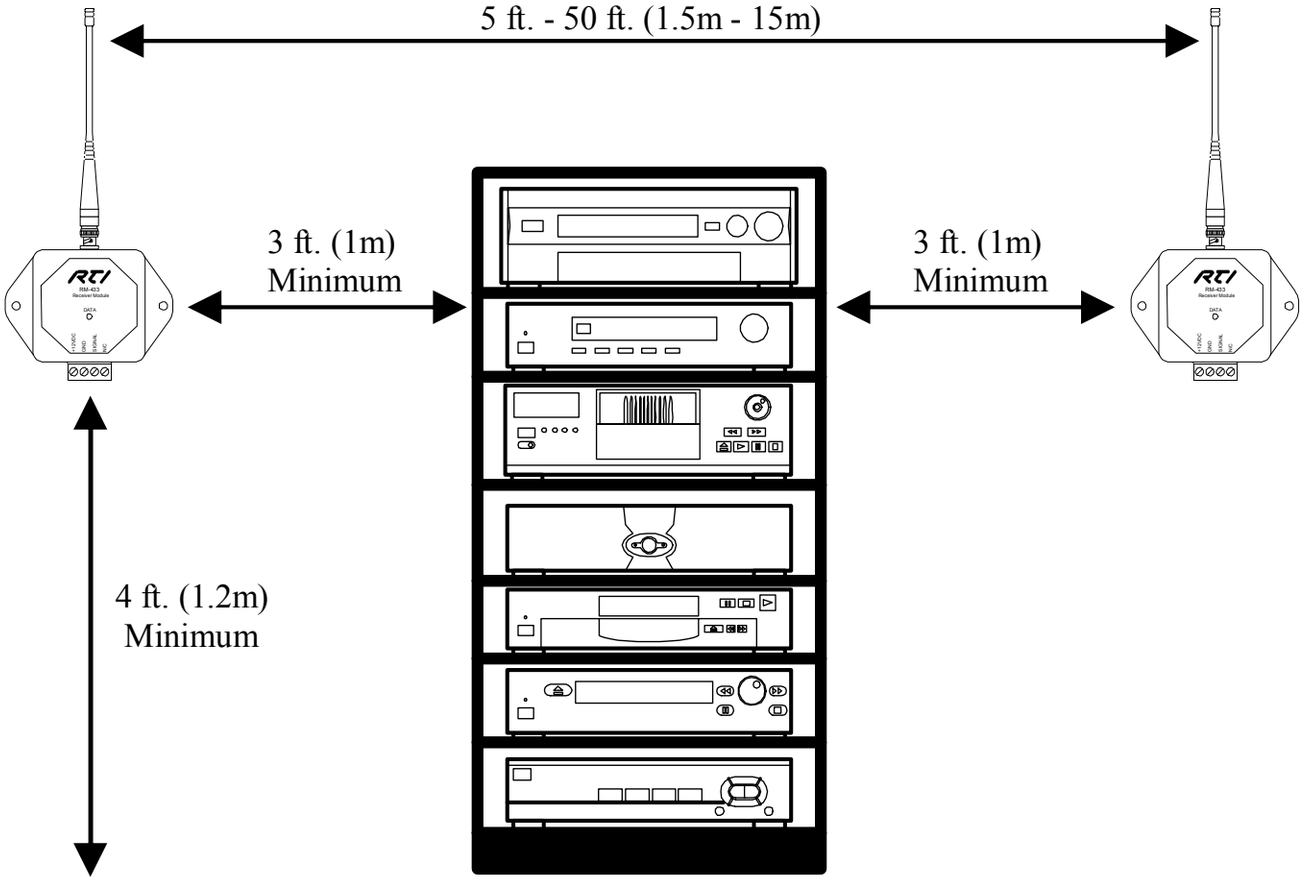
SIGNAL: Data output connection. Connect to SIGNAL IN on RTI control system.

N/C: No Connect. Do not connect this terminal.

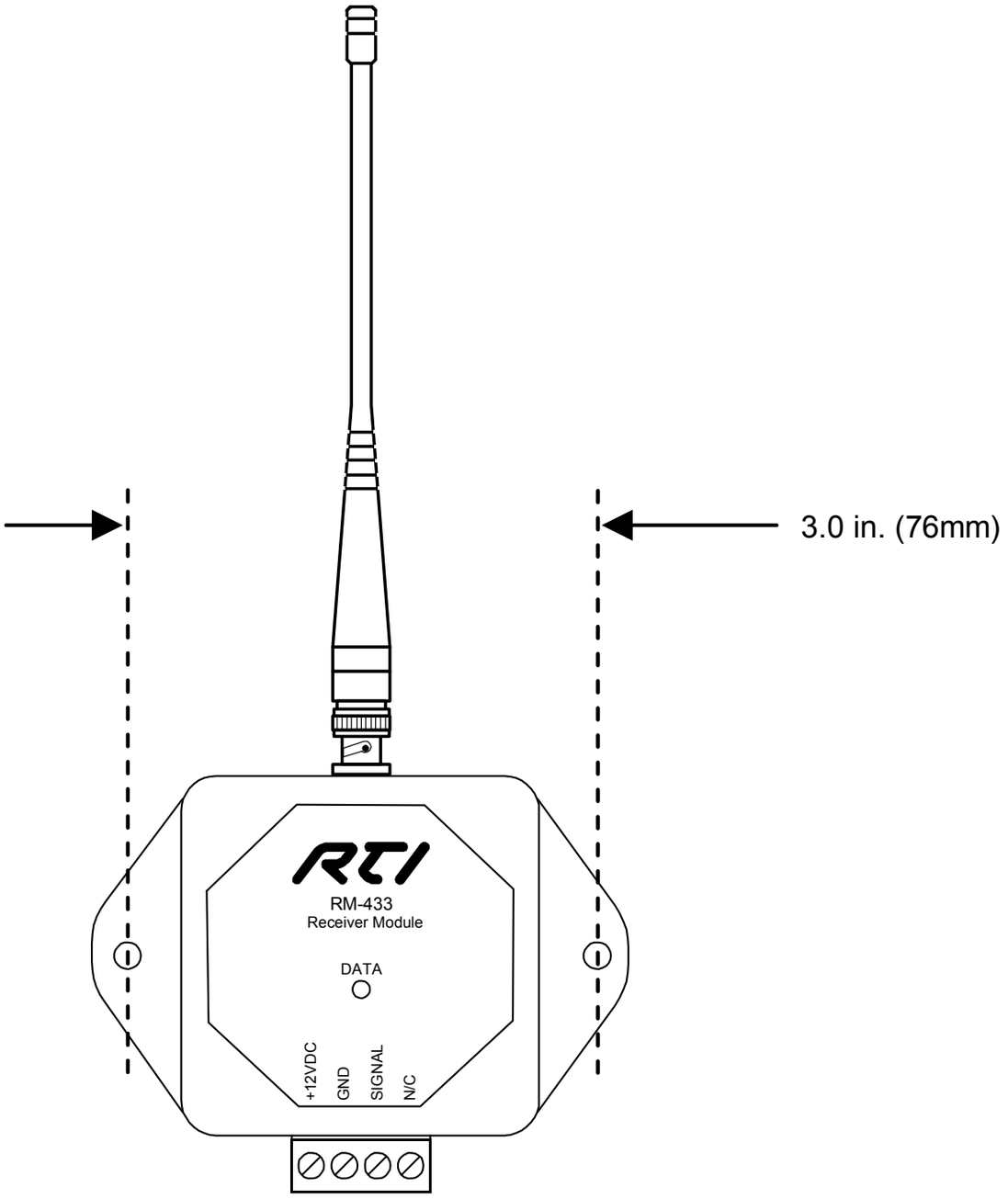
Use 22AWG wire or larger. If Category 5 wire is used, maintain pairs for each connection.

Installation

The *RM-433* can be mounted on a shelf, wall, or cabinet. See below for recommended positioning. For the best reception connect two or more *RM-433* units together. This will help eliminate RF reception drop-out due to multi-path interference. Up to ten *RM-433* units can be connected together as long as the total wire length does not exceed 1000 ft. (300m).



Mounting Hole Pattern



Troubleshooting

If you are having problems with your *RM-433* please read these troubleshooting tips before contacting technical support.

The Data LED is constantly flashing red

- This does not necessarily indicate a problem that will effect performance. If it does, move the *RM-433* to a different area.

The Data LED never turns green

- Make sure the *RM-433* is wired correctly to the central control system, and verify the control system is powered-up.
- Make sure the RTI universal system controller is programmed to output RF data.

The Data LED turns green when it receives a command, but the control system does not respond

- Make sure the Signal terminal on the *RM-433* is wired to the Signal In terminal on the central control system. The Signal In LED on the control system should illuminate.
- If there is also an infrared repeater connected to the control system, make sure it is not injecting noise onto the signal line.
- Make sure the programming in the central control system matches the universal system controller.

Specifications

Power Requirements:	+9VDC to +16VDC @ 60mA
RF Carrier Frequency:	433.92 MhZ
Output Drive:	200mA maximum
Operating Temperature:	+32°F to +122°F (+0°C to +50°C)
Operating Humidity:	5% to 95% non-condensing
Module Dimensions:	3.5 in. x 3.4 in. x 1.0 in. (89mm x 86mm x 25mm)
Antenna Length:	13 in. (330mm)
Weight:	4.4 oz. (125 grams)

All specifications are subject to change.

It's Under Control ®

Remote Technologies Incorporated

18681 Lake Drive East
Chanhassen, MN 55317
Tel: 952-253-3100
Fax: 952-253-3131
www.rticorp.com