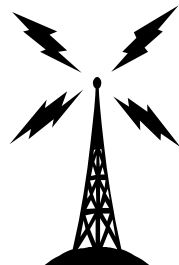


# WIRELESS RF LINK

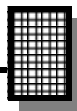
## RECEIVER/DECODER MODULE



**Ramsey Electronics Model No.      RXD433**

*Need a data transmitter or receiver for your remote wireless application? These compact units are perfect for any project; car alarms, door openers, home security, you name it!*

- **SAW Resonators for high stability – no drift!**
- **Compact size with low current demand.**
- **433 MHz license free band.**
- **Sensitive superhet receiver with RF LNA.**
- **Automatic tuning – no manual adjustments.**
- **Operates on 5 volts DC.**



### RAMSEY WIRELESS RF LINKS

- TXE433 or 916 Transmitter & Encoder Module
- RXD916 Data Receiver & Decoder
- RX433 or 916 Data Receiver
- TX433 or 916 Data Transmitter

### RAMSEY TRANSMITTER KITS

- FM10A, 25B FM Stereo Transmitters
- TV6 Television Transmitter
- "Cube" TV Transmitters

### RAMSEY RECEIVER KITS

- FR1 FM Broadcast Receiver
- AR1 Aircraft Band Receiver
- SR2 Short-wave Receiver
- AA7 Active Antenna
- SC1 Short-wave Converter
- LC1 Capacitance/ Inductance Meter

### RAMSEY AMATEUR RADIO KITS

- CPO3 Code Practice Oscillator
- DDF1 Doppler Direction Finder
- HR Series HF All Mode Receivers
- QRP Series HF CW Transmitters
- CW700 Micro Memory CW Keyer
- QRP Power Amplifiers

### RAMSEY MINI-KITS

Many other kits are available for hobby, school, Scouts and just plain FUN. New kits are always under development. Write or call for our free Ramsey catalog.

#### RXD433 WIRELESS RECEIVER/DECODER INSTRUCTION MANUAL

Ramsey Electronics publication No. MRXD433 Revision 1.1

First printing: July 1999



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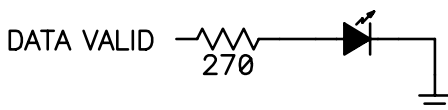
## **THE RXD433**

This wireless RF receiver/decoder has a 4 bit data output that will match the data sent by the encoder, TXE433. The output is CMOS compatible when the unit is run on +5 volts.

The demod bandwidth is selectable by the placement of jumpers on the circuit board. The table on the schematic shows jumper positions for different bandwidths. Narrower bandwidths will give slightly better range at the expense of more limited constraints on battery voltage tolerance over time and more limited operating temperature range. For most applications, the 4800 Hz setting will be best.

The “decoder address select” allows you to use one transmitter to control different receivers by giving each receiver a unique address. The decoder chip has internal pull-up resistors making it a simple matter of grounding the address select pins to match the grounded pins on the transmitter/encoder. These outputs are also CMOS compatible when run on +5 volts.

The receiver/decoder unit additionally has a “data valid” output. This output goes high when the “decoder address select” matches the encoder’s address select. This is convenient place to connect a “data valid” LED indicator to show at a glance when the receiver is decoding. The schematic below shows how such an LED can be connected.



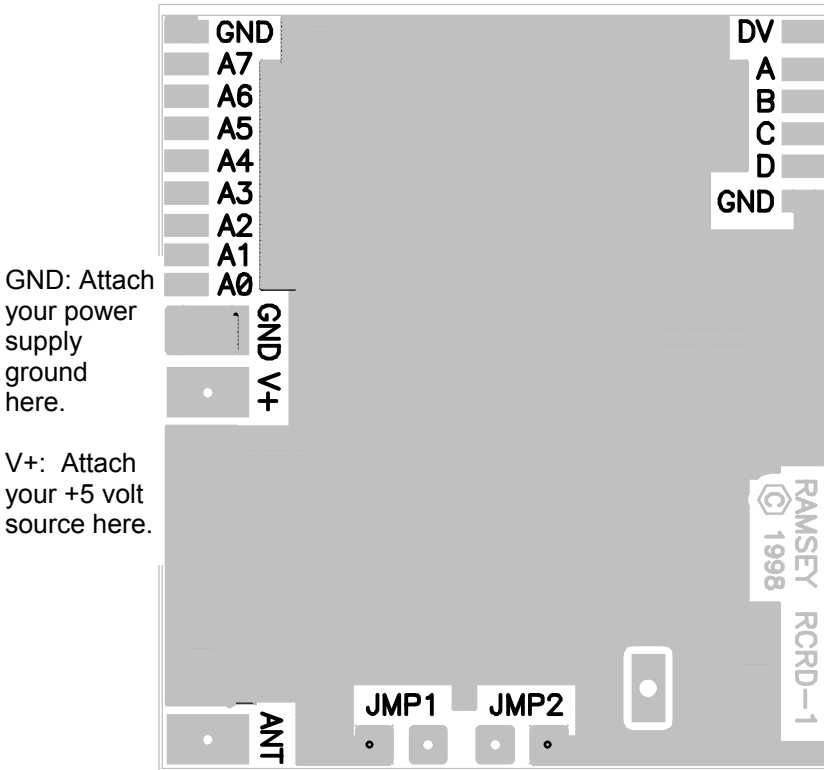
## **ANTENNA CONSIDERATIONS:**

The simplest antenna consists of a piece of wire approximately 6 to 7 inches long. If you desire more range you can try a ground plane antenna or a Yagi such as the Ramsey 4004 model. The antenna should be tuned for the 433 MHz band for best operation.



Address lines: Ground individual lines to match transmitter address lines.

Data lines: Access your data here.  
Data output will match data input to transmitter.  
DV: Data Valid line. Attach your optional LED circuit or other data valid indi-



GND: Attach your power supply ground here.

V+: Attach your +5 volt source here.

Antenna: Attach your antenna here.

Demod bandwidth select: Jumper as shown in chart on schematic to change bandwidth

A0 through A7: These are the address lines. Individual address lines should be tied to ground to match the TXE-433 transmitter address lines. Lines not tied to ground can be left open.

A through D: These are the data output lines. The output from these lines will match the input to the TXE-433 transmitter data lines.

DV: Data Valid. Output goes high when the “decoder address select” matches the encoder’s address select. See text on page 3.



## **The Ramsey Kit Warranty**

**Please read carefully BEFORE calling or writing in about your kit. Most problems can be solved without contacting the factory.**

Notice that this is not a "fine print" warranty. We want you to understand your rights and ours too! All Ramsey kits will work if assembled properly. The very fact that your kit includes this new manual is your assurance that a team of knowledgeable people have field-tested several "copies" of this kit straight from the Ramsey Inventory. If you need help, please read through your manual carefully. All information required to properly build and test your kit is contained within the pages!

**1. DEFECTIVE PARTS:** It's always easy to blame a part for a problem in your kit. Before you conclude that a part may be bad, thoroughly check your work. Today's semiconductors and passive components have reached incredibly high reliability levels, and it's sad to say that our human construction skills have not! But on rare occasions a sour component can slip through. All our kit parts carry the Ramsey Electronics Warranty that they are free from defects for a full ninety (90) days from the date of purchase. Defective parts will be replaced promptly at our expense. If you suspect any part to be defective, please mail it to our factory for testing and replacement. Please send only the defective part(s), not the entire kit. The part(s) **MUST** be returned to us in suitable condition for testing. Please be aware that testing can usually determine if the part was truly defective or damaged by assembly or usage. Don't be afraid of telling us that you 'blew-it', we're all human and in most cases, replacement parts are very reasonably priced.

**2. MISSING PARTS:** Before assuming a part value is incorrect, check the parts listing carefully to see if it is a critical value such as a specific coil or IC, or whether a RANGE of values is suitable (such as "100 to 500 uF"). Often times, common sense will solve a mysterious missing part problem. If you're missing five 10K ohm resistors and received five extra 1K resistors, you can pretty much be assured that the '1K ohm' resistors are actually the 'missing' 10 K parts ("Hum-m-m, I guess the 'red' band really does look orange!") Ramsey Electronics project kits are packed with pride in the USA. If you believe we packed an incorrect part or omitted a part clearly indicated in your assembly manual as supplied with the basic kit by Ramsey, please write or call us with information on the part you need and proof of kit purchase.

### **3. FACTORY REPAIR OF ASSEMBLED KITS:**

To qualify for Ramsey Electronics factory repair, kits **MUST**:

1. NOT be assembled with acid core solder or flux.
2. NOT be modified in any manner.
3. BE returned in fully-assembled form, not partially assembled.
4. BE accompanied by the proper repair fee. No repair will be undertaken until we have received the **MINIMUM** repair fee (1/2 hour labor) of \$25.00, or authorization to charge it to your credit card account.
5. **INCLUDE** a description of the problem and legible return address. **DO NOT** send a separate letter; include all correspondence with the unit. Please do not include your own hardware such as non-Ramsey cabinets, knobs, cables, external battery packs and the like. Ramsey Electronics, Inc., reserves the right to refuse repair on **ANY** item in which we find excessive problems or damage due to construction methods. To assist customers in such situations, Ramsey Electronics, Inc., reserves the right to solve their needs on a case-by-case basis.

The repair is \$50.00 per hour, regardless of the cost of the kit. Please understand that our technicians are not volunteers and that set-up, testing, diagnosis, repair and repacking and paperwork can take nearly an hour of paid employee time on even a simple kit. Of course, if we find that a part was defective in manufacture, there will be no charge to repair your kit (But please realize that our technicians know the difference between a defective part and parts burned out or damaged through improper use or assembly).

**4. REFUNDS:** You are given ten (10) days to examine our products. If you are not satisfied, you may return your unassembled kit with all the parts and instructions and proof of purchase to the factory for a full refund. The return package should be packed securely. Insurance is recommended. Please do not cause needless delays, read all information carefully.

Price: \$5.00

Ramsey Publication No. MRXD433

Assembly and Instruction manual for:

***RAMSEY MODEL NO. RXD433***



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