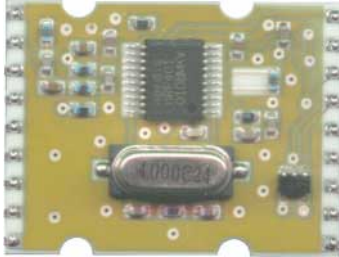


RXQ1-433.9

Dual Band FM Transceiver



Features

- Low Profile DIL Package
- Data Rate up to 20 Kbits/S
- 433.92 MHz Operation
- 2 Selectable RF Channels (433.92 / 434.33 MHz)
- Narrowband Crystal Controlled
- Wide Supply Range
- Optimal Range 200m

Applications

- Alarm and Security Systems
- Home Automation
- Remote Controls
- Sensor Reporting
- Wireless Communication

General Description

The RXQ1 is a half duplex radio transceiver module for use in bi-directional data transfer applications at ranges up to 200 meters.

The module operates in the 433MHz European ISM (Industrial, Scientific and Medical) Frequency Band.

The RXQ1 radio transceiver contains two RF channels at 433.92 and 434.33MHz selectable by external pin (CS pin).

The module uses a 'crystal controlled' design providing narrow band performance, much better than other wideband 'SAW' based designs.

Its unique features of channel selection and interference rejection make the RXQ1 ideal to provide a reliable wireless link.

The RXQ1 modules will suit one-to-one multi-node wireless links in applications including building and car security, remote industrial process monitoring and computer networking.

Because of its small size and low power requirements, the module is ideal for use in portable wireless applications.

Absolute Maximum Ratings

Supply Voltage (V_{CC}) -0.3V to +6V
 Input Voltage -0.3V to V_{CC} + 0.3V
 Output Voltage -0.3V to V_{CC} + 0.3V

Operating Temperature -20°C to +70°C
 Storage Temperature -40°C to +100°C

Electrical Characteristics

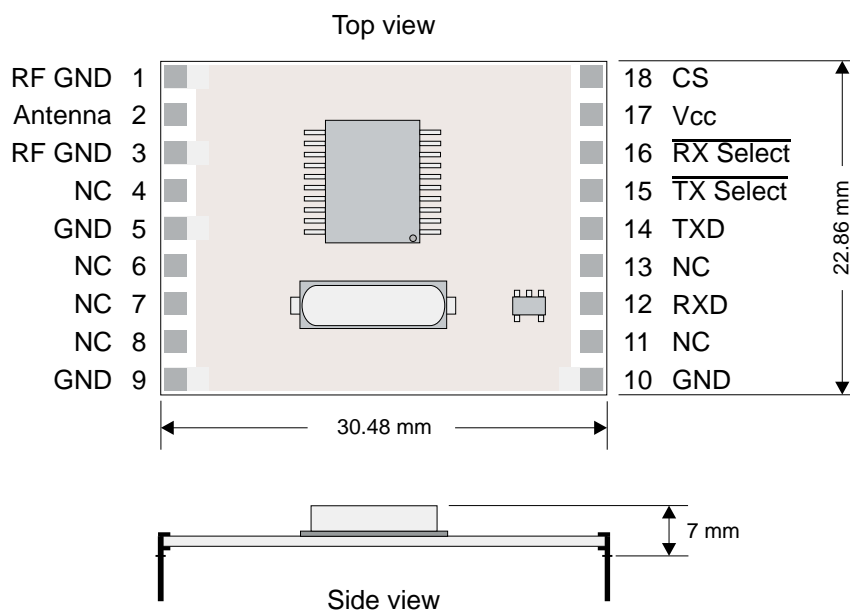
T_a = 25°C unless otherwise specified

| CHARACTERISTICS | | MIN | TYP | MAX | UNIT |
|------------------|------------------------------------|---------------------|-----------------|---------------------|--------|
| V _{CC} | Supply Voltage | 2.7 | 3 | 5.25 | VDC |
| I _{SR} | Supply Current (Receive mode) | | 12 | | mA |
| I _{ST} | Supply Current (Transmit mode) | | 26 | | mA |
| I _{SS} | Supply Current (Standby mode) | | 8 | | uA |
| V _{OH} | High-Level Output Voltage (I=-1mA) | 0.7 V _{CC} | | V _{CC} | V |
| V _{OL} | Low-Level Output Voltage (I=1mA) | 0 | | 0.3 V _{CC} | V |
| | Working Frequency | | 433.92 / 434.33 | | MHz |
| | Receiver Sensitivity | | -100 | | dBm |
| | FM Deviation | | ±15 | | KHz |
| BW _{IF} | IF Bandwidth | 65 | | 85 | KHz |
| | RF Output Power into 50Ω | | +5 | | dBm |
| | Harmonic Spurious Emission | | -50 | | dBc |
| | Data bit Rate | 0 | | 20 | Kbit/s |
| T _{OP} | Operating Temperature Range | -20 | | +70 | °C |

Timing Data

| CHARACTERISTICS | MIN | TYP | MAX | UNIT |
|--------------------------------------|-----|-----|-----|------|
| Power Up to Stable receiver Data out | | 5 | | mS |
| Power Up to Full RFout | | 4 | | mS |
| Standby to RX mode | | 3 | | mS |
| Standby to TX mode | | 2 | | mS |
| Switching from TX to RX mode | | 3 | | mS |
| Switching from RX to TX mode | | 1 | | mS |

Mechanical Dimensions



Pin Description

RF GND (pins 1, 3)

RF ground pin. For best results, these pins should be connected to the ground plane against which the antenna radiates.

Antenna (pin 2)

Nominal 50 ohm input/output impedance capacitively isolated from the internal circuit.

GND (pins 5, 9, 10)

Supply ground connections.

NC (pins 4, 6, 7, 8, 11, 13)

Not connected

RXD (pin 12)

Receiver digital data output (CMOS logic out) representing true data as supplied to the transmitter.

TXD (pin 14)

Data input to the transmitter can be directly interfaced to CMOS logic drive operating on the same supply voltage as the transceiver.

TX Select (pin 15)

Active low transmit select.

RX Select (pin 16)

Active low receive select.

Vcc (pin 17)

Supply voltage range from 2.7 to 5.25 volts.

Channel Select (pin 18)

Data 0 selects 433.92MHz.

Data 1 selects 434.33MHz.

| TX Select | RX Select | Function |
|-----------|-----------|-----------------|
| 0 | 0 | Power Down Mode |
| 0 | 1 | Transmit Mode |
| 1 | 0 | Receive Mode |
| 1 | 1 | Power Down Mode |