



# AM Hybrid Transmitter

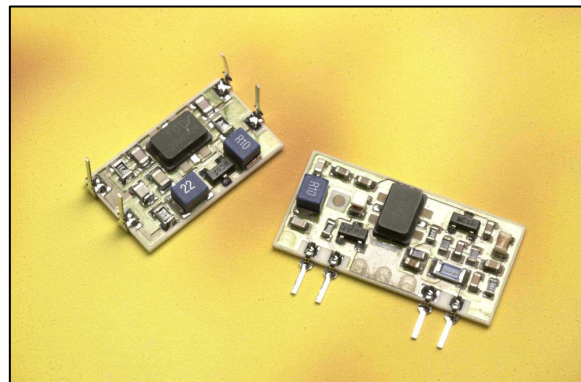
AM-RT4-XXX  
AM-RT5-XXX  
AM-RTQ4-XXX  
AM-RT14-XXX

## Features

- Complete RF Transmitter
- CMOS / TTL Input
- No Adjustable Components
- Very Stable Operating Frequency
- Low Current Consumption
- Low Spurious Emissions

## Applications

- Wireless Security Systems
- Car Alarms
- Remote Gate Controls
- Remote Sensing
- Data Capture
- Sensor Reporting



## RT4 / RT5

- Available as 315, 418, 433 MHz
- Range up to 70 metres
- SAW Design
- Available In DIL or SIL Package
- Wide Operating Voltage

## RTQ4 / RT14

- High Output Power
- PLL Design
- Range 100+ metres
- Available as 433, 868 MHz

## Description

The R F Solutions Ltd. AM hybrid transmitter module provides a complete RF transmitter which can be used to transmit data at up to 4KHz from any standard CMOS/TTL source.

The module is very simple to operate and offers low current consumption (typ. 4 mA). Data can be supplied directly from a microprocessor or encoding device, thus keeping the component count down and ensuring a low hardware cost.

The module exhibits extremely stable electronic characteristics due to the use of 'Thick-Film' hybrid technology, which uses no adjustable components and ensures very reliable operation.

The modules are compatible with R F solutions Ltd. range of AM receivers to provide a complete solution.

## Ordering Information

| Part Number    | Description                                      |
|----------------|--------------------------------------------------|
| AM-RT4-XXX     | DIL AM Transmitter Module XXX MHz                |
| AM-RTQ4-XXX    | DIL AM Transmitter Module XXX MHz                |
| AM-RT5-XXX     | SIL AM Transmitter Module XXX MHz                |
| AM-RT14-XXX    | DIL AM Transmitter Module XXX MHz, SAW Resonator |
| AM-RT14-XXX-SO | SMT AM Transmitter Module XXX MHz, SAW Resonator |

## Frequency Availability

RT4 / RT5: XXX = 315, 418, 433MHz

RTQ4: XXX = 868MHz

RT14: XXX = 433MHz

Other Frequencies available on request

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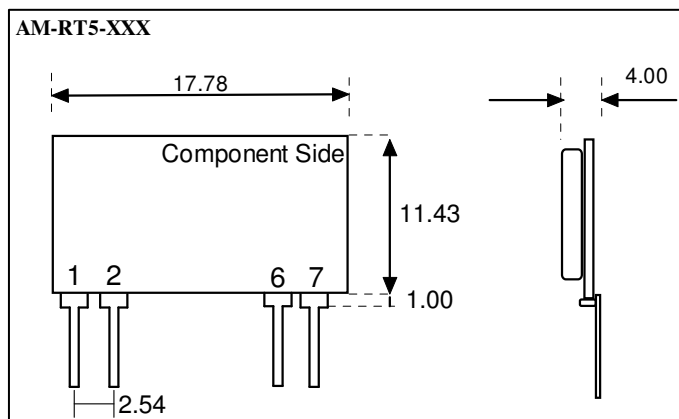
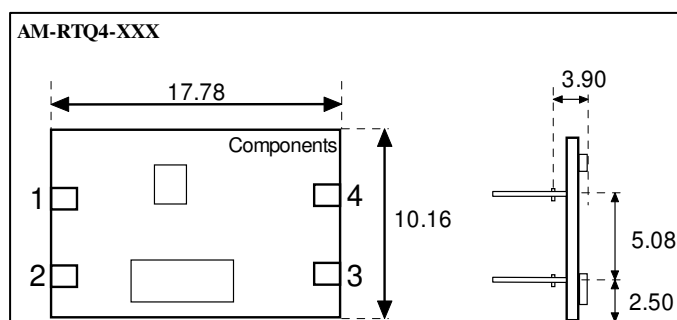
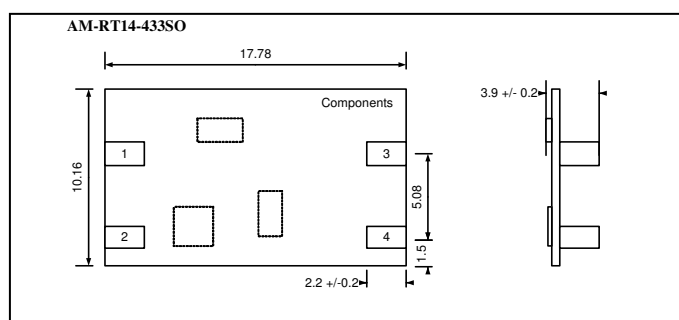
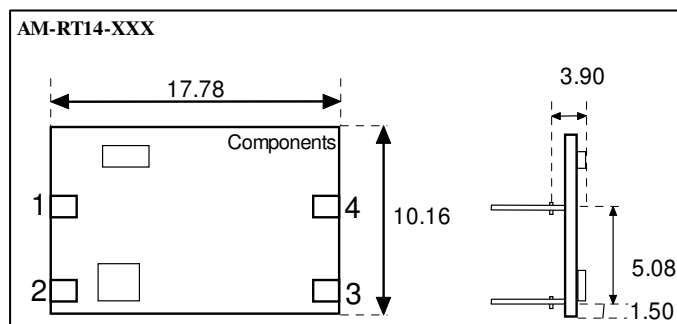
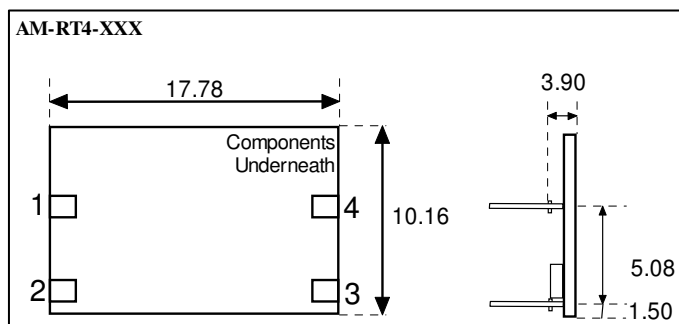
Other Frequencies available on request



# AM Hybrid Transmitter

AM-RT4-XXX  
AM-RT5-XXX  
AM-RTQ4-XXX  
AM-RT14-XXX

## Mechanical Dimensions



### Notes

Pins on 0.1" pitch  
Pin Dimensions: 0.25 x 0.50mm  
All measurements in mm  
Tolerance: +/- 0.2mm

The component side differs depending on module

## Pin Descriptions

| RT4 / RTQ4 / RT14 | RT14-SO | RT5 | Name | Description                             |
|-------------------|---------|-----|------|-----------------------------------------|
| 1                 | 1       | 7   | Vcc  | Supply Voltage                          |
| 2                 | 2       | 6   | GND  | Ground, Connect to RF earth return path |
| 3                 | 4       | 2   | IN   | Data input                              |
| 4                 | 3       | 1   | ANT  | External Antenna                        |



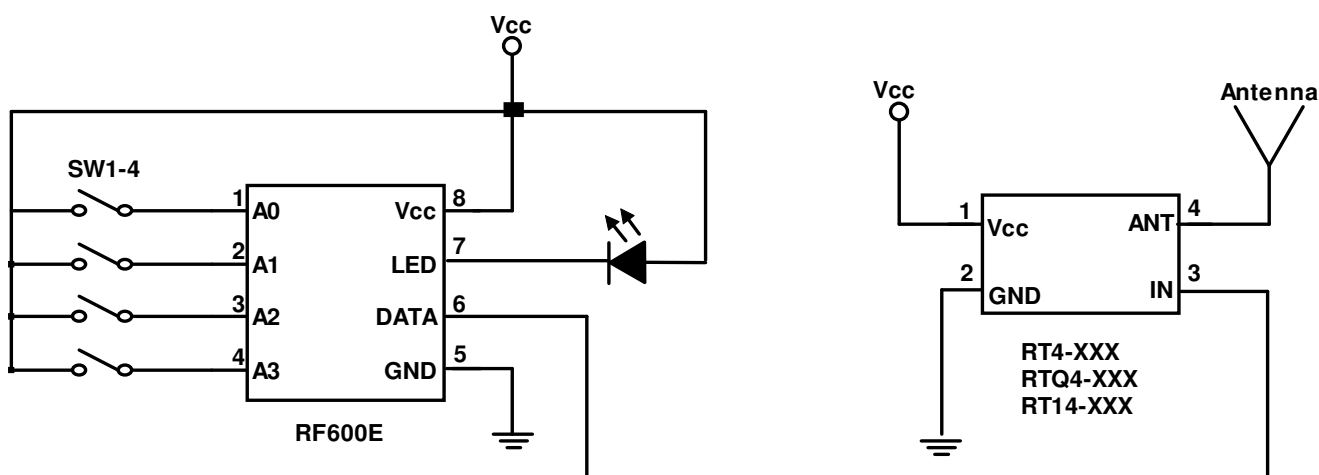
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AM-RT4-XXX  
AM-RT5-XXX  
AM-RTQ4-XXX  
AM-RT14-XXX

## Typical Application

For further information on this circuit please see datasheet DS600

## Transmitter Circuit





# AM Hybrid Transmitter

AM-RT4-XXX  
AM-RT5-XXX  
AM-RTQ4-XXX  
AM-RT14-XXX

## RT4/RT5: Electrical Characteristics

Ambient temp = 25 °C unless otherwise stated.

| Characteristic                          | Min.  | Typ.   | Max.   | Dimensions |
|-----------------------------------------|-------|--------|--------|------------|
| Supply Voltage                          | 2     |        | 14     | Vdc        |
| Supply Current (Vcc=5V IN=1kHz)         |       | 4      |        | mA         |
| Supply Current (Vcc=5V IN=DC GND)       |       | 50     |        | nA         |
| Working Frequency                       | 303.8 |        | 433.92 | MHz        |
| Frequency Tolerance                     |       | +/-100 |        | KHz        |
| RF Output Power into 50Ω (Vcc=5V)       |       | 0      |        | dBm        |
| Harmonic Spurious Emissions             |       | -30    |        | dBc        |
| Input Voltage High                      | 2     |        | Vcc    | V          |
| Time from Power on to data transmission |       | 10     |        | μSec       |
| Data Rate                               | 50    |        | 9,600  | bps        |
| Operating Temperature                   | -25   |        | +80    | °C         |

## RTQ4: Electrical Characteristics

Ambient temp = 25 °C unless otherwise stated.

| Characteristic                    | Min.    | Typ.   | Max.  | Dimensions |
|-----------------------------------|---------|--------|-------|------------|
| Supply Voltage                    | 1.9     |        | 5     | Vdc        |
| Supply Current (Vcc=5V IN=1kHz)   |         | 12     |       | mA         |
| Working Frequency                 |         | 868.35 |       | MHz        |
| Frequency Tolerance               | -35     |        | +35   | KHz        |
| RF Output Power into 50Ω (Vcc=4V) | +5      | +7     |       | dBm        |
| Harmonic Spurious Emissions       |         | -50    |       | dBc        |
| Input Voltage High                | 0.7*Vcc |        |       | V          |
| Power-Up                          |         |        | 1     | mSec       |
| Data Rate                         | 50      |        | 9,600 | bps        |
| Operating Temperature             | -25     |        | +80   | °C         |

## RT14: Electrical Characteristics

Ambient temp = 25 °C unless otherwise stated.

| Characteristic                    | Min. | Typ.   | Max.  | Dimensions |
|-----------------------------------|------|--------|-------|------------|
| Supply Voltage                    | 2    |        | 9     | Vdc        |
| Supply Current (Vcc=5V IN=1kHz)   |      | 8      |       | mA         |
| Working Frequency                 |      | 433.92 |       | MHz        |
| RF Output Power into 50Ω (Vcc=4V) | +10  | +12    |       | dBm        |
| Harmonic Spurious Emissions       |      | -55    |       | dBc        |
| Input Voltage High                | 2    |        | Vcc   | V          |
| Data Rate                         | 50   |        | 9,600 | Hz         |
| Operating Temperature             | -25  |        | +80   | °C         |

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