



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

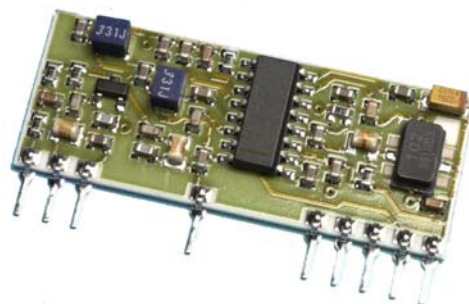
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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



- Compact Hybrid Module.
- Ceramic Substrate
- Very High Frequency Stability
- Receiving Range Up To 100 Metres.
- CMOS/TTL Compatible Output.
- Single Supply Voltage 5V.
- Compatible with R.F. Solutions AM Transmitters.
- Compliant to ETS300-220
- **RRQ3 Version**
 - Sleep Mode
 - Sensitivity Typically -107 dBm
 - 315 / 433 / 868MHz Available
- **RRQ5 Version**
 - Front End SAW Filter
 - Sensitivity Typically -110 dBm
 - 433MHz Available

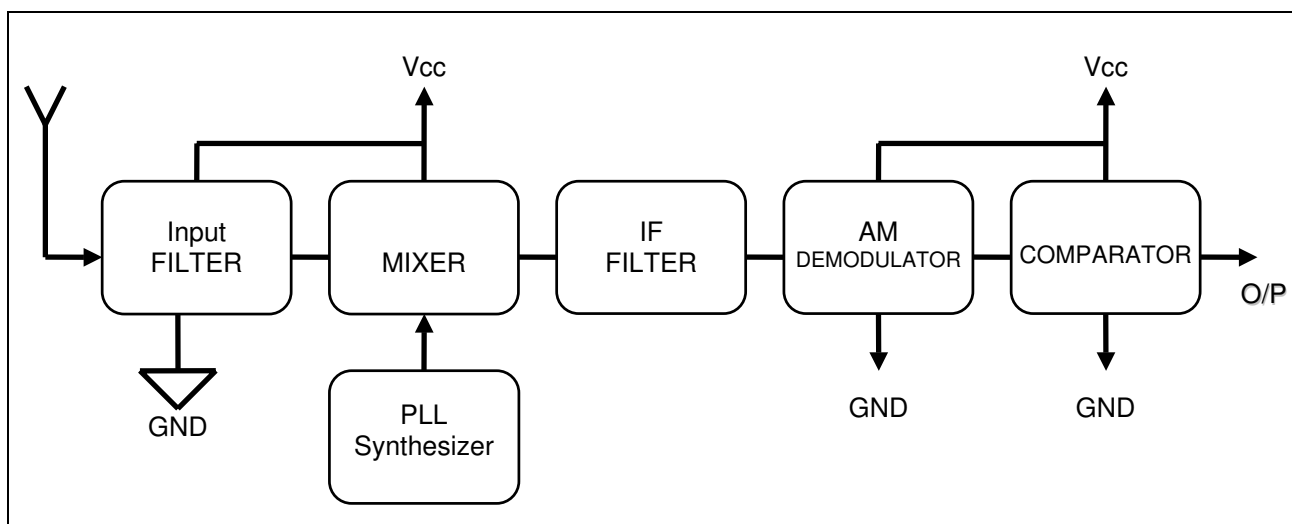


Description

The RF Solutions AM Superheterodyne Receivers are compact modules, which can be used to capture undecoded data from any equivalent AM Transmitter, such as R.F. Solutions AM-RT4 range of transmitters. (See AM Transmitter datasheet).

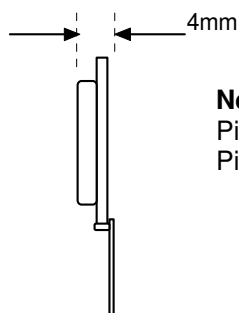
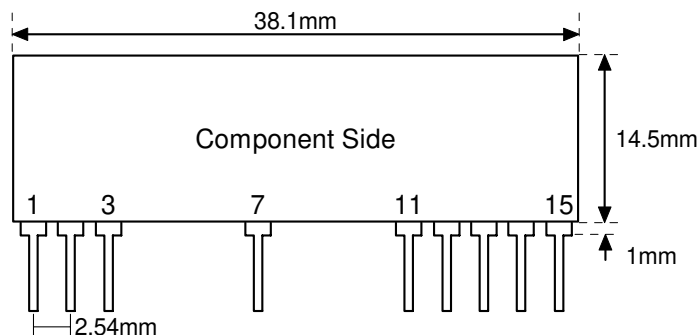
Receivers are manufactured on a ceramic substrate, the RRS3 incorporates an LC Filter, pre amplifier front end and PLL Synthesizer for high sensitivity and reduced EMC emissions. The RRQ5 incorporates a SAW Filter to provide a further increase in the module sensitivity. The modules show a very high frequency stability over a wide operating temperature even when subjected to mechanical vibrations or manual handling offering a very cost effective solution.

Block diagram





AM-RRQ3 Mechanical Dimensions



Notes

Pins on 0.1" pitch
Pin Dims :0.25 x 0.50mm

Pin Descriptions

RRQ3	
Pin No	Pin Name
1	+Vcc
2	GND
3	DATA IN (Antenna)
7	GND
11	GND
12	+Vcc
13	RSSI (output)
14	DATA OUT
15	PD (Power Down input) 0 = Standby Mode ($I_{standby}$ 100nA max) 5V = Normal Operation

RSSI Output

RF In (dBm)	RSSI (V)
-120	1.20
-110	1.32
-100	1.50
-90	1.78
-80	2.06
-70	2.35
-60	2.62
-50	2.72
-40	2.75

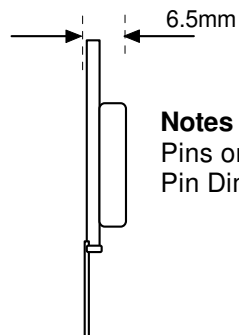
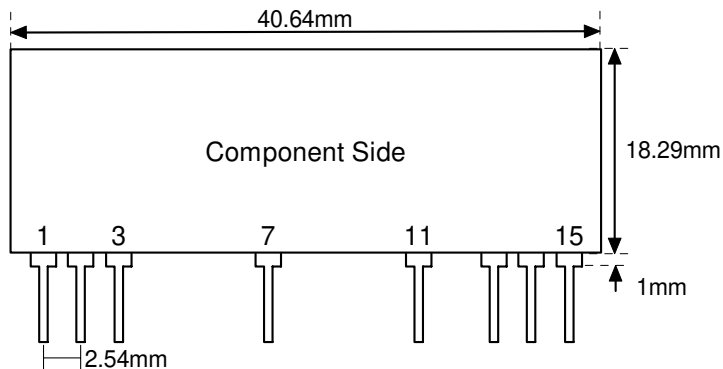
Electrical Characteristics

Ambient temperature = 25°C.

Electrical Characteristics	Min	Typical	Max	Dimension
Supply Voltage (Vcc)	4.5	5	5.5	V
Supply Current		5	6	mA
Receiver Frequency 315MHz variants		315		MHz
Receiver Frequency 433MHz variants		433.92		MHz
Receiver Frequency 868MHz variants		868.35		MHz
Low Level Output Voltage (I=10uA)			0.8	V
High Level Output Voltage (I=200uA)	Vcc-1			V
Operating Temperature Range	-25		+80	°C
R.F Sensitivity (100% AM) at 315 / 433MHz		-106		dBm
R.F Sensitivity (100% AM) at 868MHz		-101		dBm
3dB Bandwidth		+/-150		KHz
Max Data Rate			4.8	KHz
Level of Emitted Spectrum			-70	dBm



AM-RRQ5 Mechanical Dimensions



Notes

Pins on 0.1" pitch
Pin Dims :0.25 x 0.50mm

Pin Descriptions

RRQ5	
Pin No	Pin Name
1	+Vcc
2	GND
3	DATA IN (Antenna)
7	GND
11	GND
13	RSSI (output)
14	DATA OUT
15	+Vcc

RSSI Output

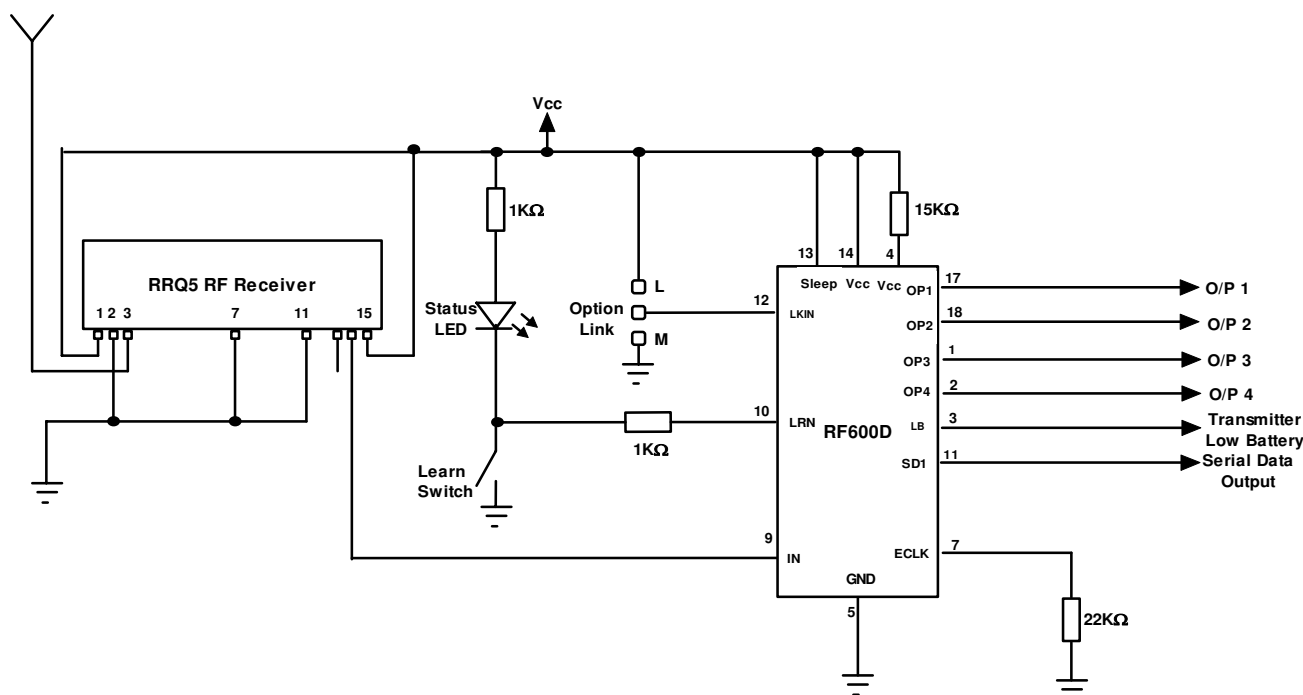
RF In (dBm)	RSSI (V)
-120	1.20
-110	1.32
-100	1.50
-90	1.78
-80	2.06
-70	2.35
-60	2.62
-50	2.72
-40	2.75

Electrical Characteristics

Ambient temperature = 25°C.

Electrical Characteristics	Min	Typical	Max	Dimension
Supply Voltage (Vcc)	4.5	5	5.5	V
Supply Current		6	7	mA
Receiver Frequency 433MHz variants		433.92		MHz
Low Level Output Voltage (I=10uA)			0.8	V
High Level Output Voltage (I=200uA)	Vcc-1			V
Operating Temperature Range	-25		+80	°C
R.F Sensitivity (100% AM)	-108	-110		dBm
3dB Bandwidth		+/-150		KHz
Max Data Rate			4.8	KHz
Level of Emitted Spectrum			-70	dBm

Application Circuit



Notes

- Do not use Veroboard or Stripboard to mount the module!
- Ensure the supply is stable (ideally <10mVpk ripple).
- Keep the module away from other EMF generating components.
- Mount the antenna as close to the module as possible.

Part numbering

AM-RRQ3-315	Receiver Module 315MHz
AM-RRQ3-433	Receiver Module 433MHz
AM-RRQ3-868	Receiver Module 868MHz
AM-RRQ5-433	Receiver Module, SAW Filter, 433MHz

Should you require further assistance, please call:

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RF Solutions is a member of the Low Power Radio Association.