



RFRQ3 Crystal controlled PLL FSK Receiver Module

Features

- PLL XTAL Design
- 433.92MHz operation
- CMOS/TTL Output
- RSSI Output
- Standby Mode (max 100nA)
- 5V DC Operation
- High stability
- Compatible with RFTQ3 FM RF transmitter modules
- SIL pin out for space saving vertical or horizontal mounting
- Data rates up to 9.6Kbps

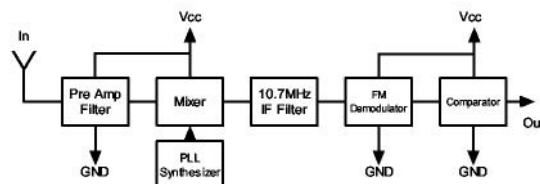


Description

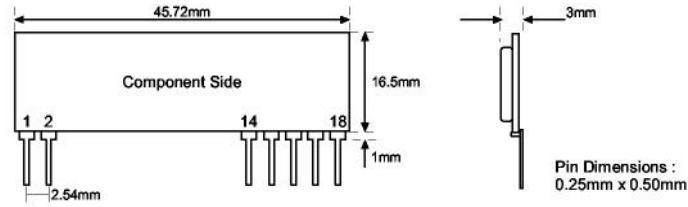
These miniature RF receiver modules provide a cost effective high performance 433.92 MHz FM Radio data link. The hybrid technology uses no adjustable components and ensures highly reliable operation. Together with a suitable RF transmitter module such as the RFTQ1 or RFTQ3 the simple implementation of a data link at distances up to 200ft in-building and 700ft open ground may be easily achieved.

These RF receiver modules will suit one-to-one and multi-node wireless links in applications including car and building security, home and industrial automation, EPOS and inventory tracking, remote industrial process monitoring and computer networking. Because of their small size and low power requirements, these modules are ideal for use in portable, battery powered applications such as hand-held terminals.

Receiver Block Diagram



RFRQ3 Dimensions



Pin Description

Pin	Description
1	Antenna
2,15	GND
14	Received Signal Strength Output
16	Power
17	AF Output
18	Data Out

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

The RSSI (received signal strength indicator) output provides a DC voltage proportional to the peak value of the received signal. This output can be used, for example, as a wake up signal interface for other connected circuits.

Technical Specifications

Electrical Characteristics	Min	Typical	Max	Dimension	Notes
Supply Voltage (Vcc)	4.5	5	5.5	V	
Supply Current (Operating)		5.7	6.8	mA	
Supply Current (Standby)			100	nA	
Receive Frequency		433.92		MHz	
RF Sensitivity		-102		dBm	
3dB Bandwidth		+/-150		KHz	
Data Rate	300		9.6	Kbits/s	
Turn on Time		8		ms	1
Level of Emitted Spectrum			-70	dBm	
Operating Temperature Range	-25		+80	°C	

Note 1: Time from applying power to stable data

Prototyping Tips:

It is essential when building any RF system that you have a 'clean' DC power source. Typically the ripple voltage should be less than 10mVp-p. Normally a 470uF decoupling capacitor is sufficient decoupling for an AC derived DC power source.

When prototyping RF circuits, avoid using breadboards. Rather use hard wiring and try to keep wire lengths to the minimum.

An effective antenna for testing purposes, can simply be a length of wire cut to 16.5cm (1/4 wavelength at 433.93MHz) soldered directly to the module's antenna pin.

Disclaimer:

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