

FM-RTFQ1-XXX FM-RRFQ1-XXX

- FM Radio Transmitter & Receivers
- Transmit Range Up To 250m
- Miniature Packages
- Data Rate upto 9.67Kbps
- No Adjustable Components
- Very Stable Operating Frequency
- Operates from –20 to +85°C
- Available As 315 or 433 or 868MHz

Transmitter

- 3V Supply Voltage
- DIL Package

Receiver

- PLL XTAL Design
- CMOS/TTL Output
- RSSI Output
- Standby Mode (max 100nA)
- 5V Supply Voltage

Applications

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

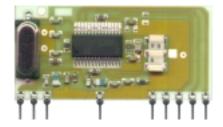
Description

These miniature RF modules provide a cost effective high performance FM Radio data link, at either 315, 433.92 or 868MHz. Manufactured using laser trimmed Thick Film ceramic Hybrid the modules exhibits extremely stable electronic characteristics over an Industrial Temperature range. The hybrid technology uses no adjustable components and ensures very reliable operation.

This transmitter and receiver pair enables the simple implementation of a data link at distances upto 75 metres in-building and 250 metres open ground.

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

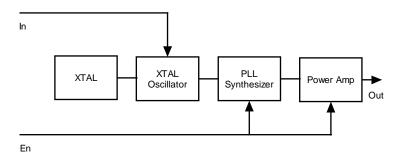




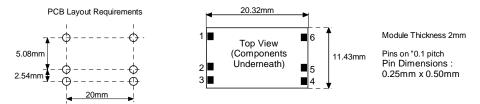


FM-RTFQ1-XXX FM-RRFQ1-XXX

RTFQ1 Block Diagram



Mechanical Dimensions



Pin Description

Pin Number	Name	Description
1	En	Enable (active high)
2	IN	Data input
3	GND	Ground, Connect to RF earth return path
4	Vcc	Supply Voltage
5	GND	Ground, Connect to RF earth return path
6	EA	External Antenna

Technical Specifications

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
Supply Voltage	2.1	3.3	4.00	V
Supply Current		7	8	mA
Standby Current (IN = EN = Low)			100	nA
Initial Frequency Accuracy	-25	0	25	KHz
FM Deviation	25	30	35	KHz
RF Output into 50Ω (Vcc=3.3V)		5		dBm
Harmonic Spurious Emissions		-40		dBc
Input High Voltage	1.5		Vcc	V
Power up Time (En to full RF)			1	mS
Max Data Rate			9.6	KHz
Operating Temperature	-25		+80	°C

Part Numbering

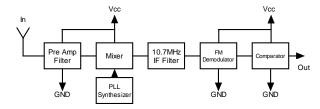
Part Number	Description		
FM-RTFQ1-315	DIL FM Transmitter Module 315 MHz		
FM-RTFQ1-433	DIL FM Transmitter Module 433 MHz		



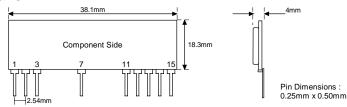


FM-RTFQ1-XXX FM-RRFQ1-XXX

RRFQ1 Block Diagram



Mechanical Details



Pin Description

Pin No	Pin Name	Pin No	Pin Name
1	+Vcc	12	NC
2	GND	13	Received Signal Strength Output
3	Data In (Antenna)	14	Data Out
7, 11	GND	15	Power Down

Operation Mode

PD Pin	Mode	
0V	Standby	
5V	Operating	

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	
Receiver Frequency (315 part)		315.00		MHz	
Receiver Frequency (433 part)		433.92		MHz	
R.F Sensitivity (100% AM)		-102		dBm	
3dB Bandwidth		+/-200		KHz	
Data Rate	300		9,600	Hz	
Turn on Time			5	mSecs	1
Level of Emitted Spectrum			-70	dBm	
Low Level Output Voltage			0.6	V	I = 200uA
High Level Output Voltage	Vcc-1			V	I = 200uA
Operating Temperature Range	-25		+80	°C	

Notes

Part Numbering

Part Number	Description
FM-RRFQ1-315	SIL FM Receiver Module 315 MHz
FM-RRFQ1-433	SIL FM Receiver Module 433 MHz



^{1.} Time from PD pin going high to stable data.

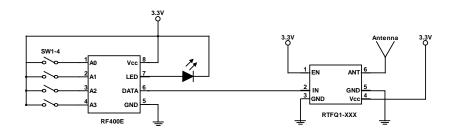


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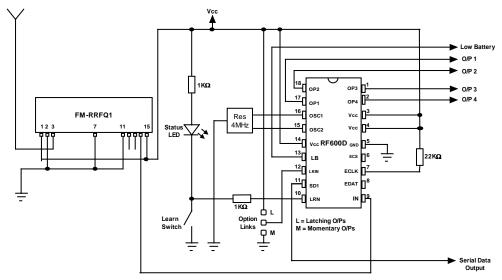
Typical Application

The following circuits show a remote control system with 'self learning feature' for more information please see Datasheet DS400

Transmitter Circuit



Receiver Circuit



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