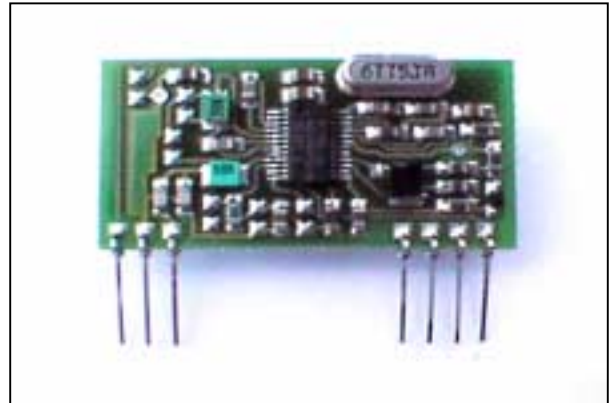


Features

- Miniature SIL Package
- Unique QM (Quasi AM/FM) Design
- Data Rates Up To 10kbits/S
- Optimal Range 200m (433.92MHz Version)
- 433.92 / 868 / 916.5 MHz Versions
- Very High Sensitivity (-110 Dbm)
- Very Low Current Consumption
- Single 5v Supply
- Signal Strength Output (RSSI)
- High Selectivity (20KHz B/W Possible)
- Immune To FM Threshold Effect



Applications

- Vehicle Alarm Systems
- Remote Gate Controls
- Garage Door Openers
- Domestic And Commercial Security

Compatible Transmitter Modules

- QAMT2-XXX (see data sheet QAMT2)
- QFMT1-XXX (see data sheet DS301)
- QTRC1-XXX Transceiver (see DS351)

General Description

The QMR1-XXX miniature receiver UHF radio module enables the implementation of a simple telemetry link at data rates of up to 10Kbit/s when used with one of the compatible transmitter modules

Available for operation at 433.92, 868 and 916.5 MHz these modules are able to receive at distances of up to 1Km (433.92 MHz version).

The QMR1-XXX module will suit one-to-one and 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 battery powered wireless applications

Absolute Maximum Ratings: Receiver

Operating temperature:	-40°C to +85°C
Storage temperature:	-40°C to +100°C
Supply Voltage (pin 3)	5V
Data input (pin 5)	10V
RF Input (pin 2)	±50V @ < 10MHz , +20dBm @ > 10MHz

Electrical Characteristics: Receiver

	pin	min.	typ.	max.	units	notes
DC LEVELS						
Supply voltage		4.5	5	5.5	V	
Supply current			2		mA	
Supply ripple		-	-	10	mV _{P-P}	
Data output high			=>4.5		V	
Data output low			<= 0.5		V	
RF						
RF sensitivity			-110		DBm	
IF Bandwidth			600		KHz	
Initial frequency accuracy			±50		KHz	
Max R.F. input			-20		DBm	
E.M.C.						
Spurious responses upto 1GHz			<60		dB	
LO leakage, conducted			<60		dBm	
LO leakage, radiated			<60		dBm	
DYNAMIC TIMING						
<i>Power up with signal present</i>						
Power up to stable data					mS	
<i>Signal applied with supply on</i>						
Signal to stable data					mS	
Time between data transitions					mS	
Mark:space ratio					mS	
Bit rate		20		10000	bps	

Connection Details

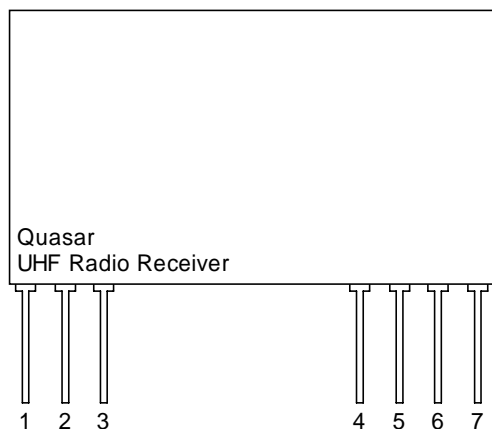


Figure 1: Receiver

Pin Description:

V_{CC} (pin 1)

+Ve supply pin. Operation from a 5V supply able to source 2mA at less than 10mV_{P-P} ripple.

GND (pin2)

Supply ground connection, preferably connected to a solid ground plane.

RF IN (pin 3)

50Ω RF input from antenna, connect using shortest possible route. Capacitively isolated from internal circuit.

UNCONNECTED (pins 4-5)

Extra SIL pins for additional mechanical retention.

RSSI (pin 6)

Test output providing a voltage that is proportional to the level of the RF input on pin 3.

DATA OUT (pin 7)

CMOS compatible output. This may be used to drive external decoders. **Note:** sink/source capability is limited to 20μA.

General Information

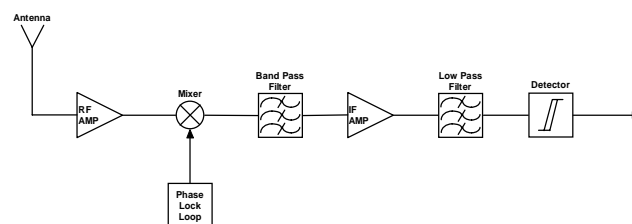


Figure 2: Receiver Block Diagram

The receiver module is a quasi AM /FM (QM) superhet receiver capable of handling data rates of up to 10Kbits/s. With an on board data buffer and phase locked loop a -110 dBm sensitivity is achieved.

Utilising the quasi AM/FM modulation technique and the latest phase locked loop receiver technology with one of the compatible transmitter modules will yield a highly efficient wireless link.

Note: Because of the way Quasi Modulation operates the QMR1 and the QFMT1 will not work reliably in close proximity to each other.

RSSI Values

RF Level (dBm) pin 3	RSSI (volts) pin 6
-110	2.145
-100	2.214
-90	2.311
-80	2.46
-70	2.624
-60	2.800
-50	2.911
-40	2.967
-30	3.00
-20	3.028
-10	2.886

Mechanical Dimensions

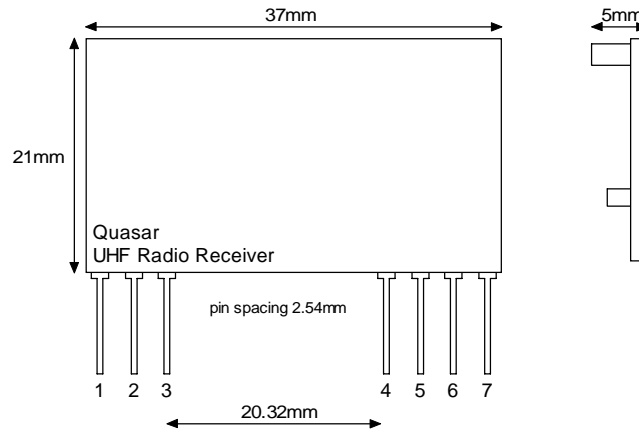


Figure 6: Receiver

Ordering Information

Part No	Description
QMR1-434	SIL Receiver 434MHz
QMR1-868	SIL Receiver 868MHz
QMR1-916	SIL Receiver 916.5MHz