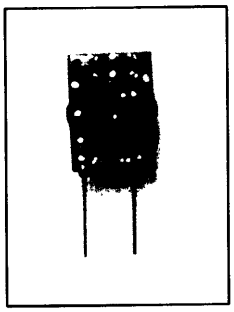
309-6580
20060

AM Transmitter Module

QAMT2-XXX

Features

- MINIATURE TWO PIN PACKAGE
- SAW RESONATOR 100% AM MODULATION
- DATA RATES UP TO 2400 BITS/S
- OPTIMAL RANGE 100m (433.92 MHz Version)
- 418 / 433.92 / 868 MHz VERSIONS
- CMOS/TTL COMPATIBLE INPUT
- LOW CURRENT CONSUMPTION (typ. 5mA)
- SINGLE SUPPLY VOLTAGE 1.5 – 13V



Applications

- VEHICLE ALARM SYSTEMS
- REMOTE GATE CONTROLS
- GARAGE DOOR OPENERS
- DOMESTIC AND COMMERCIAL SECURITY

Compatible Receiver Modules

- QMR1-XXX (see data sheet QMR1)

General Description

The QAMT2-XXX miniature transmitter UHF radio module enables the implementation of a simple telemetry link at data rates of up to 2400 bit/s when used with one of the compatible Quasar receiver modules.

Available for operation at 418, 433.92 and 868 MHz these modules are able to transmit at distances of up to 100m (433.92 MHz version).

The QAMT2-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: Transmitter

Operating temperature:	-20°C to +55°C
Storage temperature:	-40°C to +85°C
Supply Voltage (pin 1)	15V
Data input (pin 1)	15V

Electrical Characteristics: Transmitter

	pin	min.	typ.	max.	units	notes
DC LEVELS						
Supply voltage		1.5	5.0	13	Volts	
Current & RF POWER						
Supply current @ Rd = 1KΩ (data high)		6	8.2	9	mA	
RF power into 50Ω @ Rd = 1KΩ		-8	-5	-3	dBm	
Supply current @ Rd = 100Ω (data high)		4		7	mA	
RF power into 50Ω @ Rd = 100Ω		-10		-6	dBm	
RF & Data						
Data rate		100		2400	bits/s	
Data pulse width		400			µs	

Connection Details

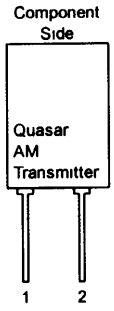


Figure 1: Quasar AM Transmitter

Pin Description

Data *(pin 1)*
CMOS/TTL compatible input. Must be driven with appropriate current limiting resistor to provide the module with 5mA.

GND *(pin2)*
Ground connection, preferably connected to a solid ground plane.

General Information

The QAMT2-XXX requires a current limiting resistor (Rd) to source the module with the correct drive current. The following values of Rd must be used with the module depending on the drive voltage:

Drive Voltage = 1.5 –3.7V then Rd = 51Ω
Drive Voltage = 7 – 13 V then Rd = 1K5Ω

For other values of Drive Voltage:

$$Rd = \frac{\text{Drive Voltage}}{5mA}$$

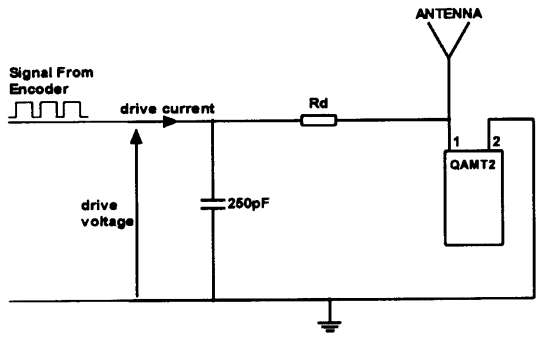


Figure 2: Drive Circuit Required For Quasar AM Transmitter Module

Application Information

Antenna Design

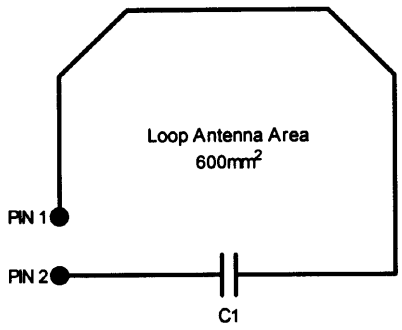
The design and positioning of the antenna is as crucial as the module performance itself in achieving a good wireless system range. The following will assist the designer in maximising system performance.

The antenna should be kept as far away from sources of electrical interference as physically possible. If necessary, additional power line decoupling capacitors should be placed close to the module.

The antenna 'hot end' should be kept clear of any objects, especially any metal as this can severely restrict the efficiency of the antenna to receive power. Any earth planes restricting the radiation path to the antenna will also have the same effect.

Best range is achieved with either a straight piece of wire, rod or PCB track @ ¼ wavelength (15.5cm @ 433.92MHz). Further range may be achieved if the ¼ wave antenna is placed perpendicular in the middle of a solid earth plane measuring at least 16cm radius. In this case, the antenna should be connected to the module via some 50 ohm characteristic impedance coax.

Loop Antenna



C1 = 2.2pF @ 418MHz
C1 = 1pF @ 433MHz
C1 = 1pF @ 868MHz and halve loop area

Whip Antenna

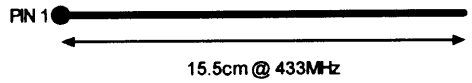


Figure 3: Antenna Configurations To Be Used With The Quasar AM Transmitter Module

Mechanical Dimensions

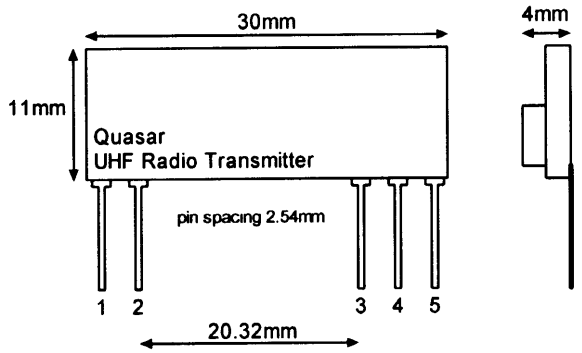


Figure 4: Quasar Transmitter

Ordering Information

Standard Product;

Part No	Description
QFMT1-418	SIL Transmitter 418MHz
QFMT1-434	SIL Transmitter 434MHz
QFMT1-868	SIL Transmitter 868MHz

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Web Site: http://www.quasar.uk.com

Mechanical Dimensions

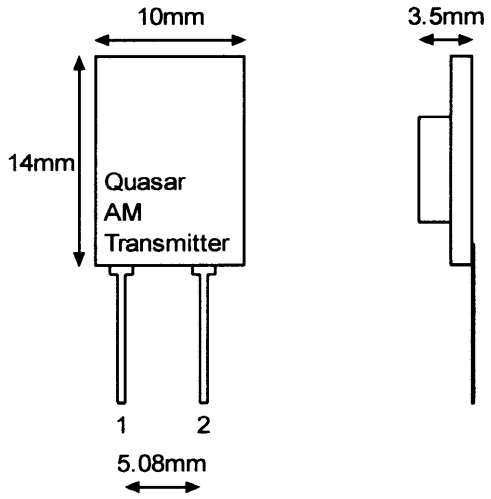

Figure 4: Quasar AM Transmitter

Ordering Information

Standard Product;

Part No	Description
QAMT2-418	AM Two Pin Transmitter 418MHz
QAMT2-434	AM Two Pin Transmitter 434MHz
QAMT2-868	AM Two Pin Transmitter 868MHz

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