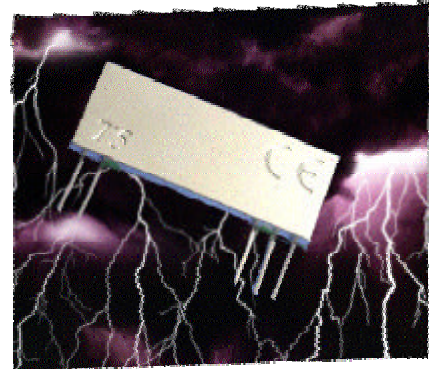


## Features

- MINIATURE SIL PACKAGE
- FULLY SHIELDED
- FULL 20 KHz AUDIO SPEECH BW
- BANDWIDTH EFFICIENT PLL TECHNOLOGY
- CRYSTAL STABILISED
- 4 CHANNELS AVAILABLE
- PAN EUROPEAN VERSION  
(863 – 865 MHz BAND)
- WIDE OPERATING VOLTAGE
- EN 300-220 compliant module



## Applications

- WIRELESS HEADPHONES
- WIRELESS SPEAKERS
- WIRELESS MICROPHONES
- GENERAL PURPOSE AUDIO

## Compatible Receiver Modules

- RS-MKR3-XXX (see data sheet RS-MKR3)

## General Description

The RS-MKT3 miniature UHF radio transmitter module enables the implementation of a wireless audio link at full 20KHz speech bw.

The transmitter is based on a classical phase lock loop using a crystal reference oscillator. This results in an accurately controlled RF output in the frequency domain. A significant advantage of this is that narrow filtering can then be used in the receiver, which results in high interference immunity. Secondly, this stable frequency allows use of up to 4 independent channels.

In addition, the module is fitted with an on board voltage regulator which enhances the module performance due to better supply filtering as well as ensuring a constant RF output level.

Because of its small size and low power requirements, this modules is ideal for use in portable battery powered wireless applications.

**Absolute Maximum Ratings: Transmitter**

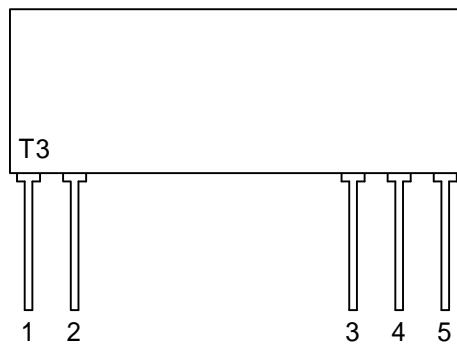
Operating temperature:	-10°C to +55°C
Storage temperature:	-40°C to +100°C
Supply Voltage (pin 3)	10V
Data input (pin 5)	10V

**Electrical Characteristics: Transmitter**

	pin	min.	Typ.	max.	units	notes
<b>DC LEVELS</b>						
Supply voltage	3	2.3	5.0	10.0	Volts	
<b>Current &amp; RF POWER</b>						
863 to 865 MHz						
Supply current @ V <sub>CC</sub> = 5V	3		7		mA	1
RF power	2		1		mW	1
FM Deviation	2		50		KHz	
<b>RF &amp; Audio</b>						
2 <sup>nd</sup> harmonic			-50		dBm	2
Harmonics @ > 1GHz			-50		dBm	2
Initial frequency accuracy			±10		KHz	
Modulation bandwidth @ -3dB						
AF Input level	5		tba		V	
AF input impedance	5		tba		ohms	
Power up time to full RF			tba		µs	

- Note 1:** measured into a 50Ω impedance  
 A 10mW version will be available july 2001.  
**2:** the limit for the European spec EN 300 220 is -36dBm

## Connection Details



**Figure 1: MK Transmitter**

### Pin Description:

#### **RF GND (pin 1)**

RF ground pin, internally connected to pin 4 (0V). This pin should ideally be connected to the nearest ground plane (e.g. coax braid, main PCB ground plane etc.)

#### **RF OUT (pin2)**

50Ω RF antenna output. To achieve best results the antenna impedance must match that of the module.

#### **V<sub>CC</sub> (pin 3)**

+Ve supply pin. The module will generate RF when V<sub>CC</sub> is present. It is strongly recommended that a 100nF capacitor decouples the supply rail as close as possible to this pin.

#### **GND (pin 4)**

Supply and data ground connection, connected to pin 1.

#### **AF IN (pin 5)**

tba

**Application Information**

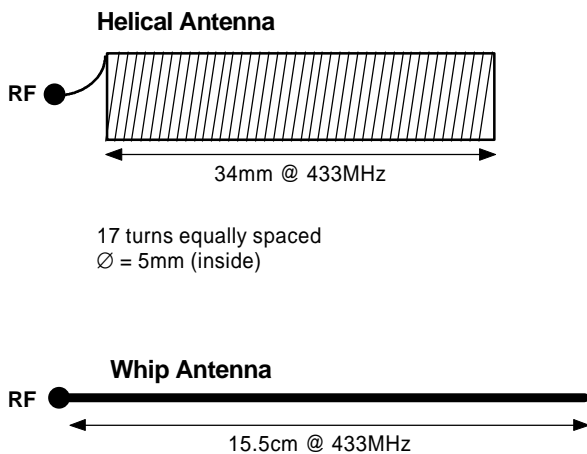
**Antenna Design**

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.

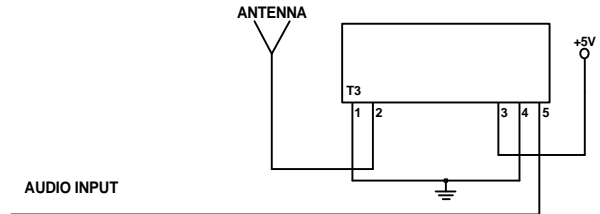
Best range is achieved with either a straight piece of wire, rod or PCB track @ ¼ wavelength (7cm @ 863 MHz). Further range may be achieved if the ¼ wave antenna is placed perpendicular in the middle of a solid earth plane measuring at least 10cm radius. In this case, the antenna should be connected to the module via some 50 ohm characteristic impedance coax



**Figure 2: Antenna Configurations To Be Used With The MKT3 Transmitter Modules**

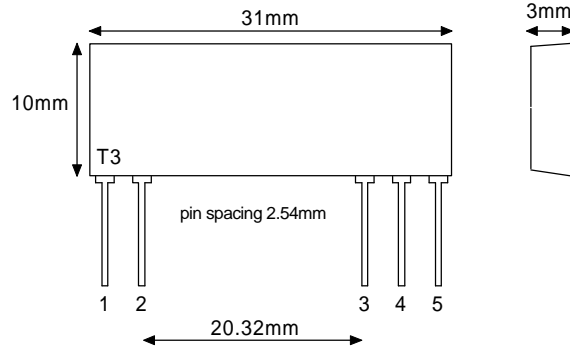
**Application Circuit**

The application circuit shows how the MKT3 transmitter can easily be integrated into a system to form a wireless link



**Figure 3: MK Transmitter Application Circuit**

**Mechanical Dimensions**



**Figure 4: MK Transmitter**

**Ordering Information**

**Standard Product;**

Part No	Description
RS-MKT3-4	863.4 MHz transmitter
RS-MKT3-8	863.8 MHz transmitter
RS-MKT3-2	864.2 MHz transmitter
RS-MKT3-6	864.6 MHz transmitter
Please note initial samples will be available only on 864.2 MHz. Other channels available in June.	

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