

FEATURES

- No operating licence required
- Range 10-20km line of sight
1-3km in buildings
- RF frequency range:

458.50 MHz	to 458.95 MHz
420.00 MHz	to 470.00 MHz
869.40 MHz	to 869.65 MHz
- RF power output 5mW to 500mW
- Data rates: up to 10Kpbs
- TX6000 transmitter power 5.5 - 8.5V at 170 mA
- RX6000 receiver power 5V at 15mA
- Approvals: ETSI 300-220, MPT1329
- Size 36mm by 51mm by 12.5mm



DESCRIPTION

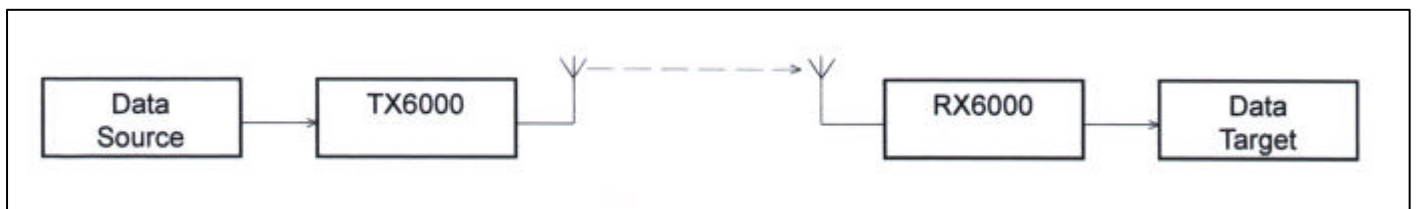
The TX6000 transmitter and RX6000 receiver are compact crystal controlled modules capable of transmitting data at 10Kbps for a distance of up to 20km line of sight and 1-3km in buildings.

The modules are crystal controlled for fast response, low power consumption and frequency stability. They are supplied tuned to a specific frequency in the range 420MHz to 470MHz and 869 MHz. Modules with different set frequencies are easily interchanged by means of a pcb mounting socket.

The radios are ideal for general telemetry applications. The TX6000 will transmit analogue data such as FSK, FFSK, GMSK and PWM from its analogue input or accept direct TTL digital data from its digital input. The RX6000 will receive analogue and digital data and present it to its analogue and digital outputs in the same format as it was transmitted.

The units conform to MPT1329 and ETSI 300-220. In addition they comply with EMC Directives EN 50 081-1 for emissions and EN 50 082-1 for immunity.

TYPICAL OPERATION



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SPECIFICATION

ABSOLUTE MAXIMUM RATINGS

Storage Temperature..... -30 to +85 Celsius
Operating Temperature..... -25 to +55 Celsius

DIMENSIONS

Length = 36mm Width = 51mm Height = 12.5mm

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION	NOTE
Frequency Range	485.500		485.950	MHz	UK
	420.000		470.000	MHz	World
	869.400		869.650	MHz	Europe
Channels		1			
Channel Separation	12.5	25.0	25.0	KHz	
Start up Time	3.0	5.0	7.0	mSecs	
Modulation		F3D			
TRANSMITTER					
RF Output Power	5.0		500.0	mW	
Analogue Input		0.5		Vp-p	mod.
Digital Input	3.5	4.7	5.0	V	TTL
Power Supply	7.2		9.0	V	
	170.0	290.0	390.0	mAmps	
RECEIVER					
Sensitivity		-112		dBm	20dB SIN AD
Analogue Output		2.0		Vp-p	+/-5KHz
Digital Output		5.0		V	TTL
Power Supply	4.7	5.0	5.3	V	
	12.0	15.0	18.0	mAmps	

Note: Switch mode power supplies can produce RF frequencies that will interfere with the receiver signal.

PART No.	DESCRIPTION
TX6000.XXX	Transmitter 458.XXX = RF Frequency
RX6000.XXX	Receiver 458.XXX = RF Frequency

RADIO PROPAGATION

With any radio system there are a number of factors which affect the system performance. These are:

Transmitter power output.

Height of transmitter and receiver antenna.

Length and type of coaxial feeder cable to the antenna.

Type and efficiency of the antenna.

Topography between transmitter and receiver.

The weather.

ANTENNA

X603 Quarter Wave Antenna

Low cost, mobile, omni-directional, short range approximately 2km

X604 Mast Mounted Dipole Antenna

Omni-directional, base station, range approximately 10km

X605 High Gain Yagi Antenna

Directional beam of 40°, range approximately 10-20km, usually used on receivers only.

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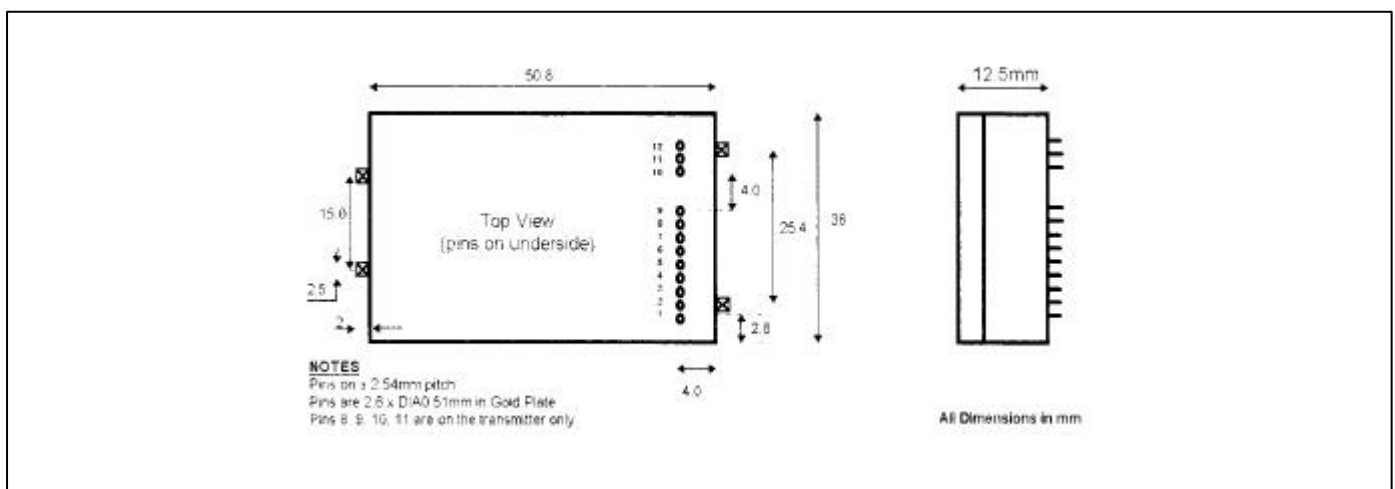
TRANSMITTER CONNECTIONS: Pins on underside of Module

PIN	DESCRIPTION	DIRECTION
1	Ground	Input
2	Modulation Input 500mVpk-pk +ve freq deviation	Input
3	Modulation Input 500mVpk-pk -ve freq deviation	Input
4	Digital Data Input (TTL)	Input
5	Switched +5V	Output
6	Test	Output
7	Regulated +5V	Output
8	Transmitter ON (Connected to Ground to start the Transmitter)	Input
9	Supply Voltage to Module (7.2 - 9V)	Input
10	Receiver RF Output (for use in transceiver)	Output
11	Ground	Input
12	Antenna	Output

RECEIVER CONNECTIONS: Pins on underside of Module

PIN	DESCRIPTION	DIRECTION
1	Ground	Input
2	Receiver Signal Strength Indicator (RSSI)	Output
3	Demodulated Output	Output
4	Test	Output
5	+5V supply to Local Oscillator and RF Amplifier	Input
6	Digital Data Output	Output
7	+5V supply to IF and LF Amplifiers	Input
12	Antenna	Input
11	Ground	Input
12	Antenna	Output

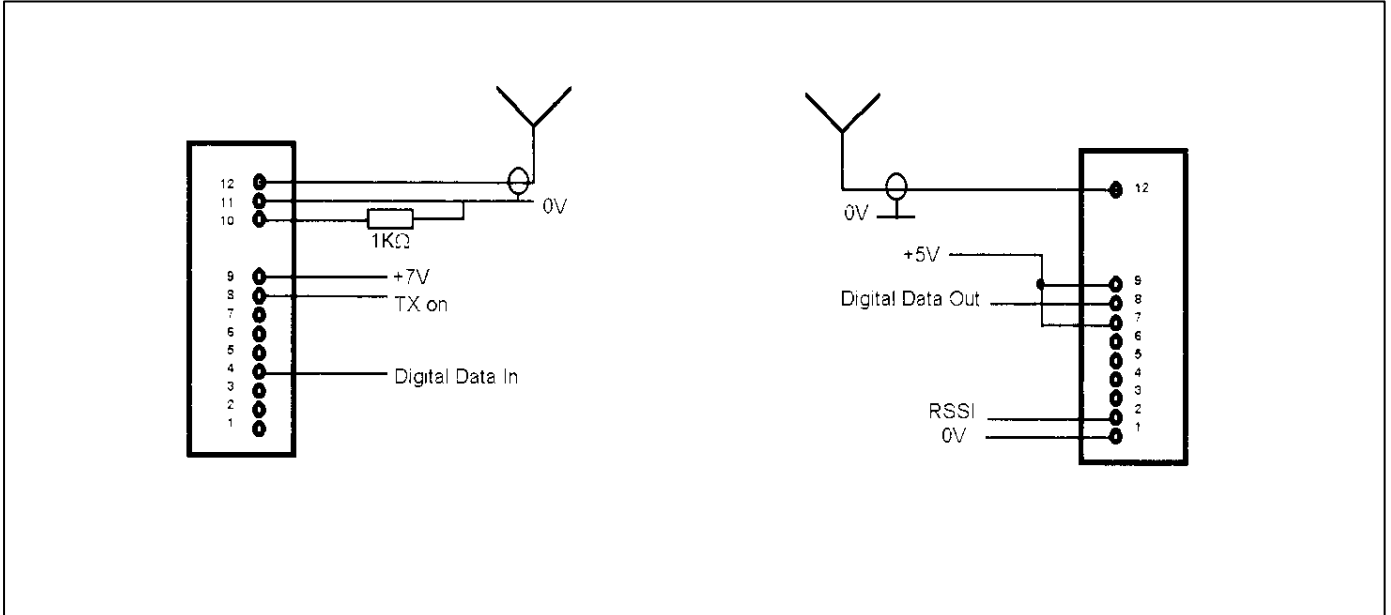
MECHANICAL DETAILS



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CIRCUIT CONNECTIONS



TRANSCEIVER APPLICATION CONNECTIONS

