

## FEATURES

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

458.50 MHz	to 458.95 MHz
400.00 MHz	to 490.00 MHz
860.00 MHz	to 930.00 MHz
- RF power output 5mW to 500mW
- Data rates: up to 10Kpbs
- TX8000 transmitter power 7.5 - 12V at 270 mA
- RX8000 receiver power 5V at 15mA
- Approvals: ETSI 300-220, MPT1329
- Size 36mm by 51mm by 14.5mm



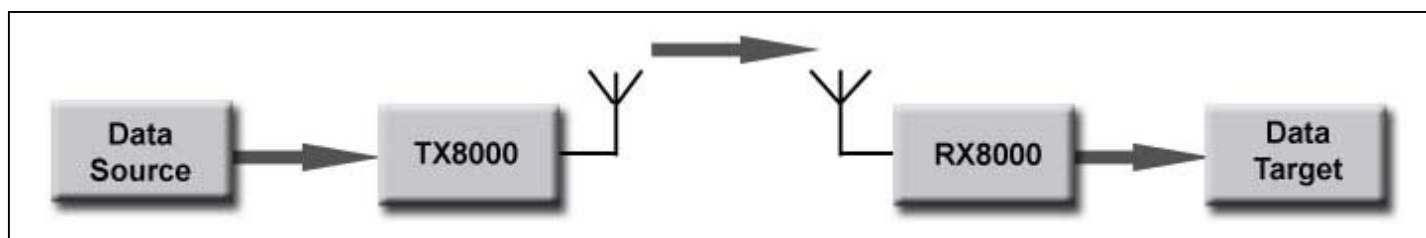
## DESCRIPTION

The synthesised TX8000 Transmitter and RX8000 Receiver can be set to one of 32 switch selectable RF frequencies. The modules can transmit data at 10Kbps for a distance of up to 20km line of sight and 1-3km in buildings.

The radios are ideal for general telemetry applications. The TX8000 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 RX8000 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 ETSI 300-220 and ETSI 300-683.

## 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 = 14.5mm

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION	NOTE
Frequency Range	485.500		485.950	MHz	UK
	400.000		490.000	MHz	World
	860.000		930.000	MHz	World
Channels		1			
Channel Separation	12.5	25.0	25.0	KHz	Factory
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	
	270.0	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
TX8000.XXX	Transmitter XXX = RF Frequency Band
RX8000.XXX	Receiver XXX = RF Frequency Band

### 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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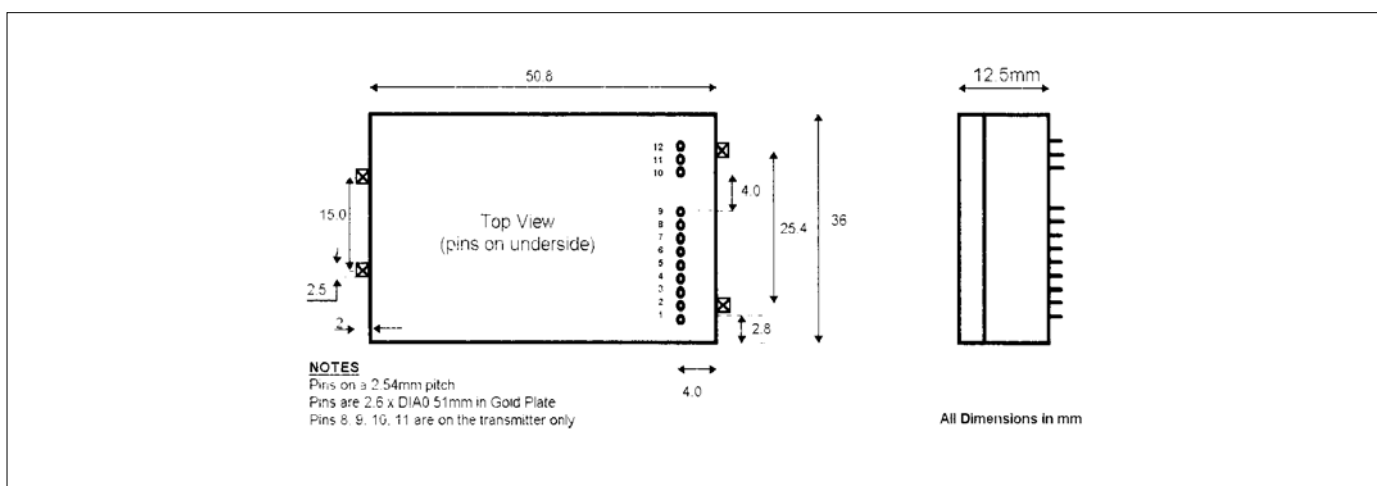
## TRANSMITTER CONNECTIONS: Pins on underside of Module

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 - 12V)	Input
10	Receiver RF Output (for use in transceiver)	Output
11	Ground	Input
12	Antenna	Output

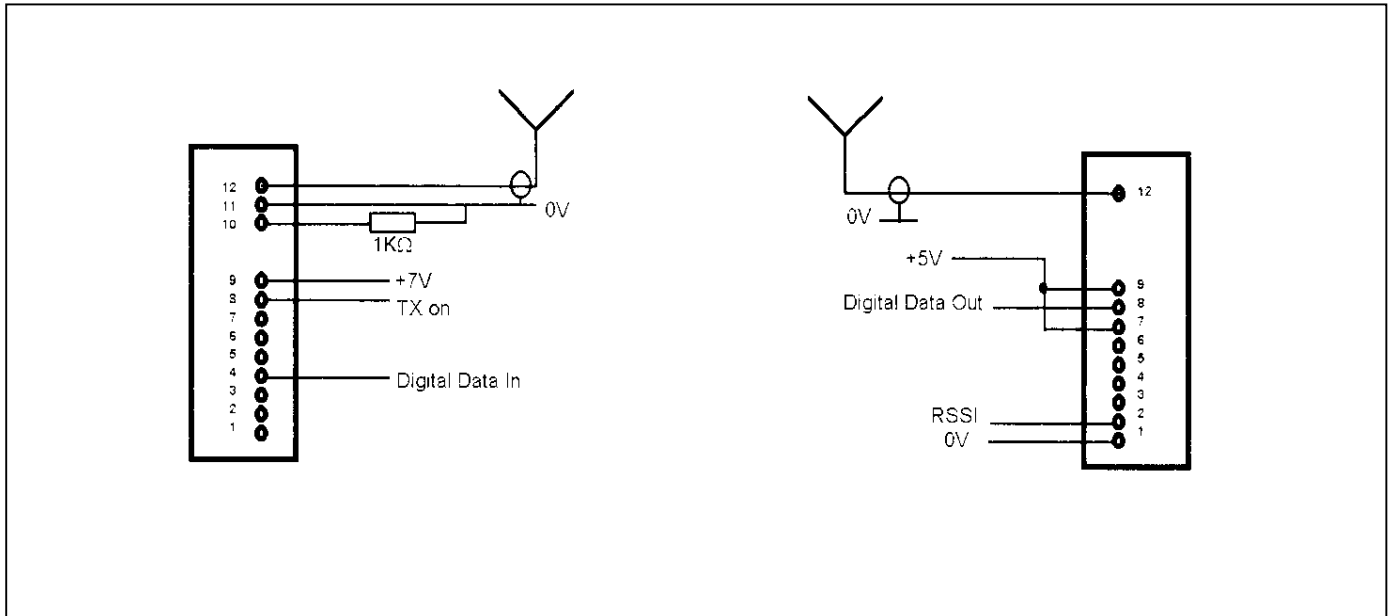
## RECEIVER CONNECTIONS: Pins on underside of Module

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

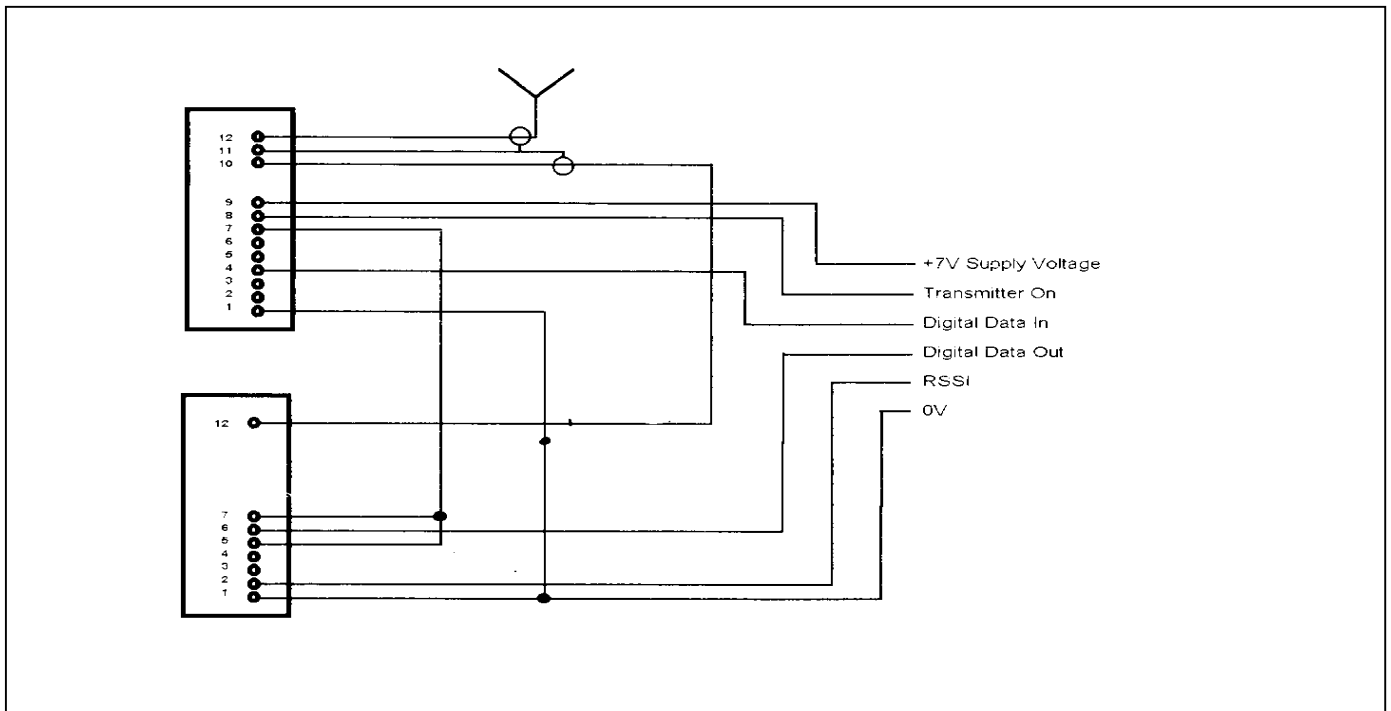
## MECHANICAL DETAILS



## CIRCUIT CONNECTIONS



## TRANSCEIVER APPLICATION CONNECTIONS



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