

LRT SERIES

ADVANCED
RADIO
TECHNOLOGIES



The LRT Series are cost effective low current, synthesized data transceivers, receivers and transmitters available with two different TX power ranges for license exempt and licensed operation. The products have been designed for mounting directly onto clients' OEM printed circuit boards to provide a fast track route to market.

CONTROL INTERFACE

The LRT module is designed to interface with a microprocessor or a pre-programmed PIC modem processor, with baud rates and channels selected via a suitable switch or processor. Pre-programmed PICs may be purchased from the sales office, or information on synthesizer loading and control software for the product is available on request.

LOW POWER

The 5mW – 750mW and 50mW – 5Watt LRT operate from a 5V and 7.5VDC supply respectively. The transmitter's power can be adjustable over the range with reasonably good efficiency. Add to that a very low current receiver and the LRT Series is the perfect module for battery and solar powered applications.

RF POWER CONTROL

The LRT's RF output power can be adjusted over the range 5mW – 750mW or 50mW – 5Watts, via an internal pre-set potentiometer or by applying an external voltage from a potentiometer or MPU.

RECEIVED SIGNAL STRENGTH (RSSI)

The RSSI is available as a voltage relative to the received signal strength. This voltage can be used to decide if the link path is acceptable.

DATA INTERFACE

A DC input and output path is provided to the transceiver to accommodate various forms of modulation. However, for optimum performance the PIC modem with its programmable over the air baud rate is recommended.



TECHNICAL SPECIFICATIONS

General

Frequency Range:	LRT170 LRT470 LRT870 50MHz – 950MHz available on special order	135 – 150MHz 406 – 475MHz 820 – 950MHz
Programmable Bandwidth:	UHF VHF 900	10MHz slot 5MHz slot 20MHz
Power Requirements:	1Watt 5Watt	5VDC 7.5DC
Number of Channels:	Any number within the programmable bandwidth	
Min. Programmable Channel Step:	6.25 or 10KHz	
Channel Spacing:	12.5KHz (optional 20/25/30KHz)	
Operating Temp.:	–30 to +60°C	
Frequency Stability:	2ppm –25 to +60°C	
Size:	78mm W x 52 H x 20 H	
Weight:	120gms	
Connectors:	Interface 15 Way 2.54mm Pitch pins	
Approvals:	Products within the range have been tested or are undergoing testing to the following specifications. For further information contact the sales office. European RF: ETS 300-220 ETS300-113 European CE: ETS 301-489 USA: FCC Part 90/15 Canadian: DOC	

Transmitter

RF Output Power:	LPRXX-1 LPRXX-5	10mW – 750mW adjustable 50mW - 5 Watt adjustable
Max. Deviation:	±7.5KHz max	
Adj. Channel Power:	Better than 60dB	
Spurious Emissions:	To ETS300-220	
Modulation Input:	DC - 2.4KHz for a 12.5KHz channel	
Rise Time:	<9mS	

Receiver

Receive Current:	22mA at 5VDC
Sensitivity:	-120dBm for 12dB SINAD de-emphasised response -118dBm for 12dB SINAD flat response
Spurious Response:	>75dB
Blocking:	>95dB relative to 1µV
Intermodulation:	>65dB
Adjacent Channel:	>65dB at 12.5KHz
IF Frequencies:	LPR870/470/170 45MHz and 455KHz
Spurious Emissions:	To ETS300-220
Signal Output:	250mV, DC - 2.4KHz for a 12.5KHz channel
RSSI Output:	-120dBm to -40dBm
Mute Response Time:	<3mSec

Optional PIC Modem & Controller

Features:	Power down/save, channel selection, lead in delay, lead out delay, 8051 UART interface running mode 3 at 9600bps and test mode
Channel Selection:	Via 8051 interface or hard wired switch
Parity:	Odd, Even or None
Stop bits:	1 or 2
Data bits:	7 or 8
Signalling Formats:	Programmable for use within a 12.5KHz channel: FFSK, V23, Bell202 up to 1200baud, 2400 baud uses coherent 1200/2400Hz (1200/1800Hz by special order) GMSK at 4800 baud
NRZI:	On or Off