



**Model LPT-24
User's Guide**

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1 Revision History

Revision	Author	Date	Description/Changes
1.0	Martin Steenblok	Feb. 10, 2004	Original
2.0	Martin Steenblok	Mar. 26, 2004	Addition of User Information

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3 Introduction

The LPT-24 is a frequency hopping spread spectrum (FHSS) transmitter module designed to be compatible with FCC Part 15.247 (US) and RSS-210 (Canada) regulations for license free operation in the 2.4000 to 2.4835 GHz frequency band.

This transmitter module is intended to be mounted on a carrier circuit board, which will be used in a variety of housings. General applications will be for hand-held remote control of industrial equipment.

This transmitter has an integrated on-board chip antenna, eliminating the need for an external antenna.

4 Specifications

Parameter	MIN	TYP	MAX	UNITS
Frequency Range	2.4000		2.4835	GHz
Supply Voltage	4.0	6	10	VDC
Frequency Stability (synthesized with TCXO reference)		+/- 2.5		PPM
Operating Temperature	-40		+70	°C
R.F. Power Output		10	12	mW
Data Throughput		4800		bps

Type of Emission: Frequency Hopping Spread Spectrum
Number of Radio Channels: 756

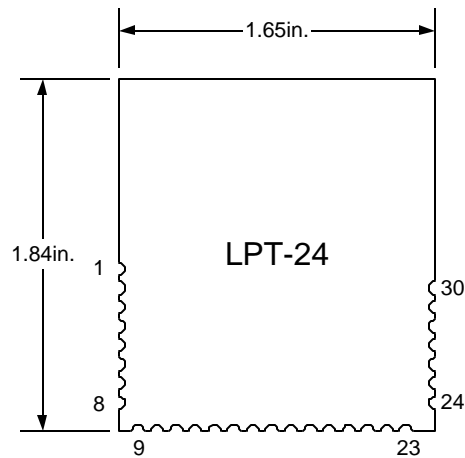
5 Connections

Refer to Schematic DSCH-2377R05.

The LPT-24 has the following connections

Pin #	Schematic	Function	Input/Output
1	CN23	3 V Out	O
2	CN20	Din2; RXD	I/O; Digital
3	CN19	D7; SPI SCK	I/O; Digital
4	CN12	Din5; SPI MOSI	I/O; Digital
5	CN15	D6; SPI MISO	I/O; Digital
6	CN9	OFF DETECT (ESTOP)	I
7	CN7	Lo Batt In	Analog In
8	CN24	RESET; SPI RESET	I
9	CN5	LO BAT LED	O
10	CN3	ON LED	O
11	CN1	A1	I/O; Analog In, Digital Out
12	CN6	A4	I/O; Analog In, Digital Out
13	CN4	A3	I/O; Analog In, Digital Out
14	CN2	A2	I/O; Analog In, Digital Out

15	CN8	A5	I/O; Analog In, Digital Out
16	CN11	A6	I/O; Analog In, Digital Out
17	CN14	A7	I/O; Analog In, Digital Out
18	CN18	A8	I/O; Analog In, Digital Out
19	CN21	32KHz_OSC2	
20	CN17	32KHz_OSC1	
21	CN22	Batt	I
22	CN26	Gnd	NA
23	CN31	Gnd	
24	CN27	Gnd	NA
25	CN28	Gnd	
26	CN29	Gnd	
27	CN25	ON DETECT	I
28	CN13	Din4;	I/O; Digital
29	CN10	Din3	I/O; Digital
30	CN16	Din1; TXD	I/O; Digital



6 User Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution - changes or modifications to this module not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

7 Labelling requirements

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

If the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed FCC ID: "Contains FCC ID: IA9LPT24RC."