HHTX-102

MICREL-POWERED HANDHELD TRANSMITTER

PRELIMINARY

DATA SHEET

Radios, Inc.

February 20, 2006 Preliminary Data Sheet

HHTX-102

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Description:

The HHTX-102 is an on-off key (OOK) high performance, long-range transmitter operating at 315, 418, and 433.92 MHz. This keyfop transmitter is primarily intended for use in Part 15.231 systems. The transmitter is synthesized and ideal for high volume OEM applications. It requires one 12 volt battery. The HHTX-102 is a well designed transmitter that is suitable for a variety of RF applications.
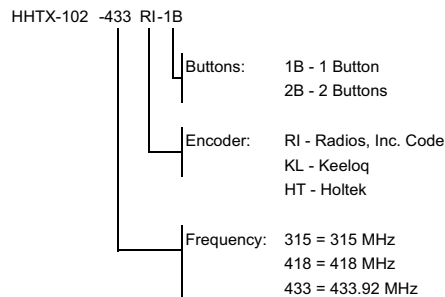
Typical Applications:

- Remote controls
- Garage openers / Gate controls
- Keyless entry
- Home / Industrial automation
- Remote access

- Domestic / Commercial security
- Automated resource management
- Fire / Security alarms
- Long-range RFID
- General wire elimination

Key Features:

- Low cost
- Low power consumption
- Rugged construction
- Synthesized
- Small size
- Range up to 2000 ft.
- No production tuning

Product Ordering:

HHTX-102 -433 RI-1B

Buttons:	1B - 1 Button	
	2B - 2 Buttons	
Encoder:	RI - Radios, Inc. Code	
	KL - Keeloq	
	HT - Holtek	
Frequency:	315 = 315 MHz	
	418 = 418 MHz	
	433 = 433.92 MHz	

Contact Information

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Oostburg, WI 53070	Email: sales@radiosinc.com

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Mechanical and Pin Diagram

Dimensions

Connection Diagram

2.40

1.46

.58

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BATTERY
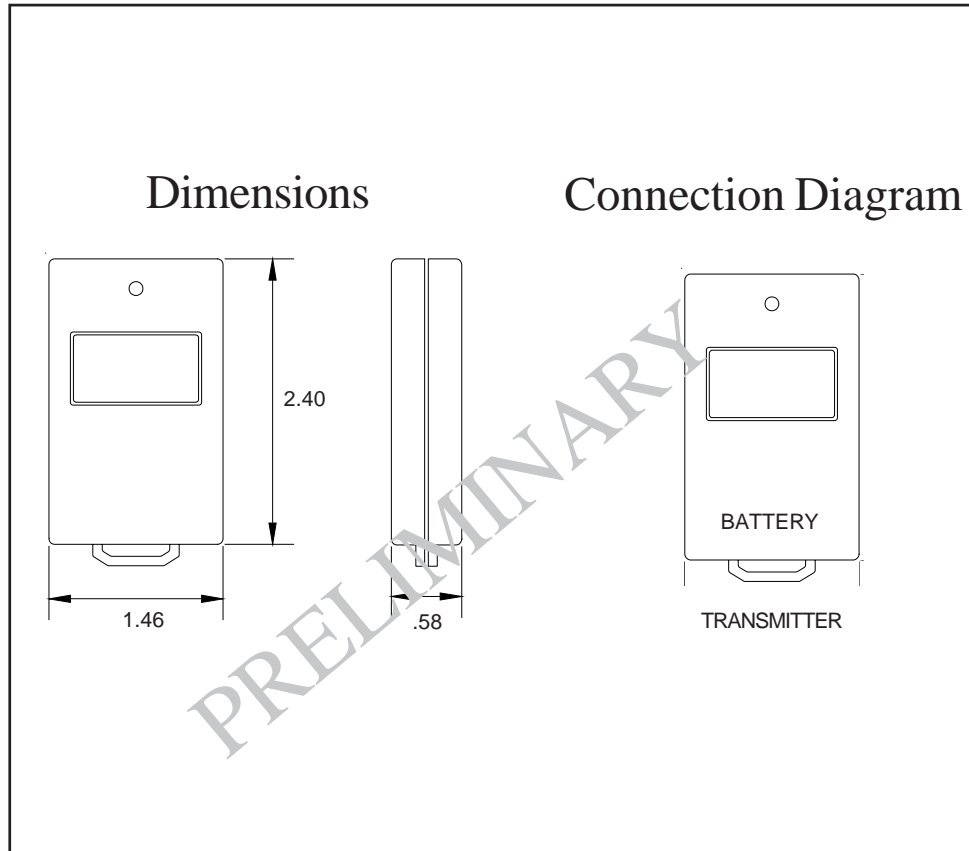
TRANSMITTER

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Electrical Limits

Sym	Parameters	Min	Typ	Max	Unit	Notes
	DC Voltage V_{DC}	12	12	12	V	
	Operating temperature	-20		65	°C	
	Storage temperature	-45		85	°C	

Electrical Characteristics

This device is ESD sensitive. Do not operate or store near strong electrostatic fields. Use appropriate ESD precautions.

Parameters	Test Conditions	Min	Typ	Max	Unit
Supply Voltage			12		VDC
Supply Current			TBD		mA
Working Frequency		300		470	MHz
Overall Frequency Accuracy		-100		100	kHz
RF Output Power			TBD		dBm
Data Rate				20	Kbps
Operating Temperature Range		0		85	°C

Note 1: Exceeding the absolute maximum ratings may damage the device.

Note 2: The device is not guaranteed to function outside its operating ratings.

Note 3: The device uses the A23 12 volt battery.

Encoder Types:

Three encoder types are offered for the HHTX-102: RI, Keeloq, and Holtek. RI is Radios, Inc.'s proprietary code. This code sends asynchronous data packets with a header and several bytes of data.

Keeloq uses a 32-bit hopping code generated by a non-linear encryption algorithm, with a 28-bit serial number and 6 information bits to create a 66-bit transmission stream. The length of the transmission eliminates the threat of code scanning, and the code hopping mechanism makes each transmission unique, thus rendering code capture and re-send schemes useless.

Holtek uses a Holtek series encoder to securely encode the data being sent.

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Technical Support:

Radios, Inc. is committed to providing its customers with excellent technical support and the resources necessary to assist them with their product development. All technical support is provided free of charge. Customers have several options to obtain assistance. First, any questions or concerns can be e-mailed to Radios, Inc. at information@radiosinc.com. We monitor our e-mail daily, and will respond to all questions promptly. Additionally, to speak directly to a technical support representative, customers can call Radios, Inc. at 920-564-6622.

Compliance:

Embedded wireless modules are intended for use as component devices which require peripheral elements to operate. Radios, Inc.'s modules are intended to be used in products requiring compliance. They are, however, not pre-approved by the FCC or any other agency worldwide unless so stated. The user or customer understands that regulatory compliance may be required prior to the sale or operation of the module or development system, and agrees to abide by all laws governing the module's or development system's use in the country of operation.

The approval process of embedded wireless modules in the United States is relatively uncomplicated. The Federal Communications Commission (FCC) is the governing body in the US that specifies its requirements in the Code of Federal Regulations (CFR), Title 47. Title 47 consists of several volumes and it is necessary to first identify the correct section that applies to your application. These rules require that a device which intentionally creates RF emissions be FCC compliant; i.e., pre-tested for compliance and assigned an identification number. Radios, Inc. offers pre-screening at one of our affiliate test sites. Final certification is then accomplished by an independent test laboratory. After passing compliance testing, you will be issued a unique ID number which must be placed on each product manufactured.

Any questions dealing with interpretations of the rules relating to testing or compliance should be addressed to:

FCC
Equipment Authorization Division
Customer Service Branch, MN 1300F2
7435 Oakland Mills Road
Columbia, MD 21046

Returns:

Products may be returned directly to Radios, Inc. for evaluation. Returns, without exception, must have a valid RMA number attached. RMA numbers can be obtained by calling a customer service representative at Radios, Inc. If a product is found to be defective and is returned within 90 days

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of purchase, Radios, Inc. may repair or replace, at its option, said defective product. The warranty does not apply to any products which have been disassembled, modified or subjected to conditions exceeding the application specifications. Under no circumstances will Radios, Inc. be responsible for losses, financial or other, arising from the use or failure of a device in an application or for losses arising from failure to meet delivery requirements, other than the repair, replacement, or refund limited to the original product purchase price. No other warranties, express, implied, or statutory, including warranty of fitness for a particular purpose, apply.

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