



**HT Keyfob
Transmitter
Data Guide**

Wireless made simple[®]



Warning: Some customers may want Linx radio frequency (“RF”) products to control machinery or devices remotely, including machinery or devices that can cause death, bodily injuries, and/or property damage if improperly or inadvertently triggered, particularly in industrial settings or other applications implicating life-safety concerns (“Life and Property Safety Situations”).

NO OEM LINX REMOTE CONTROL OR FUNCTION MODULE SHOULD EVER BE USED IN LIFE AND PROPERTY SAFETY SITUATIONS. No OEM Linx Remote Control or Function Module should be modified for Life and Property Safety Situations. Such modification cannot provide sufficient safety and will void the product’s regulatory certification and warranty.

Customers may use our (non-Function) Modules, Antenna and Connectors as part of other systems in Life Safety Situations, but only with necessary and industry appropriate redundancies and in compliance with applicable safety standards, including without limitation, ANSI and NFPA standards. It is solely the responsibility of any Linx customer who uses one or more of these products to incorporate appropriate redundancies and safety standards for the Life and Property Safety Situation application.

Do not use this or any Linx product to trigger an action directly from the data line or RSSI lines without a protocol or encoder/decoder to validate the data. Without validation, any signal from another unrelated transmitter in the environment received by the module could inadvertently trigger the action.

All RF products are susceptible to RF interference that can prevent communication. RF products without frequency agility or hopping implemented are more subject to interference. This module does not have a frequency hopping protocol built in.

Do not use any Linx product over the limits in this data guide. Excessive voltage or extended operation at the maximum voltage could cause product failure. Exceeding the reflow temperature profile could cause product failure which is not immediately evident.

Do not make any physical or electrical modifications to any Linx product. This will void the warranty and regulatory and UL certifications and may cause product failure which is not immediately evident.

Ordering Information

Ordering Information	
Part Number	Description
OTX-***-HH-KF#-HT-xxx	HT Keyfob Transmitter
EVAL-***-HH-KF-HT	HT Keyfob Evaluation Kit
# = Number of Buttons, 1 to 5 *** = 418 (Standard) or 433MHz xxx = Color (Leave blank for standard black) WHT = White CRE = Red CGY = Gray	

Figure 3: Ordering Information

Electrical Specifications

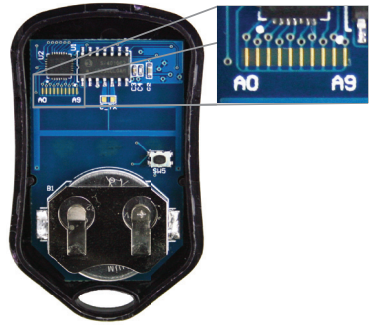
Keyfob Electrical Specifications						
Parameter	Designation	Min.	Typ.	Max.	Units	Notes
Power Supply						
Operating Voltage	V_{CC}	2.3	3.0	3.6	VDC	
Supply Current	I_{CC}		12.6		mA	
Power-Down Current	I_{PDN}		1.5		μ A	1
Transmitter Section						
Transmit Frequency Range	F_C					
OTX-418-HH-KF#-HT			418		MHz	
OTX-433-HH-KF#-HT			433.92		MHz	
Center Frequency Accuracy		-8		+8	kHz	
Data Rate			2,400		bps	
Environmental						
Operating Temperature Range		0		+70	$^{\circ}$ C	1
1. Characterized, but not tested						

Figure 4: Electrical Specifications

Setting the Transmitter Address

The Keyfob allows the selection of one of 1,022 unique addresses. All keyfobs are supplied set to the same address.

The address must be changed to avoid contention with other units or to create unique relationships. This is accomplished by cutting the traces. The traces are accessed by removing the rear cover.



If the trace is intact, the address line is connected to ground, otherwise it is pulled high. The receiver's address must match exactly in order for the units to communicate. Application Note AN-00300 describes in detail how to set the address to match any of the receivers offered by Linx. This note can be found in the Support section of the Linx website, www.linxtechnologies.com.

Figure 5: Address Traces

Note: Leaving all of the traces intact (default as shipped) or all cut are not valid addresses. At least one trace must be different from the rest.

Button Assignments

The Keyfob is available in five button configurations. Those configurations and the corresponding switch numbers are shown in Figure 6. The table shows which encoder data line has been assigned to each switch. When a button is pressed, the data line goes high, causing the corresponding data line on the decoder to go high if the address has been learned.

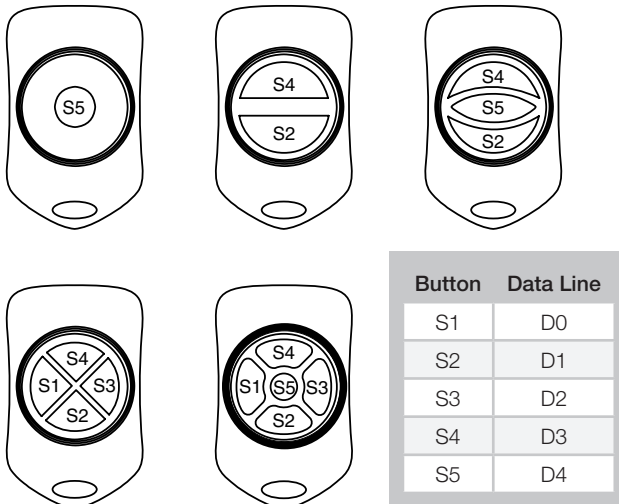


Figure 6: OTX-***-HH-KF#-HT Button Assignments

Labeling / Instruction Requirements

The transmitter has been pre-certified for FCC Part 15 and Industry Canada license-exempt RSS standards for an intentional radiator. The 433.92MHz version has also been tested for CE compliance for use in the European Union. The 418MHz version is not legal for use in Europe. It has already been labeled in accordance with FCC, Industry Canada and CE regulations. No further labeling of the unit is needed; however, it is necessary to include the following Instruction to the User statement in the end product's instruction manual or insert card.

Europe requires that the final product's instruction manual be provided in the end user's native language.



Receivers

There are four options for receivers within the Linx product line. The first option is to use one of the OEM Function Modules, such as the Relay Module. These items are also pre-certified and can be immediately included in a product.

The other options are to use one of the Linx receiver modules. The signal sent by the Keyfob transmitter can be received by the LR Series receiver module or the LT Series transceiver module. These modules can be connected to the DS Series decoder to decode the signal, or a custom microcontroller can be programmed to decode it and take specific action.

The KH3 Series offers a slightly simpler solution by combining the LR Series receiver and the DS Series decoder in a single package. This receiver only supports the Holtek protocol, not the serial protocol.

When a button is pressed on the transmitter, a corresponding line on the decoder goes high (as long as the addresses match). This can then be connected to whatever circuitry is required by the application.

Application Note AN-00300 discusses in detail how to set the addresses on all of the units. Data guides for all of the receivers and the DS Series decoder can be found on the Linx website, www.linxtechnologies.com.



Figure 9: Linx Receivers

Resources

Support

For technical support, product documentation, application notes, regulatory guidelines and software updates, visit www.linxtechnologies.com

RF Design Services

For customers who need help implementing Linx modules, Linx offers design services including board layout assistance, programming, certification advice and packaging design. For more complex RF solutions, Apex Wireless, a division of Linx Technologies, creates optimized designs with RF components and firmware selected for the customer's application. Call +1 800 736 6677 (+1 541 471 6256 if outside the United States) for more information.

Antenna Factor Antennas

Linx's Antenna Factor division has the industry's broadest selection of antennas for a wide variety of applications. For customers with specialized needs, custom antennas and design services are available along with simulations of antenna performance to speed development. Learn more at www.linxtechnologies.com.





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