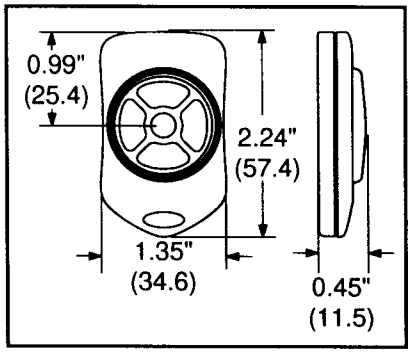
LINX TECHNOLOGIES
WIRELESS MADE SIMPLE

CMD-KEYX-XXX

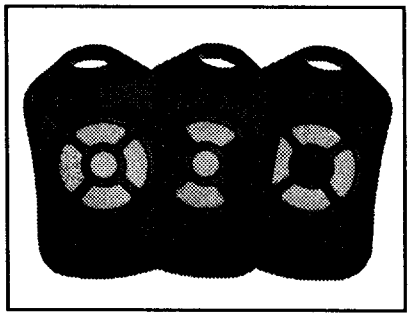
OEM KEYFOB TRANSMITTER DATA GUIDE

DESCRIPTION

The Linx CMD-KEYX-XXX Remote Command keyfob is ideal for general-purpose remote control and command applications. Available in 418 or 433.92 MHz (418MHz standard), this stylish and compact remote is capable of 100+ ft. transmission range. The unit can be configured with 1-5 buttons and the keypad and labeling can be customized to meet specific customer requirements. Selectable addressing provides security and allows for 2^{10} distinct transmitter-receiver relationships. The transmission can be decoded using a matching Linx function module, a KH series receiver/decoder module or a Linx LC series receiver paired with a decoder IC or microcontroller. The unit operates from a single 3-volt lithium cell.



Physical Dimensions



OEM Configurations

With a one-time NRE and minimum order, Linx can configure the keypad and label areas to meet your specific requirements. Contact Linx for details.

APPLICATIONS INCLUDE:

- Remote Control / Command
- Keyless Entry
- Garage / Gate Openers
- Lighting Control
- Security / Call Systems
- Home / Industrial Automation

ORDERING INFORMATION	
PART #	DESCRIPTION
CMD-KEYX-418*	418 MHz Keyfob Transmitter
CMD-KEYX-433	433 MHz Keyfob Transmitter
X= # of buttons insert 1-5	
* = Standard Frequency	

Revised 7/18/00

PERFORMANCE DATA– CMD-KEYX-XXX

ABOUT THESE MEASUREMENTS

The performance parameters listed below are based on module operation at 25°C from a 3Vdc supply unless otherwise noted.

RF Parameters CMD-KEYX-418	Designation	Min.	Typical	Max.	Units	Notes
Frequency of Carrier	F_C	417.925	418	418.075	MHz	–
Harmonic Emissions	P_H	–	–	-40	dBc	3

RF Parameters CMD-KEYX-433	Designation	Min.	Typical	Max.	Units	Notes
Frequency of Carrier	F_C	433.845	433.92	433.995	MHz	–
Harmonic Emissions	P_H	–	–	-45	dBc	3

Electrical Parameters CMD-KEYX- 418, 433MHz	Designation	Min.	Typical	Max.	Units	Notes
Operating Voltage Range	V_{CC}	2.7	–	3.2	Vdc	–
Current Average	I_{CA}	–	1.7	–	mA	1
Current In Sleep	I_{SLP}	–	0	-	µA	2
Output Power	P_O	PART 15.231 Compliant				
TX Data length			26bits 3x			
Average Data Duty Cycle			50%			
Encoder Oscillator	FE_{NC}		100		KHz	
Operating Temperature	-30°C	to	+70°C			

Notes:

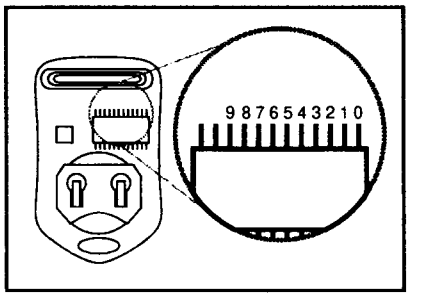
1. Current draw with 50% mark/space ratio.
2. Current draw in standby
3. RF out connected to 50Ω load.

THEORY OF OPERATION

The CMD-KEYX-XXX Keyfob Command Unit combines a high-performance SAW-(Surface Acoustic Wave) based transmitter with an on-board encoder. The keyfob can transmit the status of 1 to 5 buttons along with the state of ten address lines for security and creation of unique transmitter/receiver relationships. The product's operation is straightforward. When a button is pressed, power is applied to the internal circuitry and the encoder IC is enabled. The encoder then detects the logic states of the DIP switch address and button data lines. These states are then formatted into a 3-word transmission cycle which continues until the button is released. The encoder data is used to modulate the transmitter which through the antenna conveys the data into free space. The transmitted signal may be received by any Linx KH or LC receiver or pre-made function module. Once data is received it is decoded using a decoder IC or custom microcontroller. The transmitted address bits are checked against the address settings of the receiving device. If a match is confirmed, the decoder's output(s) are set to replicate the transmitter's button status.

SETTING THE TRANSMITTER ADDRESS

The keyfob allows the selection of one of 1024 unique addresses. All keyfobs from the factory are supplied set to the same address. To avoid ID contention with other units in the vicinity or to create unique relationships it may be helpful to change the address settings. This may be accomplished by cutting the appropriate jumper trace(s) with a sharp object such as an X-acto knife as shown. The traces are accessed by removing the rear cover as for battery replacement.

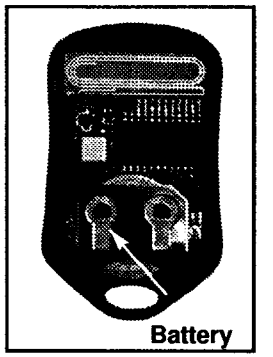


CONTENTION CONSIDERATIONS

It is important to understand that only one transmitter at a time can be activated within a reception area. While the transmitted signal consists of encoded digital data, only one carrier of any frequency can occupy airspace without contention at any given time.

BATTERY REPLACEMENT

The remote unit utilizes a CR-2032 Button Lithium Cell. In normal use it will provide 1-2 years of operation. Access for replacement is accomplished by removing the screw in the middle of the back cover. Once the unit is open, remove the battery by depressing the release finger on the battery holder as shown. Replace the cell with the same type while observing the polarity shown.



COMPLIANCE REQUIREMENTS

The CMD-KEYX-XXX has been pre-certified by Linx for FCC Part 15 compliance when used with an appropriate function module in keeping with the applications allowed under section 15.231.

LABELING/INSTRUCTION REQUIREMENTS

The CMD-KEYX-XXX Remote Command Unit has already been labeled in accordance with FCC regulations in effect as of the date of this document. No further labeling of the unit is needed; however, it is necessary to include the following statement in the end product's instruction manual or insert card.

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INSTRUCTION TO THE USER

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.

This equipment has been certified to comply with the limits for a Class-B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

Place the above statement in the instruction manual or insert card.

LINX TECHNOLOGIES

WIRELESS MADE SIMPLE

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