

KeyRF

**KeyRF
PC Remote
Control
(Version 2.0L)**

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L3 Systems, Inc.
Redmond, WA

Introduction

The KeyRF PC Remote Control Adapter provides a way to send remote control signals to your PC. Some of the advanced features of the KeyRF are:

- ◆ **Superior RF technology** – Receives 360° with better performance as compared to infrared type remotes.
- ◆ **Programmable Button Actions** – Different key sequences can be sent to the PC, based on the way the buttons are pressed on the remote transmitter.
- ◆ **Easy installation** – KeyRF requires no special software to be installed on your system. Just plug between your PC and keyboard and you are ready to go.
- ◆ **Easy to use** – KeyRF mimics your keyboard, so it will work easily with most applications.
- ◆ **Alternating Action** – Keys can be programmed for alternating action.

Notes of Caution

Before using the KeyRF PC remote Control, a few notes of caution should be considered.

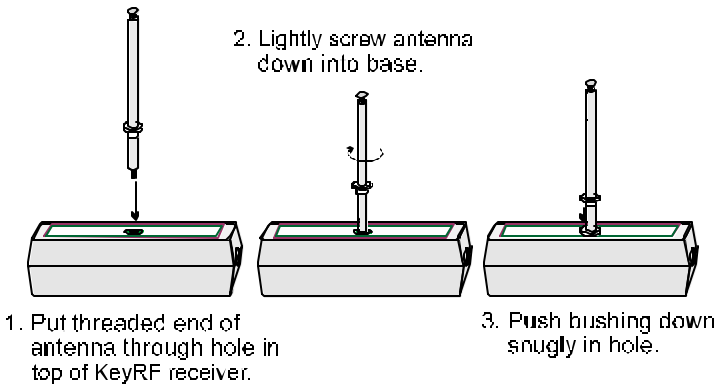


Before connecting or disconnecting the KeyRF, make sure power is turned off to your computer.



Do not discharge static electricity to antenna. Touch a grounded object first before contacting antenna. This can lock up or even damage the receiver.

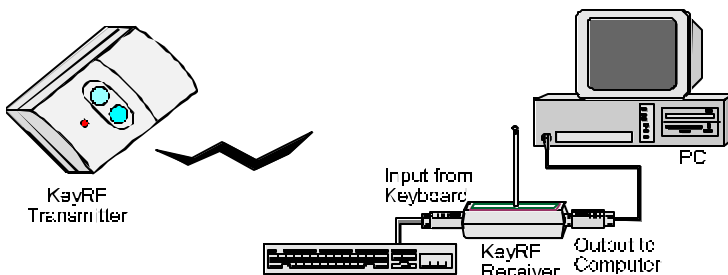
Antenna Assembly



Connections

The following illustrates a typical connection of the KeyRF.

1. The keyboard plugs into the 6 pin Mini-DIN keyboard connector. Use a 5-pin DIN female to 6-pin Mini-DIN male adapter (in adapter kit KT0002) for older style keyboards.
2. A 6 PIN mini-DIN cable is supplied to connect the KeyRF receiver to the computer. Use a 6-pin mini-DIN female to 5-pin DIN male adapter (in adapter kit KT0002) for older style motherboards.



LED Status

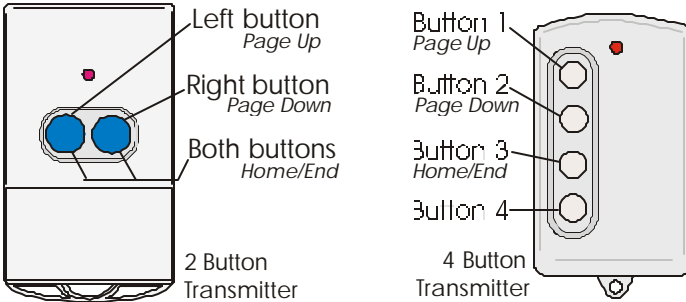
A red status indicator located next to the keyboard connector indicates both keyboard and remote control activity. It turns

KeyRF - PC Remote Control

solid red when the attached keyboard is being used. It blinks red whenever the RF transmitter button is pressed.

KeyRF Default Setup

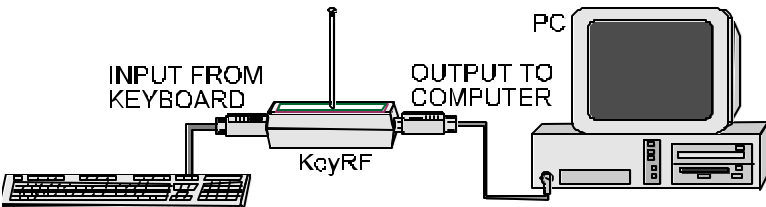
The KeyRF is shipped ready to use and set up as below.



The default settings work well with overhead presentation programs. An easy way to test the KeyRF is to edit a file with your editor or word processor. Most of these applications will respond to page-up and page-down keys.

Running Setup

If the default settings do not fit your application, custom keys can be configured. To configure the Key RF, you must connect it to a computer as shown below.



With the computer booted, make sure that you are in a text based “shell”. On a DOS computer, that is the normal command prompt. On a Windows computer, bring up a DOS command shell. For Unix systems, bring up a login or Xterm shell. Make sure “Backspace” is your backspace key.

On the keyboard, alternate pressing left-SHIFT and right-SHIFT keys until the following prompt displays:

```
[B] Buttons [D] Default [A] Address [C] Config [Q] Quit
```

Now you can enter setup data.

KeyRF – PC Remote Control

First, a quick summary:

- B - **Button settings** – Select this to change the keys configured for the transmitter buttons.
- D - **Default Settings** – Select this to return the KeyRF settings back to factory default.
- A - **Address** – Allows you to match the address of the transmitter. Usually this is only used when you have more than one KeyRF in the vicinity.
- C - **Configuration** – This is used to configure the transmitter. Just leave this alone.
- Q - **Quit** – Quit configuration.

[B] Button Configuration

If you press “B” in response to the initial setup prompt, the following will be displayed for a 2-button transmitter:

[L]Left [R]Right [B]Both [X]Lt->Rt [Y]Rt-Lt

The 4-button transmitter prompt:

Buttons: [1][2][3][4] [A]4&1 [B]4&2 [C]4&3

The following tables show what button actions are selected by the response to the prompt:

2 Button Transmitter

L	Press Left Button
R	Press Right Button
B	Press Both Buttons
X	Press Left, and while holding, press right.
Y	Press Right, and while holding, press left.

4 Button Transmitter

1	Press 1 st button
2	Press 2nd button
3	Press 3rd button
4	Press 4th button. If A,B or C are programmed, then this button must be pressed twice
A	Press 4 th button, release, then press 1 st button
B	Press 4 th button, release, then press 2nd button
C	Press 4 th button, release, then press 3rd button

Note: Programming either the X or Y actions will affect the way the KeyRF 2- button remote works. If X and Y are not programmed (factory default), the Left and right buttons will cause the keystrokes to be sent to the PC upon pressing down the button. If X or Y are programmed, then keystrokes will not be sent until the button is released or after a short delay. You will notice this initial delay using auto-repeat. If you find you do not like this mode of operation, use the [D] command to revert to factory defaults.

KeyRF – PC Remote Control

After selecting the button, the following prompt will appear:

[S]Single or [A]Alternating

“Single” means that there’s only one key sequence for a key. “Alternating” means that there are two sequences which alternate every time the button is pressed.

If “S” for single is selected, the following prompt appears:

Press key(s), end with Right-SHIFT key:

At this point type the keys you wish to program for the button. *(Note that the keys will not echo as you type. This is to avoid undesired consequences of displaying special keys such as function keys.)* Generally for a single button, about 10 keystrokes can be stored. Some keys require more memory storage, so this will vary. If you type too many keys, it will warn you, and then you can try again. If you need a shift key in the sequence, use the left shift key, as the right shift key is used to detect the end of the entry.

When you press the Right-SHIFT key to end the entry, the initial configuration prompt will appear:

[B] Buttons [D] Default [A] Address [C] Config [Q] Quit

You can now program another button, re-program the button you just programmed, or quit(Q) and try out the new button settings.

If you selected the Alternating (A) button programming, the following prompt will appear:

1st, Press key(s), end with Right-SHIFT key:

Type keys as with the Single key, noting that you can only have about 10 keys total, or if evenly divided, 5 keys per alternate button action. When you end the first set of keys with the Right-SHIFT, then the next prompt will be:

1st, Press key(s), end with Right-SHIFT key:

When you press the Right-SHIFT key to end the entry, the initial setup prompt will appear:

[B] Buttons [D] Default [A] Address [C] Config [Q] Quit

KeyRF - PC Remote Control

You can now program another button, re-program the button you just programmed, or quit(Q) and try out the new button settings.

[A] Transmitter Address

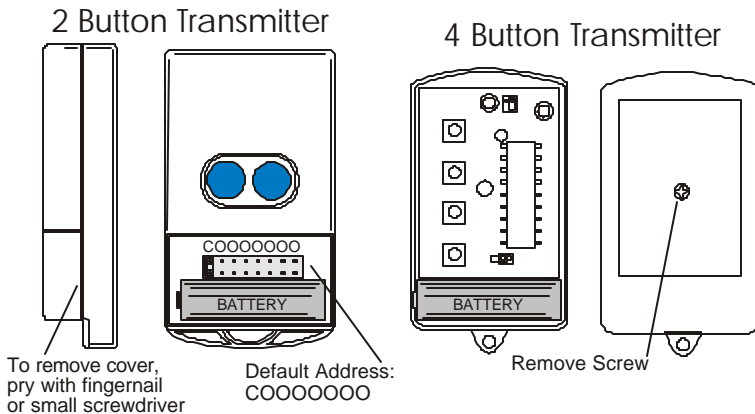
The address set in the KeyRF receiver has to match the address in the transmitter. The factory receiver setting is C0000000, where “C” signifies where a jumper is installed, and “O” where a jumper is NOT installed

If “A” is pressed in response to the initial setup prompt, the following prompt will appear:

Address: [C0000000]:

If you respond with only an <ENTER>, then it will keep the current setting. Make sure you type 8 O's or C's.

The 4-button transmitter address is preset to C0000000, and cannot be changed. To change the 2-button transmitter address, remove the small cover, prying with a fingernail or a small screwdriver (like ones used for eyeglasses). Orient the 2-button transmitter with key chain hole at the bottom. Place jumper in a position that matches the “C” in the address loaded into the receiver.



Changing Transmitter Battery

Both transmitters has a 12-volt A23 type battery. Make sure that battery plus (+) terminal matches diagram on bottom of case.

[D] Restore Setup to Factory Settings

If the settings get messed up, a recommended procedure is to restore the factory setup. Pressing “D” at the initial setup prompt will restore all settings to factory default. First you have to say which type of transmitter that you have:

[2] 2-Button [4] 4-Button

One selected, the following settings are loaded:

2 Button Transmitter

Address	COOOOOOO
Left Button	Page-Up
Right Button	Page-Down
Both Buttons	Alternating Home/End
X and Y	Not initialized
Configuration	223201025100

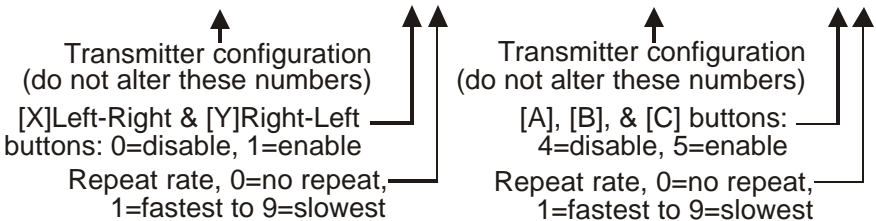
4 Button Transmitter

Address	COOOOOOO
Button 1	Page-Up
Button 2	Page-Down
Button 3	Alternating Home/End
4, A, B & C	Not initialized
Configuration	223241325140

[C] View/Change Receiver Configuration

2-Button Transmitter default 4-Button Transmitter default

223201025100 22324132514



This allows for changing the parameters of the RF receiver. All but the last two digits should be left at factory default:

By setting and enabling the repeat rate, holding down a button will cause keys to be continuously sent to the PC. To keep the current settings, just press [ENTER]. To restore factory defaults, use the “D” command.

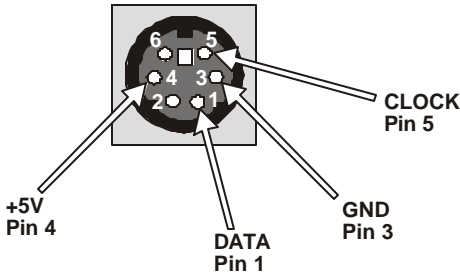
Pull out Antenna for Better Range

The antenna for the KeyRF can be extended for better reception. You can also try different placements of the KeyRF to help improve reception.

KeyRF Mini-DIN Connectors

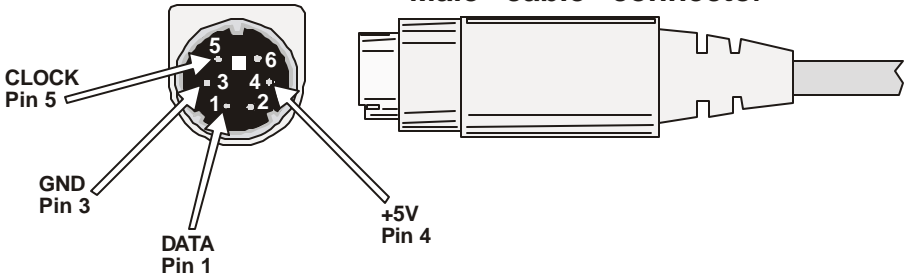
The following connector shows the pin definitions for the two 6 pin DIN connectors. The KeyRF get its 5-volt power from the PC. If a keyboard is attached, the 5-volt power is passed through to the keyboard.

Female “panel” connector



KeyRF 6 PIN
Mini-DIN
Connector

Male “cable” connector



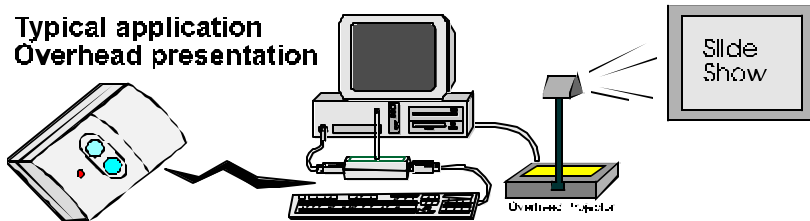
Warranty *L3 Systems guarantees this product to be free of defects in material and workmanship for 180 days from date of shipment to the end user. L3 Systems will repair or replace (at our option) products within the warranty period at no charge for parts and labor. All returns must obtain a Return of Merchandise Authorization number (RMA) available on request from L3 Systems. Shipping costs (plus customs and duty, if any) to and from L3 Systems must be paid by the user. Damage or defect caused by accident, misuse or neglect is not covered. Damage or defect caused by shipping is excluded. L3 Systems shall not be liable for any consequential damage or losses from the use of, or inability to use its products. Any unauthorized repair or modification of the product voids the warranty. L3 Systems makes no other warranty, express or implied, nor have we authorized anyone to make representations to the contrary.*

FCC Class B Approval Information

NOTE: 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 interference to radio or television reception, which determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antennae
- Increase the separation between the equipment and the 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.

KeyRF – PC Remote Control



The KeyRF provides a convenient way to connect RF remote control transmitter to your PC.

APPLICATIONS

- ◆ **Overhead Presentations** - Use the KeyRF to control presentations, such as PowerPoint (© Microsoft Corp.)
- ◆ **Home Automation** - The KeyRF can provide input to your PC-based home automation applications.
- ◆ **Embedded Systems** – Many PC-based embedded systems have need of a remote control interface.
- ◆ **PC TV** – Remote control for your PC based TV.

FEATURES

- ◆ **Superior RF technology** – Receives 360° and has superior performance compared to infrared remotes.
- ◆ **Programmable Button Actions** – Five to seven different key sequences can be sent to the PC, based on the way the buttons are pressed on the remote transmitter.
- ◆ **Easy installation** – KeyRF requires no special software to be installed on your system. Just plug the KeyRF receiver between your PC and keyboard, or your laptop's keyboard port and you are ready to go.
- ◆ **Easy to use** – KeyRF mimics your keyboard, so it will work easily with most applications.
- ◆ **6 PIN Min-DIN cable provided** – A Mini-DIN keyboard extension cable is provided, just plug it in and go.

Note: For Older style PC's with the larger 5 PIN DIN connectors, adapter kit CL0007 is required.