

Lynx is an affordable wireless programmable remote controller for the Ockam system. It responds to 'key fob' controllers or wired buttons (or both). In addition to the convenience, it replaces the heavy hard wiring traditionally installed for controlling mast displays, by sending control commands over the Ockam bus.

The Lynx receiver stores 8 sets of commands which are triggered by the associated transmitter (or transmitters; a Lynx receiver can be triggered by any number of properly keyed wireless controllers). The receiver also has the ability to be triggered by up to 4 hard-wired buttons.

Lynx is capable of outputting any of the Ockam system command set. As supplied, key fob buttons 1 and 3 step mast display pages, buttons 2 and 4 control the stopwatch and button 5 does a 'man overboard' function¹. Hard-wired buttons perform functions 5 thru 8, #5 being common with button 5 of the key fob.

The OckamSoft 4 driver (rev. 4.07 or later) provides an easy way to reassign the button commands to suit your needs.

If needed, up to 16 Lynx receivers can be attached to the system, each with its own set of keyed controllers and buttons. Of course, each receiver would be programmed with its own set of commands.

¹Note: Some Ockam systems do not output back range & bearing.
Test the man-overboard feature before relying on it.

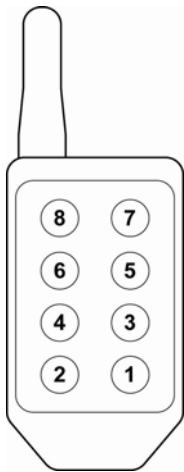
Specifications

Receiver component:

- Dimensions: 4" W x 2" H x 1-3/4" D (less antenna and BNC)
- Mounting: 3M DualLock
- Weight: ¼ Lb.
- Power Requirements: 55ma
- Fuse: 250ma Picofuse
- Mating Connections: Ockam Bus: BNC Female
- Buttons & beeper: 6 position terminal strip
- Operating frequency: 418 Mhz.

Transmitter component: (multiple transmitters may be used)

- Standard: 5-button key fob
- Optional: 8-button controller

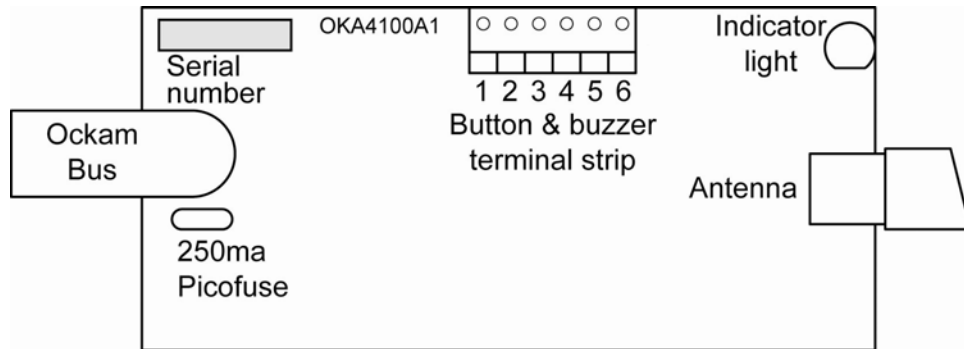


One 5-Button key fob is supplied with the 058. Additional fobs may be purchased to trigger the same receiver. Receiver serial number must be supplied at time of order.



The 8-Button controller may be purchased separately. It provides access to all 8 functions of the receiver. Receiver serial number must be supplied at time of order.

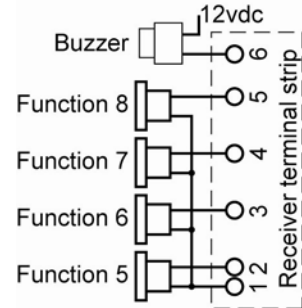
Installation



Connect the Lynx receiver to the Ockam bus. On power-up the LED should quick-flash. Pick a protected location (the receiver is not waterproof). You may need to experiment to find the correct location and antenna orientation for proper operation with the key fob. Try the key fob to confirm proper operation. Each button push should blink the LED.

If connecting hardware buttons, use normally-open momentary types, and connect as shown. The buttons trigger receiver functions 5 thru 8, allowing 3 independent actions, plus 1 common with the 5-button fob.

A buzzer may also be attached, which operates in parallel with the LED. Pin 6 of the receiver terminal strip is an open-collector transistor capable of 50ma drive current.



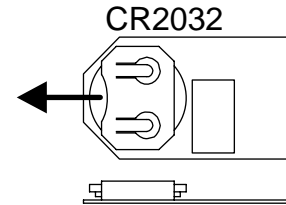
Ensure the key fob serial numbers match the serial number of the receiver.

Replacing the transmitter battery

If the Lynx stops working or the operating range becomes too short, the transmitter battery probably needs replacement. Both the 5-button and 8-button transmitters use coin cells type **CR2032**, available in camera stores or over the internet. To replace the battery;

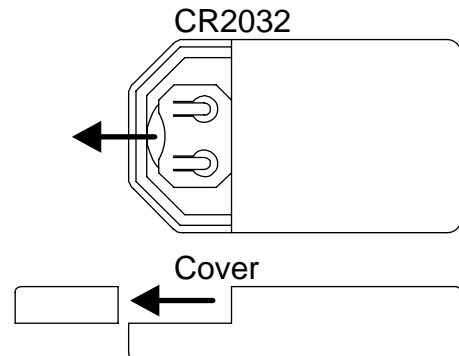
5-button fob

- Pry open the case using a dime.
- Remove the circuit board.
- Pull out the battery and replace with a fresh one. Observe polarity; the wider diameter goes UP.
- Reverse the disassembly.



8-button controller

- Slide the battery compartment cover off.
- Pull out the battery and replace with a fresh one. Observe polarity; the wider diameter goes UP.
- Reverse the disassembly.

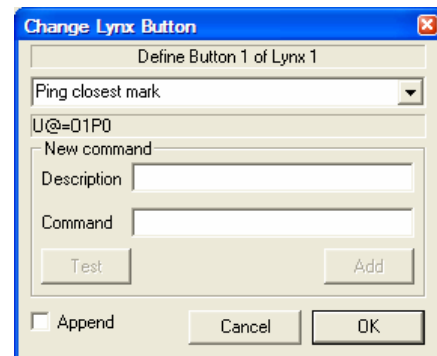
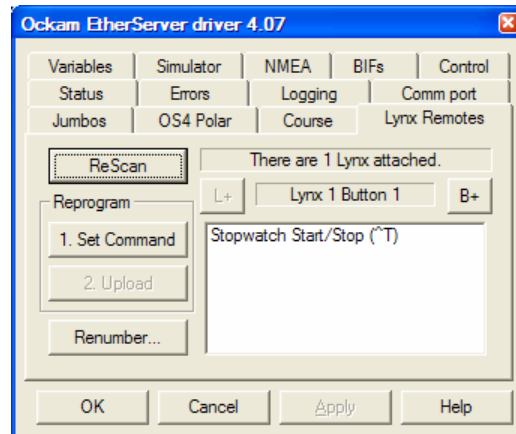


Programming the receiver

The Lynx is programmed through the Ockam bus using '@' frames. This method is tedious but totally flexible. To use this method, refer to the Communications protocol section below. For most people, the OS4 driver (rev. 4.07 or later) is much handier.

Using the OS4 Driver

1. Open the OckamSoft 4 driver and select the Lynx Remotes tab.
2. If it says "There are no Lynx attached", check that the lynx receiver is attached to the Ockam bus. Then press the ReScan button and wait for the receiver to be detected.
3. Use the B+ button to review the button assignments. If more than one Lynx is attached, use the L+ button to select the Lynx.
4. To reprogram a button, press Set Command. Pick the desired command from the droplist, and press OK.
5. If you don't find what you want, fill in the Ockam command and a description. Press Test to confirm the command does what you expect, then Add to the droplist. Select your newly minted command from the droplist and press OK.
6. The Lynx dialog shows your new definition, and the Upload button becomes active, indicating that the Lynx button definitions have changed.
7. If you want to stack more than one command on a button, check Append before pressing OK.
8. After re-defining your buttons, press the Upload button to reprogram the Lynx receiver(s).



Adding a 2nd Lynx

To add another Lynx to your system (to add another set of 8 commands), you must renumber Lynx #1 to some other number, so you can then attach another Lynx (all Lynx are shipped set to #1). To renumber a Lynx;

1. Select Lynx #1 and press Renumber.
2. Enter the new number and press OK. The Lynx will be renumbered, and a new scan is initiated.
3. Connect the new lynx (new #1) and press ReScan.

Communications protocol

The Lynx listens to the display channel for frames beginning with “@Ln” where *n* (1 thru 16) is its current address. To send this type of frame, send a direct command using the User command syntax “U@=Ln...”.

Example:

Let’s say you wanted to assign “Jumbo 1 Up” to button 1 of the receiver.

Description	Command
When Jumbo 1 hears “@J1S+”, it advances to the next page.	@J1S+
To place this command on the bus, one would enter a user command (User output to tag ‘@’).	U@=J1S+
When Lynx receiver <i>n</i> hears a frame like this, it reprograms button <i>m</i> to <command>.	@LnCm<command>
Therefore, to reprogram Button 1 on Lynx 1 to advance Jumbo 1, enter this user command. Easy!	U@=L1C1U@=J1S+

Let’s add “Jumbo 2 Up” to the same button, so the button advances both Jumbos at the same time.

Note the ‘C1+’ which appends rather than replaces and the ‘J2’ which specifies Jumbo #2.	U@=L1C1+U@=J2S+
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Each command received by the receiver is signaled by a quick-flashing of the LED.

Lynx commands

U@=LnAm	Change address of Lynx <i>n</i> to address <i>m</i> (1 thru 16). Allows multiple receivers to be configured on the same system. Lynx ignores commands where $n=m$.
U@=LnAm	
	NOTE: in order to prevent accidental address change, this command must be received twice in succession by the Lynx before the address is changed.
U@=LnBmcTag	Output Lynx <i>n</i> button <i>m</i> (1 to 8) command <i>c</i> (1 to 8) on tag <i>Tag</i> . This command is used to read out the contents of the receiver key buffers (e.g. by the OS4 driver).
U@=LnCmCmd	Set Lynx <i>n</i> button <i>m</i> to <i>Cmd</i> . If the command starts with '+', the command is appended, allowing for multiple commands to be assigned to the same button.
U@=LnCm+Cmd	
U@=LnDtag	Used for troubleshooting. After this command is issued, Lynx output is additionally sent as <i>TagCmd</i> . This assignment is cleared on power-up. To clear the debug feature without removing power, send "U@=LnD".
U@=LnVtag	Output Lynx receiver version information on tag <i>tag</i> .
U@=LnZdur	Quick-flash the LED (and buzzer, if attached) for <i>dur</i> ATUs; (an ATU is about 0.01 seconds).

Lynx command set files

The Lynx receiver does not store a description. The translation is provided to the OS4 driver by the file LynxCmds.txt, located in the OckamSoft 4 directory. When you define a new command, it is appended to the file. If this file becomes corrupted, you can download a fresh copy from

<http://www.ockam.com/Lynx>

A second file is provided, Lynx Presets.txt, which describes the default settings for the Lynx receiver.

Revision History

Rev	Date	Change
1.00	5/24/06	1 st Revision.

Lynx Receiver serial number & programming

Record your Lynx receiver serial number and any reprogramming for future reference.

Lynx serial number	
Button 1 Fob & controller only, not wired.	Command 1
	Command 2
	Command 3
	Command 4
	Command 5
	Command 6
	Command 7
	Command 8
Button 2 Fob & controller only, not wired.	Command 1
	Command 2
	Command 3
	Command 4
	Command 5
	Command 6
	Command 7
	Command 8
Button 3 Fob & controller only, not wired.	Command 1
	Command 2
	Command 3
	Command 4

	Command 5
	Command 6
	Command 7
	Command 8
Button 4 Fob & controller only, not wired.	Command 1
	Command 2
	Command 3
	Command 4
	Command 5
	Command 6
	Command 7
	Command 8
Button 5 Common with fob, 8-button controller and first wired button.	Command 1
	Command 2
	Command 3
	Command 4
	Command 5
	Command 6
	Command 7
	Command 8
Button 6 8-button controller or wired only.	Command 1
	Command 2
	Command 3
	Command 4

	Command 5
	Command 6
	Command 7
	Command 8
Button 7 8-button controller or wired only.	Command 1
	Command 2
	Command 3
	Command 4
	Command 5
	Command 6
	Command 7
	Command 8
Button 8 8-button controller or wired only.	Command 1
	Command 2
	Command 3
	Command 4
	Command 5
	Command 6
	Command 7
	Command 8