



Digitrax Complete Train Control  
Run Your Trains, Not Your Track!



# UR92

Duplex Transceiver/IR Receiver  
For Duplex Equipped LocoNet Throttles

Works with Digitrax  
Duplex & InfraReady  
Throttles

## Features:

- LocoNet makes it easy to add Duplex Radio (UR92) to your layout. And it works alongside Simplex Radio (UR91) and Infrared (UR90) at the same time so you can use all three technologies together.
- Provides a Full Duplex link to/from the layout with Digitrax Duplex Equipped Throttles.
- Supports simplex InfraRed operation with all Digitrax InfraReady Throttles.
- Supports dozens of duplex throttles operating at the same time.
- One UR92 provides adequate coverage for most layouts.
- Duplex range is approximately a 300 ft diameter circle.
- Group Name feature allows multiple Duplex Equipped layouts to operate independently in close proximity to each other, such as at a train show.
- FCC Part 15, Class B RFI, CE/ETSI 300 compliant.

\* While the 2.4GHz band is in use worldwide, the UR92 may only be operated in countries where it is certified or type accepted for use in that country.

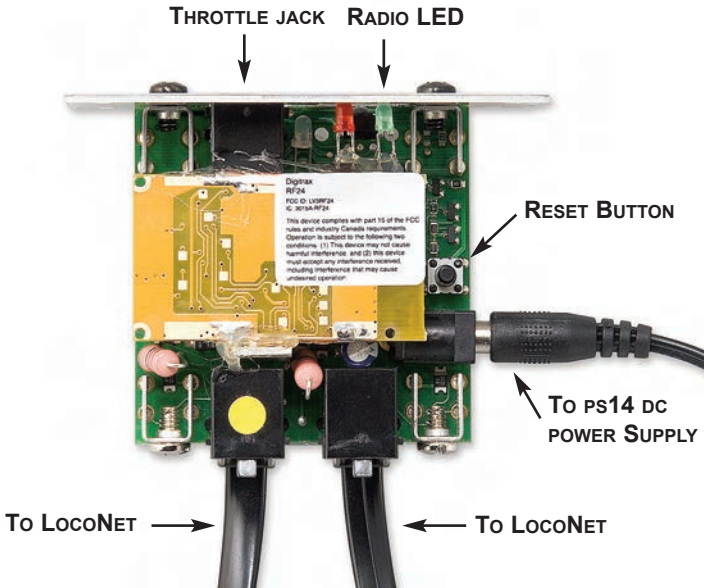
## Parts List

- |   |                     |
|---|---------------------|
| 1 UR92 Duplex Transceiver/IR Receiver Panel | 1 2' LocoNet cable  |
| 1 PS14 DC Power Supply                      | 1 Instruction Sheet |





## UR92 Installation/Quick Start



The UR92 is simple to install and begin using on your LocoNet layout.

1. In most cases a UR92 should be situated near the physical center of a layout. Its range is a circle of approximately 300 feet across, which will be adequate for most layouts. Some layouts may require additional UR92s for adequate signal coverage.
2. Connect the PS14 DC power supply to your UR92 via the DC power jack on the side of the UR92. Plug the PS14 into a 110 V wall outlet. The green and red LEDs should blink and then the red LED should stay on.
3. Connect the UR92 to your working LocoNet system using one of the RJ12 jacks at the rear of the UR92. The red LED will go off and the GREEN **RADIO** LED will blink at a 2-second interval to indicate that it is working and set up for duplex radio operation.
4. If your layout has UR91s and or UR90s installed, re-set the LocoNet ID by plugging in any DT402 throttle while holding down the **EDIT** Key. Release the **EDIT** Key. Use the R throttle knob to set the LocoNet ID (00-07) you want to use and press Enter to complete LocoNet ID set up. As simplex and infrared throttles plug in to LocoNet, they will log on to the LocoNet ID automatically and all three technologies will work together.

**That's all that's required for installation of your UR92 on LocoNet!**



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## Join Your Throttle to the Duplex Group

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1. Connect a DT402D Duplex Radio Throttle with a known good installed battery to the front RJ12 jack of an installed UR92 for about 2 seconds until the throttle initializes.
2. Disconnect the DT402D from the LocoNet jack. The DT402D will briefly display an 8 character Duplex Group name and the Channel number being used by the UR92 Group. The actual Duplex Group name is not important at this point, it is simply used by the DT402D to join this Duplex group on its particular Duplex channel (#11 through #26). If your throttle shows “Idle” at this point, simply plug in and allow the throttle to re-initialize.
3. Now that the DT402D has joined the Duplex group, it can be operated wirelessly as if it were plugged in to the LocoNet system.
4. Use the DT402D throttle to select one of the locomotives on your system. The UR92’s GREEN **RADIO** LED will blink simultaneously to show that good duplex messages are being sent and received. If the RF transmissions are not acknowledged by the UR92, the DT402D will blink its white “flashlight” LED to show there is a duplex communication problem. This usually indicates a range or interference issue. (See troubleshooting section.)
5. DT402Ds remember the last joined Duplex Group, even if the batteries are removed, so when re-powered they will automatically wirelessly rejoin this particular Group if it is within duplex radio range.

*This ‘tethered’ method of joining the UR92 Duplex Group will always work to join any Duplex throttle to a particular Duplex Group. You can also join in wireless mode! See the DT402 manual for instructions on joining a Group without plugging in.*

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## Troubleshooting Your Installation

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To get the best performance out of your duplex radio installation, walk around the layout and check Duplex operation to be sure you have adequate signal coverage.

Depending on the layout size, geometry and surrounding materials it is often possible to move the UR92(s) to better cover dead spots. Experimenting with UR92 location will usually help you locate a position that is best for your layout. Note that DT402D orientation and body position of you and your operators may also affect the UR92’s range and reception.

On very large layouts or layouts with problem areas, it is possible to add more than one UR92. Adding extra units will automatically provide space-diversity coverage and reliability. Adding multiple UR92s is covered in the Advanced Installation and Customization section of these instructions.

If duplex range is poor, it may be due to interference from a Wireless LAN or similar device operating continuously on the same channel. The next section outlines several ways to avoid interference and congestion from other devices.



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## Advanced UR92 Installation and Customization

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**Adding UR92s** will provide better signal coverage for complex layouts. If you are adding more than one UR92 be sure to connect all of the units to LocoNet before changing the Duplex Group name or channel number. This will prevent the units from automatically re-negotiating these values with each addition.

1. Add the UR92(s) to your LocoNet. (See UR92 Installation section.)
2. After adding extra UR92s, use the DT402D to turn OFF layout track power and then turn track power back ON. This forces all the UR92s to automatically negotiate a common Duplex Group name and channel number. (Your Group name may change with each UR92 addition.)
3. Rejoin the DT402Ds by either the tethered (described above) or untethered method (described in the DT402 manual) to use the newly established Duplex Group name and channel.

**Setting Duplex Group Name:** You can use the DT402D to edit the UR92's Duplex Group name to one you choose. This change is optional, and the UR92 factory default will work out of the box with no change. You should have all UR92s connected to the layout before changing the Duplex Group Name or they will automatically renegotiate and may change the preferred name to a default.

1. Connect the DT402D to the front RJ12 jack of any UR92 on the LocoNet.
2. On the DT402D press the **OPTN** key and then the **EDIT** key.
3. The 8 character Duplex Group name will appear in the display center.
4. Use the **R** Throttle knob to change the first character value. It will blink as it is changed. When the desired character is seen, use the **L** Throttle knob to move across and select a character to modify.
5. Press the **ENTER** key to update the current displayed characters as the new UR92 Duplex Group Name. To skip making any changes, simply press the **EXIT** key.
6. After changing the Duplex Group Name, your other DT402Ds will need to rejoin to use this new Group Name. **Note:** As long as Duplex Group Name is unique, it is generally possible to run dozens of different layouts on the same channel number in close proximity.

**Setting the Duplex Group Channel:** You can use this capability to move the duplex channel away from signal interference caused by other devices.

1. Connect the DT402D to the front RJ12 jack of any UR92 on LocoNet.
2. On the DT402D press the **OPTN** key and then the **EDIT** key. The Group channel number (11-26) will now show in the lower left hand side of the display.



3. Use the **Y / +** key to change to a higher channel in the available range of 11 through 26. The **N / -** key will change to a lower channel.
4. Press the **ENTER** key to update the currently displayed channel as the new UR92 channel to be used with the Duplex Group Name.
5. After changing the channel all DT402Ds will have to rejoin to use this new channel. To skip making any changes, simply press the **EXIT** key.

**Note:** If you suspect a Wireless LAN or other device is causing interference and limiting range, you can change the channel as above, and search through all available 16 channels to find one that gives the best coverage.

See additional resources at [www.digitrax.com](http://www.digitrax.com). There are additional utilities to let you scan the layout environment for any signals using the installed UR92's as scanners and to easily update your Duplex Group name, channel and to set up a Password to protect your Group from unauthorized access.

## Resetting Factory Defaults

You are unlikely to encounter a problem that will require a factory reset. One such instance may occur if you set a Password for your Duplex Group Name and forget what it is. Resetting to factory default condition is an easy way to correct the situation.

1. Disconnect the UR92(s) from the LocoNet. If you have more than one UR92 in your layout, you must disconnect all of them to do a full factory reset on each unit as follows.
2. Disconnect any throttle that is plugged into the UR92.
3. Leave the PS14 power supply connected to the UR92 and to the wall outlet.
4. Press and hold the button (next to the power supply jack) for two seconds or until both the red and green LEDs begin to blink. Release the button.
5. When the lights stop blinking, unplug the power supply.
6. Reconnect the PS14 DC power supply to the UR92. The green and red LEDs will blink and then the red LED will stay on.
7. Connect the UR92 to your working LocoNet system using one of the RJ12 jacks at the rear of the UR92. The red LED will go off and the GREEN **RADIO** LED will blink at a 2-second interval to indicate that it is set up for duplex radio operation and is working.
8. The UR92 is now set to the factory default Group Name of Dtxnnnn (where "nnnn" is the unit serial number) and Channel 11.



## **FCC Regulatory Information**

**This equipment is FCC Part 15, Class B RFI and CE/ETSI 300 compliant.**

**FCC ID LV3RF24**

**IC 3015-RF24**

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 environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, 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 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.

**Note:** Any modifications to the equipment not expressly approved by Digitrax voids the user's authority to operate under and be in compliance with CFR 47 rules, as administered by the Federal Communication Commission.

### **For Canadian Users:**

"This digital apparatus does not exceed the Class B limits for Radio noise emission from digital apparatus set out in the Radio Interference Regulation or the Canadian Department of Communications."

Le present appareil numerique n emet pas de bruits radio-electriques depassant les limites applicables aux appareils numeriques de la classe B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.



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## Warranty

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Digitrax gives a one-year “no worries” warranty against manufacturing defects and accidental customer damage on all Digitrax products. That’s it! Simple, straightforward warranty, no tricky language!

All warranties on Digitrax products are limited to repair or replacement of Digitrax products at the discretion of Digitrax. Except to the extent expressly stated, there are no warranties, express or implied, including but not limited to any warranties of merchantability or fitness for a particular purpose.

For items that are no longer covered under warranty, whenever possible we will make repairs to units at fair and reasonable rates.

Please visit our warranty and repair page at [www.digitrax.com/warranty](http://www.digitrax.com/warranty) for warranty and repair information and procedures.

*Digitrax, Inc. reserves the right to make changes in design and specifications, and/or to make additions or improvements in its products without imposing any obligations upon itself to install these changes, additions or improvements on products previously manufactured.*

***Digitrax, Inc. is not responsible for unintentional errors or omissions in this document.***



UR92

Duplex Radio Transceiver/IR Receiver for LocoNet

# Go Beyond DCC With Digitrax® Complete Train Control

## Main Station

Starter Sets  
LocoNet®  
Power Supplies

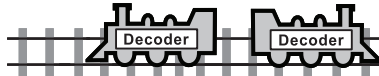


Your Digitrax LocoNet® Starter Set is just the beginning of an exciting trip! Pick the one that's right for you!



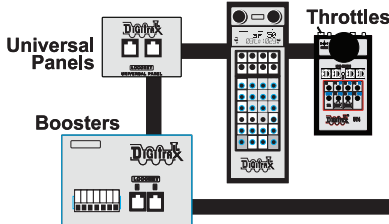
## Locomotive Shops

Mobile Decoders  
Function Decoders  
SoundFX™ Decoders



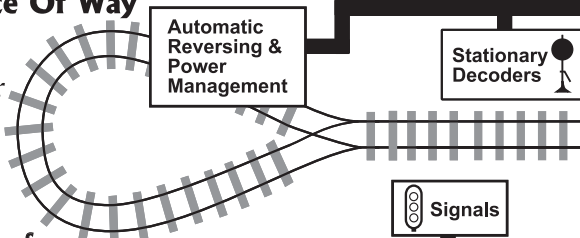
## More Fun For Everyone

Add More Boosters, Advanced & Simple Throttles, Power Supplies, Universal Panels, IR and/or Radio for more trains and operators.



## Maintenance Of Way

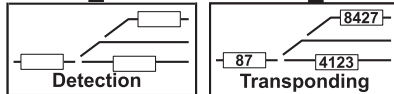
Make your layout more fun & simpler to operate!



## Computer Controls

Computer Interface  
Decoder Programmer  
Sound Programmer

## It All Adds Up To Complete Train Control



Made in U.S.A.



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UR92 Duplex Transceiver

