

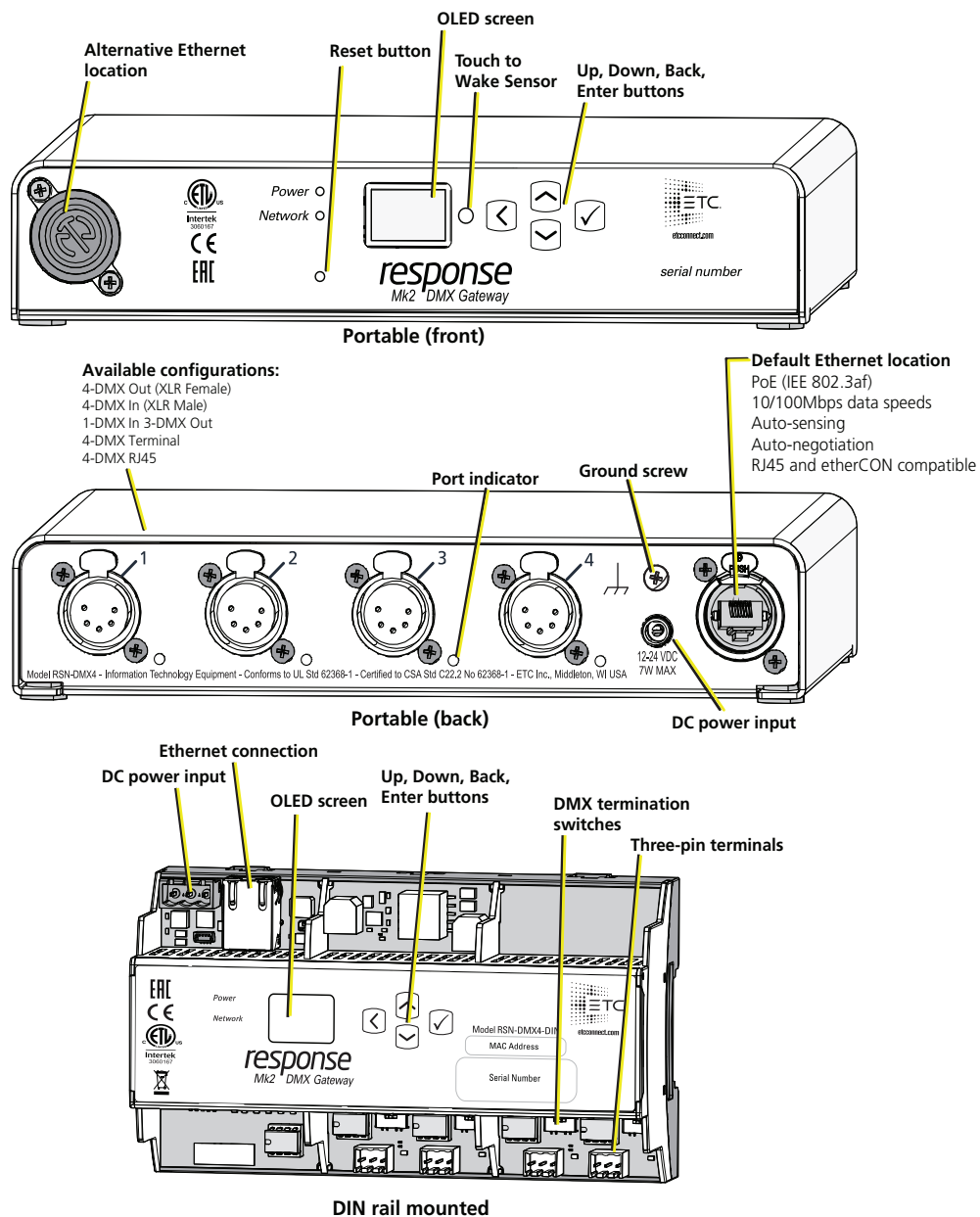
ETC Setup Guide

Response Mk2 Four-Port Gateway

This guide covers installation and basic setup of the Response Mk2 Four-Port Gateway. You can configure additional software features using the Net3 Concert software from ETC. Reference the Help system built into Concert for more information. Net3 Concert software can be found at etcconnect.com/Concert.

Overview

There are two versions of the Four-Port Gateway. The portable version can be used on a tabletop or be rack-, pipe- or bar-mounted using [optional accessories](#) (available separately). The second version is mounted on DIN rail.



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Action Buttons

- Up, Down, Back buttons - The Back button allows you to return to the previous menu or option and the Up and Down buttons navigate between menu options
- Enter - The Enter button allows you to advance to the next available menu option or commit a modified selection
- Reset - The Reset button provides a physical button to reset the gateway
- Touch to Wake Sensor - Cover the sensor with your hand to wake the display

LED Indicators

- Power - Solid blue indicates that power is supplied
- Network - Solid green indicates network connection and blinking indicates network activity
- Port Indicator - Each port has an adjacent port indicator LED that provides information on the state of the port:
 - Output mode
 - Green (solid): Valid sACN sources on the port
 - Green (slow blinking): No valid sACN sources on the port. Note that the port can be in a Hold Last Look (HLL) state.
 - Green (fast blinking): Attempting to output but there are other DMX sources detected on the DMX line causing a collision
 - Amber (blink): RDM transaction in process
 - Input mode
 - Red (solid): Active DMX input on the port
 - Red (slow blinking): No active DMX input on the port
 - Red (fast blinking): DMX source is invalid
 - Off: Port disabled or power off
 - Red-Green (alternating blinking): The port is updating a connected ETC device
 - Amber-Green (alternating blinking): The port is in DMX test mode

Electrical Specifications

The gateways are powered by either auxiliary power or Power over Ethernet (PoE).

- Auxiliary power input rated voltage of 12-24 VDC, 15 W Max, Polarity Independent
- 10/100Base-T, PoE power Class 2 (IEEE 802.3af)

For auxiliary power, the portable gateway uses an external DC power supply (available separately) and the DIN rail gateway uses a three-position screw clamp terminal block.

If you supply both PoE and auxiliary power, the gateway defaults to using auxiliary. If auxiliary power is lost, the gateway will reboot and then begin using PoE.



Note: If you are using an external power supply, it must be rated at a maximum of 15 watts.

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Connection Options

There are four different connector types available depending on your gateway:

- DMX Out (five-pin female XLR)
- DMX In (five-pin male XLR)
- DMX RJ45 (input or output)
- DMX Terminal header (three-pin terminal for input or output)

The Response Mk2 Gateways send and receive DMX-512 control signals. DMX cables must be acceptable for DMX data transmission and connections should follow the standard pinouts per the charts below. The optional secondary data pair is not used by the Response Mk2 Gateways.

The DMX RJ45 variant can use a standard RJ45 Cat5e cable or better to transmit DMX-512 to other devices with the same connector.

The portable version of the Four-Port Gateway is available in five variants of available connector types:

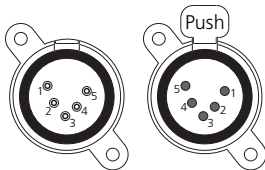
- 4 Out (female XLR connectors)
- 4 In (male XLR connectors)
- 3 Out and 1 In
- 4 Terminal connectors
- 4 RJ45 connectors

The DIN rail version of the Four-Port Gateway comes with four terminal connectors.



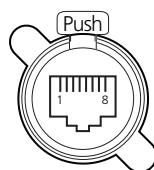
Note: The DMX RJ45 connector does not function as an Ethernet network port.

Pinouts



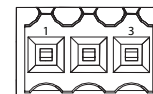
**DMX-512
Pinout for
five-pin XLR**

Pin	Use
1	Common (shield)
2	Data -
3	Data +
4	not connected
5	not connected



**DMX-512 Pinout
for RJ45**

Pin	Use	Wire Color
1	Data 1 +	w/orange
2	Data 1 -	orange
3	not used	w/green
4	not used	blue
5	not used	w/blue
6	not used	green
7	Signal Common	w/brown
8	Signal Common	brown



**DMX-512 Pinouts for
Terminal Header**

Pin	Use	Typical Wire Color
1	Common (shield)	clear/shield
2	Data -	black
3	Data +	red

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Wiring the Terminal Connector

The terminal header can accept two types of connectors (both connector types are provided with the gateway):

- DMX Cable (three-position screw connector used with Belden 9729 or equivalent cable)
- DMX Cat5 (three-position Cat5 insulation displacement connector used with Cat5 or equivalent cable)

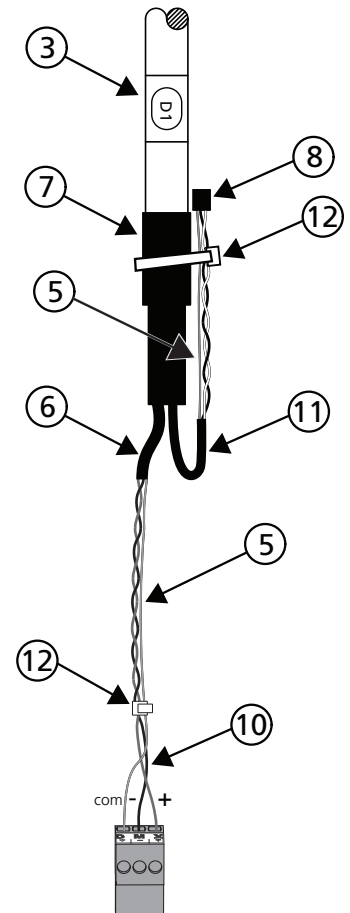
DMX Cable Preparation and Termination



Note: Not for use with Cat5, Cat5e, or Cat6 cable. When running DMX with these cable types, use the provided 3-position IDC connector and reference [DMX Cat5 Preparation and Termination on the facing page](#).

This instruction assumes preparation of Belden 9729 (or equivalent) cable for termination to the three-position screw terminal connector provided.

1. Install the cable so there is an 20 cm (8 in) service loop available at the rear of the gateway.
2. Strip 18 cm (7 in) off the outer jacket.
3. Label the cable with the data type and run designation. (DMX1, DMX2, etc.)
4. Strip the foil shielding from each wire set to within 6 mm (1/4 in) of the outer jacket.
5. Untwist the shield wire from each pair and apply a piece of 1.6 mm (1/16 in) clear heat shrink to each shield wire.
6. Twist each shield wire back onto its data pair, and then apply a 4 cm (1.5 in) piece of 0.5 cm (3/16 in) heat shrink all the way down each 3-wire set. Make sure to capture the foil shielding at the base.
7. Apply the 5 cm (2 in) piece of the 1 cm (3/8 in) heat shrink, centered on the end of the cable jacket and the bases of all the wires in the cable.
8. Cap the ends of the unused pair of wires with a 2.5 cm (1 in) piece of 0.5 cm (3/16 in) heat shrink centered over the end of the wires.
9. Strip 6 mm (1/4 in) of insulation from all of the wires to be used.
10. Maintain the wire pair twist as close to the screw terminal connector as possible and terminate the wires.
 - a. Insert the common (shield) wire into the terminal labeled "DMX -" and secure.
 - b. Insert the data - wire (typically black) into the terminal labeled "DMX -" and secure.
 - c. Insert the data + wire (typically red or white) into the terminal labeled "DMX +" and secure.
11. Bend back the unused set of wires and secure them to the cable with a wire tie.
12. Secure the terminated wire sets together with a wire tie 5 cm (2 in) from the connector.



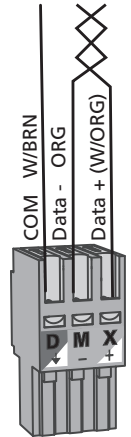
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DMX Cat5 Preparation and Termination

This instruction assumes use of Cat5 (or equivalent) cable for termination to the three-position Cat5 insulation displacement connector provided in the termination kit.

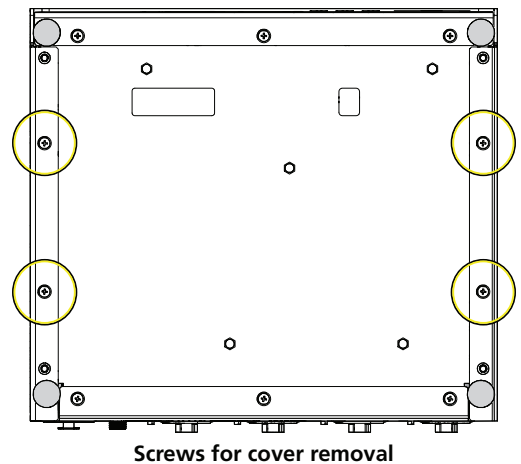
1. Follow normal Cat5 wire installation procedures to remove 5 cm (2 in) from the end of the cable jacket.
2. Separate the White/Brown, Orange, and White/Orange conductors from the cable. These conductors are required for DMX out.
3. Cut the remaining unused conductors from the cable flush to the cable jacket.
4. Label the cable with the data type and run designation (for example D1 for DMX run 1).
5. Twist the White/Orange and Orange conductors as close to the 3-position IDC as possible and insert the conductors through the labeled terminals as follows:
 - Common (White/Brown) to terminal 1
 - Data - (Orange) to terminal 2
 - Data + (White/Orange) to terminal 3
6. Fully depress each terminal, closing it onto the wire.
7. Use side-cutters to trim the excess wire from the connector.



Switching the Network Port

The Response Mk2 Four-Port Gateway portable version can have the Ethernet connector installed on the front or back of the unit. To switch the location, perform the following steps:

1. Using a Phillips screwdriver, remove the four screws on the bottom of the gateway and slide the cover off from front to back.
2. Using a Phillips screwdriver, remove the two screws from the nuts securing the blank plate to the gateway.
3. Remove the two screws securing the Ethernet connector to the gateway.
4. Move the Ethernet connector to the desired location on the gateway and secure with the two screws removed in step 3.
5. Secure the blank plate to the other location using the screws and nuts removed in step 2.
6. Slide the cover back on the gateway, from back to front and secure with the four screws you removed in step 1.

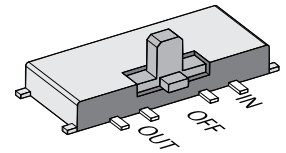


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DMX Termination

Termination is required for all DMX systems and belongs at the source (beginning) of a DMX line and at the last device physically connected in the line. A termination switch is located internally for each input/output and can be configured for DMX termination (IN), No termination (OFF) or RDM termination (OUT). By default, the DMX termination switch is set to the appropriate position based on the port type (Female XLR, RJ45 and terminal set to OUT and Male XLR set to IN).



If you need to change the termination setting for the portable gateway, perform the following steps:

1. Disconnect your gateway from all power supplies.
2. Using a Phillips screwdriver, remove the four screws on the bottom of the gateway and slide the cover off from front to back. The termination switches are aligned with their associated port and located about 45 mm (1 3/4 in) from the back of the gateway.
3. Set the termination switch to the appropriate configuration.

For the DIN rail version gateway, the termination switches are located above the terminal headers for each port.

About RDM

Remote Device Management (RDM, ANSI E1.20) is a protocol enhancement to DMX-512 that allows bidirectional communication between a lighting system controller and attached RDM-compliant responder devices over a standard DMX line. This protocol allows configuration, status monitoring, and management of these devices.

An RDM Controller is the device that initiates communication with one or more RDM Responder devices. Examples of responders are RDM-enabled edge devices such as color scrollers, dimmers, moving lights, and LED fixtures. Compliant DMX-512 and DMX-512-A devices (non-RDM devices) are fully functional when RDM is present. The Response Mk2 Gateway supports up to 256 total RDM devices across its ports using standard DMX system design practices.



Note: RDM is currently only supported on DMX Output ports.

RDM Basics

By default, RDM discovery is not enabled on the gateway. To enable RDM on the gateway, use the Net3 Concert software or the user interface on the front of the gateway. Please see the Concert online help files for more information on activating RDM on your gateways or see [Configure RDM Settings on page 10](#).

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Installation



Note: Installation must follow all national and local codes for electrical equipment.

The Four-Port gateway is available in a portable (tabletop or rack, pipe, or bar mounted) version and a DIN rail mounted version.

Portable

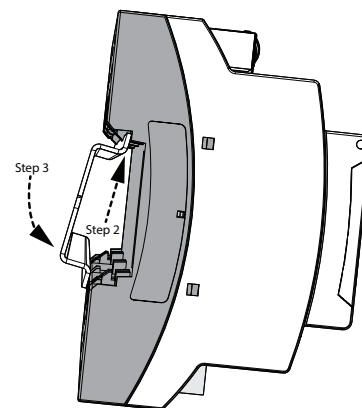
The portable version of the gateway is designed for easy setup and can be set on a tabletop or mounted on a pipe, rack, or bar. For information about mounting to a pipe, rack, or bar, refer to [Optional Accessories on the next page](#).

Provide power to the gateway using PoE or an external power supply (available separately). Attach one end of a ground wire to the back of the gateway and the other to a suitable grounding point.

DIN rail Mount

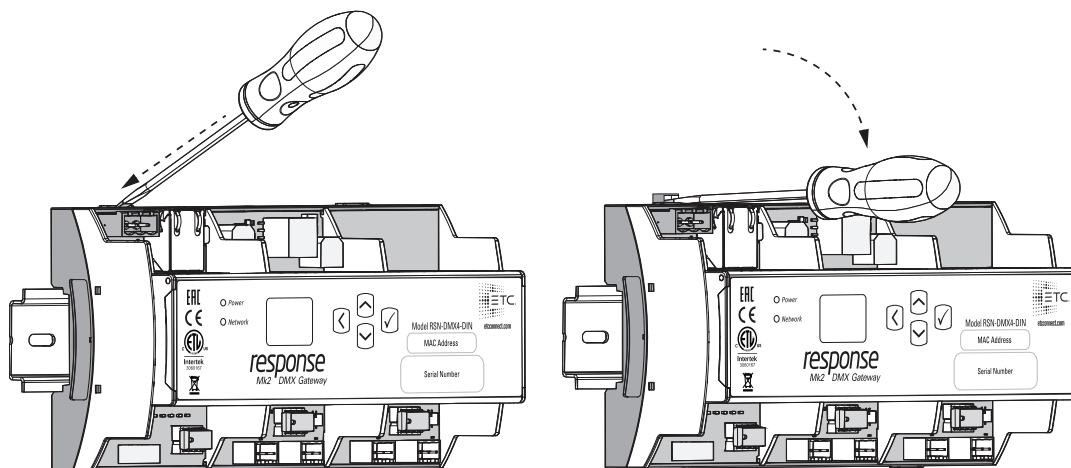
To install to the DIN rail, perform the following steps:

1. Ensure the section of DIN rail to be used is mounted securely according to the manufacturer's requirements.
2. Hook the top of the gateway over the upper DIN rail edge as shown,
3. Depress until the bottom clip on the gateway seats completely onto the DIN rail.



Removal from DIN Rail

To remove the gateway from the DIN rail, insert a small screwdriver into the orange retaining clips on the top of the gateway and push the screwdriver down to open the clips. Insert the screwdriver into the bottom retaining clips and push up to fully release the gateway from the DIN rail.



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Wiring Auxiliary Power

If you are using auxiliary power for your DIN rail gateway, consider the following specifications for the three position screw clamp terminal connector:

- Strip length: 6 mm (1/4 in)
- Torque: Max 0.5 Nm (4.4 lb-in)
- Wire size: 0.5 mm² - 4 mm² (22-12 AWG)

To wire the auxiliary power, perform the following steps:

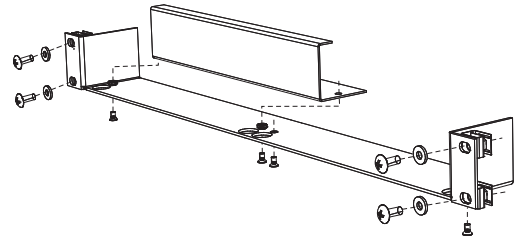
1. Run the positive/negative DC and ground wires to your gateway, leaving at least a 300 mm (12 in) tail.
2. Strip 6 mm (3/16 in) of insulation from the ends of the incoming wires.
3. Insert the positive wire into the left hand screw terminal and tighten the terminal screw.
4. Insert the negative wire into the middle terminal of the connector and tighten the terminal screw.
5. Insert the ground wire into the right hand screw terminal and tighten the terminal screw.
6. Install the connector to the port on the front of the gateway.

Optional Accessories

The following accessories are available for use with the portable Four-Port Gateway:

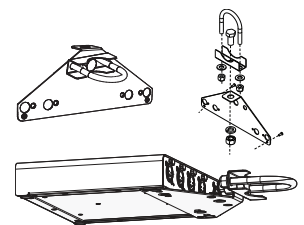
Rack Mount Kit

4260K1001: The Gateway Rack Mount kit is capable of holding up to two Four-Port gateways for mounting into a standard 19" rack enclosure. If you only need to mount one unit, a blanking plate is provided with the kit. This blanking plate can be installed on either side of the rack mount bracket.



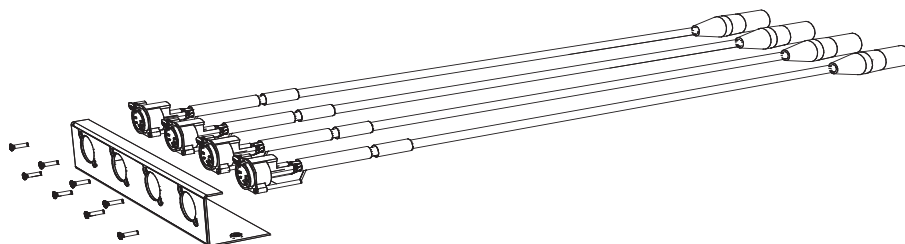
Hanging Hardware Kit

4260K1005: The Hanging Hardware Kit allows pipe mounting of a gateway in a variety of orientations. You can vary the way the U-bolt (or c-clamp) attaches to the bracket and the way the bracket mounts to the gateway. The bracket attaches to any edge on the bottom of your gateway.



DMX Out Front Panel Kit

4260K1002 - DMX out: This kit provides front panel access to the DMX connectors on a Four-Port Gateway when installed in an equipment rack. You must use these kits in combination with one Response Four-Port Gateway and a Rack Mount Kit (4260K1001), not included.



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Gateway User Interface and Configuration

The following sections provide information on basic tasks and configuration that you can perform from the user interface of the gateway. These tasks and additional configuration can all be performed using the Net3 Concert application, available from etcconnect.com.

Home Screen Information

The initial screen that your gateway displays is the Home screen. This screen provides the name of the gateway, the IP address and some basic port information. The following is an example of what a typical home screen might look like.

DMX Gateway
10.101.101.101
1: Output - Act
Univ 63999

Here, you'll see that the gateway name is DMX Gateway, IP address is 10.101.101.101 and port 1 is actively outputting DMX from universe 63999.

Pressing the **Up** and **Down** buttons from the Home screen cycles through the different ports of your gateway.

Pressing the **Enter** button from the Home screen brings up three selectable menu options (**About**, **Setup**, **Operations**) from which you can access other information or configuration options.

If attempting to access the **Setup** or **Operations** options displays **User Interface Locked**, your gateway UI has been locked from the Net3 Concert application. To unlock the UI, reference the Device Help for **Response Gateway Mk2** in Net3 Concert software.

View Device Information

To view information specific to your gateway, select the **About** menu option from the Home screen. From the About screen, you can select one of the following four options and then view the information specific to that option:

General	View Levels	Port Info	RDM Info
Ver: 1.0.0.12 FPGA: 1.0.0 MAC 00:c0:16:00:00:00	Port 1 Channel 1 State Active Level 127(50%)	Port 1 Mode Output U: 63999 Speed Max	Port 1 RDM Enabled Background Off Devices 128

Configure Network Settings

To configure network settings for your gateway, perform the following steps:

1. From the Home screen, select **Setup** > **Network**.
2. From the Mode screen, use the **Up** and **Down** buttons to select **Manual**, **Link Local** or **Automatic**.
 - **Automatic** attempts to automatically configure the IP Address, IP Subnet and IP Gateway for your device via DHCP.
 - If you select **Manual**, you must configure the IP Address, IP Subnet and IP Gateway screens and then select **OK** from the Apply/Reboot? screen.
 - If you select **Link Local**, the gateway self-assigns an IP address that is valid for the local network in the link-local address range. Select **OK** from the Apply/Reboot? screen.

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Configure Port Settings

To configure the ports of your gateway, perform the following steps:

1. From the Home screen, select **Setup > Ports**.
2. Use the **Enter** button to move from the menu options on the left to the values on the right side of the screen. Use the **Up** and **Down** buttons to change the values and press **Enter** again to confirm the change. Using these controls, configure the fields on screen:
 - **Port** - Select the port for which the following values apply:
 - **Mode** - Select the port mode. This can be set to Input, Output or Disabled.
 - **Universe** - Select the Universe of the port (1-63999).
 - **HLL** - Select whether Hold Last Look (HLL) is on or off. Selecting **On** enables Hold Last Look Forever. By default, the output holds for five minutes. Additional configuration options are available through Net3 Concert.

Configure RDM Settings

To configure RDM for your gateway, perform the following steps:

1. From the Home screen, select **Setup > RDM**.
2. Use the **Enter** button to move from the menu options on the left to the values on the right side of the screen. Use the **Up** and **Down** buttons to change the values and press **Enter** again to confirm the change. Using these controls, configure the fields on screen:
 - **Port** - Select the port for which the following values apply:
 - **RDM** - Select whether RDM is enabled or disabled on the port.
 - **Background** - Select whether background discovery and polling of RDM is on or off.

Modify Device Settings

To restore the factory defaults or upgrade the software for your device, select the **Operations** menu from the Home screen. From here, you can select the following options:

Restore Defaults - Select **OK?** from the Restore Defaults screen to restore all default values to your device. This removes all information that is configured for your gateway.

Restore Defaults
All data
will be lost
OK?

Update Software - Select **OK?** from the Update Software from server <#.#.#> screen if you need to update the software directly from the gateway.



Note: The recommended method of updating is through UpdaterAtor. Regardless of whether you update from UpdaterAtor or directly from the gateway, the device must be on the network.

Update Software
from server
10.101.50.60
OK?

If you do choose to update directly from the gateway, the bootloader runs and the latest software is downloaded from the server indicated by the <#.#.#> IP address on the Update Software screen. If you need to modify this IP address, you can configure it in the Net3 Concert application using the **Update Server** property.

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Test Port Output

You can test DMX outputs by selecting **Operations > Test Output** from the Home screen.



CAUTION: *Testing outputs drives all DMX levels to full. Use with caution in a show situation or when controlling high current devices.*

Port	1
State	-
Release All	

This screen allows you to test the output for any port on your gateway.

- **Port** - Press the **Enter** button to select and then use the **Up** and **Down** buttons to cycle through the ports of your gateway. Press **Enter** again to select the port.
- **State** - Press **Enter** to select and then use the **Up** and **Down** buttons to cycle through the test state options. If the port is an input, this field displays either Input or Disabled. If the port is an output, you can select either Released (--), Full or All Zero.
- **Release All** - Press the **Enter** button to release the test state on all ports. Once outputs are set into a test state they can be released from this menu, from the Net3 Concert application or by rebooting the gateway.



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