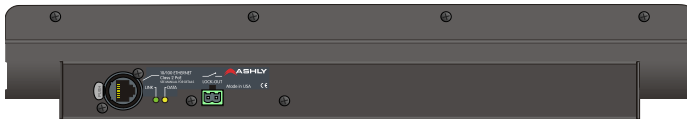




FR-8 and FR-16 Remote Control Operating Manual



Introduction

The FR-8 and FR-16 are Ethernet-based remote control devices for Ashly Ethernet compatible products with DSP capabilities, including the Ashly ne24.24M, NE two-channel amplifiers (with DSP), NE multichannel power amplifiers (with DSP), ne8800/4800 processors, and all Pema power amplifiers. The FR-8 has eight assignable faders with a master fader, and the FR-16 has 16 faders with a master fader. Each fader can be assigned to control an input or output DSP gain function, or assigned to control an output mixer. Fader scaling is available whereby the user can set a maximum and minimum value for each fader. The master fader provides an overall level control for selected faders. Buttons above each fader provide mute control with LED, can indicate signal level for that channel with user defined LED transition points, and will indicate communication failure with the target device. Each unit is powered by Power over Ethernet (PoE), or by an external PoE injector, and has automatic IP addressing. A clear window opening is provided above and below each fader to allow insertion of user defined labels which are available as a document template on the Ashly website. The FR-8 and FR-16 are designed to mount to a standard four or seven-gang US electrical wall box array, can be mounted to any flat surface using the cutout template found on page 9, or can be used as a desktop device.

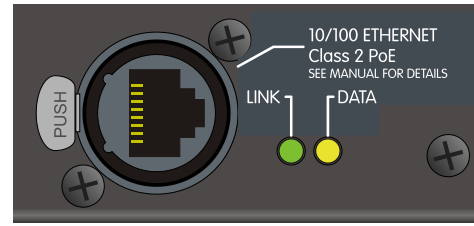
When the FR remote is first connected or powered on, it attempts to communicate with all devices it has been programmed to control, if any. Once communication with the targeted device(s) is established, it waits to transmit any fader or switch position data to the targeted device until a control is physically changed by the user, and then only the data for that control. This feature prevents sudden and unexpected changes when reconnecting or re-starting the FR remote, as well as when a new preset is recalled to the host device. When in doubt, make sure all faders are either in the correct position or fully down before reconnecting.

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1. Network requirements

Ethernet communication is made by wiring with standard Cat-5 cable terminated with an RJ-45 or Neutrik etherCON connector through an Ethernet network router, switch, hub, or patch panel to a PC running Protea NE Software v5.10 or higher. Maximum cable distance is 100 meters (328 ft) from the nearest router, hub, or switch. Ashly networked devices will auto detect their Ethernet network connection, and adapt (Auto-MDIX) to either a straight through pin to pin, or crossover Ethernet cable. Note that the push release tab on the back panel connector (as shown) is meant only for etherCON connectors. Standard RJ-45 connectors have their own built-in release tab.



Power over Ethernet - FR remote controllers are powered using a class 2 IEEE 802.3af Power over Ethernet (PoE) switch, hub, or in-line PoE injector. Power consumption is two watts maximum.

IP Address - There is no need to assign an IP address to FR-8/16 used with a network router. The router or Link Local Addressing will assign IP addresses to each product automatically. When a router is not available, most current NE products and remotes have the capability to assign their own IP address based on Link Local Addressing. This allows the device to operate without the need to set up static IP address. If the only option is to use an Ethernet switch instead of a router, and communications problems remain which cannot be solved with the use of the Link Local standard, each device must have a static IP address assigned from within Protea NE software. This is done by selecting “Manual Configuration” in the Network Properties tab of each device, where the system/network administrator must assign each product its own unique static IP address, each with the appropriate sub-net if applicable.

Firewalls - If Protea NE software does not detect the FR-8/16, the firewall in the host PC should be turned off, as firewalls may block the device response to the controlling PC when network communication is attempted. The current PC firewall status is found by clicking on the Windows Start button, then Control Panel, then double clicking on the security shield where the firewall can then be disabled. Once communications with the device is established, the firewall can be enabled again, but if there continues to be communications problems then disable the firewall.

Wi-Fi and LAN – For the initial device auto-configuration process, any secondary Wi-Fi connection should also be disabled, and the LAN (Local Area Network) connection must be enabled on the PC. Secondary network connections may confuse the auto device discovery process. Go to the Windows Control Panel, then Network Connections, to disable any secondary network connections. Once communications with the device is established, secondary network connections can be enabled again, unless a communications problem remains with the FR-8/16, in which case the secondary network connections should remain disabled.

Connecting Device(s) - Connect an Ethernet cable with PoE (Power over Ethernet) to the FR-8/16 unit. If a successful Ethernet connection has been made, a solid green LED (Link) lights up near the device Ethernet port. If there is no green LED showing, there is either a problem with the cable or the network source, which must be addressed before proceeding further. All RJ-45 Ethernet ports flash green when active, so backtrack through any other cables, routers, or switches to find the problem. The flashing yellow LED (Data) indicates that data is flowing to or from the device.

Communication Failure Indicator - If a fader has been assigned to control a specific device function but has somehow lost contact with that device, the LED button above that fader will continually flash to indicate communication has been lost.

2. Mechanical requirements

The FR-8 and FR-16 are designed to be mounted to an electrical wall box or modular box array, to any flat surface using the provided cutout, or as a freestanding desktop controller.

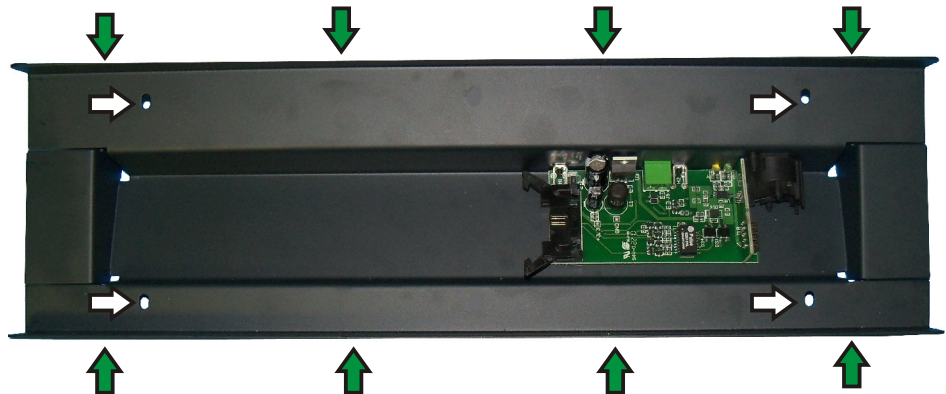
The FR-16 will mount to a modular 7-gang US electrical box, with a minimum box depth of 2.25". The **FR-8 mounts to a 4-gang electrical box**. For mounting to a wall or flat surface without using a wall box, a mechanical drawing and cutout pattern are provided in this manual on pages 9.

Fader and switch function labels can be created using the document template found on the Ashly website and referenced in this manual on page 10.

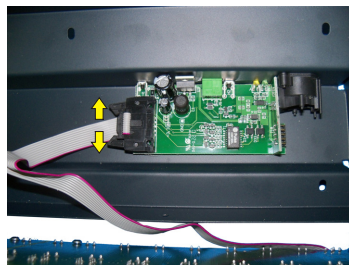
Follow these instructions for mounting to an electrical wall box or surface:

***Note: Remove power before mounting.** Avoid static shock disruptions to this or other connected devices by mounting to an earth-grounded metal wall box or other earth grounded point. This prevents static discharge from flowing through the data lines.*

- ➡ 1) Remove Front Panel Using These Eight (four on FR-8) Screws.
- 2) Insert Fader and Switch Labels Beneath Front Panel Overlay.
- 3) Remove Ribbon Cable as Shown Below.
- 4) Prepare Electrical Box or Panel Cutout, and Install Wiring.
- 5) Plug In Ethernet Cable and Lockout Wiring Before Mounting.



- ➡ 6) Fasten the Rear Panel to Wall, Wall Box, or Flat surface Using These Four Holes.
- 7) Re-Insert Ribbon Cable As Shown and Replace Front Panel.



(2) Remove ribbon cable by pushing apart the two cable ejector levers. Do NOT pull on ribbon cable!



(7) Re-Insert ribbon cable by pushing in the cable header back into socket. Ejector pins will automatically snap back to locked position.

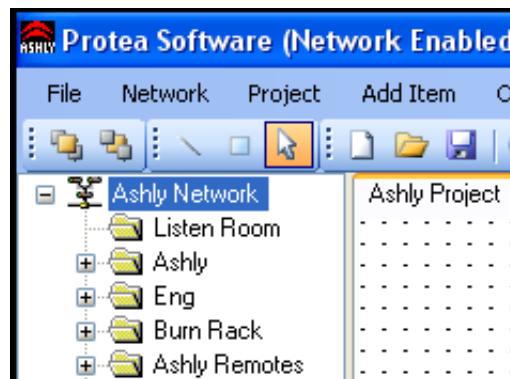
3. FR Firmware Update (Flash Reprogram)

To view the current FR firmware revision, click on it's control surface Network Properties tab and look under Hardware Configuration. If a newer firmware update is available on the Ashly website, the user may download it and run the Flash Reprogram procedure found in the FR Device Options menu. If the control surface is somehow unable to communicate with the FR device due to a corrupt internal program, run flash reprogram from the main Protea^{ne} window under Flash Programmer/Launch Flash Reprogram. This requires the FR device MAC address, found on the back panel. When the FR device is put into flash reprogram mode, the highest channel LED turns green and Master LED turns amber. All control function is suspended until reprogramming is completed

4. Protea NE Software

Protea NE Software version 5.10 or greater is required for the FR Remotes. Load it from the supplied CD or Ashly website to a PC running Microsoft® Windows 7/Vista/XP, 32 & 64 bit.

Network Tree - Start Protea NE Software and the FR-8/16 should appear in the network tree in the "Ashly Remotes" folder. From the factory, it should appear with the name "FR-8 (or 16) Fader Remote" in green. If it doesn't appear, click the "Scan For Devices" button under the network tree. All devices continuously broadcast their availability to the software. All currently connected and active products are highlighted in green, while products which have been formerly connected but are currently off-line or unavailable show up in red. To clear the network tree of all unavailable (red) items, right click the top level item (Ashly Network) and select <Clear Inactive Devices In All Groups>.

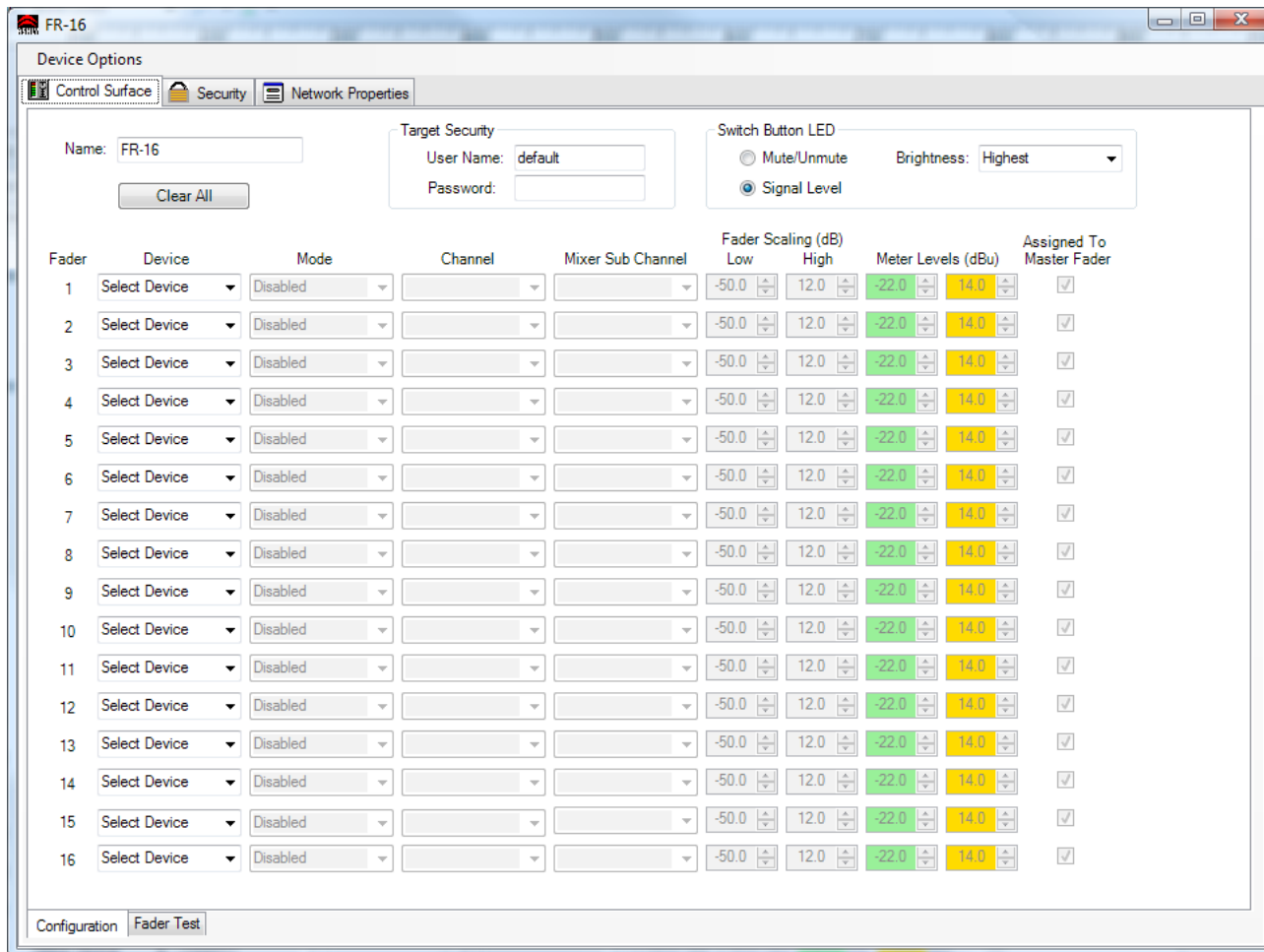


Project Canvas - To configure the FR-8/16, double-click its icon in the network tree, which brings up that FR-8/16's control surface. Alternatively, drag the icon from the network tree onto the project canvas and double-click it there. Drawing elements such as lines, rectangles, text, and image files can be added to the canvas to complete a visual control screen displaying all Ashly devices under control, which is then saved as a project file. Drawing elements are found as icons above the canvas. To add text or image files, right click over empty canvas. The saved project file contains all devices, settings, and drawing elements shown on the project canvas.

Once an image has been placed on the canvas, it must be manually deleted if that device is no longer available to the software. Scanning for devices does not automatically remove images which may have been installed at one time but are now off line. To clear the canvas of *all* devices and drawn elements click <File - New>.

Design Mode - *Design Mode must be enabled to work with devices or drawing elements in the project canvas.* Right-click on canvas to enable Design Mode. This allows placed objects to be moved around, while unchecking Design Mode locks objects in place and prevents the addition of other objects or devices. *Further help is available in Protea NE software by navigating through the online help menu.*

4.1 Software - FR Control Surface Features



Within the main FR-8 or FR-16 control surface, there are two tabs at the bottom labeled “Configuration” and “Fader Test”. All device targeting and programming of faders happens in the configuration tab. There are no user controls in the fader test tab, it is meant only for visual reference, indicating current FR fader and switch position as well as front panel lockout status.

Global Features: Global features affect the entire FR device and include the following:

Device Name: Up to 20 characters can be used for the device name. The name appears in the device menu tree in the Protea^{ne} Software startup screen, as well as the main FR device screen.

Target Security: When target security is left unspecified or in its default state (user name = “default” with no password), the FR device will have full access to all available control parameters on the targeted DSP device. However, if an administrator wishes to limit control parameter access from an FR controller to selected target devices on the network, they must enter the *same* user name and password on *both* the FR-8/16 target security fields and on the specified target’s device users section, under the general security tab. Think of it as creating a login requirement for each device before they can be assigned to work together, up to the level of parameter access granted by the target device. Note that even though “Default” and “Admin” are reserved system user names, any changes to these reserved FR name *or* password fields requires a corresponding entry on the target device. Note also that target security is completely independent from the general FR security section described in section 5, and that user names and passwords implemented there have no impact to or from those used for target security.

Switch Button LED Function: All switch LEDs normally indicate mute (red) or enable (green) for each fader, but can be alternately set to indicate signal level. When set for signal level mode, the LEDs use green and amber to indicate the post-fader signal level in dBu at the point of gain control for each fader. Every fader's LED transition points can be individually set.

LED Brightness: The overall brightness of FR-8 and FR-16 LEDs can be adjusted to one of four levels to match ambient room lighting. The factory default is for the brightest setting.

Clear All: This button clears the control parameters of all faders in the configuration window and returns them to factory default settings. It also clears the FR device target security user name and password. Note: individual fader parameters can be cleared by clicking on any control for that fader and then clicking the pop-up "Clear Fader" button associated with that fader.

Fader Control Features: Individual fader control parameters include assignment of the targeted device, fader mode, device channel, mixer sub-channel (if in mixer mode), fader scaling, signal LED breakpoints (if the switch button LEDs are selected for signal level mode), and assign to master fader. An individual fader clear function button appears when editing any control point in a fader row. This returns that fader's parameters back to default settings.

Fader: The total number of faders available on the FR remote are shown here, either 8 or 16.

Device: Each fader can be programmed to control one exclusive NE device available in the drop down menu, or to be inactive.

Mode: Once a target DSP device has been selected, the fader can operate in one of two modes, Mixer Mode or I/O Level Control Mode.

Mixer Mode - In mixer mode, the fader is first assigned to the target device's output channel mixer, then assigned to a mixer sub channel, whereby the fader acts as a level control corresponding directly to one of that mixer's input sources. The mixer sub channel feature is only available in mixer mode.

I/O Level Control Mode - I/O level control mode offers individual assignment of faders to single input or output channel DSP gain controls on the targeted device, whereby the fader works along with the DSP gain function. **For controlling a stereo signal**, one FR fader can control more than one device channel by linking input or output gain functions within the target device.

Fader Scaling - The gain range for target DSP gain stages is -50dB to +12dB. By default, the FR fader will use the full range of the DSP gain function under its control. An upper or lower fader limit can be assigned to prevent insufficient or excessive audio level.

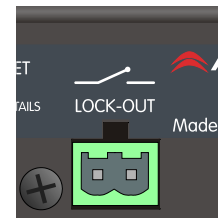
LED Level Transition Points - When the switch button LEDs are set to signal level mode, the two thresholds at which point the green signal LED first turns on and then transitions from green to amber can be defined by the user. Factory default transition points are -22dBu for green and +14dBu for amber.

Master Fader Assignment - Faders can be individually selected for or removed from control by the master fader. The factory default is for all faders to be assigned to the master fader. If a fader appears to be functioning but has no effect on level, check that the master fader is not muted or down.

5. Other Features

Front Panel Lock-Out

When unintended or unauthorized changes to the faders or buttons must be prevented, a keyed switch or contact closure can be connected to this Euro-block connector. When the two pins are unconnected, the front panel operates normally. When connected via a switch or contact closure, physical changes on the front panel are locked out and ignored by software. *Note: Before unlocking the front panel, it is suggested that all faders first be placed fully down or at pre-determined marked levels to avoid excess volume.* Lock-out status is indicated in software in the main control surface fader test tab window.



Factory Reset

If it is necessary to restore the FR remote to its factory default settings, follow these steps:

1. Remove power from the FR-8/16.
2. Press and hold down buttons 5, 6, 7, 8 on the FR-8, or buttons 9, 10, 11, 12 on the FR-16.
3. Apply power to the FR-8/16.
4. Release the held buttons after all the buttons glow amber.

Security

In addition to the hardware lockout, there are multiple user/multiple levels of FR-8 and FR-16 software protection assignable within the security tab. The security data is stored within the FR remote device itself, not Protea NE Software. *Passwords are case sensitive.* Be sure to write down the password and store in a convenient place for future reference. Note that device security is different than the target security, and is located next to the main control surface configuration window tab.

Device Options

Control Surface | **Security** | Network Properties

Current User

User Name: default

Access Level: Full Access

☐ Automatically log in as current user

Log In

User Name

☐

☐ admin

☒ default

Log In

Device Users

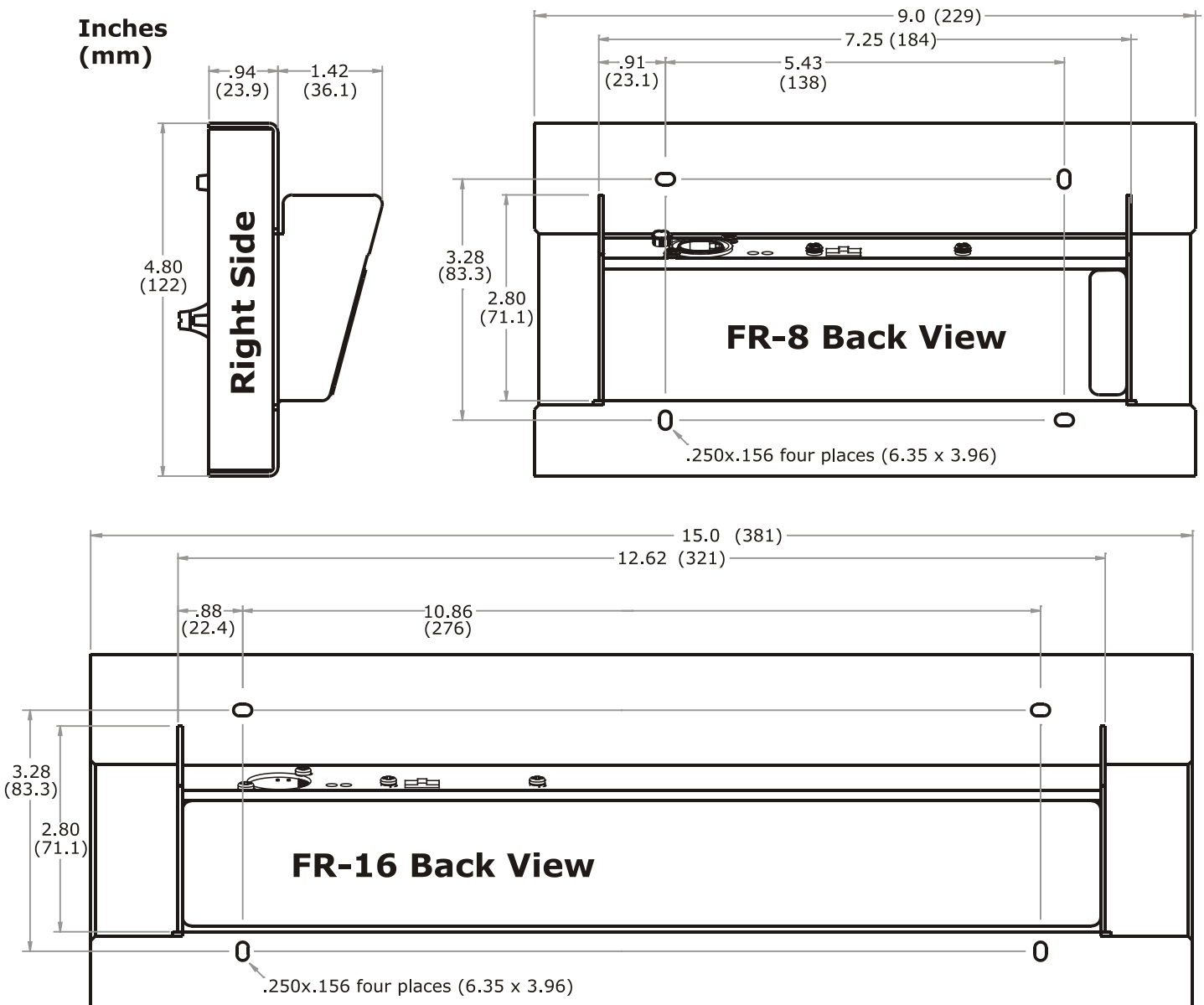
User Name	Password	Access Level
<input type="text"/>	<input type="text"/>	Full Access
<input type="text"/>	<input type="text"/>	Full Access
<input type="text"/>	<input type="text"/>	Full Access
<input type="text"/>	<input type="text"/>	Full Access
<input type="text"/>	<input type="text"/>	Full Access
admin	<input type="text"/>	Full Access
default	<input type="text"/>	Full Access

☐ Show passwords

Using Multiple Remote Controllers

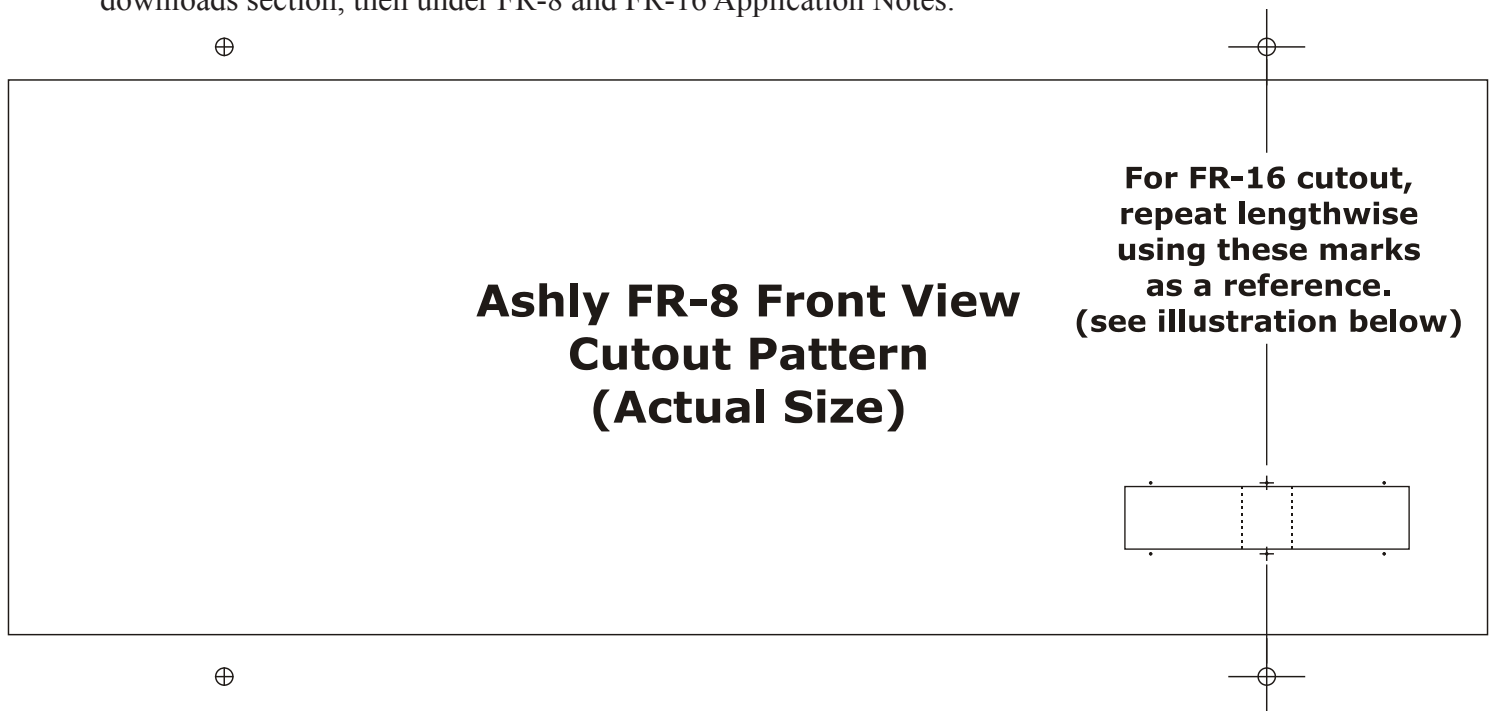
Protea^{ne} software allows multiple NE remote controllers the ability to target the same DSP device. For example, an Ashly neWR-5 could target the same DSP device as an FR-16, if a user wanted to add remote preset or logic control to the remote gain control offered by the FR-16. Note that in this case, *both* the FR remote and the neWR-5 remote could conceivably be configured to control the same gain function on the target DSP device. Ashly does not recommend this practice. However if it is deemed necessary to have two remote control devices controlling the same function, know that *the last remote device action will always take effect*, regardless of which device it is and regardless of the position or setting of the other remote device(s). This is true for any combination of Ashly NE remote control devices targeting the same device and function. The administrator can avoid the possibility of redundant control situations like this by using the target security feature to limit control access to DSP devices.

6. FR-8 and FR-16 Dimensions



7. Panel Mount Cutout Pattern

Note: This template is also available as a pdf download from the Ashly website. Look in the downloads section, then under FR-8 and FR-16 Application Notes.



8. Function Label Template

An editable document template is available on the Ashly website for making custom labels. Text, text color, and background color can be individually defined for each label and inserted behind the front panel overlay windows as shown below.

Note: The front panel must be removed for label insertion. See instructions in section 2.

FR-8/16 Label Insertion

1) Download the Microsoft® Word Document "FR-8-16 Label Template.doc" From Ashly:
<http://www.ashly.com/downloads.html>

Switch Button
↓
YOUR TEXT
↓ ↓

Inserted Label
↓

FR-8

POWER

YOUR TEXT

MASTER

YOUR TEXT

2) Edit, Print, and Cut Out Label

3) Fold Under Tab

4) Insert Label Behind Overlay

5) Inserted Label

9. FR-8 and FR-16 Troubleshooting Tips:

1) I can't find the target device I want to control - Is the target device plugged into the network? Is it turned on? Are there multiple target devices of the same model? Rename individual devices with a unique identifier. For an immediate update of available devices, click <Scan for Devices> at the bottom of the main Protea^{ne} network tree.

2) How do I get rid of extra target devices listed that do not exist? The FR target device drop down listing is taken directly from the main Protea^{ne} network tree. Devices listed in the network tree appear green if they are live units, and red if they were once available but are now offline. To clear all inactive devices from the menu tree, right click on <Ashly Networks> at the top of the menu tree and click <Clear Inactive Devices From All Groups>.

3) Even though my user name is "default" or "admin", I don't have access to the target device - Is there additional text in the user name field? Is the password field blank? Any password entry, even on the reserved user-names of "default" or "admin" must have a corresponding match in the target devices.

4) What do the various LED indicators and blinking patterns mean?

Mute/Unmute - If a fader is assigned to a target device function and the switch button LEDs are set to Mute/Unmute mode, they will be solid red when muted and solid green when unmuted.

Signal Level - If the switch button LEDs are set to signal level mode, they will indicate signal level with green and amber, but will still turn solid red if the mute button is pressed. If the fader is not assigned a function, it will not indicate mute/unmute or signal level.

Factory Reset - All LEDs glow amber during factory reset until held buttons are released.

Communications failure - If a fader was assigned to a target device, but that target device becomes unavailable, the fader LED will continuously flash red to indicate that communication has been lost for that fader. See if the target device is powered on and networked.

Flash Reprogram - In flash reprogram mode, all controls are disabled and the highest fader LED glows solid green while the master fader LED glows amber. Once reprogramming begins, red LEDs blink to indicate the new program is being loaded. Upon completion, all LEDs either turn off or revert to their user defined status, and the FR device is ready for use. Unlike factory reset, flash reprogram does not delete or overwrite user settings on the FR device.

5) Why won't the FR device let me flash reprogram it? If the firmware program in the FR device becomes corrupt for some unexpected reason, you will not be able to flash reprogram it from the FR control surface in Protea^{ne} software. Rather, you must use the main Protea^{ne} flash reprogrammer as follows:

- 1) Click on <Flash Reprogrammer> in the main Protea^{ne} software window
- 2) Click <Launch Flash Reprogrammer>
- 3) In the Select Device window, click <Skip This Step>
- 4) Select the latest FR firmware file from website download or CD
- 5) Enter MAC address found on FR device back panel
- 6) Enter IP address of 255.255.255.255
- 7) Finally, click <Flash Reprogram>

Ashly Audio Inc. LIMITED WARRANTY (USA ONLY)

(Other countries please contact your respective distributor or dealer.)

For units purchased in the USA, warranty service for this unit shall be provided by ASHLY AUDIO, INC. in accordance with the following warranty statement.

ASHLY AUDIO, INC. warrants to the owner of this product that it will be free from defects in workmanship and materials for a period of FIVE years from the original-date-of-purchase. ASHLY AUDIO INC. will without charge, repair or replace at its discretion, any defective product or component parts upon prepaid delivery of the product to the ASHLY AUDIO, INC. factory service department, accompanied with a proof of original-date-of-purchase in the form of a valid sales receipt. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

EXCLUSIONS: This warranty does not apply in the event of misuse, neglect, or as a result of unauthorized alterations or repairs made to the product. This warranty is void if the serial number is altered, defaced, or removed. ASHLY AUDIO, INC. reserves the right to make changes in design, or make additions to, or improvements upon, this product without any obligation to install the same on products previously manufactured.

Any implied warranties, which may arise under the operation of state law, shall be effective only for FIVE years from the original-date-of-purchase of the product. ASHLY AUDIO, INC. shall be obligated to only correct defects in the product itself. ASHLY AUDIO, INC. is not liable for any damage or injury, which may result from, or be incidental to, or a consequence of, such defects. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion, or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

OBTAINING WARRANTY SERVICE:

For warranty service in the United States, please follow this procedure:

1) Return the product to ASHLY AUDIO, INC. freight prepaid, with a written statement describing the defect and application that the product is used in. ASHLY AUDIO, INC. will examine the product and perform any necessary service, including replacement of defective parts, at no further cost to you.

2) Ship your product to:

ASHLY AUDIO, INC.
Attention: Service Department
847 Holt Road
Webster, NY 14580-9103

Ashly Audio Inc 847 Holt Rd Webster NY 14580
585-872-0010 toll free 800-828-6308 fax 585-872-0739 www.ashly.com

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