FOR.A®
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

OPERATION MANUAL

MFR-4000/6000

Web-based Control

Version 1.04 - Higher

FOR-A COMPANY LIMITED

Edition Revision History

Ver.	Rev.	Date	Description	Section/Page
1.00	-	2017/08/23	First Edition	
1.01	-	2017/11/02	Supports MFR-2SDIGB/2SDOGB Supports SNMP	5-4 11
1.02	-	2018/08/29	SNTP Settings added GPI Pin Assign - Pin No. Item added RU Settings - Supports bitmap image - “Page” added to Default - Wrap Around ON/OFF added	4-7 4-11 6-3
1.03	-	2019/03/20	MFR-6000 supported	Throughout
1.04	-	2019/04/19	Description errors corrected.	Throughout

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1. Prior to Starting

MFR-4000/6000 Web-based Control is a web-based application that gives you free access to MFR-4000/6000 series control settings such as System Settings, Input and Output Settings, Tally Settings, Remote Control Button Assignments, and Crosspoint Switch Settings. Without the need to install software, the system can be controlled using the web browser of a PC connected to the main unit. Settings can be input using MFR-4000/6000 Web-based Control, and setting operations can be easily performed using the remote control panel buttons.

Font Convention

Text in bold (such as **System Settings**) indicates important text, application **pages** or **buttons** that appear on the screen.

2. Starting Web-based Control

2-1. System Requirements

To install MFR-4000/6000 Web-based Control, your PC must meet the following requirements.

OS	Windows® 7 Professional SP1 (32-bit) or later
Web browser	Windows® Internet Explorer 11
CPU	Intel® Core™ 2 Duo processor, 2 GHz or faster
Memory	2GB or more
Display	1280 x 1024 pixel resolution or better Must be capable of 24-bit color display
Network port	100BASE-TX/1000BASE-T, at least one port
Network cable	100BASE-TX: Category 5 or better 1000BASE-T: Category 6 or Enhanced category 5

IMPORTANT

Note that only a single simultaneous connection is allowed for MFR Web-based Control.

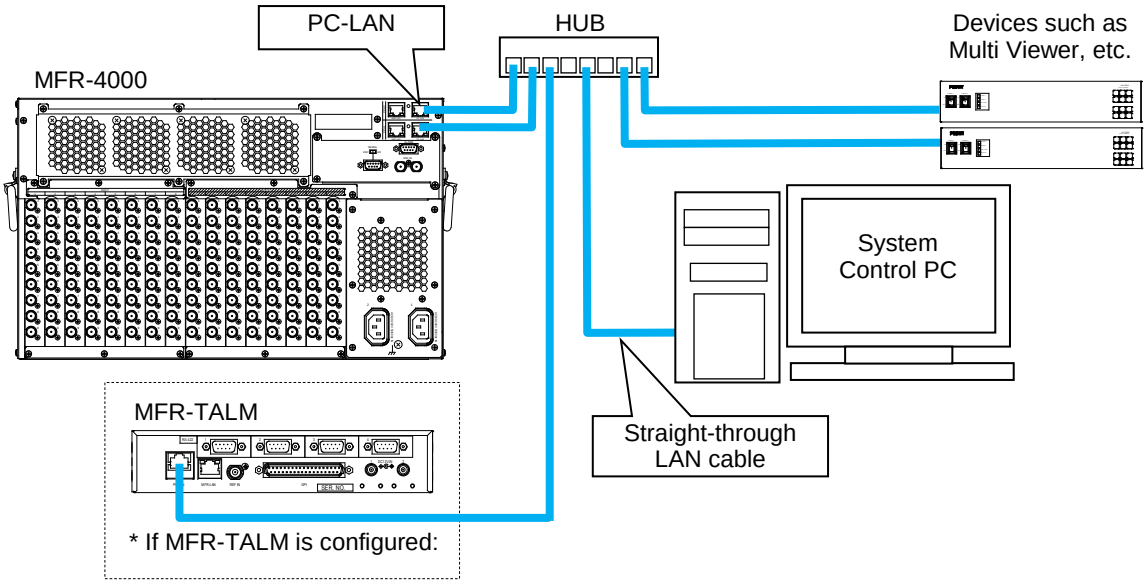
2-2. Connection

There are two ways to connect the MFR series main unit to a PC.

◆ **Connecting the main unit to a PC through a hub**
Connecting to PC LAN. (The figure as shown below is an example using MFR-4000.)

NOTE

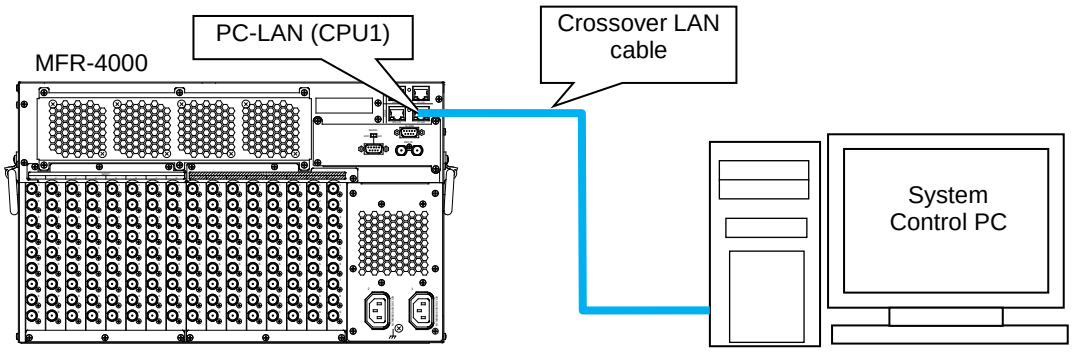
Use a straight-through LAN cable.



◆ **Connecting the main unit directly to a PC**
Connecting to PC LAN. (The figure as shown below is an example using MFR-4000.)

NOTE

Use a crossover LAN cable.
When a redundant CPU is installed into the main unit, the unit is unable to directly connect to a PC.



2-3. PC Network Settings

MFR series factory default port settings are as follows.

◆ **MFR-4000/6000**

IP address	MFR-LAN	192.168.1.10 (CPU1) 192.168.1.11 (CPU2) (with an optional MFR-CPUA installed)
	PC-LAN	192.168.0.12 (CPU1) 192.168.0.13 (CPU2) (with an optional MFR-CPUA installed)
Subnet mask		255.255.255.0
Default gateway		0.0.0.0

◆ **MFR-TALM**

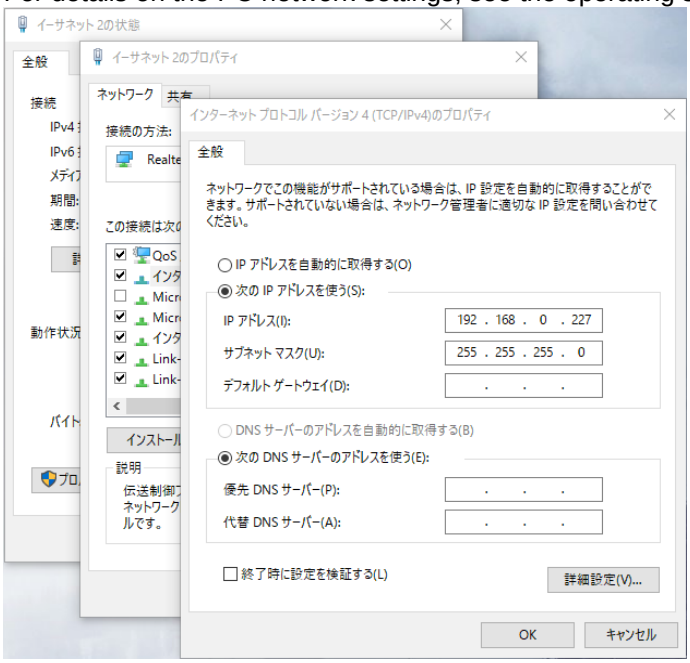
IP address	MFR-LAN	192.168.1.60
	PC-LAN	192.168.1.62
Subnet mask		255.255.255.0

IMPORTANT

Make sure the PC's IP addresses and above IP addresses do not conflict. Apply separate switching hubs to MFR-LAN and PC-LAN network respectively. Or apply VLAN to separate networks. Make sure that the MFR-LAN and PC-LAN network addresses do not conflict.

◆ **PC network settings**

For details on the PC network settings, see the operating system operation manual.

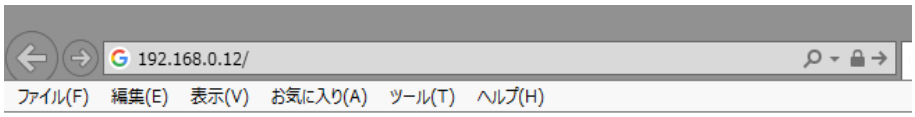


2-4. Opening the Web-based Control Screen

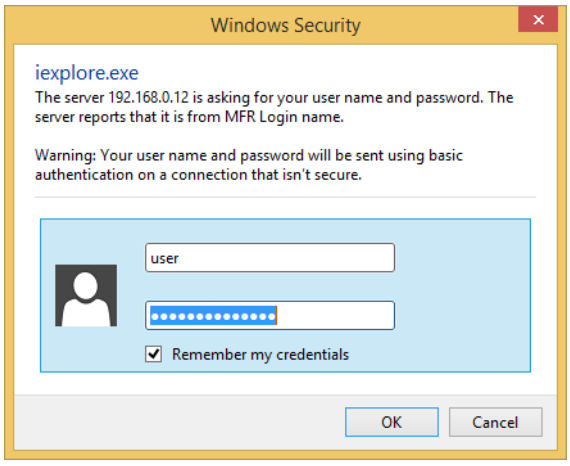
NOTE

This product has been tested with Internet Explorer 11.
XGA (1024 x 768) screen resolution is recommended.
If the main unit is rebooted, the web browser should also be restarted.

1. Open a browser (for example, Internet Explorer) and connect to the LAN (to PC) port address.
   The MFR **Main Unit** address (default) is “http://192.168.0.**12**.”
   The **MFR-TALM** Tally Manager address (default) is “http://192.168.1.**62**.”



2. Once the page is accessed, enter the password. Enter the username and password as follows:
   Username: user
   Password: password (factory default setting)



IMPORTANT

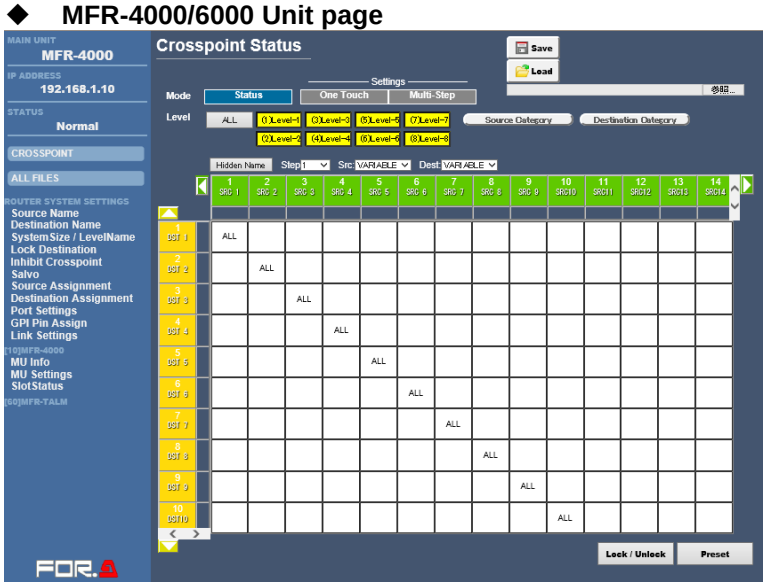
The MFR unit IP addresses, login user name and password described above are default settings. If any of the settings have been changed, use the new ones.

To change settings, see Sec. 5-2. "MU Settings" for the Main unit, and Sec. 9-3-1. "Network Settings"- PC-LAN for the MFR-TALM unit, respectively.

Note that the same or different user name and password can be used to log into the Main unit and MFR-TALM.

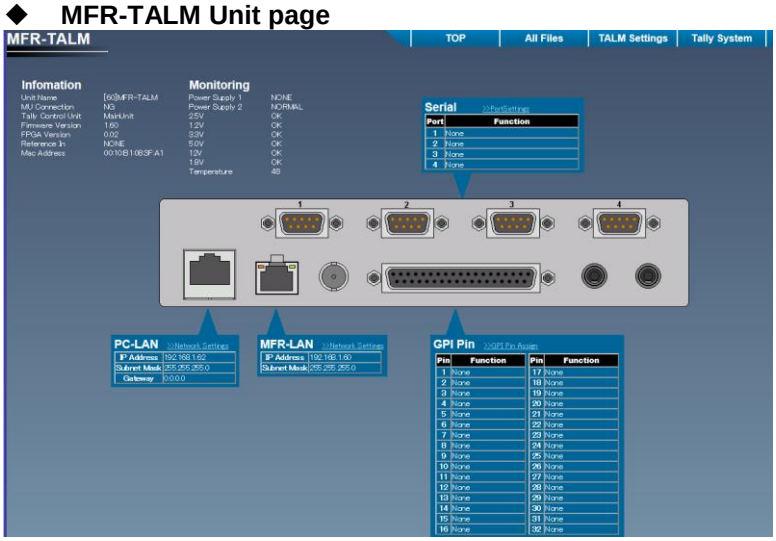
3. The web page as shown below appears after the correct username and password have been entered.

◆ MFR-4000/6000 Unit page



For details on Main Unit settings, see Sec. 3. "MFR Main Unit Page Configuration" to Sec. 5. "Main Unit Settings."

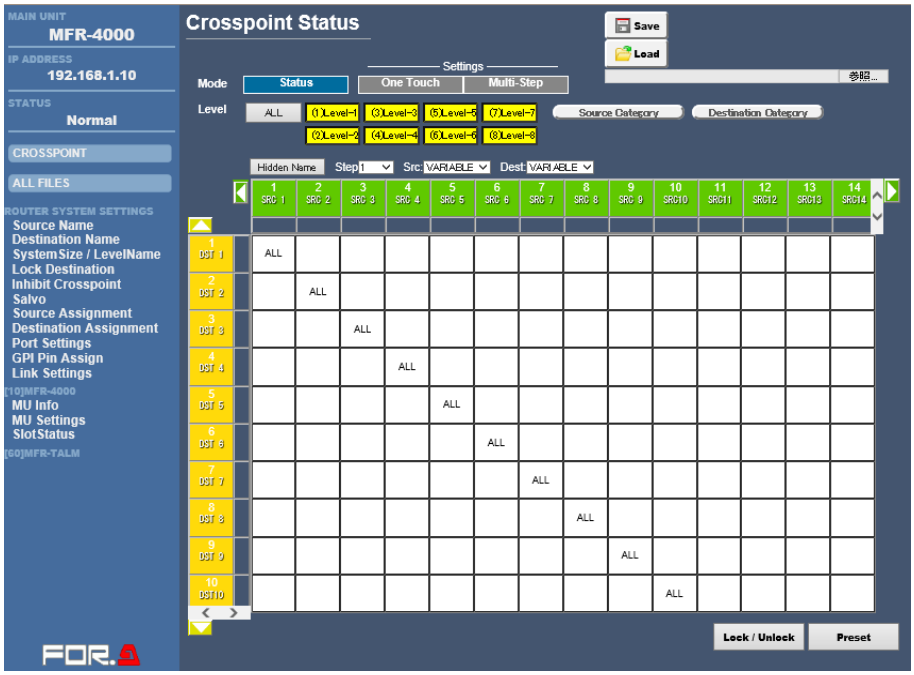
◆ MFR-TALM Unit page



For details on Tally Manager settings, see Sec. 9. "MFR-TALM Settings."

3. Main Unit Page Configuration

On the MFR series main unit Web-based Control screen, there are two buttons: **CROSSPOINT** and **ALL FILES**, and a **ROUTER SYSTEM SETTINGS** tree in the left pane.



CROSSPOINT

Displays each unit state, crosspoint information and the Crosspoint Settings page. See Sec. 7. “CROSSPOINT.”

ALL FILES

Displays a page in which all settings in the router system can be saved and loaded as a whole.

Navigation Tree

Allows you to open the **ROUTER SYSTEM SETTINGS** page, and other device setting pages. Click an item to the left to expand the tree. Clicking the item again collapses the tree. For details on each screen, see Sec. 4. “Router System Settings” to Sec. 6. “MFR-GPI Settings”.

Navigation trees can be expanded to that shown in the table below.

Navigation Tree	Refer To
ROUTER SYSTEM SETTINGS	4
Source Name	4-1
Destination Name	4-2
SystemSize / LevelName	4-3
Lock Destination	4-4
Inhibit Crosspoint	4-5
Salvo	4-6
SNMP/SNTP Settings	4-7
Source Assignment	4-8
Destination Assignment	4-9
Port Settings	4-10
GPI Pin Assign	4-11
Link Settings	4-12

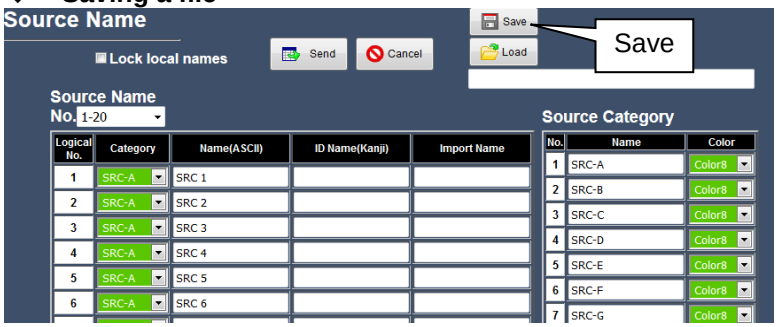
Navigation Tree	Refer To
Build Settings	4-13
[**] MFR-4000/6000	5
MU Info	5-1
MU Settings	5-2
Slot Status	5-3
Gearbox Settings	5-4
[**]MFR-16RU/40RU/16RUD/16RUW/32RUW/64RUW/18RU//18RUA/39RU /39RUA/16RUTA/8RUA	MFR-RU Series Operation Manual
Assign Function	
RU Info	
RU Settings	
Src/Dest-Inhibit	
Salvo	
[**] MFR-GPI	6
GPI Info	6-1
GPI Setting	6-2

The **Save** and **Load** icon buttons along the upper right of the **Crosspoint Setting** page, and other device setting pages, allow you to save and load settings to and from a file. See Sec. 3-1. “Saving and Loading a File,” next.

3-1. Saving and Loading a File

Web-based Control settings can be saved to a file, and the saved file can be loaded into Web-based Control.

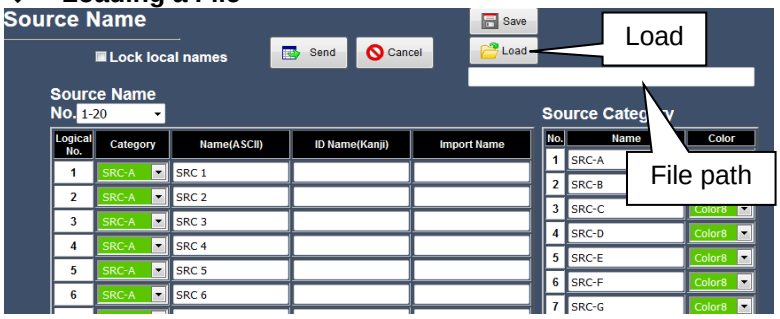
◆ **Saving a file**



Clicking the **Save** button while the settings screen is open starts downloading the setting file.

Depending on your browser, a confirmation dialog box appears when downloading. In such case, choose the location to save the file, and save.

◆ **Loading a File**



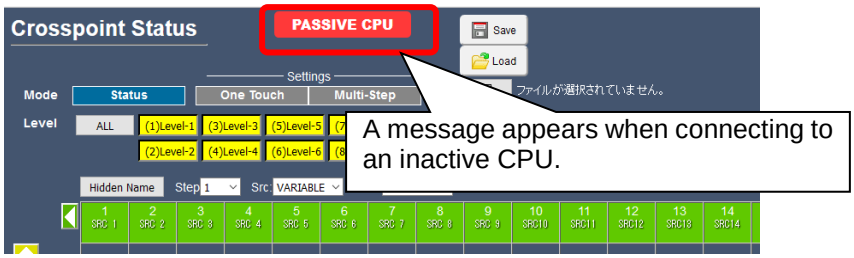
Enter the file path in the field and click the **Load** button to load the saved settings.
Note that a file must be loaded from the page in which the file was saved.
(Example: Destination Name File is unable to be loaded from a Source Name page.)

3-2. Redundant Processor

A secondary CPU can be installed on an MFR-4000/6000 to configure CPU redundancy. An active CPU controls the system and the other CPU monitors the system. The CPU usage state (which CPU is active) can be checked by monitoring through Web-based Control.

* Note that CPU change-over takes about 30 seconds from when an error condition occurs.

MFR-4000/6000 main units have two LAN ports for PC connection. Make sure to open Web-based Control via the LAN port of an active CPU. Otherwise, the message as shown in the figure below appears and the settings are not applied.
Settings in the **Network Settings** and **SNMP Settings** page, however, are possible on an inactive CPU.



IMPORTANT

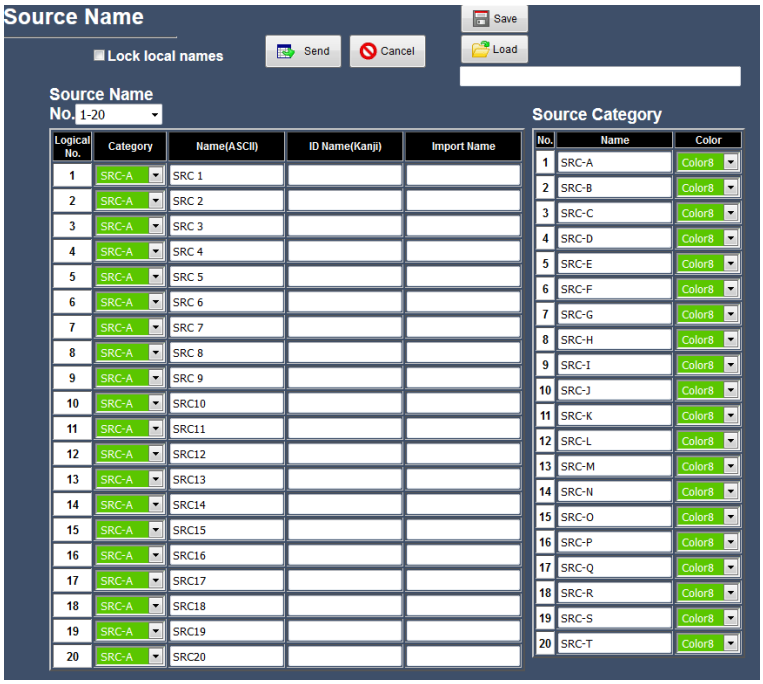
The secondary CPU, when activated, indicates a failure has occurred on the primary CPU. Contact your FOR-A reseller.

4. Router System Settings

Router System Settings are used to establish the system.

4-1. Source Name

This page allows you to enter Source Names and Category settings.
Expand the ROUTER SYSTEM SETTINGS tree and click **Source Name** to open the page as shown in the figure below.



◆ **Renaming a Source Name**

1. Input a channel range (1-20, 21-40...) in the Source Name No. entry box in the upper left side of this page.
2. Enter name(s) you wish to rename under **Name (ASCII)** or **ID Name (Kanji)**.

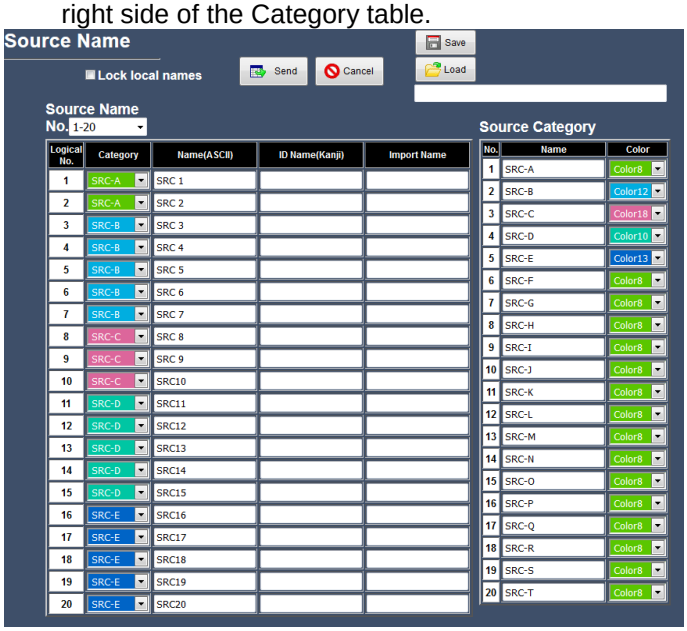
Parameter	Description
Name(ASCII)	Allows you to enter the Source Name displayed on the remote control panel button when the Display mode is set to **ASCII** (one-byte character display). The names specified on this page are displayed on HVS and MV series units.
ID Name(Kanji)	Allows you to enter the Source Name displayed on the remote control panel button when the Display mode is set to **KANJI** (two-byte character display).
Import Name	Displays imported signal names, which can be imported from an external name server using LAN commands.

3 After inputting all necessary settings, click the **Send** button.

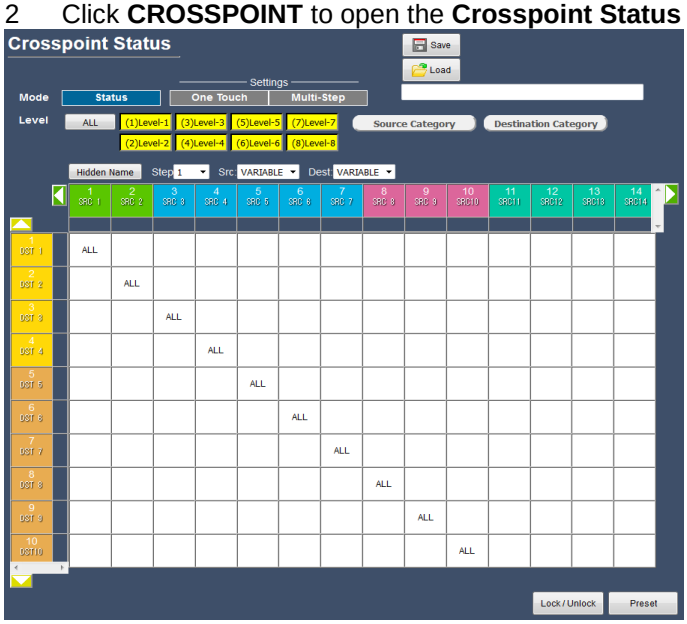
◆ Category Settings

Allows you to categorize Sources and Destinations, which allow sources and destinations to be selected via the remote control panel **Category** settings (Tenkey function)

1. Set (Source or Destination Name) **Category** colors in the **Name** and **Color** columns on the right side of the Category table.



2 Click **CROSSPOINT** to open the **Crosspoint Status** page as shown below.



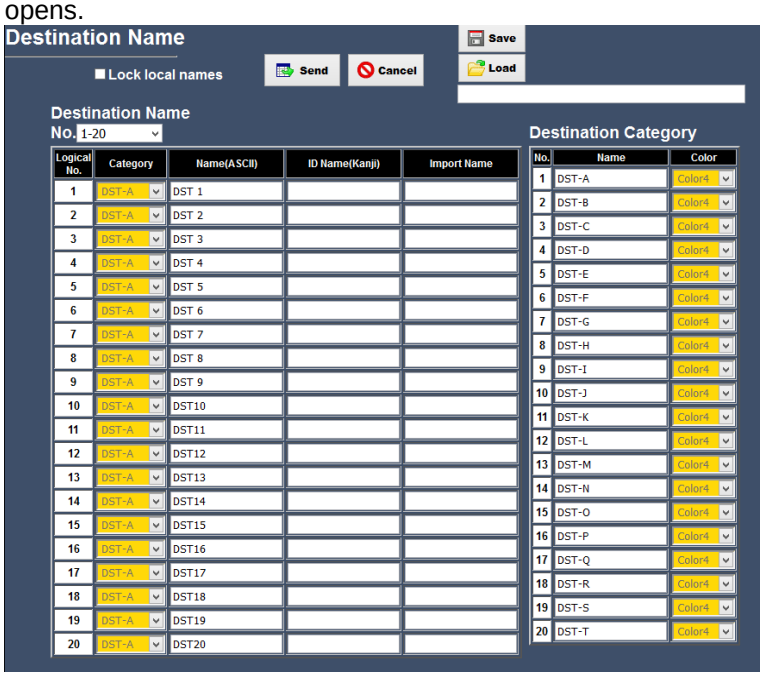
◆ Remote Control Panel Button Source Name Display Format (PHY NUM, ASCII, Kanji, Bitmap)

For details on changing the display format via the remote control panel menu, see “NAME TYPE” in the MFR-RU Series Operation Manual.

For details on changing the display format via Web-based Control, see “RU Settings” in the MFR-RU Series Operation Manual.

4-2. Destination Name

Allows you to enter Destination Name and Destination Category settings.
Expand the ROUTER SYSTEM SETTINGS tree and click **Destination Name**. The screen below opens.



◆ **Renaming a Destination Name**

1. Input a channel range (e.g., 1-20, 21-40...) in the Destination Name No. entry box in the upper left side of this page.
2. Enter name(s) you wish to rename under **Name (ASCII)** or **ID Name (Kanji)**.

Parameter	Description
Name(ASCII)	Allows you to enter the Destination Name displayed on the remote control panel button when the Display mode is set to **ASCII** (one-byte character display). The names specified on this page are displayed on HVS and MV series units.
ID Name(Kanji)	Allows you to enter the Destination Name displayed on the remote control panel button when the Display mode is set to **KANJI** (two-byte character display).
Import name	Displays imported signal names, which can be imported from an external name server using LAN commands.

3. After inputting all necessary settings, click the **Send** button.

◆ **Category Settings**

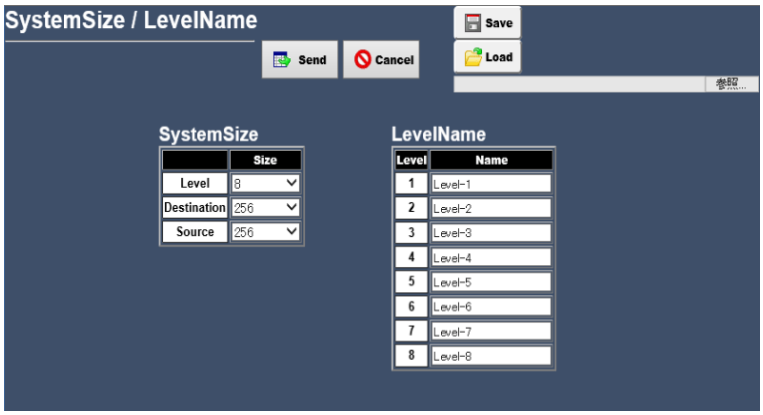
See the description for Category Settings in the previous page.

◆ **Remote Control Panel Button Source Name Display Format (PHY NUM, ASCII, Kanji, Bitmap)**

- For details on changing the display format via the remote control panel menu, see “NAME TYPE” in the MFR-RU Series Operation Manual.
- For details on changing the display format via Web-based Control, see “RU Settings” in the MFR-RU Series Operation Manual.

4-3. SystemSize / LevelName

Allows you to enter System Size and Level Name settings.



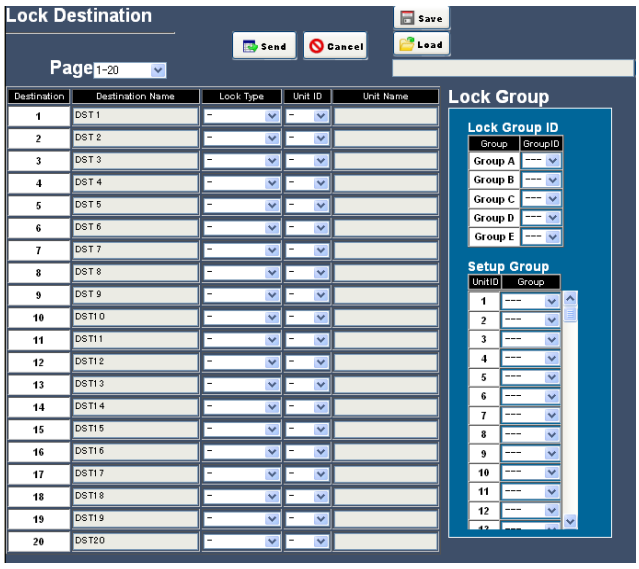
1. Select numbers for the following parameter listings under **SystemSize**.

Parameter	Description
Level	Allows you to select the number of Levels used within the range 1 to 8.
Destination	Allows you to select the number of Destination channels within the range 1 to 512.
Source	Allows you to select the number of Source channels within the range 1 to 1024.

2. Input a level name under each **LevelName** entry.

4-4. Lock Destination

The **Lock Destination** page allows you to enter LOCK mode (LOCK OTHER or LOCK ALL) for destination settings, respectively.

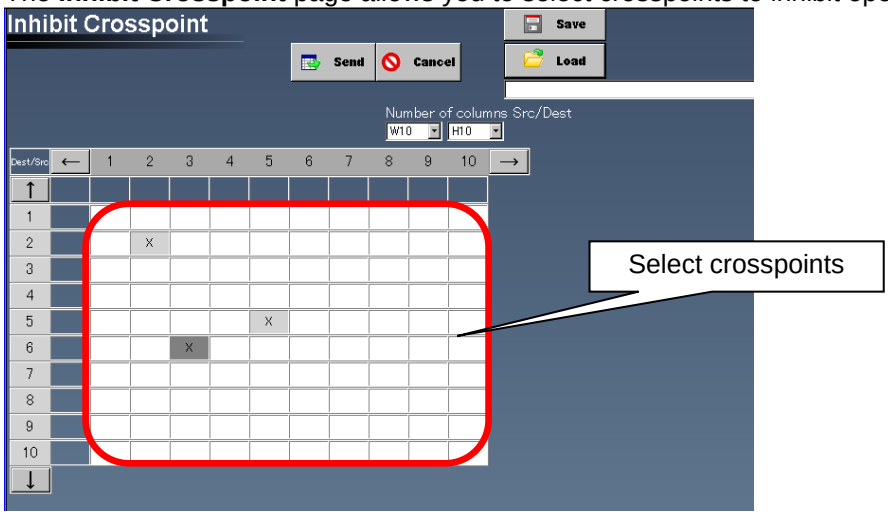


Parameter	Description
Lock Type	Allows you to select the Lock type. LOCK OTHER: Allows you to disable operation in all devices except for devices or group members using Unit or Group ID numbers. LOCK ALL: Allows you to disable operation in all devices.
Unit ID	Allows you to select a unit ID number to lock.
Unit Name	The unit name to be locked is displayed.

Parameter	Description
Lock Group	Allows you to set a group for LOCK OTHER/LOCK ALL. Lock Group ID: Allows you to set group ID numbers. Setup Group: Allows you to select RU devices to be added to groups using Unit ID numbers.

4-5. Inhibit Crosspoint

The **Inhibit Crosspoint** page allows you to select crosspoints to inhibit operation.



◆ **Setting an Inhibition**

1. Double-click a crosspoint cell. An **X** mark is displayed in the cell.
2. Click the **Send** button to inhibit the setting.

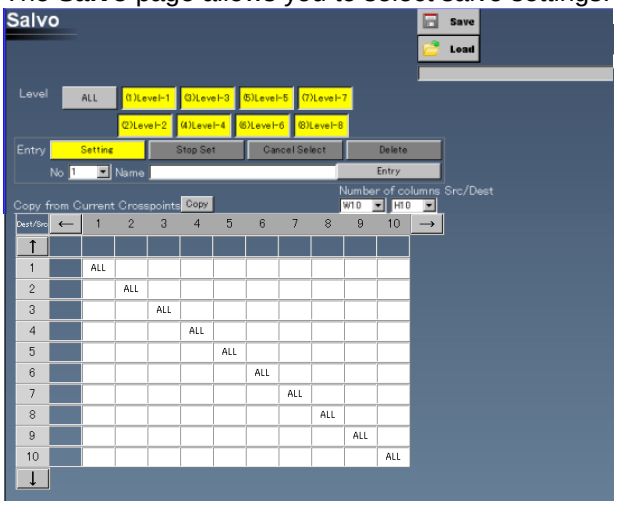
◆ **Releasing an Inhibition**

1. Click the cell where an inhibition is applied. The **X** mark disappears.
2. Click the **Send** button to release the inhabitation.

Dragging a mouse from the **X** marked crosspoint enables you to mark an **X** into all crosspoints under the mouse pointer trace. In the same manner, if you drag a mouse from the crosspoint without **X** mark enables you to erase **X** marks of crosspoints under the mouse pointer trace. (Crosspoints without an **X** remain unchanged.)
Up to **50,000** inhibition settings can be stored in the MFR-4000/6000 unit.

4-6. Salvo

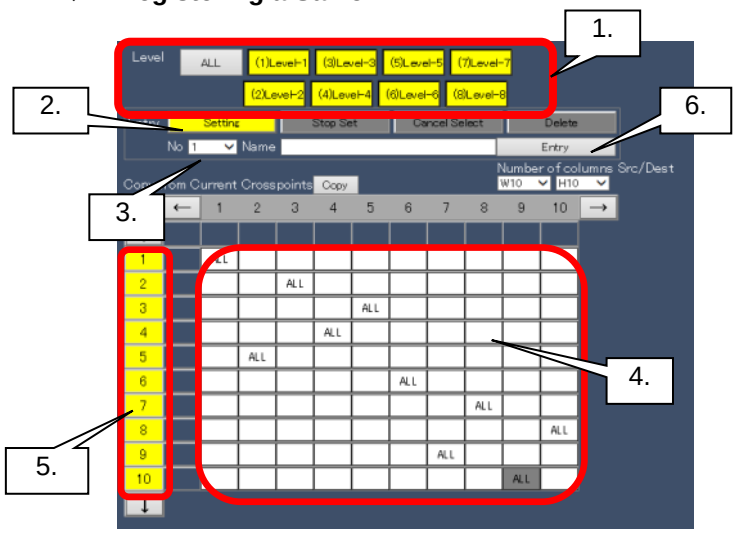
The **Salvo** page allows you to select salvo settings.



◆ Copying from Current Crosspoint

Selecting the **Copy** button allows you to copy settings from current crosspoint.

◆ Registering a Salvo



1. In the **Level** area, select **Enabled/Disabled** for each level. (**Enabled:** Yellow, **Disabled:** Gray)
2. In the Entry area, select **Setting**.
   If you select the **Cancel Select** button, destination channel selection is cancelled.
3. Specify the salvo number (selectable in the range from 1 to 100).
   Input a salvo name if necessary. The salvo name can be freely specified, and the specified name is displayed on the remote control panel salvo button.

4 Select the crosspoints to save as a salvo. The MFR-4000/6000 allows you to save up to **15,000** crosspoints. Up to **256** crosspoints can be saved to a single salvo in MFR-4000/6000.

5 Select the destination channels to save. The selected channels are highlighted in yellow.

6 Click the **Entry** button to register salvos.

◆ **Deleting a crosspoint**

▼ By selecting a destination channel

1. Click a destination channel to delete. The clicked channel turns gray.
2. Click the **Entry** button. Only yellow-highlighted destination channels are registered.

▼ By using the **Delete** button

1 Click the **Stop Set** button.
2 Click the **Delete** button.
3 The **Delete** button and crosspoints are highlighted yellow. Click a crosspoint from among those highlighted. Click the **Delete** button to exit Delete mode.
4. Click the **Setting** button.
5. Click destination channels to highlight them yellow.
6. Click the **Entry** button.

4-7. SNMP/SNTP Settings

The **SNMP/SNTP Settings** page allows you to configure SNMP/SNTP settings.

<SNMP>

Parameter		Default	Description
Community	Read-Only	public	Read only SNMP community name (16 char max)
	Read-Write	private	Read/Write SNMP community name (16 char max)
	Trap	public	The community name that sends a trap. (16 char max)
System Information	sysContact	-	Allows you to enter comments regarding the person in charge of the device. (32 char max)
	sysLocation	-	Allows you to enter comments regarding the device location. (32 char max)

Trap	Destination IP address1	0.0.0.0	SNMP manager's IP address to which a trap is sent.
	Destination IP address2	0.0.0.0	SNMP manager's IP address to which a trap is sent.
	Enable	(All enable)	Chooses traps to be enabled.

<SNTP>

If an SNTP server is set, logs are displayed with time stamps provided through the SNTP server.

Parameter	Description
SNTP Server	Specifies an SNTP server IP address.
Time Zone	Sets the time zone.
Poll Interval	Sets the interval for sending SNTP time requests.

IMPORTANT

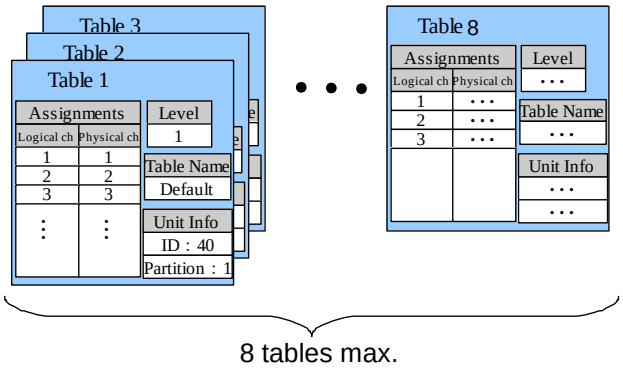
For the time provided by an SNTP Server, accuracy is within 35 seconds per day.

4-8. Source Assignment

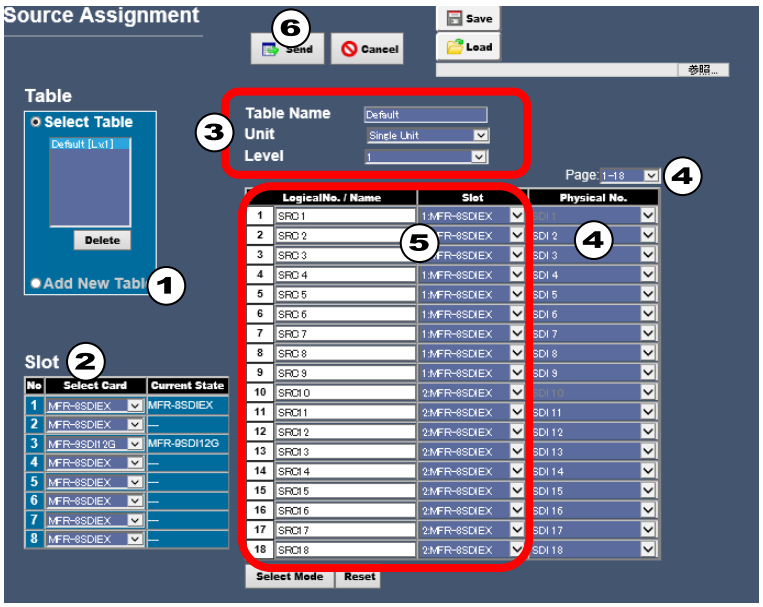
The **Source Assignment** page allows you to assign a physical input channel to a logical input channel.

◆ **Assignment Information**

Assignment information is managed in units of tables. A table consists of its level, unit information, and table name, in addition to the assignment information. Up to 8 Router tables and 4 HVS tables can be retained.



4-8-1. Creating a New Table



1. Select **Add New Table**.
2. Set **Slot** information.

Parameter	Description
Select Card	Select an Input Card type for use.
Current State	Displays the Input Card currently installed in each slot.

3. Set items shown in the table below.

Parameter	Description
Table Name	Allows you to set the table name in which assignments are saved.
Unit	**Single Unit** is normally selected.
Level	Allows you to select a level.

4. Set logical channel (Logical No.) range in **Page**.
   Set **Physical No** as the physical channel input.

5. Set following items if required.

Parameter	Description
Slot	Allows you to select an input card for physical channels. Slot number - MFR-4000: 8 slots MFR-6000: 16 slots
Physical No.	Allows you to assign physical channels to logical source channels.

6. Click **Send** to create a new table.

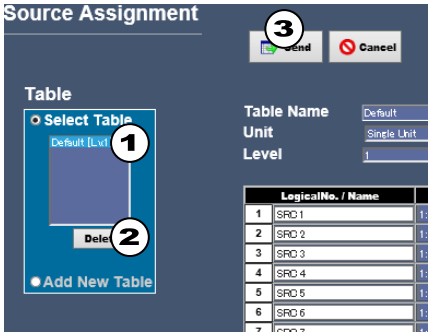
4-8-2. Copying a Table

1. Select **Add New Table** and select a table to copy.
2. Click the **Copy** button.
3. Edit required parts and click the **Send** button.

4-8-3. Deleting a Table

1. Select **Select Table** and select a table to delete in the list box.
2. Click the **Delete** button. The button turns yellow.
3. Click **Send** to delete the selected table.

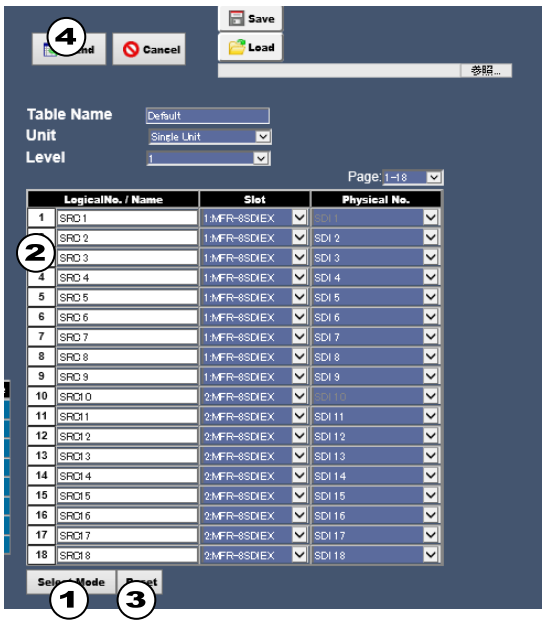
Click the **Delete** button again, the button turns gray. If **Send** is clicked in this state, the Physical No. assignments of the table are cancelled, and the table is not deleted.



4-8-4. Resetting Assignment

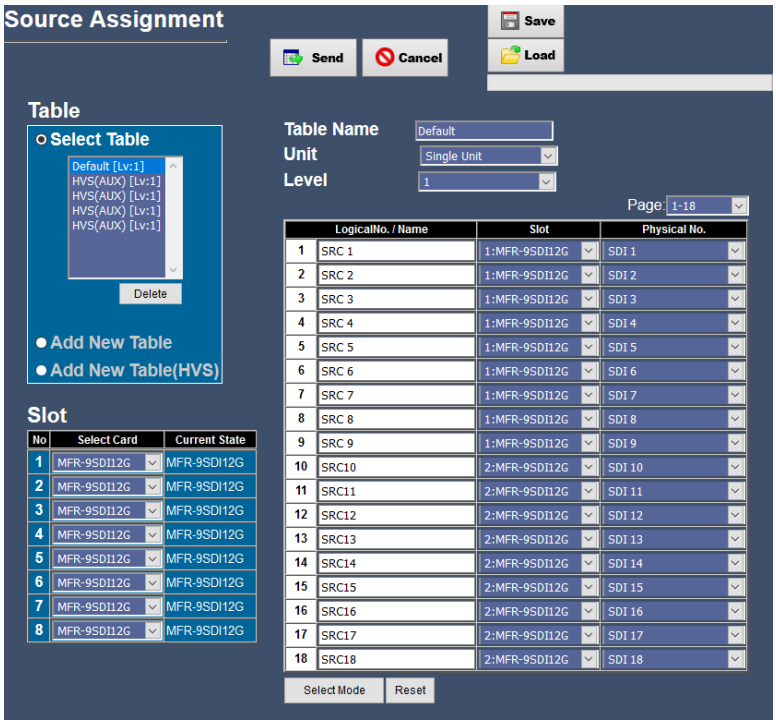
1. Click the **Select Mode** button. The button turns yellow. (Selected)
2. Click a Logical No. or drag Logical No./s to reset. The selected Logical No./s turn gray.
3. Click the **Reset** button to clear the selected Logical No. assignment/s.
4. Click **Send** to apply the settings.

* Click the **Select Mode** button again to deselect while the button is lit yellow.



4-8-5. Switcher Input Channel

Assigning a switcher SRC channel to an MFR logical SRC channel allows you to remotely control the crosspoint switches from the switcher. Select **Add New Table (HVS)** to display a page to perform assignments.

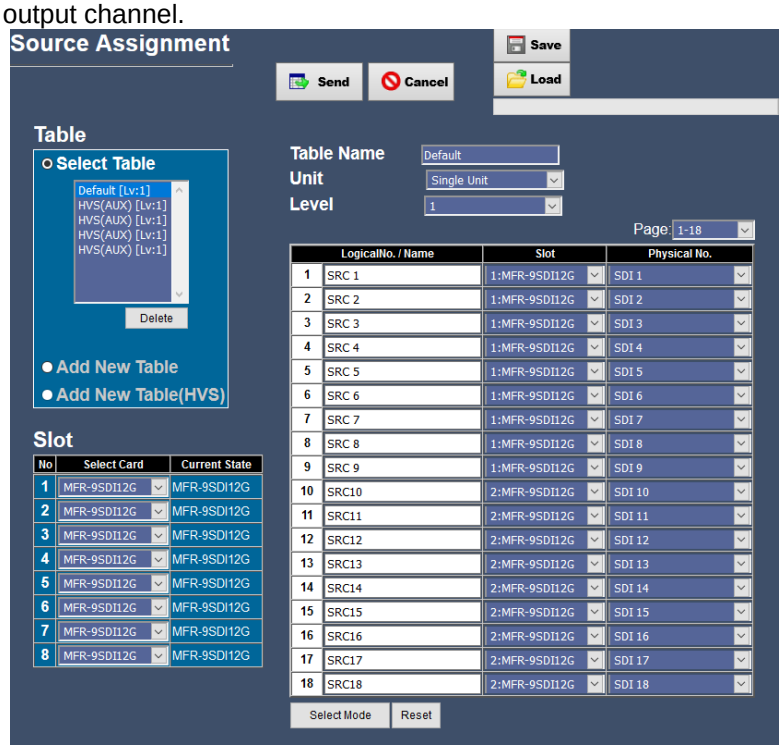


Set the following listed items.

Item	Description
Alternative Source	Select an alternative SRC. When the switcher side selects (switches to) the SRC that is not assigned to MFR, MFR side switches to alternative source.
Table Name	Sets a table name to save the assignment list.
Unit	Select a switcher model.
Level	Select a level.
Page	Changes the Logical source channel (Logical No.) range to display.
Logical No.	Displays logical source channels.
Switcher Channel	Assigns logical channels to switcher input channels.
ID	When switching from multiple switchers, select 4th octet of the switcher IP address.

4-9. Destination Assignment

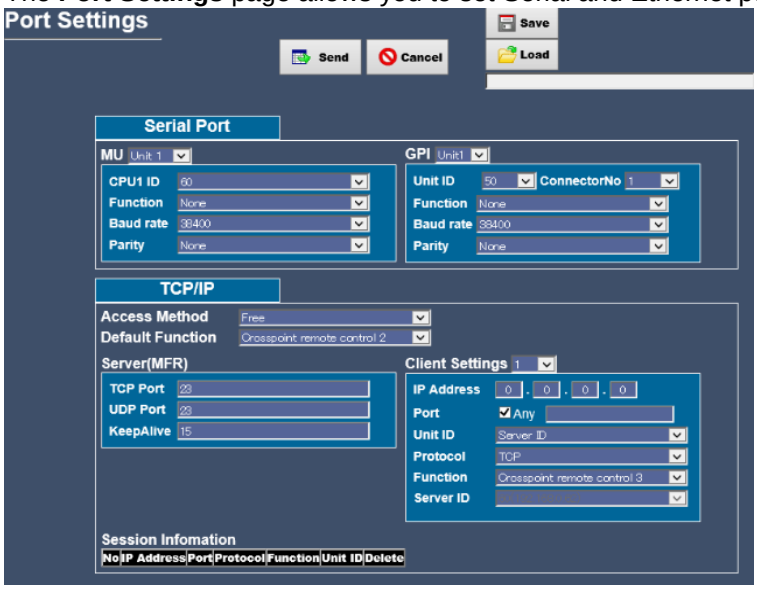
The **Destination Assignment** page allows you to assign a physical output channel to a logical output channel.



Procedures to Create, Copy, Delete and Reset a Table and to assign switcher input channels are the same as described in Source Assignment. See Sec. 4-8. “Source Assignment” for details.

4-10. Port Settings

The **Port Settings** page allows you to set Serial and Ethernet port settings.



◆ **Serial Port**

Parameter	Description
CPU1 ID	Allows you to specify the CPU1 ID.
Unit ID	Allows you to specify the Unit ID.
Connector No.	Allows you to specify the connector number for the unit specified under **Unit ID**.
Function	Allows you to select the communication protocol. (See Available Protocols table in the next page.
Baud rate	Allows you to select the Baud rate.
Parity	Allows you to select the Parity.

Available Protocols

Protocol	Description
Crosspoint remote control	Serial / LAN command protocol via the specified port
* Crosspoint remote control 2	Crosspoint remote control with Channel Name and CPU Status request commands
* Editor (HVS)	Switcher AUX control protocol

* Ethernet only

IMPORTANT

Saved settings are applied the next time the MFR-4000/6000 is rebooted. If GPI settings are changed, the MFR-GPI should also be rebooted.

◆ **TCP/IP**

Parameter	Default	Description
Access Method	Free	Allows you to select access mode. **Free:** Controllable from any control PC. **Client:** Controllable only from the PC selected under Client Settings.
Default Function	Crosspoint remote control	Allows you to select the communication protocol for the PC that is not selected under Client Settings.

Server (MFR) (Main Unit)

TCP Port	23	Allows you to set the TCP port number for the Server. (Setting range: 23, 49152 to 65534) * The communication is terminated if the setting is changed.
UDP Port	-	Not used
KeepAlive	15sec	Allows you to set the PC connection verification interval. The communication is terminated if the connection is not established. (Setting range: 15 to 7,200 sec) * The communication is terminated if the setting is changed.

Client Settings

Client Settings	1	Allows you to assign the client (PC) identification number. (Setting range: 1 to 16)
IP Address	0.0.0.0	Allows you to enter the IP address for the client terminal (PC). Setting the IP address enables the communication.
Port	Any	Allows you to set the port number for the PC. Check **Any** when not setting a port number. To enable connection from a specific port, uncheck **Any**, then enter the port number in the right setting box. If the port number remains unspecified, the PC is connected via any available port.
Unit ID	10	Allows you to select the Unit ID for controlling crosspoints. LOCK is applied upon the Unit ID. * The Unit ID of the connected MFR Series main unit is employed for the PC without the Unit ID.
Protocol	TCP	Set to TCP when Crosspoint remote control or Crosspoint remote control 2 is selected. Set to UDP when Editor (HVS) is selected.
Function	None	Allows you to select the communication protocol. (See **Available Protocols** in the previous page.)
Local port (MFR) (If Editor(HVS) is selected)	23 49152-65534	Allows you to select a UDP port number used to communicate with switchers. Do **not** use the UDP port number (Default: 23) already used in the MFR system.
Server ID	10 (192.168.0.12)	Allows you to set the Unit ID for the MFR Series main unit. * The server IP Address is displayed in parentheses.
Session Information	–	A list of active sessions Check Delete, and click **Send** to terminate the session.

◆ **Command Response**

Settings for “Crosspoint Remote Control” and “Crosspoint Remote Control 2” protocols allow ON or OFF Echo, C Response and S Response, respectively.

NOTE

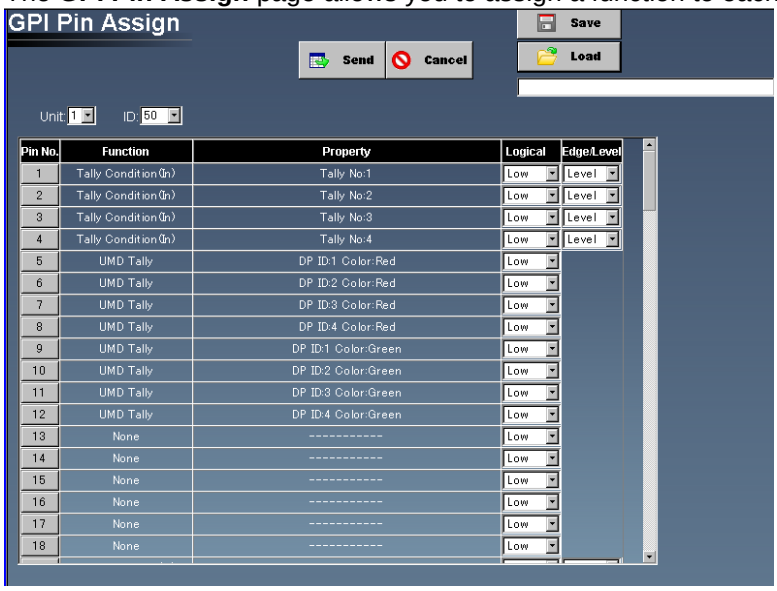
Up to **20** external devices can be connected to an MFR Main Unit (including MFR-GPI serial ports) through LAN or serial interface. The maximum number of allowed LAN connections is **16**.

After changing the setting, click the **Send** button to save the settings.

Note that the number of sessions and TCP connections may differ in some cases.

4-11. GPI Pin Assign

The **GPI Pin Assign** page allows you to assign a function to each MFR-GPI pin.

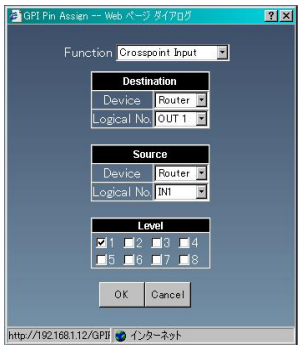


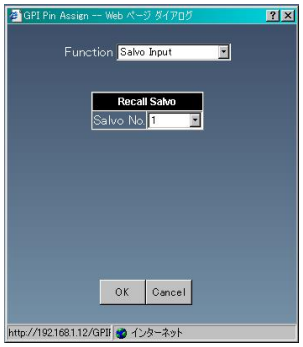
Parameter	Description
Unit	Allows you to select a Unit number from 1 to 4 to save settings.
ID	Allows you to select the ID of the MFR-GPI to which the assignments are applied.
Pin No.	Physical: Displays a pin number for each GPI port. Ex.) GPI3-1: 1st pin of GPI3 (Port no. 3) Logical: Logical Nos., controlled by MFR. Numbers, are assigned sequentially from GPI1 to GPI4. Clicking a pin no. button displays a dialog box.
Function	Displays the assigned function.
Property	Displays the property of the assigned function.
Logical	Allows you to select **High** or **Low** for a GPI input/output to be enabled.
Edge/Level	Allows you to select **Edge** or **Level** to enable GPI input. **Edge**: Inputs are enabled by rising or falling edges. **Level**: Inputs are enabled by low or high state (active low or active high).

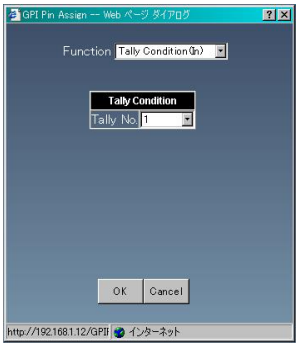
4-11-1. GPI Input

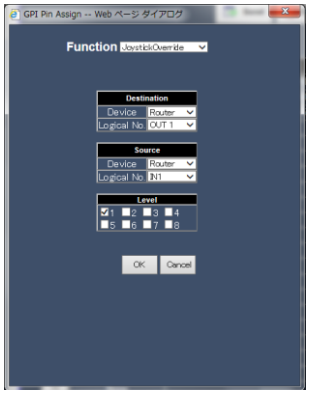
1. Select a unit number to save settings in **Unit** and select MFR-GPI unit ID for **ID**.
2. Click the **Pin No.** button. A setting dialog appears.
3. Select the pin function in **Function**. The screen changes according to the selected function. Set the required settings and click the **OK** button.

Function	Description	Edge/Level settings
Crosspoint Input	When a signal is input, a crosspoint switch is performed according to the settings specified in this dialog box.	Edge
Salvo Input	When a signal is input, an MU Salvo is performed. Select the Salvo number specified in the **Salvo** page (see 4-6), from 1 to 100.	Edge
Tally Condition (In)	When an input signal is enabled, the tally color set by Tally No. becomes enabled. When an input signal is enabled again, the tally color becomes disabled. Select the Tally No. from the numbers set in Sec. 9-4-1 “Assign Tally.”	Edge or Level
Joystick Override	While an input is enabled, the router crosspoint is switched. When input is disabled, the router crosspoint switches back. If the switching interval is too short, the action is cancelled. In such case, selecting Joystick Override allows you to select a source.	-









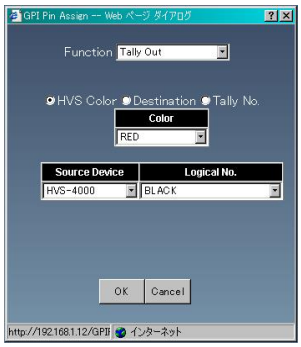
4. Set conditions for **Edge/Level** and **Logical** to recognize input as valid. When “Crosspoint Input”, “Salvo Input” or “Joystick Override” is selected for Function, set Edge/Level according to the table in Step 3.

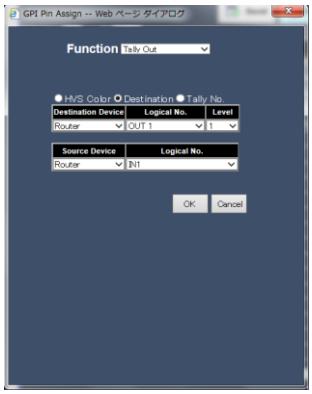
Edge/Level Setting	Logical Setting	Description
Edge	High	Input is recognized as valid at a rising edge.
Edge	Low	Input is recognized as valid at a falling edge.
Level	High	Input becomes valid during HIGH.
Level	Low	Input becomes valid during LOW.

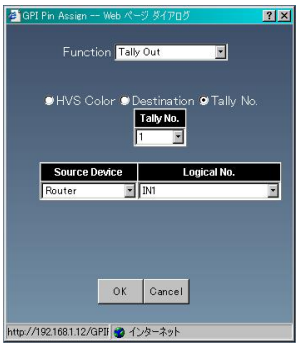
4-11-2. GPI Output

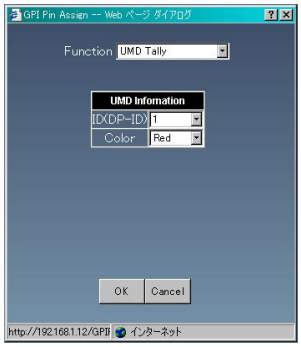
1. Select **Unit No.** to save settings and select MFR GPI Unit **ID** to apply.
2. Click the Pin No. button. A setting dialog appears.
3. Select the pin function from the **Function** column. The screen changes according to the selected function. Set required settings and click **OK**.

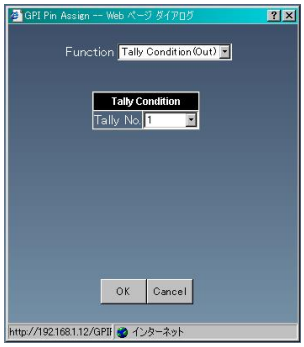
Function		Description
Tally Out	HVS Color	Output becomes valid when the signal set by **Source Device** and **Logical No.** becomes the color set by **Color**.
	Destination	Output becomes valid when the destination set by **Destination Device**, **Logical No.** and **Level** selects a source set by **Source Device** and **Logical No.**
	Tally No.	Output becomes valid when the signal set by **Source Device** and **Logical No.** becomes the tally color set by **Tally No.** Tally Nos. are selected from numbers set by Sec. 9-4-1. “Assign Tally.”
UMD Tally		Output becomes valid when the tally color set by **ID (DP-ID)** and **Color** turns on.
Tally Condition (Out)		Output becomes valid when the tally color set by **Tally No.** becomes valid. Tally Nos. are selected from numbers set by Sec. 9-4-1. “Assign Tally.”











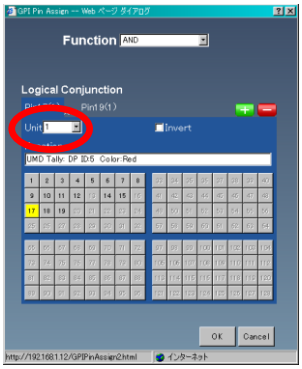
4 Set conditions for **Logical** to recognize the output as valid.

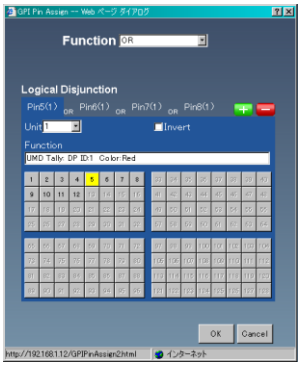
Logical Setting	Description
High	The Logical setting becomes HIGH when output is valid.
Low	The Logical setting becomes LOW when output is valid.

4-11-3. Logical Destinations and Sources

1. Select the **Unit Number** to save the settings in **Unit** field and select the MFR-GPI unit **ID** to apply.
2. Click the **Pin No.** button. The setting dialog box appears.
3. Select a pin function from the **Function** column. The screen changes according to the selected function. Set required settings and click **OK**.

Function	Description
AND	Outputs the result of Boolean operation (logical product) of the specified pins. [+] or [-] allows you to add or delete up to 4 total pin selections. Check **Invert** to set a logical product with the negative condition. Select a unit and pin.
OR	Outputs the result of Boolean operation (logical sum) of the specified pins. [+] or [-] allows you to add or delete up to 4 total pin selections. Check **Invert** to set a logical product with the negative condition. Select a unit and pin.
GPI IN (bool)	Inputs a signal, which is used for logical expressions as a Boolean value.





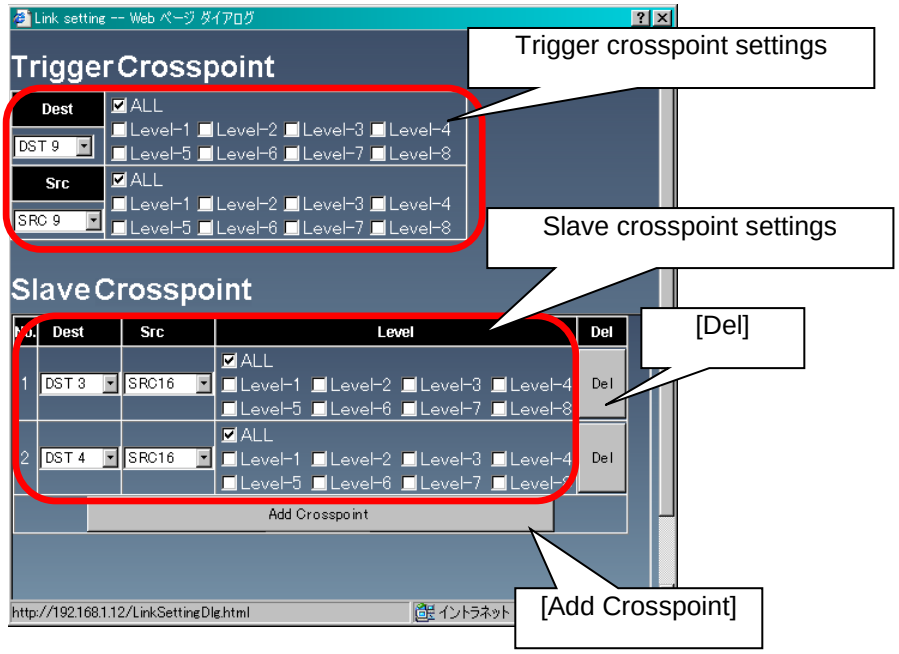
4-12. Link Settings

The **Link Settings** page allows you to set link settings.

Parameter	Description
Page	Allows you to move between pages.
No.	Clicking the button displays the dialog box to change and add Link settings. (Up to 4096 links)
Control	Clicking the **Delete** button deletes the setting.
Crosspoint	Displays the current crosspoint link setting.
Link Enable	Enables/disables the link function when changing crosspoints from devices other than RU units.

◆ **Link Settings**

1. Click a button under the **No.** that you wish to change the settings of. To add a new setting, click the button of the empty item. A dialog box as shown below appears.



2 In the dialog box, set the **Destination**, **Source**, and **Level** settings of the trigger crosspoint and the crosspoint that is linked to that crosspoint (the Slave crosspoint). Up to 3 crosspoints that are linked to the trigger crosspoint can be added, and they can be deleted by clicking the **Del** button.

3. After completing settings, click **OK**. The dialog box closes and the settings are applied under the **Crosspoint** in the **Link Settings** page.

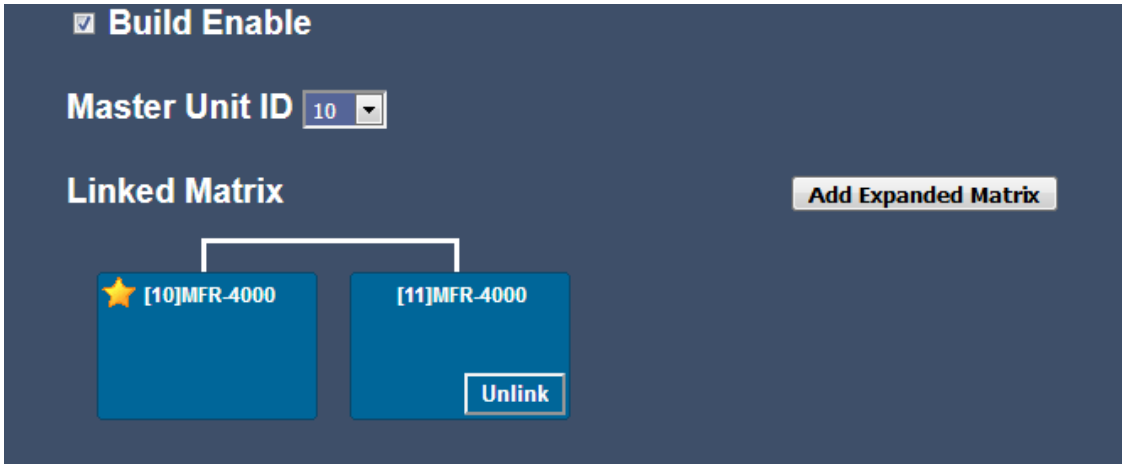
4. After all necessary settings, click the **Send** button to apply the settings.

NOTE

If settings are necessary for multiple pages, click the **Send** button for each page respectively.

4-13. Build Settings

Allows you to set up Main Unit links.



Parameter	Description
Build Enable	Checking the box enables the Main Unit Link feature.
Master Unit ID	Selects the Main Unit to be set as Master using the ID number.

◆ **Linked Matrix Area**

Link button	Clicking the **Link** button adds the unit to the Linkage and sets it as a slave.
Delete button	Clicking the button deselects the Linked (but unconnected) unit from the Link system.

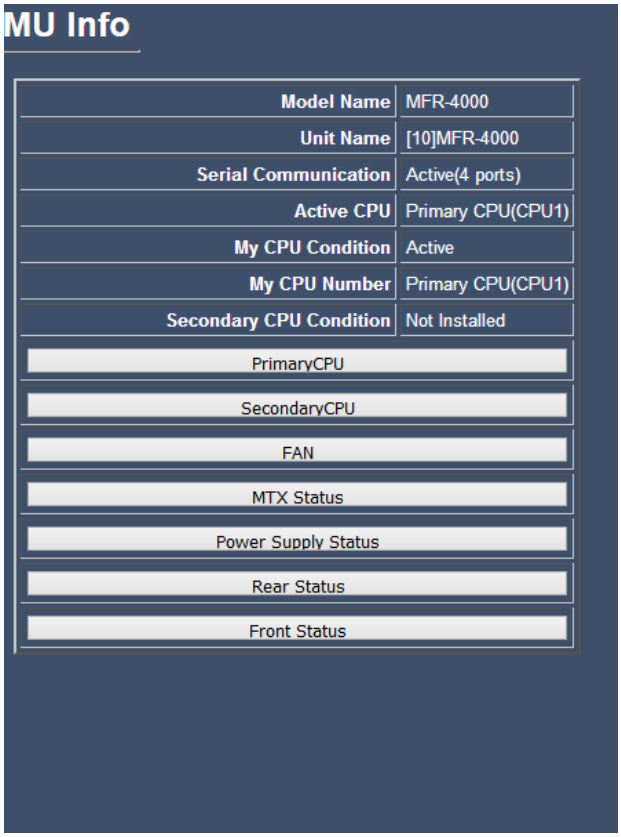
See Sec. 11. ”Main Unit Link” for details on setting up Main Unit links.

5. Main Unit Settings

The Unit name and Unit ID of the connected device are displayed in the tree, for example, as “[10]MFR-4000(MU)”.
Clicking the Unit name expands the tree, and display the main unit setting pages in the tree. Clicking the Unit name again collapses the tree.

5-1. MU Info

The **MU Info** page allows you to set the main unit network settings and check the power monitoring status. Clicking the following buttons will show detailed information. Click the button again to hide the information.
[PrimaryCPU]
[SecondaryCPU]
[FAN]
[MTX Status]
[Power Supply Status]
[Rear Status]
[Front Status]

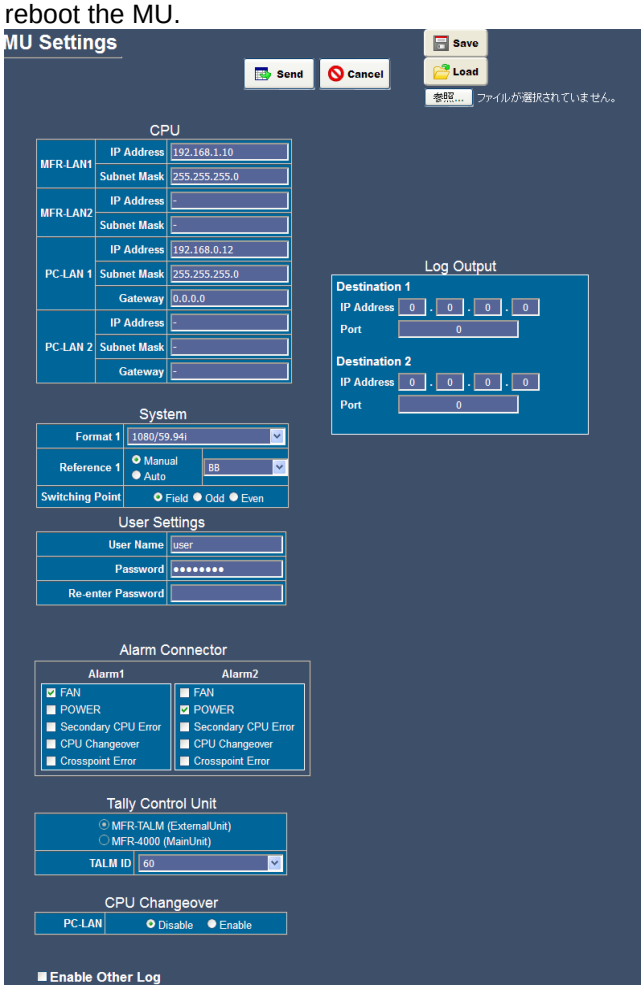


Available parameters vary depending on the main unit. See the table below for details.

Parameter	Description		
Model Name	Displays the Model information.		
Unit Name	Displays the Unit Name and unit ID.		
Serial Communication	Displays the Serial port status.		
Active CPU	Displays the active CPU (**CPU1** or **CPU2**).		
My CPU Condition	Displays whether the currently accessed CPU state is **Active** or **Passive**.		
My CPU Number	Displays whether the currently accessed CPU is **Primary** or **Secondary**.		
Secondary CPU Condition	Displays the Secondary CPU status.		
PrimaryCPU	Displays information on the Primary CPU as follows.		
	Status		Indicates whether or not the CPU is installed.
	MFR-LAN PC-LAN	IP Address	Displays the IP address.
		Subnet Mask	Displays the Subnet mask.
		MAC Address	Displays the MAC address.
	Firmware Version		Displays the Firmware version information.
	FPGA Version		Displays the FPGA version information.
	Power		Displays the Power supply status.
	Temperature		Displays the temperature status.
SecondaryCPU	Displays the secondary CPU information (same as PrimaryCPU above).		
FAN	Displays each cooling fan status.		
MTX Status	Displays the below information of the main board.		
	FPGA Version		Displays the FPGA version information.
	CPLD Version		Displays the CPLD version information.
	Power		Displays the power supply status.
	Temperature		Displays the temperature status.
	Crosspoint Error		Indicates whether or not there is a Crosspoint Error.
Power Supply Status	Displays information on the power unit as follows.		
	Active		Displays the Power unit status.
	AC/DC/ Temperature/ Internal FAN Alarm		Indicates the power Voltage (AC and DC), Temperature, and power unit Fan Alarm states.
Rear Status	Displays information on the rear card as follows.		
	CPLD Version 1/2		Displays the CPLD version information.
	Serial		Displays the Serial port setting.
	Power 1/2		Displays the power supply status.
	Temperature 1/2		Displays the temperature status.
Front Status	Displays information on the front card as follows.		
	FPGA Version		Displays the FPGA version information.
	Power		Displays the Power supply status.
	Temperature		Displays the temperature status.

5-2. MU Settings

The **MU Settings** page allows you to change the Main Unit network settings and reference signal settings. If a MU reboot is needed after changing settings, a dialog appears and prompts you to reboot the MU.



* Click **Send** after changing settings.

<CPU>

Parameter		Description
MFR-LAN1 / MFR-LAN2	IP Address	Allows you to set each CPU IP address.
	Subnet Mask	Allows you to set each CPU subnet mask.
PC-LAN1 / PC-LAN2	IP Address	Allows you to set each CPU IP address.
	Subnet Mask	Allows you to set each CPU subnet mask.
	Gateway	Allows you to set each CPU default gateway address.

※ Reboot the main unit after changing settings.

<System>

Format 1	Allows you to select the video format. Video switching occurs in sync with the selected signal format. Reboot the main unit after changing the setting.
Reference 1	Allows you to select a Reference type. Changes are applied after restarting the system. **Manual**: Selects a Reference signal in the right pull-down menu. **Auto**: Automatically detects a Reference signal.
Switching Point	Allows you to select the transition Switching Point from **Field**, **Odd** or **Even**. Changes are applied after restarting the system.

* Reboot the main unit after changing settings.

<User Settings>

User Name	Allows you to set the Username used in the Login page.
Password	Allows you to enter a Password.
Re-enter Password	Allows you to reenter the password.

<Alarm Connector>

Allows you to select items used for the Alarm1 and Alarm2 outputs.
When two or more items are checked, an alarm outputs if a failure occurs in any one of the items.

FAN	Fan alarms are output if any failure occurs in any cooling fans (including power unit cooling fans).
POWER	Power alarms are output if a failure occurs in any of the power supply units. * A warning message appears if POWER is not checked in either Alarm1 or Alarm2.
Secondary CPU Error	An alarm is output if any failure occurs in the secondary CPU.
CPU Changeover	An alarm is output if the secondary CPU is activated to change over operation.
Crosspoint Error	An alarm is output if any crosspoint error occurs.

<Tally Control Unit>

MFR-TALM (Fixed)	Uses MFR-TALM for tally control.
TALM ID	Allows you to set the MFR-TALM ID for connecting to the MFR system.

<CPU Changeover>

PC-LAN	Allows you to set whether to enable or disable changeover when PC-LAN is linked down or the PC-LAN device fails.

<Log Output>

Crosspoint control and tally (crosspoint switching results) are output as a log from the MU. Select a log destination from Destination1 or Destination 2. The log is sent out as UDP from the MU PC-LAN.

IP Address	Allows you to set the log output destination IP address.
Port	Allows you to set the log output destination Port number. Any port can be assigned but do not use a port that is used for other purpose.

5-3. Slot Status

This page allows you to check power monitoring results and temperature readings for each slot.
Slot numbers to be displayed,
MFR-4000: No. 1-16
MFR-6000: No. 1-32

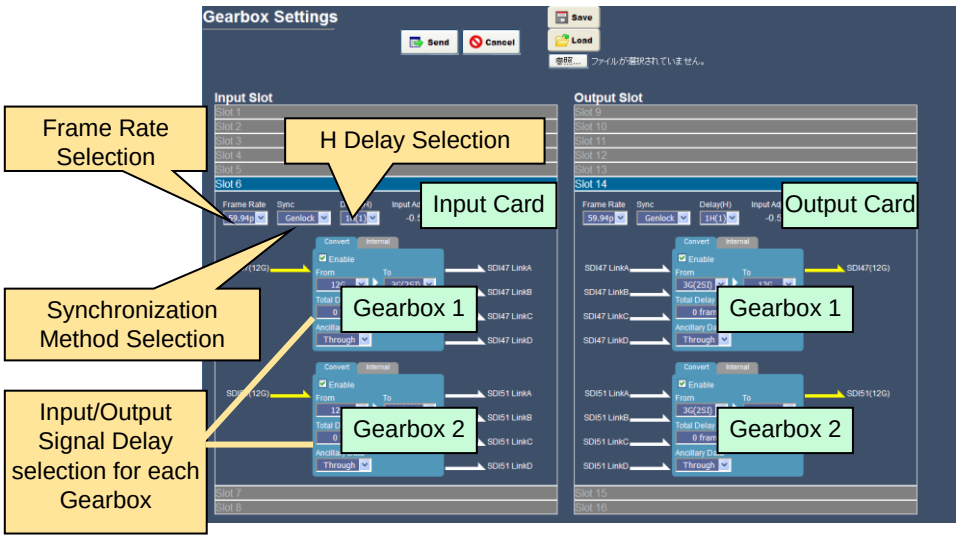
Clicking a board displays the information below.

Item	Description
Power	Displays power supply voltage.
Temperature	Displays the Temperature.
Version	Displays the FPGA and F/W version information.

The display contents may vary depending on the cards installed.

5-4. Gearbox Settings

Gearbox Settings Screen allows you to convert, synchronize and enter delay settings for MFR-2SDIGB / MFR-2SDOGB cards, displaying two Gearboxes per slot.



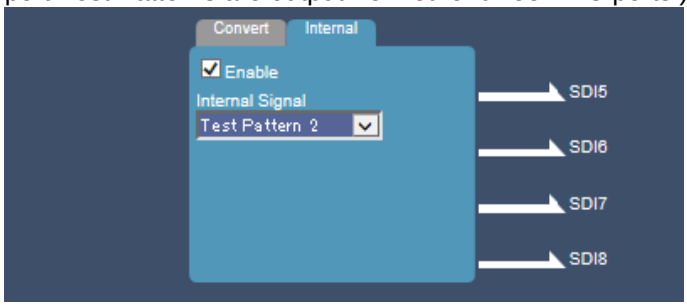
◆ **Frame Rate Selection**

Select a frame rate from 59.94p or 50p. Different rate from the selected System Format under the MU Settings Screen can be selected.

◆ **Output Signal Selection**

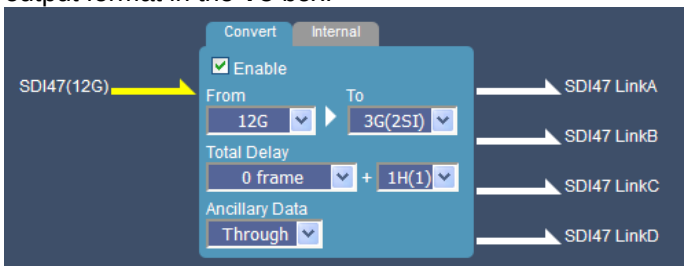
<Test Pattern Output>

Select the **Internal** tab and check **Enable**. Select a Test Pattern to output.
Select an output signal format from the **To** box on the **Convert** tab.
(When 12G-SDI is selected, a 12G-SDI Test Pattern is output from the BNC A port. 3G-SDI port Test Patterns are output from other three BNC ports.)



<Converted Input Signal Output>

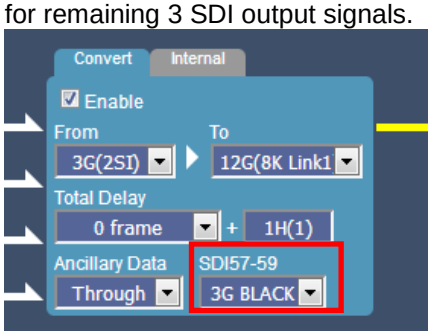
Select the **Convert** tab and check **Enable**. Select an input format in the **From** box and an output format in the **To** box.



Item	Description
From	Allows you to select a format to input to Gearbox.
To	Allows you to select a format to output from Gearbox.
Total Delay	Allows you to select a Gearbox delay. (See below “Selecting Synchronization and Delay Setting”)
Ancillary Data	Allows you to select H/V ancillary data pass-through (**Through**) or mask (**Mask**).

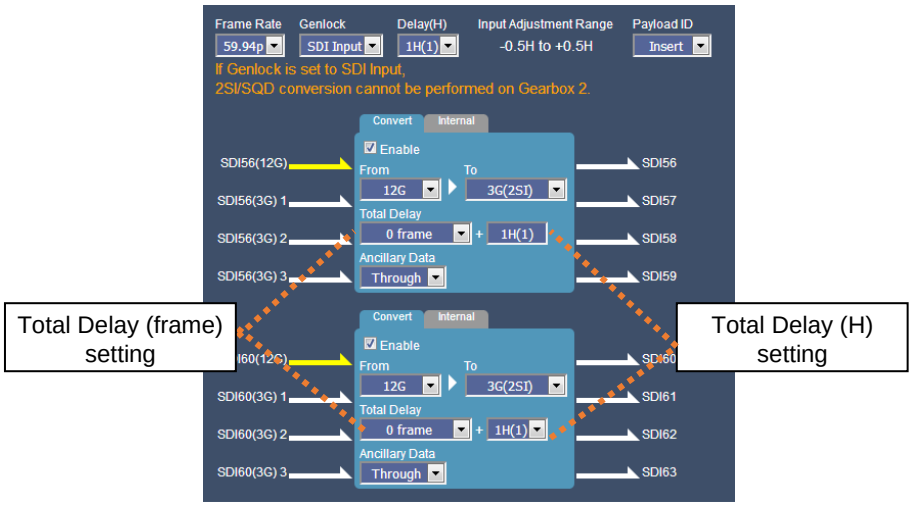
<3G-SDI BNC Output Settings>

When converting 3G Quad-Link to 12G-SDI, 3G-SDI Black or 12G-SDI Link 1 are selectable for remaining 3 SDI output signals.



◆ **Selecting Genlock and Delay Settings**

Gearboxes on both input and output cards should be set in pairs. **Genlock** and **Delay** settings depend on the combination of input and output signal formats. **Total Delay** amouns are settable for each Gearbox.



Item	Description
Genlock	Selects genlock mode for each Gearbox pair between **SDI Input** and **REF IN**. When **REF IN** is selected, the external reference signal input to the MFR Main unit is used.
Delay (H)	Selects the **Delay(H)** amount for each Gearbox pair.

Settings available for conversion (Total Delay settings and Delay (H) settings) are listed in the table on the next page.

◆ REF IN

Gearbox 2 \ Gearbox 1			12G→3G(2SI)				3G(2SI)→12G				12G→3G(SQD)				3G(SQD)→12G				3G(SQD)→3G(2SI)				3G(2SI)→3G(SQD)			
			0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H	
			0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H
12G→ 3G(2SI)	0 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔
3G(2SI)→ 12G	0 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔
12G→ 3G(SQD)	0 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔
3G(SQD)→ 12G	0 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔
3G(SQD)→ 3G(2SI)	0 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔
3G(2SI)→ 3G(SQD)	0 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔

Total Delay setting (*3)

Delay (H) setting (*2)

◆ SDI Input (If installed into MFR-6000 Input 1-8 or Output 1-8) (*1)

Gearbox1 \ Gearbox 2			12G→3G(2SI)				3G(2SI)→12G				12G→3G(SQD)				3G(SQD)→12G				3G(SQD)→3G(2SI)				3G(2SI)→3G(SQD)			
			0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H		0 frame + * (H)	1 frame + * (H)	1 frame + 0H	
			0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H	0.3～1H	0.3～1H	0.3～0.4H	0.5～1H
12G→ 3G(2SI)	0 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3G(2SI)→ 12G	0 frame + * (H)	0.3～1H	✔	✔	-	-	✔	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-	-	✔	-	-
	1 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12G→ 3G(SQD)	0 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3G(SQD)→ 12G	0 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3G(SQD)→ 3G(2SI)	0 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3G(2SI)→ 3G(SQD)	0 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + * (H)	0.3～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 frame + 0H	0.3～0.4H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5～1H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(*1) When SDI Input is selected on MFR-2SDOGB cards, video signals are synchronized by inputting all 4 channels of gearbox. When installed into MFR-4000 and MFR-6000 Input 9-16 or Output 9-16, exchange Gearbox1 and Gearbox2.

(*2) **Delay (H)** (**Total Delay (H)** setting) indicates amount of delay and their settings correspond to the following adjustable ranges.

Delay (H) setting	Adjustable range	Delay (H) setting	Adjustable range
0.3H	-0.8H to +0.2H	0.8H	-0.3H to +0.7H
0.4H	-0.7H to +0.3H	0.9H	-0.2H to +0.8H
0.5H	-0.6H to +0.4H	1H (1)	-0.5H to +0.5H
0.6H	-0.5H to +0.5H	1H (2)	-0.1H to +0.9H
0.7H	-0.4H to +0.6H		

(*3) If **Total Delay (frame)** is set to 0 frame for both gearboxes, different Total Delay (H) setting is available for both Gearboxes.

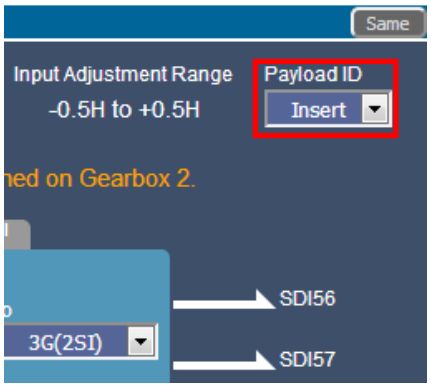
◆ **Payload ID**

➢ Adding Payload ID information to Output Signals

Select Payload ID information source for output signals.

Insert: Data created for output signals

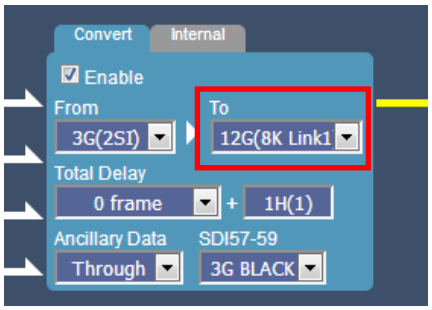
Through: data embedded to input signals.



➢ Adding 8K Quad-Link Payload ID Information

When converting 3G Quad-Link to 12G-SDI, Payload ID information for 8K Quad-Link (In compliance with SMPTE 2082-1) is able to be added to 12G-SDI output. Set as shown below.

From	To	Payload ID	Payload ID Information to Be Added
3G Quad-Link (2SI or SQD)	12G(8K Link1)	Insert	8K Quad-Link, Link1
	12G(8K Link2)	Insert	8K Quad-Link, Link2
	12G(8K Link3)	Insert	8K Quad-Link, Link3
	12G(8K Link4)	Insert	8K Quad-Link, Link4



When adding 8K Quad-Link Payload ID information to Gearbox 1, make sure to also add the information to Gearbox 2 as shown below.

Ex.)

Gearbox	From	To (Yes)	To (No)
GB1	3G(SQD)	12G(8K Link1)	12G
GB2	3G(2SI)	12G(8K Link2)	12G(8K Link2)

◆ **Gearbox Setting I One Operation**

This function allows you to change into the same settings in one operation for all the Gearboxes in one slot. Changing multiple slots settings in one operation is also possible but Input Slots and Output Slots should be set separately.

Ex.) Changing Slot 1 to Slot 3 to same settings.

(1) Click **Same** under Slot 1 to Slot 3. The button lights yellow.
(2) Change Gearbox settings.
(3) Click **Send**.

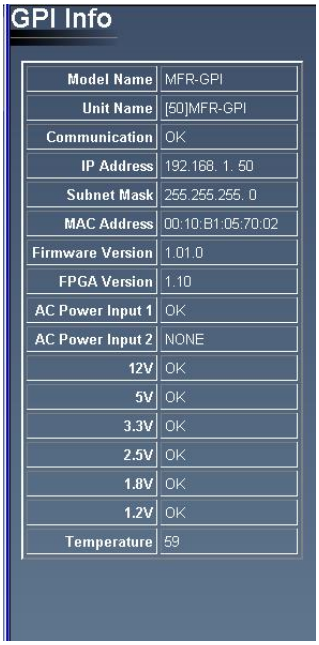
6. MFR-GPI Settings

Click **MFR-GPI** on the tree. Menus to change MFR-GPI IP address and to confirm status appear.

6-1. GPI Info

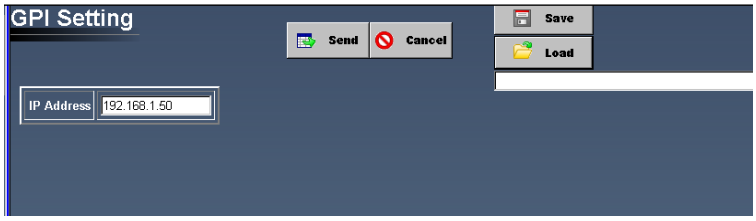
The **GPI Info** page allows you to set MFR-GPI network settings and check power monitoring results.

Parameter	Description
Model Name	Displays the Model.
Unit Name	Displays the unit name and ID.
Communication	Indicates network status. (**OK:** Normal, **NG:** Error)
IP Address	Displays the IP address.
Subnet Mask	Displays the subnet mask.
MAC Address	Displays the MAC address.
Firmware Version	Displays the firmware version.
FPGA Version	Displays the FPGA version.
AC Power Input 1/2	Displays the AC adapter input for adapters 1 and 2. (**OK:** Normal, **NG:** Error, **NONE:** Not connected)
Voltage/12V/5V/3.3V/ 2.5V/1.8V/1.2V	Displays the power voltage level states. (**OK:** Normal, **NG:** Error)
Temperature	Displays the temperature.



6-2. GPI Setting

The **GPI Settings** page allows you to enter MFR-GPI IP address settings.



Input an IP address and click **Send**.

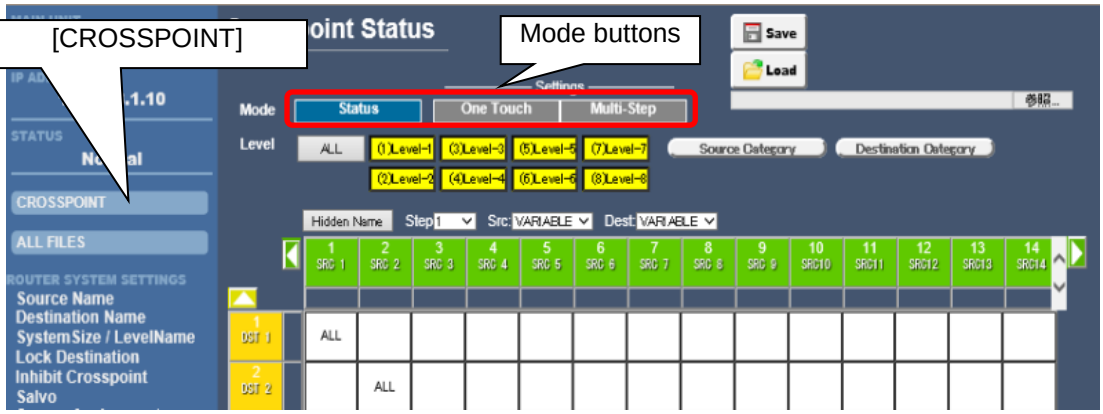
NOTE

After entering settings, do **not power OFF** the unit while BUSY LED is **lit orange**, since the system is writing to Flash. (approx. 2 minutes max.)

Refer to Sec. 4-11. “GPI Pin Assign” for details on GPI pin assignments.

7. CROSSPOINT

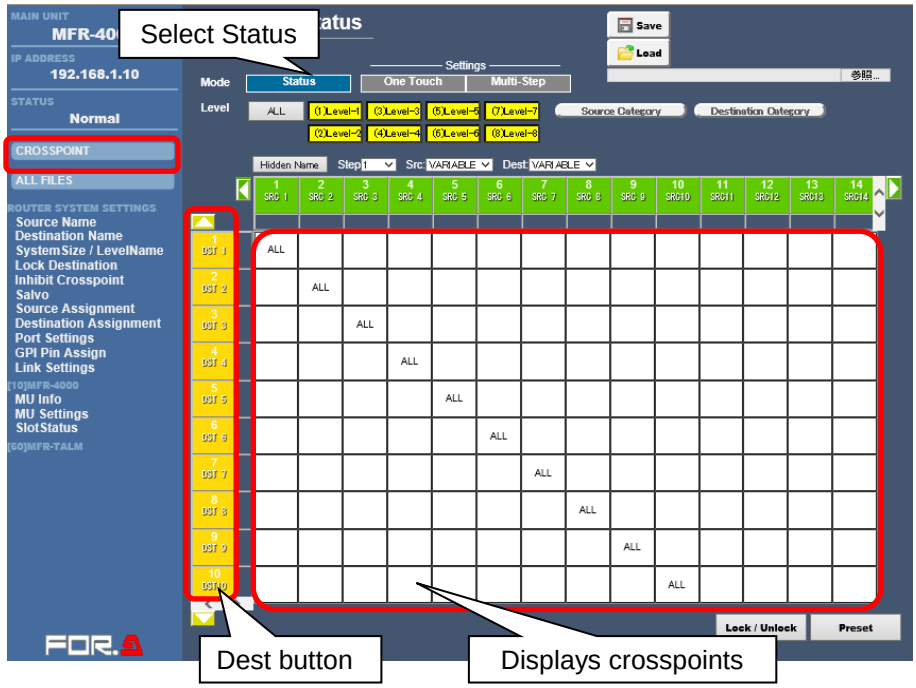
The **Crosspoint Status** page displays **Crosspoint Status** information.
This page has three modes, one for status display (**Status**) and two for crosspoint settings (**One Touch** and **Multi-Step** modes). Clicking on a mode button changes the page to the relevant mode.



<Mode>

Button	Description
Status	Changes the page to display Status mode. See Sec. 7-1. “Status Mode.”
One Touch	Changes the page to crosspoint setting mode allows crosspoints to be set by clicking cells in the matrix grid. See Sec. 7-2-1. “One Touch Mode.”
Multi-Step	Changes the page to crosspoint setting mode allows crosspoints to be set by selecting a source after specifying a destination. See Sec. 7-2-2. “Multi-Step Mode.”

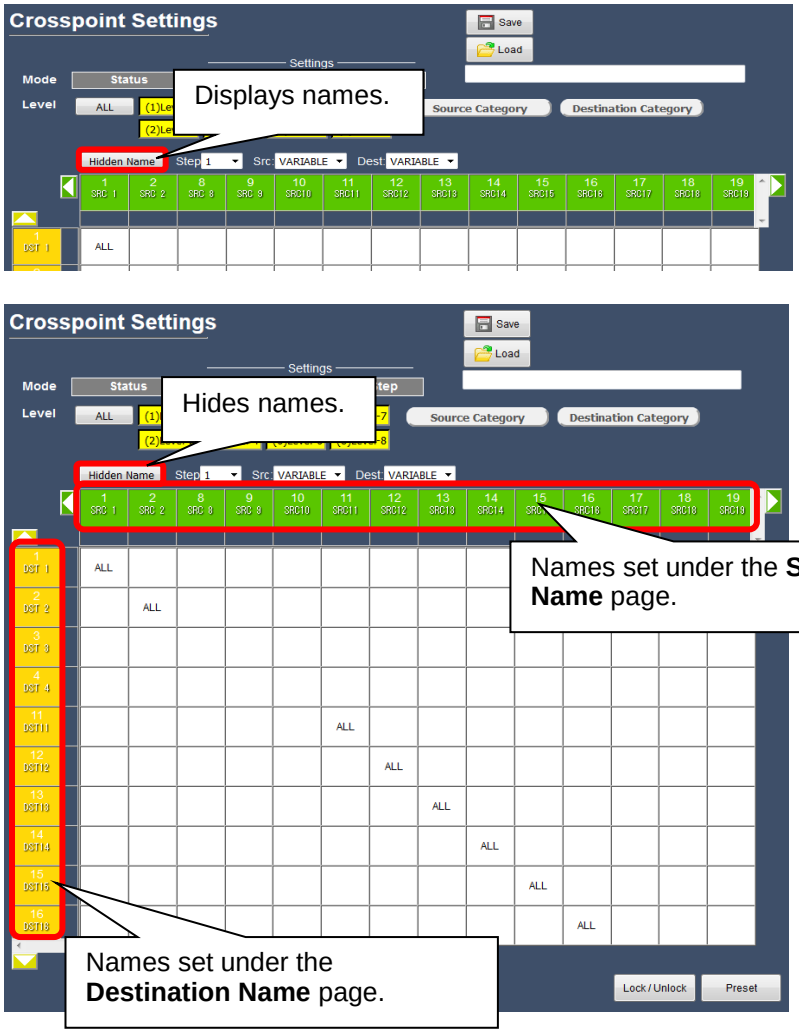
7-1. Status Mode



Item	Description
Level	Enables and disables levels. (**Enabled:** yellow, **Disabled:** gray)
Step	Sets the cell number to jump for each step in the grid.
Src, Dest	Sets the number of cells.
Lock / Unlock	Sets cells to locked/unlocked status.
Preset	Switches crosspoints using the Take (Preset) function.
△/ ▽/ ◁ / ▷	Changes cells range to display in the table. The keyboard arrow keys can also change cells range if a cell is selected (a cursor is focused). Pressing arrow keys while holding down the Ctrl key allows you to move the double amount of cells.

◆ **Source Name Display**

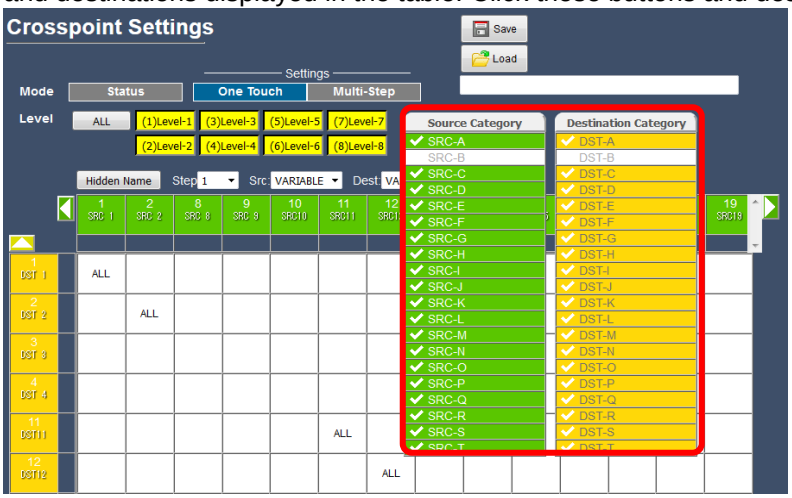
Clicking **Display Name** allows you to display **Source Names** and **Destination Names**. To hide the name display, click **Hidden Name**.



Imported signal names that are available are displayed prior to other names.

◆ **Narrowing down displayed table items**

The **Source Category** and **Destination Category** buttons allow you to narrow down the sources and destinations displayed in the table. Click these buttons and deselect unused categories.



7-2. Crosspoint Switching

The **Crosspoint Status** page has two modes for performing crosspoint switches: **One Touch** and **Multi-Step**.

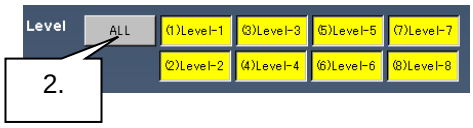
7-2-1. One Touch Mode

In One Touch mode, crosspoints can be switched independently or simultaneously using the Take function.

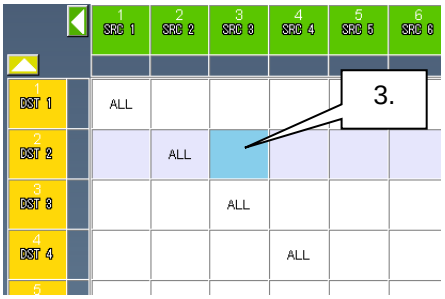
◆ **Independent Switch**

1. Click **One Touch** to set the page to One Touch mode.

2. Select levels to apply a crosspoint switch.

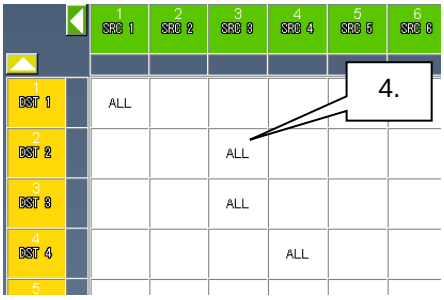


3. Click the cell (crosspoint) you wish to switch. The selected crosspoint is highlighted.



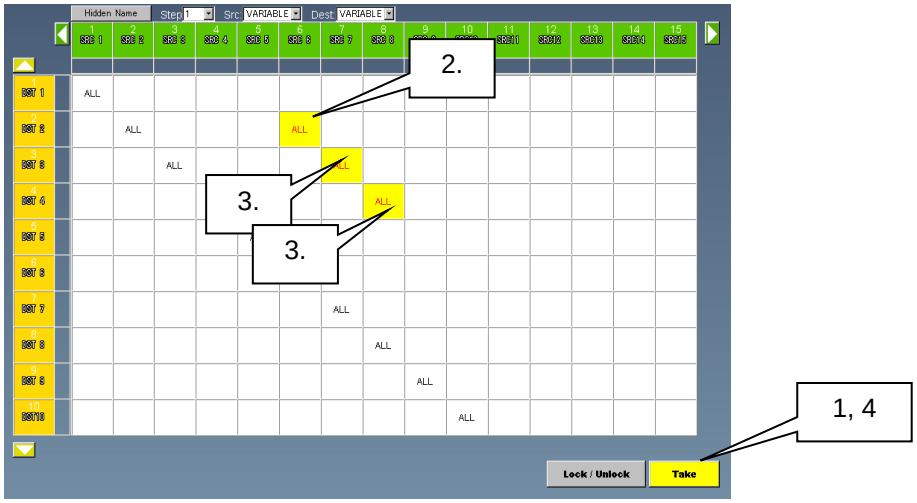
4. Click the crosspoint again to switch the crosspoint.

5. To deselect the crosspoint, click the **Destination** number.



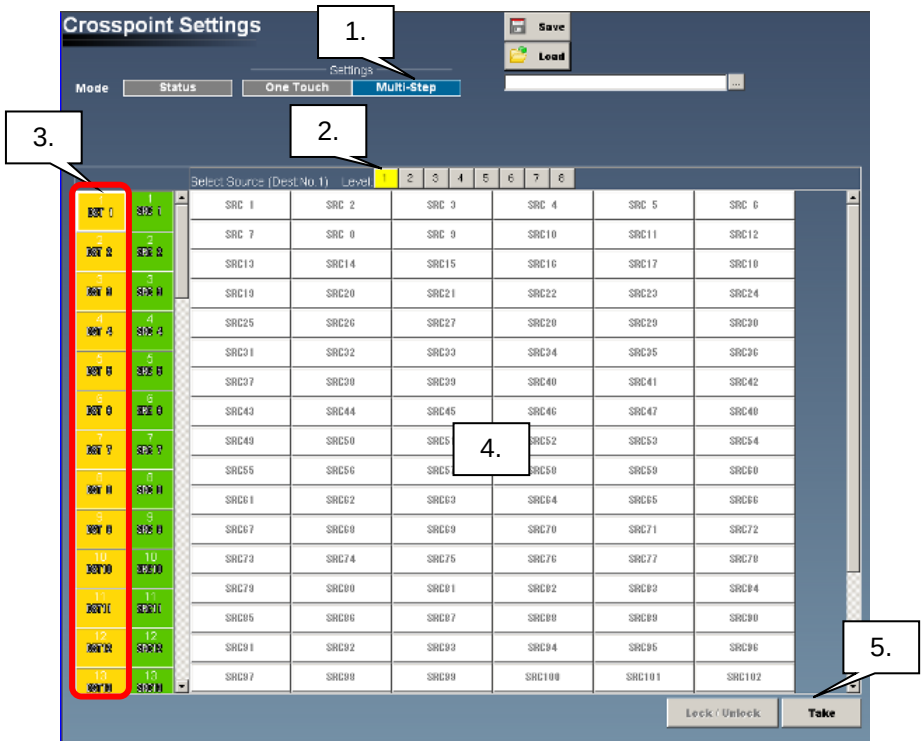
◆ **Multi-Switch using Take**

1. Click the **Preset** button. The button changes to **Take** and turns yellow.
2. Click a cell to select a crosspoint. Click a cell again to apply the selection. The text of the selected crosspoint turns red.
3. Repeat Step 2. to set all desired crosspoints.
   (Up to 256 crosspoints can be stored for execution using TAKE.)
4. Click the **Take** button again to switch the crosspoints.



7-2-2. Multi-Step Mode

1. Click **Multi-Step** to set the page to Multi-Step mode.
2. Select a level to apply crosspoint switches.
3. Click a **DST** button to be changed.
4. Click to select a source in the right cell grid.
5. Click **Take** to apply the change.
6. Repeat steps 3, 4 and 5 as needed.

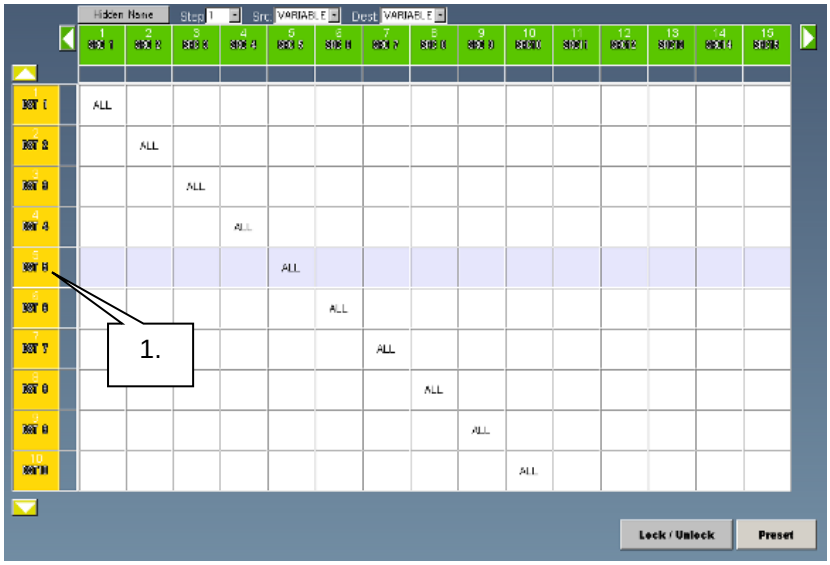


7-3. Lock Setting

The **Crosspoint Settings** page allows you to set **LOCK ALL** to desired destinations and release **LOCK OTHER** or **LOCK ALL** settings as specified by the main unit. Refer to the instructions below for details.

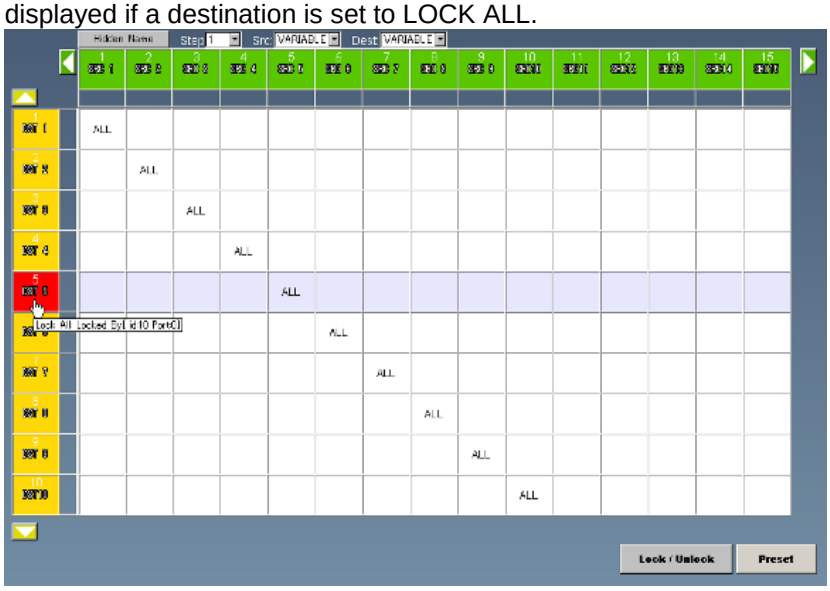
- LOCK ALL

1. Click to select a Dest. number.



2. Click **Lock / Unlock** to set the destination to LOCK ALL.

To verify the Lock All status, move the mouse over destination buttons. "Lock All: Locked" is displayed if a destination is set to LOCK ALL.



- Releasing LOCK (LOCK OTHER or LOCK ALL settings specified by the main unit)

1. Click a destination number.
2. Click **Lock / Unlock** to release LOCK ALL from the destination...

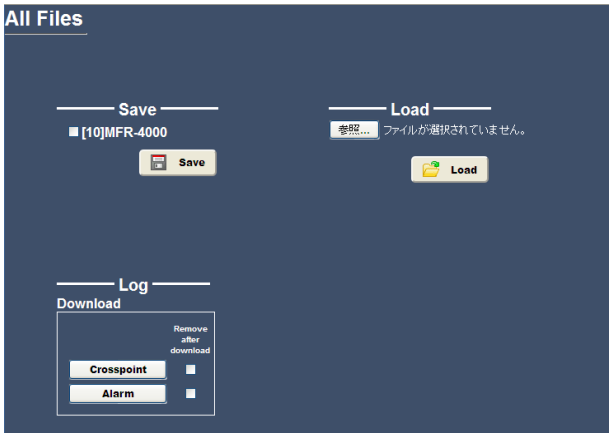
The LOCK function can also be set and released in the **Lock Destination** page. See Sec. 4-4. “Lock Destination.”

8. Saving/Loading All Page Settings (ALL FILES)

The **All Files** setting page allows you save / load all MFR system settings.
Click **ALL FILES** to display the page as shown below.

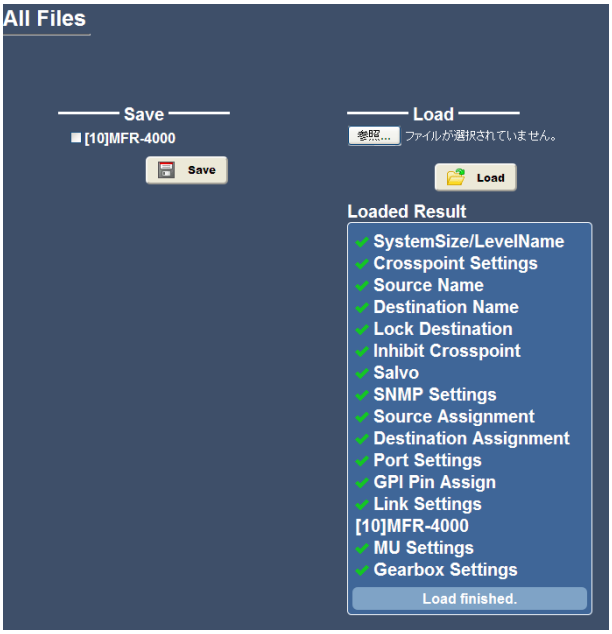
◆ **Saving Settings**

1. Check on the check boxes for the units you want to save settings.
2. Click **Save**.
3. All setting data are downloaded and saved to a file.



◆ **Loading Settings**

1. Select a file to be loaded.
2. Click **Load**.
   When data is finished loading, the **Loaded Result** settings are displayed as shown in the lower right settings box in the figure at right.



◆ **Downloading Log Data**

Click the required log button from **Crosspoint**, **Alarm** or **Other** to start downloading log data.
Other appears by checking **Enable Other Log** in the **MU Settings** screen.

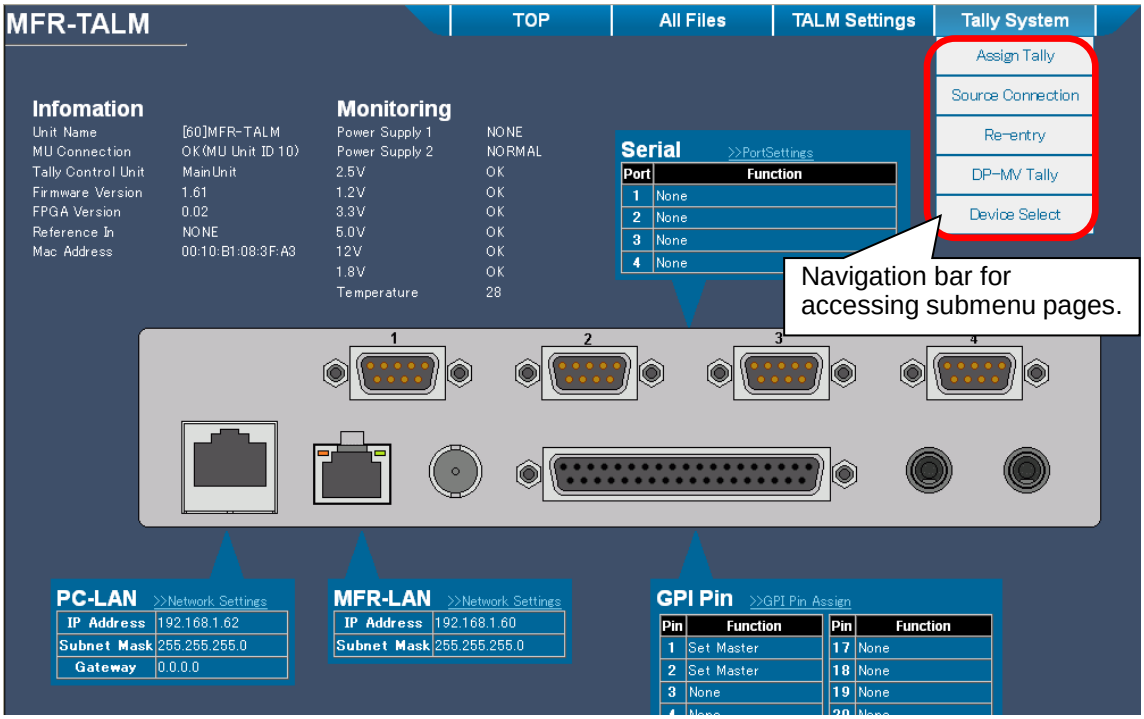
Removing Downloaded Log Data from MFR-4000/6000

Clicking **Crosspoint**, **Alarm** or **Other** after checking **Remove after download**, a dialog box appears. When OK is clicked, log data is downloaded and the downloaded log data is removed from the MFR-4000/6000.
Use this function to download log data periodically or to avoid log data duplication.

9. MFR-TALM Settings

9-1. MFR-TALM Page Configuration

On the upper right corner of the MFR-TALM Web-based Control top page, four buttons, **TOP**, **All Files**, **TALM Settings** and **Tally System** are located and used for navigating Web-based Control pages.



Navigation bar		Description	Refer to
TOP	–	Opens the TOP page, displaying the MFR-TALM hardware status.	9-2
All Files	–	Opens the All Files page, in which all MFR-TALM settings are simultaneously saved/loaded.	8
TALM Settings	Network Settings	Opens the **Network Settings** page, in which MFR-TALM IP address and other network settings are changed.	9-3-1
	Port Settings	Opens the **Port Settings** page, in which serial and Ethernet port settings are changed.	9-3-2
	HVS-TAL Protocol Reception	Opens the **HVS-TAL Protocol Reception** page, used to set how to receive serial tallies from a Hanabi series switcher.	9-3-3
	GPI Pin Assign	Opens the **GPI Pin Assign** page, in which the MFR-TALM GPI inputs and outputs are set.	9-3-4
Tally System	Assign Tally	Opens the Tally System settings page.	9-4-1
	Source Connection		9-4-2
	Re-entry		9-4-3
	DP-MV Tally		9-4-4
	Device Select		9-4-5

9-2. TOP Page

The **MFR-TALM TOP** page allows you to display the network and power status for the MFR-TALM unit.

Parameter		Description
Information	Unit Name	Displays the Unit Name and ID.
	MU Connection	Displays the MU Connection status.
	Tally Control Unit	Displays whether the MFR-TALM or Main Unit is used for the Tally Control Unit.
	Firmware Version	Displays the MFR-TALM Firmware Version.
	FPGA Version	Displays the MFR-TALM FPGA Version.
	Reference In	Displays the Reference Input status.
	MAC Address	Displays the MAC address of the MFR-LAN port.
Monitoring	Power Supply 1/2	Displays status on AC adaptors 1 and 2. (NORMAL: Normal / ERROR: Error / NONE: No connection)
	5.0V/3.3V/2.5V/ 1.8V/1.2V	Displays the voltage status. (OK: Normal / NG: Error)
	Temperature	Displays the temperature status.
Serial	>>Port Settings	Moves to the **Port Settings** page (See Sec. 9-3-2.)
	Port	Displays the port number.
	Function	Displays the set communication protocol.
GPI Pin	>>GPI Pin Assign	Moves to the **GPI Pin Assign** page. (See Sec. 9-3-4.)
	Pin	Indicates the Pin number.
	Function	Displays the Function assigned to each pin.
PC-LAN	>>Network Settings	Moves to the **Network Settings** page. (See Sec. 9-3-1.)
	IP Address	Displays the IP address of the PC-LAN port.
	Subnet Mask	Displays the Subnet Mask of the PC-LAN port.
	Gateway	Displays the Gateway of the PC-LAN port.
MFR-LAN	>>Network Settings	Moves to the **Network Settings** page. (See Sec. 9-3-1.)
	IP Address	Displays the IP address of the MFR-LAN port.
	Subnet Mask	Displays the subnet mask of the MFR-LAN port.

9-3. TALM Settings

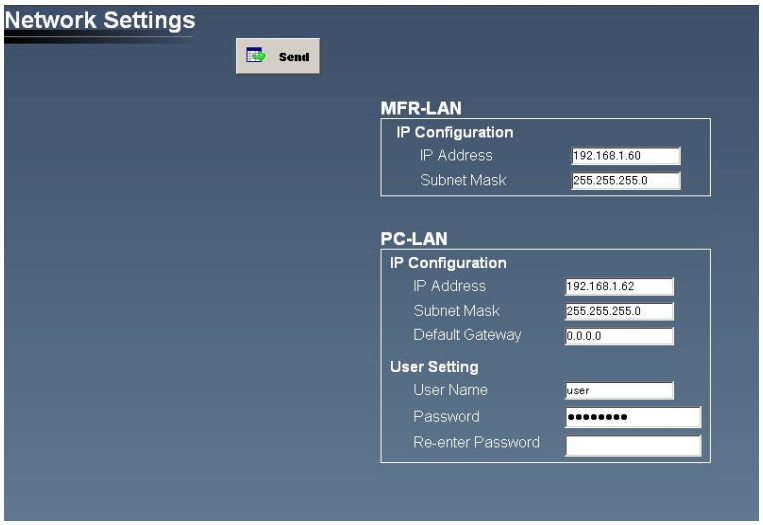
9-3-1. Network Settings

The MFR-TALM **Network Settings** page allows you to set network settings on an MFR-TALM unit.

◆ **Factory Default Settings**

Default user name and password settings for logging into an **MFR-TALM** are as shown below.

User name: **user** (factory default setting)
Password: **password** (factory default setting)



To change the user name and password, proceed as follows:

◆ **Changing PC-LAN Settings**

1. Refer to the table below to change the desired settings.

Parameter		Description
IP Configuration	IP Address	Allows you to enter the IP address.
	Subnet Mask	Allows you to enter the Subnet Mask.
	Default Gateway	Allows you to enter the Default Gateway address.
User Setting	User Name	Allows you to set the Username used in the login page.
	Password	Allows you to enter the Password.
	Re-enter Password	Allows you to reenter the Password.

2. Click **Send**.
3. A dialog box appears. Click **OK** to restart Web-based Control.

NOTE

Make sure to enter the User name, even when you change the Password.

◆ **Changing MFR-LAN Settings**

1. Set the new MFR-LAN IP address and Subnet mask settings.
2. Click **Send**.
3. Restart the MFR-TALM unit. (Turn the MFR-TALM power OFF then ON.)

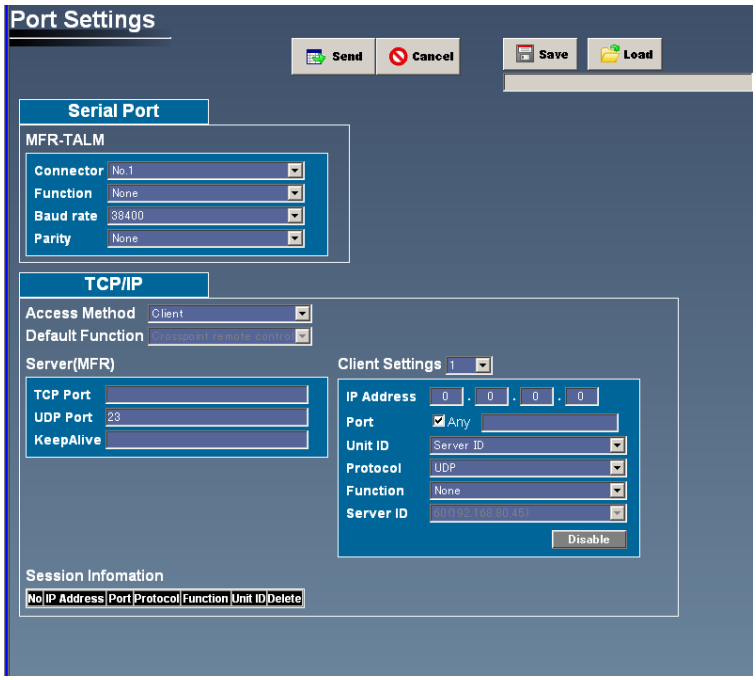
IMPORTANT

If changing both MFR-LAN and PC-LAN settings, before restarting MFR-TALM, click **Send**, then **OK** on the pop-up dialog.

Saved settings are applied the next time Web-based Control is restarted. (Restarting the browser without pressing **OK** on the dialog does not save the settings.) To apply settings in such case, close the browser, wait several tens of seconds and login once again to the MFR-TALM Web-based Control.

9-3-2. Port Settings

The **Port Settings** page allows you to set the serial and Ethernet port settings on an MFR-TALM.



◆ **Serial Port**

Parameter	Description
Connector	Allows you to specify the RS-422 connector number on the MFR-TALM rear panel.
Function	Allows you to select the communication protocol.(*1)
Baud rate	Allows you to select the Baud rate.
Parity	Allows you to select the Parity.

(*1) Available protocols:
Router / HVS connection: Used to connect Hanabi series switchers other than HVS-490/2000/4000/6000 (*2).
Router / HVS connection type2: Used to connect HVS-490/2000/4000/6000 switchers (*2).
Tally out (TSL Ver. 3.1): Used to transfer tally data using TSL protocol ver. 3.1.
Tally out (TSL Ver. 4.0): Used to transfer tally data using TSL protocol ver. 4.0.
HVS-TAL Protocol Reception: Used to receive HANABI series serial tallies.

(*2) Other connection methods are also available.

IMPORTANT

Saved settings are applied the next time the MFR-TALM is rebooted.

◆ **TCP/IP**

Parameter	Default	Description
Access Method	–	Unused
Default Function	–	Unused

Server (MFR) (MFR-TALM)

TCP Port	–	Unused
UDP Port	23	Allows you to enter the Server UDP port number.
KeepAlive	–	Unused

Client Settings

Client Settings		1	Assigns the client (PC) identification number. (Setting range: 1 to 16)
IP Address		0.0.0.0	Enters the PC IP address. Setting the IP address enables the communication.
Port		Any	Sets the PC TC/UDP port number. Check **Any** when not setting a port number. To enable the connection from a specific port, uncheck **Any**, then enter the port number in the right setting box. If port numbers remain unspecified, the PC is connected via any available port at each communication start.
Unit ID		Server ID	Unused
Protocol		UDP	Fixed to UDP.
Function		None	Selects the communication protocol.
	* The following parameters are displayed when **TSL UMD protocol V5.0 Tally out** is selected.		
	Encode	ASCII	Selects the character code from ASCII, Unicode (Kanji), or Unicode (Import).
	DLE	ON	Selects **ON** or **OFF** for **Data Link Escape**.
	Screen No.	0	Selects the TSL screen number.
	ID Range	TSL-1 to TSL-256	Sets the TSL output range. (See Sec. 9-4-4. DP-MV Tally.)
Server ID		60 (192.168.1.62)	Sets the MFR-TALM Unit ID. * The server IP Address is displayed in parentheses.
Disable		---	Enables/disables the current "Client Settings."
Session Information		–	A list of active sessions.

NOTE

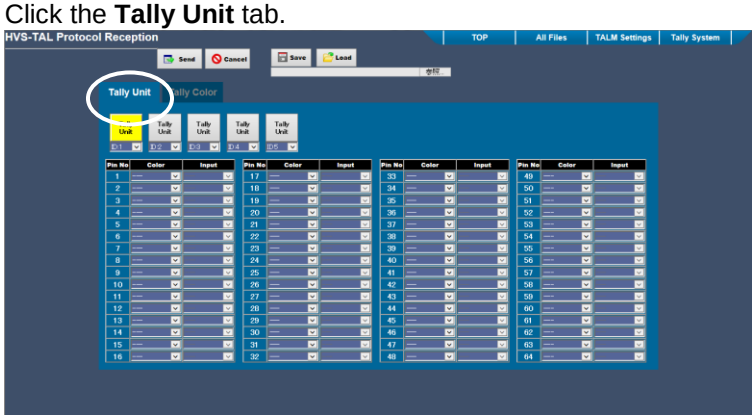
The number of concurrent server sessions allowed is **16**.
Click the **Send** button to save settings after they are changed.

9-3-3. HVS-TAL Protocol Reception

The **HVS-TAL Protocol Reception** page allows you to set up Hanabi series serial tallies to be received.

◆ Tally Unit settings

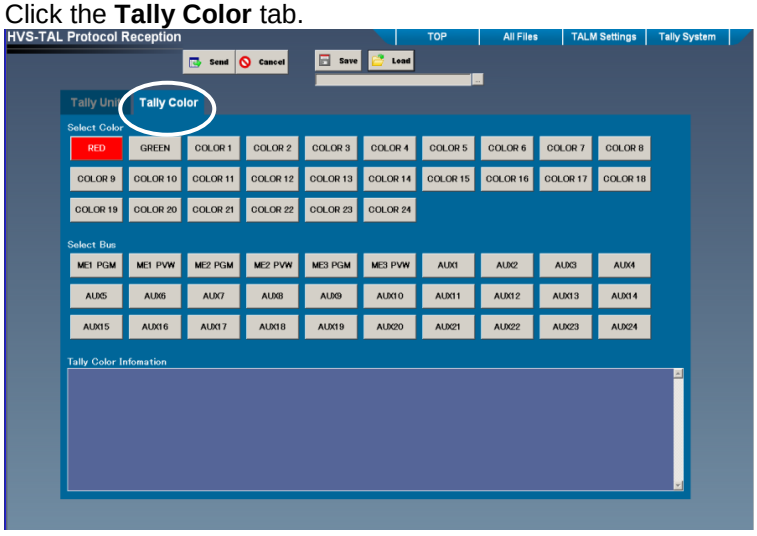
Click the **Tally Unit** tab.



Parameter	Description
Tally Unit	Specifies a Hanabi Tally Unit by specifying the ID number.
Pin No	Indicates the tally unit's Pin Number.
Color	Selects a tally Color assigned to each pin.
Input	Selects an Input signal or bus assigned to each pin.

◆ Tally Color Settings

Click the **Tally Color** tab.



Parameter	Description
Select Color	Selects a tally Color for use.
Select Bus	Selects an output Bus to which the tally color selected above is assigned in the Hanabi series switcher.

IMPORTANT

Settings in this page must be the same as those in the HVS series switcher.

9-3-4. GPI Pin Assignment

The **GPI Pin Assign** page allows you to assign functions to MFR-TALM GPI connector pins respectively. See Sec. 4-11. “GPI Pin Assign” for details other than “Master Switching” as shown below.

<Master Switching>

- When **Set Master** is selected

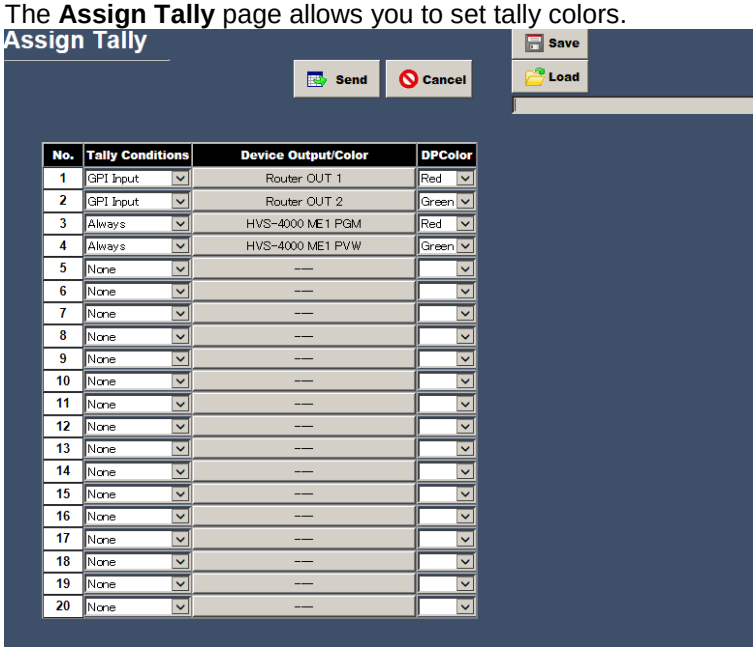
The selected ID Main Unit becomes the integrated Main Unit Master. (An unconnected unit cannot be selected as a master.)

9-4. Tally System Settings

The **Tally System Settings** page allows you to set tally control settings.

9-4-1. Assign Tally

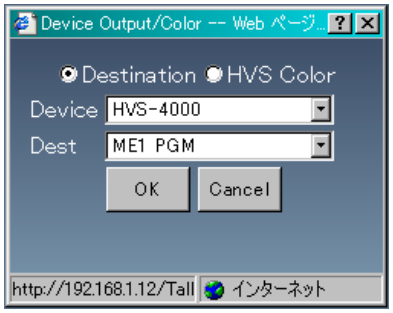
The **Assign Tally** page allows you to set tally colors.

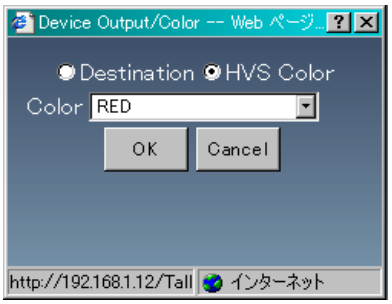


Parameter	Description
Tally Conditions	Select **Always**, **GPI Input**, or **None**.
Device Output/Color	Selects a device, and the **Channel** or **Color**.
DPColor	Selects the tally color from **Red** or **Green**.

◆ **Device Output/Color Settings**

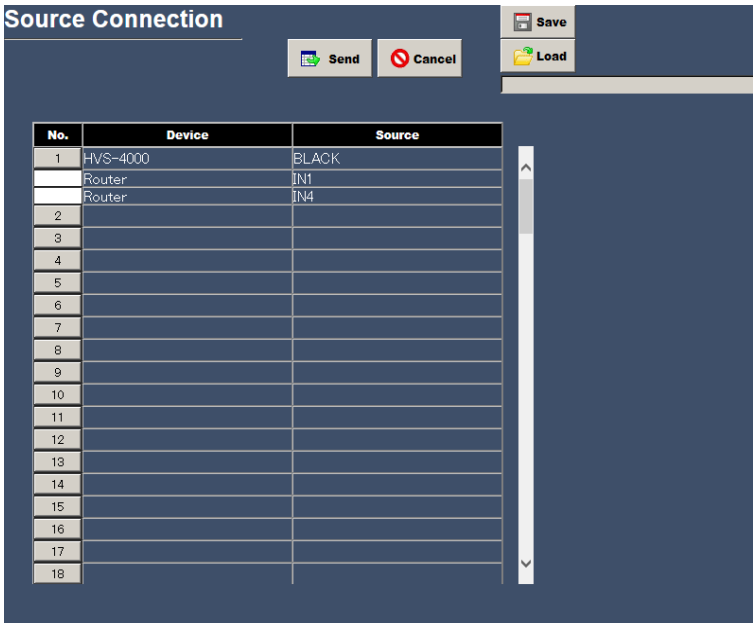
Clicking a button under **Device Output/Color** cell displays a dialog box as shown below.
Selects **Destination** or **HVS Color**.
Destination: Specify a device and destination and click **OK**.
HVS Color: Select a color and click **OK**.
Devices and channels are indicated by the names set for switchers and channels in Sec. 9-4-5. “Device Select.”





9-4-2. Source Connection

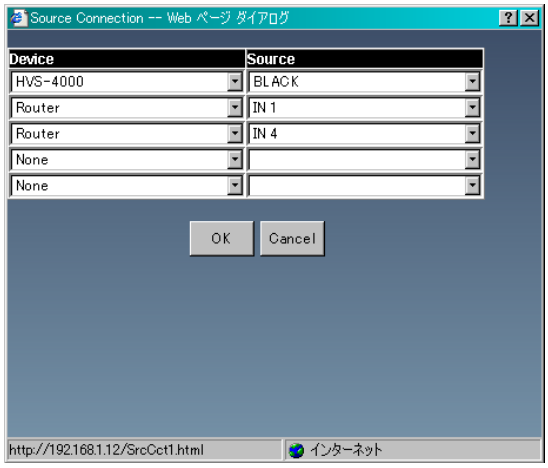
The **Source Connection** page allows you to group source signals.



Parameter	Description
Device / Source	Displays devices and sources to be grouped.

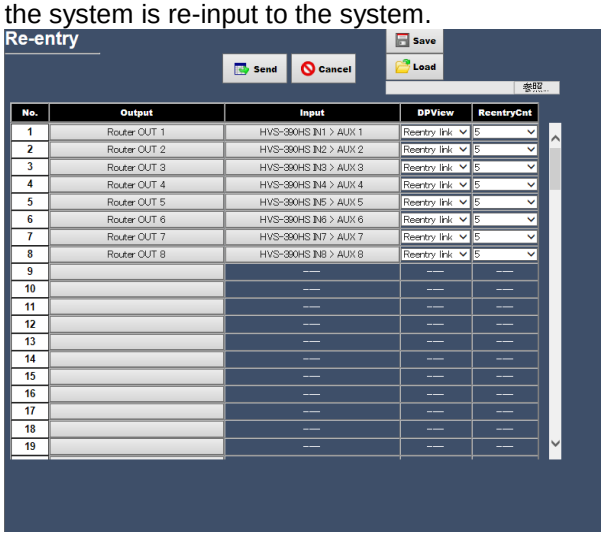
◆ Source Connection Settings

Opening the **Source Connection** page and clicking a button under **No.** opens the dialog box as shown below. Select the devices and sources to group and click **OK**. Up to five sources can be grouped together under a single number.
Devices and channels are indicated by the names set for switchers and channels in Sec. 9-4-5. “Device Select.”



9-4-3. Re-entry

The **Re-entry** page allows you to set connection relation settings when a signal output from the system is re-input to the system.

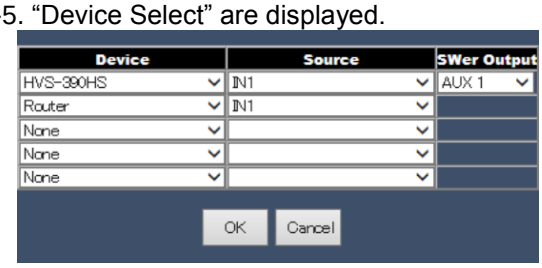


Parameter	Description
Output	Selects the Output channel.
Input	Selects the Input channel.
DPView	Selects the name to display on the UMD or MV window. **Reentry link:** Traces back and displays the original source. **Source:** Displays the connected source.
ReentryCnt	Re-entry may be looped, for example, if the re-entered output signal selects other re-entered input to the system. In such case, the number of tallies to be traced back can be specified. If tally indication of a reentry output is improper, verify that the sufficient number is set in ReentryCnt.

◆ Selecting Output and Input Signals

Clicking a button under **Output** or **Input** displays the dialog box as shown below. Select output and input signals and click **OK**. To connect to multiple devices, up to 5 input signals can be selected.

Device and channel names set in Sec. 9-4-5. “Device Select” are displayed.



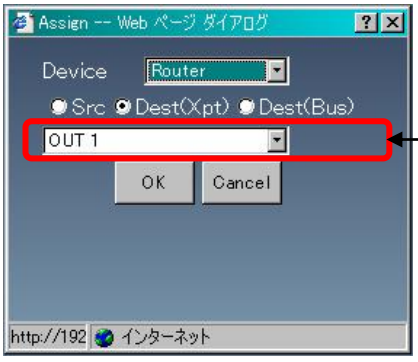
9-4-4. DP-MV Tally

The **DP-MV Tally** page allows you to assign a channel for each display ID.

Parameter	Description
DP ID/TSL ID	Selects the ID for which to set settings.
No.	If **DP ID** is selected: Selects a UMD ID (DP1-128) If **TSL ID** is selected: Selects an MV window ID. (TSL1-256)
Assign	Selects a channel to assign to the selected ID.
Display	Checking this checkbox displays the name entered under **Content** to the UMD or MV window. Unchecking the checkbox displays the name under **Assign**, the source name assigned to the channel.
Name (ASCII/Kanji)	Enters the name displayed on the UMD or MV window when the checkbox under **Display** is checked.
Colors	Selects a tally color when the checkbox under **Display** is checked.

◆ Assignments

Clicking a button under **Assign** displays the dialog box as shown below. Select the device and its channel to assign the display ID, and click **OK**. The selected device and channel are displayed under **Assign**.



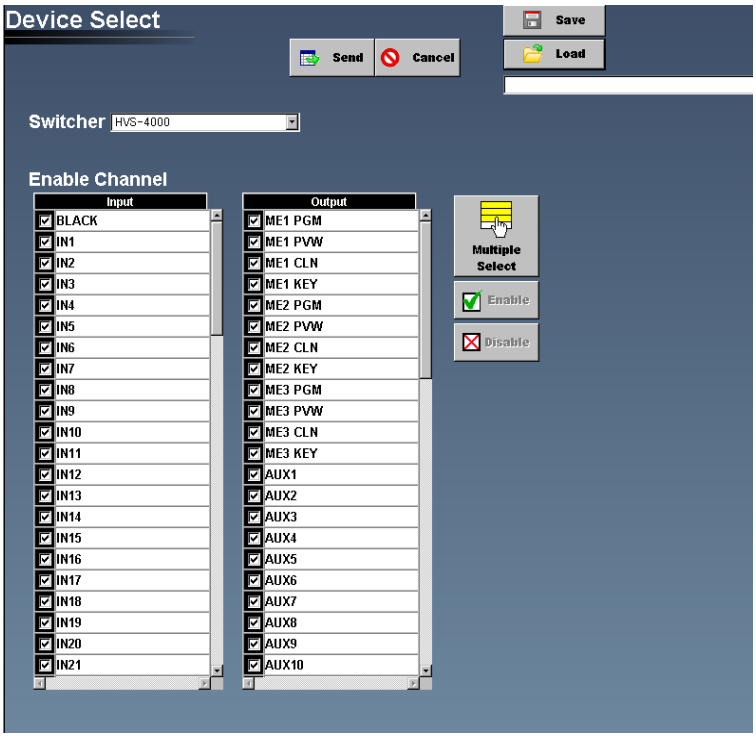
Channel selection

Devices and channels are indicated by the names set for switchers and channels in Sec. 9-4-5. “Device Select.”

Channel Selection
Src: Displays the selected source.
Dest(Xpt): Traces back and displays the original source.
Dest(Bus): Displays the selected destination.

9-4-5. Device Select

The **Device Select** page allows you to select switchers and input/output channels.



Parameter	Description
Switcher	Selects and enables switchers from among **HVS-6000, HVS-5000, HVS-4000, HVS-490, HVS-390HS**, **HVS-350HS**, **HVS-2000** and **HVS-100/110**.
Input	Displays Input channel names.
Output	Displays Output channel names.
Multiple select	Enables multiple selections. Click the Multiple Select button, then click or drag to select multiple channels. The selected channels are highlighted in yellow.
Enable	Clicking the Enable button while channel/s are selected enables all selected channels. (Checked)
Disable	Clicking the Disable button while channel/s are selected disables all selected channels. (Unchecked)
ID	When switching from multiple switchers, select 4th octet of the switcher IP address.

10. SNMP Settings

The MFR Series router can be monitored using the SNMPv2C protocol. See Sec. 4-7 "SNMP Settings" for details on SNMP network settings.

◆ **Connection setting**

Connect to an MFR Series main unit PC-LAN port (or the TO PC port).

◆ **SNMP MIB OID Information**

OID	forA	20175
	mfr	304

◆ **MIB List**

Object group	Object name in MIB file	Description
mfrMuPower Status	mfrMuPower1Alarm	Power Supply Unit1 status
	mfrMuPower2Alarm	Power Supply Unit2 status
	mfr5kPower1Ac	Power Supply Unit1 internal AC voltage alarm
	mfr5kPower1Dc	Power Supply Unit1 internal DC voltage alarm
	mfr5kPower1Fan	Fan alarm status for Power Supply Unit1 cooling fan
	mfr5kPower1OverTempAlarm	Power1 overheating alarm
	mfr5kPower2Ac	Power Supply Unit2 internal AC voltage alarm
	mfr5kPower2Dc	Power Supply Unit2 internal DC voltage alarm
	mfr5kPower2Fan	Fan alarm status for Power Supply Unit2 cooling fan
	mfr5kPower2OverTempAlarm	Power2 overheating alarm
mfrMuFan Status	mfrMuFan1Alarm	Main unit cooling fan 1 alarm
	mfrMuFan2Alarm	Main unit cooling fan 2 alarm
	mfrMuFan3Alarm	Main unit cooling fan 3 alarm
	mfrMuFan4Alarm	Main unit cooling fan 4 alarm
	mfrMuFan5Alarm	Main unit cooling fan 5 alarm
	mfrMuFan6Alarm	Main unit cooling fan 6 alarm
	mfrMuFan7Alarm	Main unit cooling fan 7 alarm
mfrMuCpu Status	mfrMuActiveCpu	CPU active / passive status
	mfrMuCpu1Status	CPU1 installation status
	mfrMuCpu1VoltAlarm	CPU1 internal voltage alarm
	mfrMuCpu1Ip	CPU1 IP address
	mfrMuCpu1Subnet	CPU1 subnet mask
	mfrMuCpu1Mac	CPU1 MAC address
	mfrMuCpu1FirmVer	CPU1 firmware version
	mfrMuCpu1FpgaVer	CPU1 hardware version
	mfrMuCpu2Status	CPU2 installation status
	mfrMuCpu2VoltAlarm	CPU2 internal voltage alarm
	mfrMuCpu2Ip	CPU2 IP address
	mfrMuCpu2Subnet	CPU2 subnet mask
	mfrMuCpu2Mac	CPU2 MAC address
	mfrMuCpu2FirmVer	CPU2 firmware version
	mfrMuCpu2FpgaVer	CPU2 hardware version
	mfrMuMaster	Main unit master unit information
	mfrMuMasterID	Main unit master unit ID

Object group	Object name in MIB file	Description
mfr5kMtxCard Status	mfr5kMtxVoltAlarm	Matrix board internal voltage alarm
	mfr5kMtxFpgaVer	Matrix board hardware version
	mfr5kMtxXptError	Matrix board crosspoint error
mfr5kRearCard Status	mfr5kRear1VoltAlarm	Rear card 1 voltage alarm
	mfr5kRear2VoltAlarm	Rear card 2 voltage alarm
mfr5kSlot StatusList (*1)	mfr5kSlotBoardName	Name of board installed on the MFR-4000/6000
	mfr5kSlotStatus	Alarm status of input and output boards
mfrRu StatusList	mfrRuID	Remote control unit ID
	mfrRuModelName	Remote control unit model information
	mfrRuUnitName	Remote control unit name and unit ID
	mfrRuIp	Remote control unit IP address
	mfrRuSubnet	Remote control unit subnet mask
	mfrRuMac	Remote control unit MAC address
	mfrRuFirmVer	Remote control unit firmware version
	mfrRuFpgaVer	Remote control unit hardware version
	mfrRuPower1Alarm	Remote control unit Power Supply unit1 alarm
	mfrRuPower2Alarm	Remote control unit Power Supply unit2 alarm
	mfrRuVoltAlarm	Remote control unit internal voltage alarm
	mfrRuLinkStatus	Remote control unit connection status
mfrGpi StatusList	mfrGpiID	MFR-GPI or MFR-TALM unit ID
	mfrGpiModelName	MFR-GPI or MFR-TALM model information
	mfrGpiUnitName	MFR-GPI or MFR-TALM name and unit ID
	mfrGpiIp	MFR-GPI or MFR-TALM IP address
	mfrGpiSubnet	MFR-GPI or MFR-TALM subnet mask
	mfrGpiMac	MFR-GPI or MFR-TALM MAC address
	mfrGpiFirmVer	MFR-GPI or MFR-TALM firmware version
	mfrGpiFpgaVer	MFR-GPI or MFR-TALM hardware version
	mfrGpiPower1Alarm	MFR-GPI or MFR-TALM Power Supply unit1 alarm
	mfrGpiPower2Alarm	MFR-GPI or MFR-TALM Power Supply unit2 alarm
	mfrGpiVoltAlarm	MFR-GPI or MFR-TALM internal voltage alarm
	mfrGpiLinkStatus	MFR-GPI or TALM unit connection status

(*1) Slot status list details as follows

◆ **MFR-4000**

mfr5kSlotBoardName 1 to 8	Board names for Slot 1-8 (Input 1-8)
mfr5kSlotBoardName 9 to 16	Board names for Slot 9-16 (Output 1-8)
mfr5kSlotStatus 1 to 8	Slot 1-8 (Input 1-8) status alarms
mfr5kSlotStatus 9 to 16	Slot 9-16 (Output 1-8) status alarms

◆ **MFR-6000**

mfr5kSlotBoardName 1 to 4	Boards names for Slot 1-4 (Input 1-4)
mfr5kSlotBoardName 5 to 12	Boards names for Slot 5-12 (Output 1-8)
mfr5kSlotBoardName 13 to 20	Boards names for Slot 13-20 (Input 5-12)
mfr5kSlotBoardName 21 to 28	Boards names for Slot 21-28 (Output 9-16)
mfr5kSlotBoardName 29 to 32	Boards names for Slot 29-32 (Input 13-16)
mfr5kSlotStatus 1 to 4	Slot 1-4 (Input 1-4)status alarms
mfr5kSlotStatus 5 to 12	Slot 5-12 (Output 1-8) status alarms
mfr5kSlotStatus 13 to 20	Slot 13-20 (Input 5-12) status alarms
mfr5kSlotStatus 21 to 28	Slot 21-28 (Output 9-16) status alarms
mfr5kSlotStatus 29 to 32	Slot 29-32 (Input 13-16) status alarms

◆ **MFR OID list**

Object group	Object name in MIB file	Access	OID	Return value
mfrMuPowerStatus			.1.3.6.1.4.1.20175.1.304.1	-
	mfrMuPower1Alarm	RO	.1.3.6.1.4.1.20175.1.304.1.1	None(0), OK(1), NG(2)
	mfrMuPower2Alarm	RO	.1.3.6.1.4.1.20175.1.304.1.2	None(0), OK(1), NG(2)
	mfr5kPower1Ac	RO	.1.3.6.1.4.1.20175.1.304.1.3	None(0), OK(1), NG(2)
	mfr5kPower1Dc	RO	.1.3.6.1.4.1.20175.1.304.1.4	None(0), OK(1), NG(2)
	mfr5kPower1Fan	RO	.1.3.6.1.4.1.20175.1.304.1.5	None(0), OK(1), NG(2)
	mfr5kPower1OverTempAlarm	RO	.1.3.6.1.4.1.20175.1.304.1.6	None(0), OK(1), NG(2)
	mfr5kPower2Ac	RO	.1.3.6.1.4.1.20175.1.304.1.7	None(0), OK(1), NG(2)
	mfr5kPower2Dc	RO	.1.3.6.1.4.1.20175.1.304.1.8	None(0), OK(1), NG(2)
	mfr5kPower2Fan	RO	.1.3.6.1.4.1.20175.1.304.1.9	None(0), OK(1), NG(2)
	mfr5kPower2OverTempAlarm	RO	.1.3.6.1.4.1.20175.1.304.1.10	None(0), OK(1), NG(2)
mfrMuFanStatus			.1.3.6.1.4.1.20175.1.304.2	
	mfrMuFan1Alarm	RO	.1.3.6.1.4.1.20175.1.304.2.1	None(0), OK(1), NG(2)
	mfrMuFan2Alarm	RO	.1.3.6.1.4.1.20175.1.304.2.2	None(0), OK(1), NG(2)
	mfrMuFan3Alarm	RO	.1.3.6.1.4.1.20175.1.304.2.3	None(0), OK(1), NG(2)
	mfrMuFan4Alarm	RO	.1.3.6.1.4.1.20175.1.304.2.4	None(0), OK(1), NG(2)
	mfrMuFan5Alarm	RO	.1.3.6.1.4.1.20175.1.304.2.5	None(0), OK(1), NG(2)
	mfrMuFan6Alarm	RO	.1.3.6.1.4.1.20175.1.304.2.6	None(0), OK(1), NG(2)
	mfrMuFan7Alarm	RO	.1.3.6.1.4.1.20175.1.304.2.7	None(0), OK(1), NG(2)
mfrMuCpuStatus			.1.3.6.1.4.1.20175.1.304.3	
	mfrMuActiveCpu	RO	.1.3.6.1.4.1.20175.1.304.3.1	CPU1(1), CPU2(2)
	mfrMuCpu1Status	RO	.1.3.6.1.4.1.20175.1.304.3.2	None(0), Installed(1)
	mfrMuCpu1VoltAlarm	RO	.1.3.6.1.4.1.20175.1.304.3.3	None(0), OK(1), NG(2)
	mfrMuCpu1Ip	RO	.1.3.6.1.4.1.20175.1.304.3.4	IP Address
mfrMuCpuStatus	mfrMuCpu1Subnet	RO	.1.3.6.1.4.1.20175.1.304.3.5	Subnet Mask
	mfrMuCpu1Mac	RO	.1.3.6.1.4.1.20175.1.304.3.6	OCTET STRING
	mfrMuCpu1FirmVer	RO	.1.3.6.1.4.1.20175.1.304.3.7	OCTET STRING
	mfrMuCpu1FpgaVer	RO	.1.3.6.1.4.1.20175.1.304.3.8	OCTET STRING
	mfrMuCpu2Status	RO	.1.3.6.1.4.1.20175.1.304.3.9	None(0), Installed(1)
	mfrMuCpu2VoltAlarm	RO	.1.3.6.1.4.1.20175.1.304.3.10	None(0), OK(1), NG(2)
	mfrMuCpu2Ip	RO	.1.3.6.1.4.1.20175.1.304.3.11	IP Address
	mfrMuCpu2Subnet	RO	.1.3.6.1.4.1.20175.1.304.3.12	Subnet Mask
	mfrMuCpu2Mac	RO	.1.3.6.1.4.1.20175.1.304.3.13	OCTET STRING
	mfrMuCpu2FirmVer	RO	.1.3.6.1.4.1.20175.1.304.3.14	OCTET STRING
	mfrMuCpu2FpgaVer	RO	.1.3.6.1.4.1.20175.1.304.3.15	OCTET STRING
	mfrMuMaster	RO	.1.3.6.1.4.1.20175.1.304.3.16	Not Master(0), Master(1)
	mfrMuMasterID	RO	.1.3.6.1.4.1.20175.1.304.3.17	0-255
mfr5kMtxCardStatus			.1.3.6.1.4.1.20175.1.304.4	
	mfr5kMtxVoltAlarm	RO	.1.3.6.1.4.1.20175.1.304.4.1	None(0), OK(1), NG(2)
	mfr5kMtxFpgaVer	RO	.1.3.6.1.4.1.20175.1.304.4.2	OCTET STRING
	mfr5kMtxXptError	RO	.1.3.6.1.4.1.20175.1.304.4.3	None(0), OK(1), NG(2)
mfr5kRearCardStatus			.1.3.6.1.4.1.20175.1.304.5	
	mfr5kRear1VoltAlarm	RO	.1.3.6.1.4.1.20175.1.304.5.1	None(0), OK(1), NG(2)
	mfr5kRear2VoltAlarm	RO	.1.3.6.1.4.1.20175.1.304.5.2	None(0), OK(1), NG(2)
mfr5kSlotStatusList			.1.3.6.1.4.1.20175.1.304.6	

Object group	Object name in MIB file	Access	OID	Return value
mfr5kSlotStatusListEntry		NA	.1.3.6.1.4.1.20175.1.304.6.1	
	mfr5kSlotStatusListIndex	NA	.1.3.6.1.4.1.20175.1.304.6.1.1	
	mfr5kSlotBoardName	RO	.1.3.6.1.4.1.20175.1.304.6.1.2	OCTET STRING
	mfr5kSlotStatus	RO	.1.3.6.1.4.1.20175.1.304.6.1.3	None(0), OK(1), NG(2), Shutdown(3)
mfrRuStatusList			.1.3.6.1.4.1.20175.1.304.8	
mfrRuStatusListEntry			.1.3.6.1.4.1.20175.1.304.8.1	
	mfrRuStatusListIndex	NA	.1.3.6.1.4.1.20175.1.304.8.1.1	1 to 255
	mfrRuID	RO	.1.3.6.1.4.1.20175.1.304.8.1.2	1 to 255
	mfrRuModelName	RO	.1.3.6.1.4.1.20175.1.304.8.1.3	OCTET STRING
	mfrRuUnitName	RO	.1.3.6.1.4.1.20175.1.304.8.1.4	OCTET STRING
	mfrRuIp	RO	.1.3.6.1.4.1.20175.1.304.8.1.5	IP Address
	mfrRuSubnet	RO	.1.3.6.1.4.1.20175.1.304.8.1.6	Subnet Mask
	mfrRuMac	RO	.1.3.6.1.4.1.20175.1.304.8.1.7	OCTET STRING
	mfrRuFirmVer	RO	.1.3.6.1.4.1.20175.1.304.8.1.8	OCTET STRING
	mfrRuFpgaVer	RO	.1.3.6.1.4.1.20175.1.304.8.1.9	OCTET STRING
	mfrRuPower1Alarm	RO	.1.3.6.1.4.1.20175.1.304.8.1.10	None(0), OK(1), NG(2)
	mfrRuPower2Alarm	RO	.1.3.6.1.4.1.20175.1.304.8.1.11	None(0), OK(1), NG(2)
	mfrRuVoltAlarm	RO	.1.3.6.1.4.1.20175.1.304.8.1.12	None(0), OK(1), NG(2)
	mfrRuLinkStatus	RO	.1.3.6.1.4.1.20175.1.304.8.1.13	LinkDown(0), LinkUp(1)
mfrGpiStatusList		NA	.1.3.6.1.4.1.20175.1.304.9	
mfrGpiStatusListEntry		NA	.1.3.6.1.4.1.20175.1.304.9.1	
	mfrGpiStatusListIndex	NA	.1.3.6.1.4.1.20175.1.304.9.1.1	1 to 255
	mfrGpiID	RO	.1.3.6.1.4.1.20175.1.304.9.1.2	1 to 255
	mfrGpiModelName	RO	.1.3.6.1.4.1.20175.1.304.9.1.3	OCTET STRING
	mfrGpiUnitName	RO	.1.3.6.1.4.1.20175.1.304.9.1.4	OCTET STRING
	mfrGpiIp	RO	.1.3.6.1.4.1.20175.1.304.9.1.5	IP Address
	mfrGpiSubnet	RO	.1.3.6.1.4.1.20175.1.304.9.1.6	Subnet Mask
	mfrGpiMac	RO	.1.3.6.1.4.1.20175.1.304.9.1.7	OCTET STRING
	mfrGpiFirmVer	RO	.1.3.6.1.4.1.20175.1.304.9.1.8	OCTET STRING
	mfrGpiFpgaVer	RO	.1.3.6.1.4.1.20175.1.304.9.1.9	OCTET STRING
	mfrGpiPower1Alarm	RO	.1.3.6.1.4.1.20175.1.304.9.1.10	None(0), OK(1), NG(2)
	mfrGpiPower2Alarm	RO	.1.3.6.1.4.1.20175.1.304.9.1.11	None(0), OK(1), NG(2)
	mfrGpiVoltAlarm	RO	.1.3.6.1.4.1.20175.1.304.9.1.12	None(0), OK(1), NG(2)
	mfrGpiLinkStatus	RO	.1.3.6.1.4.1.20175.1.304.9.1.13	LinkDown(0), LinkUp(1)

◆ **SNMP Trap**

Object name in MIB file		Trap condition
mfrTrap	mfrMuPower1AlarmTrap	Power Supply unit 1 internal voltage is abnormal or recovered.
	mfrMuPower2AlarmTrap	Power Supply unit 2 internal voltage is abnormal or recovered.
	mfrMuFan1AlarmTrap	Main unit cooling fan 1 is abnormal or recovered.
	mfrMuFan2AlarmTrap	Main unit cooling fan 2 is abnormal or recovered.
	mfrMuFan3AlarmTrap	Main unit cooling fan 3 is abnormal or recovered.
	mfrMuFan4AlarmTrap	Main unit cooling fan 4 is abnormal or recovered.
	mfrMuFan5AlarmTrap	Main unit cooling fan 5 is abnormal or recovered.
	mfrMuFan6AlarmTrap	Main unit cooling fan 6 is abnormal or recovered.
	mfrMuFan7AlarmTrap	Main unit cooling fan 7 is abnormal or recovered.
	mfrMuActiveCpuTrap	Main unit is operating with CPU2 (active) or CPU2 is activated.
	mfrMuCpu1VoltAlarmTrap	CPU1 board internal voltage is abnormal or recovered.
	mfrMuCpu2VoltAlarmTrap	CPU2 board internal voltage is abnormal or recovered.
	mfr5kMtxVoltAlarmTrap	Matrix board cooling fan is abnormal or recovered.
	mfr5kMtxXptErrorTrap	Crosspoint errors happen on the Matrix board.
	mfr5kRear1VoltAlarmTrap	Rear card 1 voltage is abnormal or recovered.
	mfr5kRear2VoltAlarmTrap	Rear card 2 voltage is abnormal or recovered.
	mfr5kSlotStatusAlarmTrap	Input / Output boards are abnormal or recovered.
	mfrMuChangeMasterTrap	Master unit ID is switched.
	mfrRuPower1AlarmTrap	Remote control unit Power Supply unit1 is abnormal or recovered.
	mfrRuPower2AlarmTrap	Remote control unit Power Supply unit2 is abnormal or recovered.
	mfrRuVoltAlarmTrap	Remote control unit internal voltage is abnormal or recovered.
	mfrGpiPower1AlarmTrap	MFR-GPI or MFR-TALM Power Supply unit 1 is abnormal or recovered.
	mfrGpiPower2AlarmTrap	MFR-GPI or MFR-TALM Power Supply unit 2 is abnormal or recovered.
	mfrGpiVoltAlarmTrap	MFR-GPI or MFR-TALM internal voltage is abnormal or recovered.
	mfrLanLinkTrap	An MFR Series device is disconnected or connected.

When CPUs are in Passive state, only CPU monitoring of “mfrMuCpuStatus > mfrMuActiveCpu” can be performed.

◆ **MFR OID list**

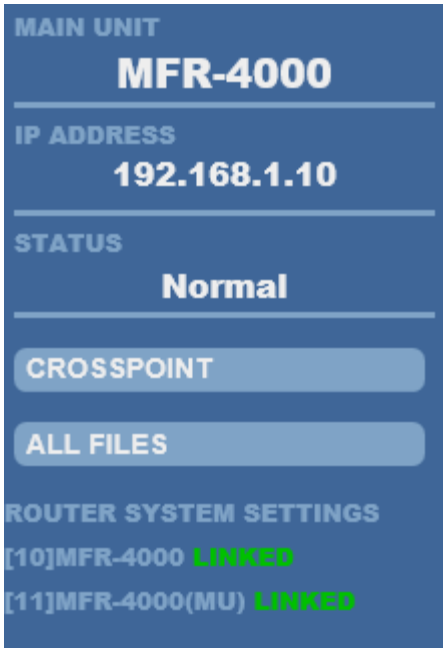
Object group	Object name in MIB file	OID	Return value
mfrTrap		.1.3.6.1.4.1.20175.1.304.10	
	mfrMuPower1AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.1	mfrMuPower1Alarm
	mfrMuPower2AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.2	mfrMuPower2Alarm
	mfrMuFan1AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.3	mfrMuFan1Alarm
	mfrMuFan2AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.4	mfrMuFan2Alarm
	mfrMuFan3AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.5	mfrMuFan3Alarm
	mfrMuFan4AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.6	mfrMuFan4Alarm
	mfrMuActiveCpuTrap	.1.3.6.1.4.1.20175.1.304.10.7	mfrMuActiveCpu
	mfrMuCpu1VoltAlarmTrap	.1.3.6.1.4.1.20175.1.304.10.8	mfrMuCpu1VoltAlarm
	mfrMuCpu2VoltAlarmTrap	.1.3.6.1.4.1.20175.1.304.10.9	mfrMuCpu2VoltAlarm
	mfr5kMtxVoltAlarmTrap	.1.3.6.1.4.1.20175.1.304.10.10	mfr5kMtxVoltAlarm
	mfr5kMtxXptErrorTrap	.1.3.6.1.4.1.20175.1.304.10.11	mfr5kMtxXptError
	mfr5kRear1VoltAlarmTrap	.1.3.6.1.4.1.20175.1.304.10.12	mfr5kRear1VoltAlarm
	mfr5kRear2VoltAlarmTrap	.1.3.6.1.4.1.20175.1.304.10.13	mfr5kRear2VoltAlarm
	mfr5kSlotStatusAlarmTrap	.1.3.6.1.4.1.20175.1.304.10.14	mfr5kSlotStatus
	mfrRuPower1AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.15	mfrRuPower1Alarm
	mfrRuPower2AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.16	mfrRuPower2Alarm
	mfrRuVoltAlarmTrap	.1.3.6.1.4.1.20175.1.304.10.17	mfrRuVoltAlarm
	mfrGpiPower1AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.18	mfrGpiPower1Alarm
	mfrGpiPower2AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.19	mfrGpiPower2Alarm
	mfrGpiVoltAlarmTrap	.1.3.6.1.4.1.20175.1.304.10.20	mfrGpiVoltAlarm
	mfrLanLinkTrap	.1.3.6.1.4.1.20175.1.304.10.21	mfrRuID, mfrRuLinkStatus
	mfrMuFan5AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.22	mfrMuFan5Alarm
	mfrMuFan6AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.23	mfrMuFan6Alarm
	mfrMuFan7AlarmTrap	.1.3.6.1.4.1.20175.1.304.10.24	mfrMuFan7Alarm
	mfrMuChangeMasterTrap	.1.3.6.1.4.1.20175.1.304.10.27	mfrMuMasterID

11. Main Unit Link

The Main Unit Link feature is available when MFR-4000/6000 firmware version is 1.00.09 and higher.

If a serial port on a Main Unit is set to one of the following:
Router / HVS connection
Router / HVS connection type2
the Main Unit Link feature cannot be applied to the Main Unit.
To apply the Link feature, change the serial port setting. (See Sec. 4-10. “Port Settings.”)

When **Parallel Link** is properly set, items as shown below appears in the left pane.



11-1. Parallel Link System Example

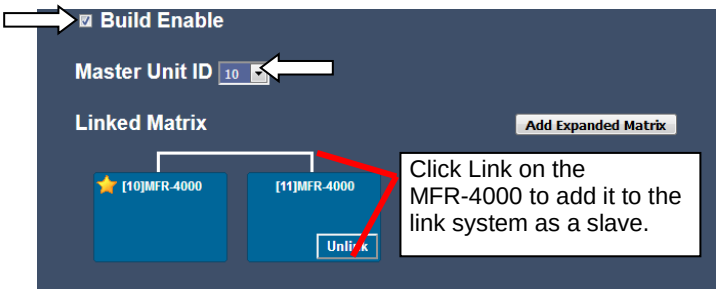
The following procedure explains how to set up a redundant system of two MFR main units. Two MFR-4000 units or two MFR-6000 units can be linked together by setting one unit as a master and the other unit as a slave. When crosspoints are changed in the master unit, they are also changed on the slave unit.

<Main Unit Link Setup>

1. Refer to Sec. 3-2-1 "Parallel Link System Example" in the MFR-4000/6000 Operation Manual to set IP addresses for the Main Units.

	MFR-4000/6000 (Master)	MFR-4000/6000 (Slave)
MFR-LAN	**192.168.1.10**	192.168.1.13
PC-LAN	**192.168.0.12**	192.168.0.15

2. Connect all devices, the Main and Remote Control Units and a PC(GUI), within the system.
3. Access the [Web-based Control] page by specifying the Master Unit Web-based Control IP address, **http://192.168.0.12**, on your web browser
4. Open the **Build Settings** page and set link settings as shown below.
   a. Check on the **Build Enable** check box.
   b. Select **10** for the **Master Unit ID**.
   c. Click **Link** on the MFR unit to be set to a master in the Linked Matrix area.
   d. Click **Send**.



5. Re-open the **Build Settings** page of the Master unit. The MFR system changes to Main Unit Link mode and the master unit appears on the navigation tree in the left pane.
6. Click **Link** on the other MFR (Slave), then click **Send**. A warning message for Source/Dest Assignment is displayed. If you want to create assignments automatically, click **OK**. If you want to create assignments manually, click **Cancel**.

Once a video and audio parallel link system is properly set, crosspoints on the MFR-4000/6000 (Slave) are switched in accordance with crosspoint changes on the MFR-4000/6000 (Master).

12. Troubleshooting

If any of the following problems occur while operating Web-based Control, before assuming a unit malfunction has occurred, follow the troubleshooting procedures below to see if the problem can be corrected.

IMPORTANT

If the problem cannot be corrected by performing the procedures below, turn the unit off and then on again. If this still does not correct the problem, contact your dealer.

Problem	Check	Remedy
Cannot control via Web-based Control	Are the LAN port connections to the PC established?	Use commands such as ping to check the connection. If pings are not getting through, verify the following conditions: -Does the PC's IP address conflict with that of another unit in the system? -Is **MASK** set to **255.255.255.0**? -Is **Gateway** set to **None** or **192.168.1.1**? -Turn off all security software such as fire walls, and try reconnecting.
	Is the connection between the browser and Web-based Control established?	Restart the browser. Make sure that the login dialog box appears.
	Is an error displayed in the browser?	Verify the browser and security settings. Make sure that Active X controls and active scripting are enabled.
Channel names specified for the HVS or MV series unit are not displayed	Are the names set using ASCII code?	To display names on the HVS or MV series unit, set the names under **Name (ASCII)**.
An effort message "An internal error has occurred. The server will restart." (Error code: 1001) appears on the screen.	—	Click **OK** then restart the web browser.
Cannot display the MFR-TALM page.	Is your browser accessing the MFR-TALM page?	The MFR Main Unit and MFR-TALM unit have different IP addresses. To connect to the MFR-TALM, enter "http://192.168.1.**62**" (default) in the address box in the browser. (See Sec. 2-4. "Connecting to Web-based Control.")