

Field Engineering Bulletin  
071 8283 03 | February 12, 2005  
Reference ECO: 330L

## **Broadlinx 2.2.1 Upgrade**

### **Applicability**

This release applies only to Trinix routers equipped with a Broadlinx board (NR-33000) operating with software version 2.1.1 or 2.2.0.

**Note** Users with versions prior to 2.1.1 must first upgrade to 2.1.1 before 2.2.1 can be installed. Please refer to Field Engineering Bulletin 071 8283 01, “Broadlinx 2.1.1 Upgrade.”

The software required for this upgrade is provided on a Broadlinx flash memory module.

**CAUTION** Thomson strongly recommends that users keep all software current. New boards are *not* guaranteed to be compatible with old versions of software. A system failure may occur if a new board is received as a replacement part and loaded with old software.

### **Purpose**

The primary purpose of this release is to provide output boost control for individual HO-33120/33121 high-definition universal output boards. This allows, for example, addition of an output splitter to provide dual or quad outputs for a block of 16 outputs, or for two blocks of 16 outputs, etc. This function is described in detail starting on page 14.

Other new features and error corrections are provided by this release, as described in the Release Notes section below.

As with any software package, some limitations remain. Many of these are known and are detailed in this document and other documents referenced. Please note that the description of known limitations is not an agreement to correct them.

## Materials required

<u>Qty</u>	<u>Description</u>	<u>Part number</u>
1 or 2	64 MB Compact Flash Memory, Broadlinx 2.2.1 (1 per NR-33000)	163 8279 07
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## Equipment required

- Trinix router equipped with Broadlinx (NR-33000) board(s).
- Ethernet connection to Trinix/Broadlinx.

## Release notes

### Release 2.2.1

#### Enhancements

1. Output boost control is now provided for individual HO-33120/33121 high-definition universal output boards.
2. Broadlinx can now be updated via NetConfig.

#### Problems corrected

1. Sync selection is now sent to HD-33120.
2. "NO XPT" status indication when interfacing Encore to Trinix. The problem appears when switching an input from 129-256 to an output from 1-128; in this case the Encore router status indicates "NO XPT" everywhere except the LRP (Local Router Panel), which shows the correct status. (CR 50177)
3. Incorrect router status was displayed on panels, LRP, and router controller status screen (Trinix/Apex issue). (CR 46803)
4. Breakaways were randomly displayed on control panels sometime after an all-level-task was executed.
5. False Breakaway was indicated.
6. Corrected NR-33000 statistical error reporting (manufacturing/test issue).
7. Software modified to support write protect on/off for new flash part (manufacturing issue)

## Release 2.2.0

### Enhancements

1. Support is now provided for crosspoint bus connection and control of the Apex digital audio router.
2. Support is now provided for SNMP.
3. Support is now provided for Encore control system version 1.6.5.1.

### Logged problems corrected

1. CR 47337 - inappropriate switchover from primary NR-33000 board to secondary board has been corrected.
2. CR 46092 - discovery of NR-33000 on LAN using NetConfig application is more reliable.

## Release 2.1.1

### Logged problems corrected (all Trinix routers)

1. For all types of Output Cards, corrected the problem where the last Take's action (within a group of Takes) was delayed an additional VIT period. This caused the output enable transition to occur one VIT after the switch in the DM-33512 Matrix Boards (for the last Take).

### Logged problems corrected (DV-33512 routers)

1. In the DM-33512 Matrix board, fixed intermittent problem of detecting the presence of input cards within the frame. This was sporadically causing Takes to not be confirmed.
2. The RP-33500 would report a low 3.3 V supply when no cards were present (for example, frame number 2 in an input-expanded system).

### Logged problems corrected (All Trinix routers with Encore control)

1. On rare occasions, when the NR-33000 card was activated, the NR's XPT bus controller would not become active. This has been corrected.

### Logged problems corrected (HO-33120 boards only)

1. The monitor switch on the RP-33500 set the monitor output to 1536 when in the 1024 position, and 1024 when in the 1536 position.

## Release 2.1

### Enhancements (all Trinix routers)

1. Encore release 1.6.1 is supported, including NR-33000 redundancy.
2. The left hand Device pane in the NetConfig application now reports the target name of the router instead of the matrix size.
3. The Firmware Update status display has been improved.
4. The router can now be restarted after updates without cycling power or re-seating cards.
5. The new Trinix HO-33120 HD/SD Output Board with multi-rate reclocker is now supported.

### Enhancements (DV-33512 routers)

1. The router no longer requires repowering when changing the frame number.
2. The system now reports the CPLD code versions running on the DM-33512 cards.

### Logged problems corrected (all Trinix routers)

1. Fixed SMS 7000 board add messages for "SR types" and "Input types" – Extra messages were getting displayed when an SR-TYPE board was discovered.
2. The system update process would occasionally halt when 99% complete. This has been corrected.
3. The upgrade process has been modified so that the system makes up to two attempts to update a board.
4. The Ethernet Monitor task has been removed from externally switched router configurations. (Broadlinx with Jupiter).
5. SMS 7000 commanded NR-33000 switchover (active NR-33000 to inactive NR-33000) is disabled during a firmware upgrade.
6. The web firmware management page and device information page both show the revision levels in decimal.
7. SMS/Encore - The In Use LED now reports the correct status when the activate button is pressed.
8. Settings for the Reclock/Bypass switches on the HO-33110 are now consistent with those for the HO-33120.

#### **Logged problems corrected (DV-33512 routers)**

1. Invalid FPGA Overtemp alarms on the DM-33512 Matrix boards have been fixed.
2. Spurious +2.5 volt power supply alarms have been fixed.
3. The web page graphics for the DV-33512 have been corrected to show the "B" and "C" power supplies in the correct position.
4. Resolved an issue where upon power-up, some DM-33512 Matrix boards would not recognize frame properly causing the card to not function correctly.
5. Corrected a problem wherein input card presence detection would fail intermittently causing "no confirm" messages during Takes.

#### **Known Issues**

1. The Trinix web pages contain two representations of the Trinix frame, a tree view on the left and a graphical view on the right. The design of the web pages is such that a browser Refresh (via the menu Refresh, toolbar icon, or F5 key) returns the user to the Trinix home page. To facilitate refresh of only certain views a "Refresh" button has been added to many of the web pages. In some cases this results in the two views being out of sync. The most recently refreshed view should always be correct. The views can be re-synchronized with a browser Refresh (menu, toolbar, or F5). The user will then need to navigate back to the desired web page.

## **Related Documents**

Trinix Planning and Installation Manual, part no. 071 8276 xx.

## Firmware Update

**Note** Certain steps of the following procedure will momentarily interrupt switcher operations. These steps are preceded by Caution statements.

### Part A: Compact Flash Installation

**Note** The Compact Flash Installation procedure has been modified since the previous release. It is now recommended that the compact flash be swapped out without pulling out the NR board.

1. Install the provided compact flash memory module(s) in the NR-33000 memory slot(s) as follows:
  - a. If there are two NR-33000 boards, locate the inactive board. See Figure 1 and Figure 2.

Figure 1. Primary Broadlinx location (DV-33512 installation shown).

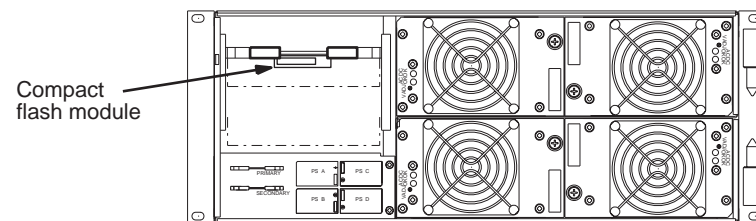
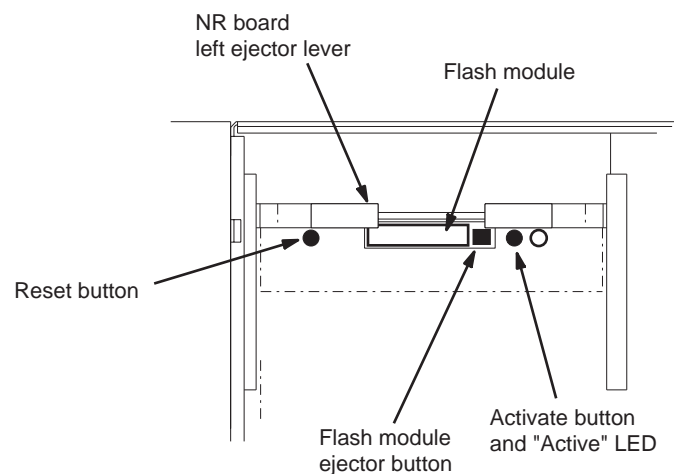


Figure 2. NR-33000 reset/activation controls.

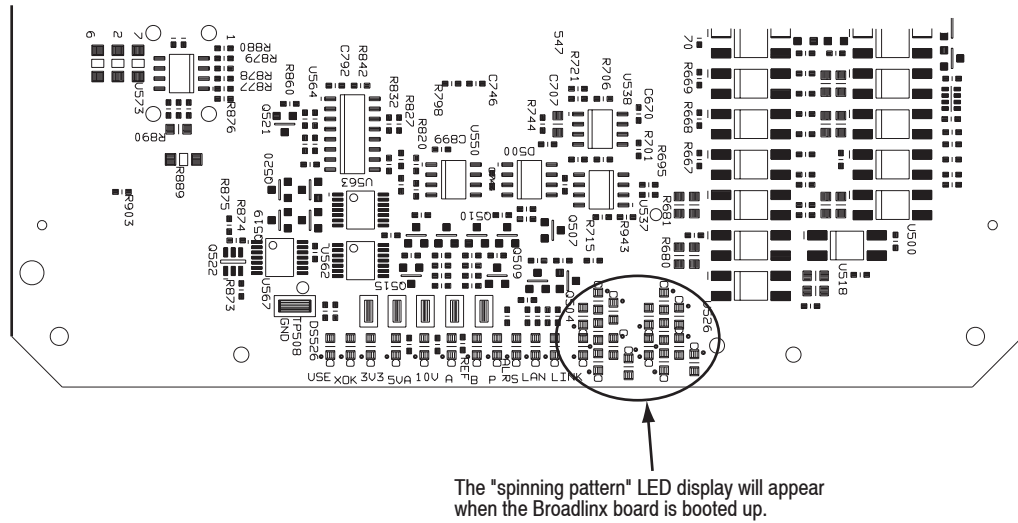


- b. Remove the old flash module by pressing on the adjacent small square ejector button. You will need to lift the left ejector lever upward slightly to allow the module to be removed.
- c. Insert the new flash module and seat it firmly.

- d. Press the Reset button.

The boot process will take about 45 seconds, after which you will see a “spinning” pattern of the LEDs on the front edge of the board. See Figure 3.

Figure 3. Broadlinx board LEDs.



- e. If there are two NR boards, make the inactive NR-33000 active:

**Jupiter-** and **Encore-**controlled systems - press the “Activate” button (see Figure 2). The “Active” LED indication will switch to this board. Note that a Secondary (amber) alarm will be asserted when the Secondary NR is active.

**SMS 7000-**controlled system - press the “Reset” button on the **active** NR-33000 (see Figure 2). The “Active” LED indication will switch to the opposite board.

- f. If there are two NR boards, return to Step 1 a above and install the new compact flash memory module on the remaining NR-33000.
- g. Proceed to *Part B: Activating New Software and Restarting Boards* on page 9.



## Part B: Activating New Software and Restarting Boards

This procedure will download new software to the various boards in the system and reboot boards as needed.

1. Log in to the Broadlinx web page for the NR board (if there are two NR boards, log in to the **active** board).

If you have just reset the board, you may have to wait a moment for the web server software to start before you can log in.

**Note** If you are unfamiliar with procedures for displaying the Firmware Management menu, refer to Section 4 of the Trinix manual. If Adobe Acrobat Reader is installed on the PC, the Trinix manual can be displayed on line by clicking the “Help” command in the Broadlinx title bar.

The Broadlinx Firmware Management table displays the types of possible PC boards, the version of sub-level software that is presently associated with each type that is installed, the versions of top-level software packages present in the Broadlinx board, and the compatibility Status of these software elements. An example of this table is shown in Figure 4.

Figure 4.

### Firmware Management

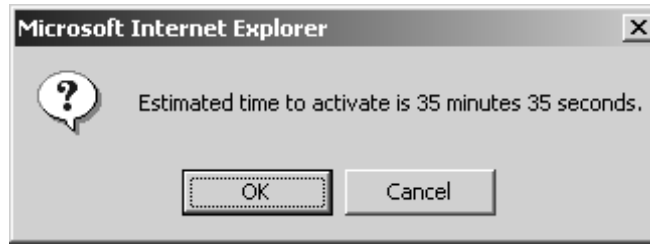
Module	Fpga Active	Fpga Pending	uControl Active	uControl Pending	Status
HI-33110			5	5	●
SI-33110			5	5	●
HO-33110	13	13	7	7	●
SO-33110	13	13	7	7	●
DM-33100	5	6	7	7	●
HR-33000	11	12	7	7	●
SR-33000		9		7	●
RP-33500				4	●
SR-33500		5		5	●
DM-33501		9		5	●
DM-33502		9		5	●
HI-33120					●
HO-33120	3	4	1	1	●
VxWorks			20050125	20050125	●
Web Interface			20050125	20050125	●

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Following Compact Flash Installation, some of the Status lights will most likely be red. This means that the software currently running in the module is different (older) than software just installed and that the new software should be activated as described below.

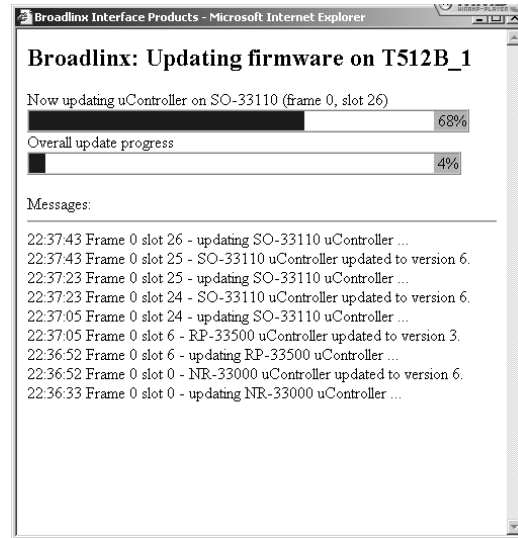
2. Select "Activate." An "Estimated Time" display will appear:

Figure 5.



3. Select "OK." A status window will appear:

Figure 6.



The new software will be copied from the NR-33000 to each board that requires update.\* This process can take from several minutes to a half hour or more. Progress will be shown by the progress bars and by alarm LEDs on the boards themselves.

If the window is accidentally closed you can return by navigating to the home page of the Broadlinux card. The rest of the Broadlinux pages are not available while the update is in progress.

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\*Except for systems with two NRs; in these systems the NR performing the update will not install software on itself, as described below.

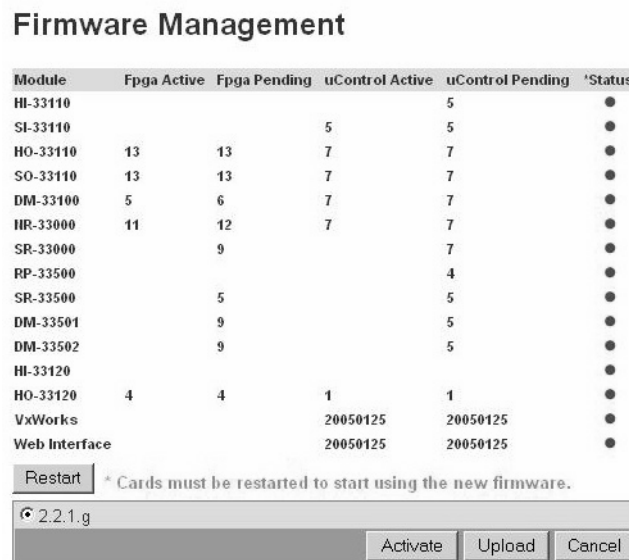
- When the copy process is finished, a Post Complete window will appear:

Figure 7.



- Select "Back" to return to the Firmware Management menu. A "Restart" button will now appear near the bottom of the display. (The display may vary from that shown.)

Figure 8.



- Select Restart.

The following popup will appear:

Figure 9.



**CAUTION** The following step will cause a momentary interruption to video passing through the router.

7. Select OK. The Post Complete popup will reappear.
8. If this is a **single** NR-33000 system go to Step 9. If this is a redundant NR system, go to Step 10.

9. Activating and Restarting the NR in a single NR system:

**Note** The Firmware Management page cannot be used to Restart an active NR.

**CAUTION** The following step will briefly interrupt sync to the router. If there is only one NR in the system, and a switch command is received while the NR board is unseated, the switch will not be synchronous.

**CAUTION** Encore-controlled systems: if for some reason there is only one NR board, switch commands cannot be executed while the NR board is unseated or rebooting.

- a. Un-seat and re-seat the NR board.
  - b. After the NR has rebooted, go to the Firmware Management window. All Status lights should be green.
  - c. This completes the update procedure for a single NR system.
10. Updating the second NR in a **redundant** NR-33000 system:
    - a. Use the hardware button (shown on page 7) to switch the inactive NR-33000 to active mode.
    - b. Log in to the newly activated board and go to the Firmware Management window.  
  
You may have to wait a moment for the web server software to start before you can log in.

Figure 10.

Firmware Management					
Module	Fpga Active	Fpga Pending	uControl Active	uControl Pending	Status
HI-33110				5	●
SI-33110			5	5	●
HO-33110	13	13	7	7	●
SO-33110	13	13	7	7	●
DM-33100	6	6	7	7	●
NR-33000	11 ...	12	7	7	●
SR-33000		9		7	●
RP-33500				4	●
SR-33500		5		5	●
DM-33501		9		5	●
DM-33502		9		5	●
HI-33120					●
HO-33120	4	4	1	1	●
VxWorks			20050125	20050125	●
Web Interface			20050125	20050125	●

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Activate Upload Cancel

In the NR-33000 status line, the “dots” and the red light will indicate that the opposite (inactive) NR requires update.

- c. Select Activate. The estimated time popup will appear.
- d. Select OK.

The new NR software will be copied from the active NR to the inactive NR. When the copy process is finished, the Post Complete window will reappear.

- e. Return to the Firmware Management menu and select “Restart.” The following popup will appear:

Figure 11.



**CAUTION** The following step will cause a momentary interruption to video passing through the router.

- f. Select OK.
- g. The Post Complete window will reappear.
- h. Select Back > Firmware Management. All Status lights should be Green.
- i. (Optional) Switch the primary NR to active mode.
- j. This completes the installation.

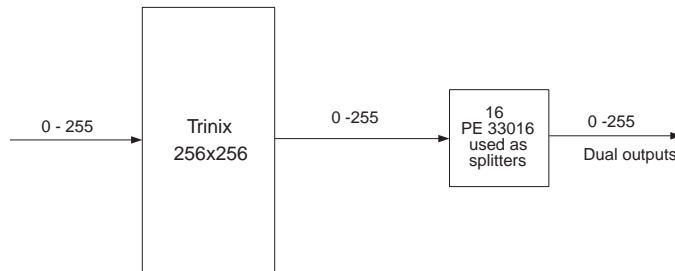
## Input (IN) Expansion and Output (OP) Expansion

**Note** The following discussion supplements **and corrects** the system expansion section of the Trinix Planning and Installation Manual, part no. 071-8276-02 and previous. Please discard the corresponding pages in the manual and replace them with the following material.

Trinix routers are designed to expand inputs and outputs using passive splitter/combiner expansion panels. Whenever an expansion panel is connected, signal gain must be increased from 800 mV to 1.6 V to compensate for the added circuitry.

1. **Output duplication** (dual/quad outputs) requires output splitters and output gain increase. See Figure 12 for an example.

Figure 12.

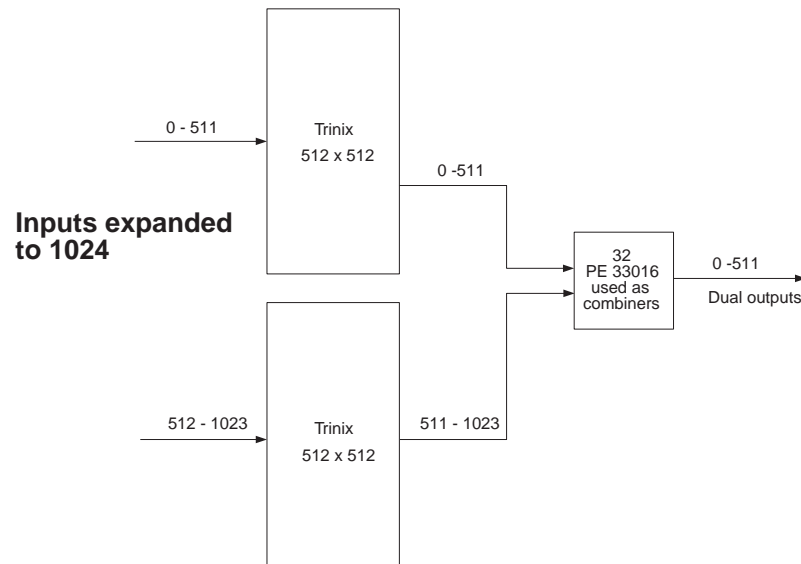


The necessary gain increase is accomplished by

- Closing the rear-panel *Input Expand* DIP switch, and
- Setting the output board jumpers (or DIP switches) to the “Expand Enable” position (as shown on page 18 and page 19).

- 2. Input expansion** requires *output* combiners and *output* gain increase. See Figure 13 for an example.

Figure 13.

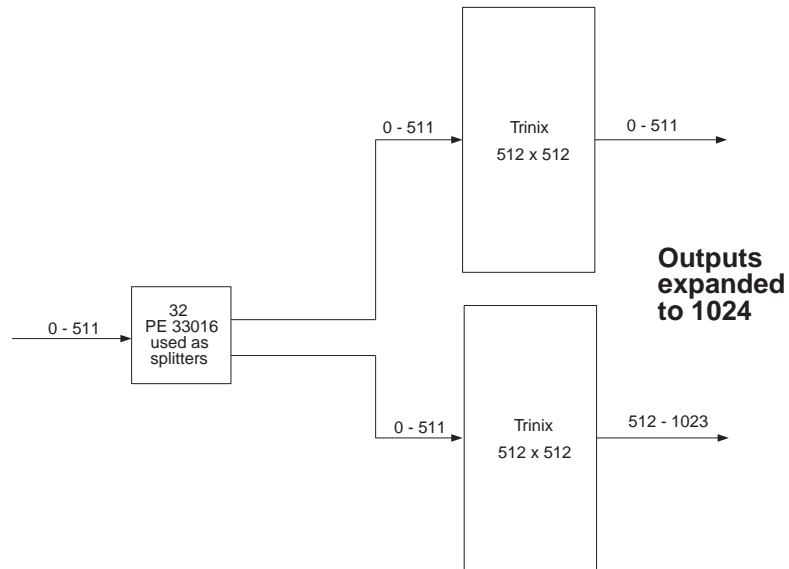


The necessary gain increase is accomplished by

- Closing the rear-panel *Input Expand* DIP switch, and
- Setting the output board jumpers (or DIP switches) to the “Expand Enable” position (as shown on page 18 and page 19).

- 3. **Output expansion** requires *input* splitters and *input* gain adjustment. See Figure 14 for an example.

Figure 14.



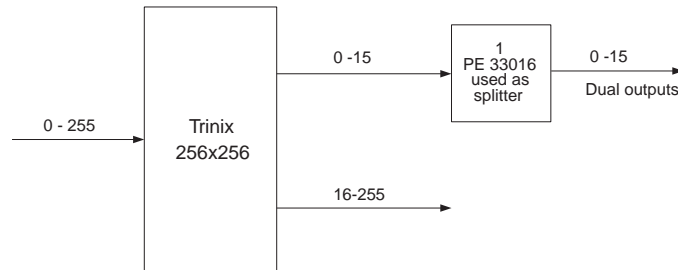
The gain increase is accomplished by closing the rear-panel *Output Expand* DIP switch. This will provide the proper gain increase for all input boards in the chassis.



### Dual/quad Outputs for Partial Chassis

The PE-33016 Port Expander can be used to provide dual outputs in groups of 16 outputs, while the PE-33008 Port Expander can be used to provide quad outputs in groups of 16 outputs. For example, Figure 15 shows outputs 0-15 with dual outputs and the remainder with single outputs.

Figure 15.



In this example:

- For SO-33110/33011 and HO-33110/33011 output boards, the gain for outputs 0-15 is boosted by closing the rear-panel *Input Expand* DIP switch and verifying that the **on-board jumper** for that set of outputs is in the “Expand Enable” position. The location of the boost jumper on these output boards is shown on page 18. The gain for outputs 16-255 must be held at unity by setting the on-board jumpers for that set of outputs to the “Force Normal” position; this overrides the rear-panel DIP switch setting for those outputs.
- For HO-33120/33121 output boards, the gain for outputs 0-15 is boosted by closing the rear-panel *Input Expand* DIP switch and verifying that the **on-board DIP switch** for those outputs is closed. The location of the DIP switches for these boards is shown on page 19. The gain for outputs 16-255 must be held at unity by opening the on-board DIP switches for that set of outputs; this will override the rear-panel DIP switch setting for those outputs.

Figure 16. Location of gain jumpers on SO-33110/33011 and HO-33110/33011 output boards.

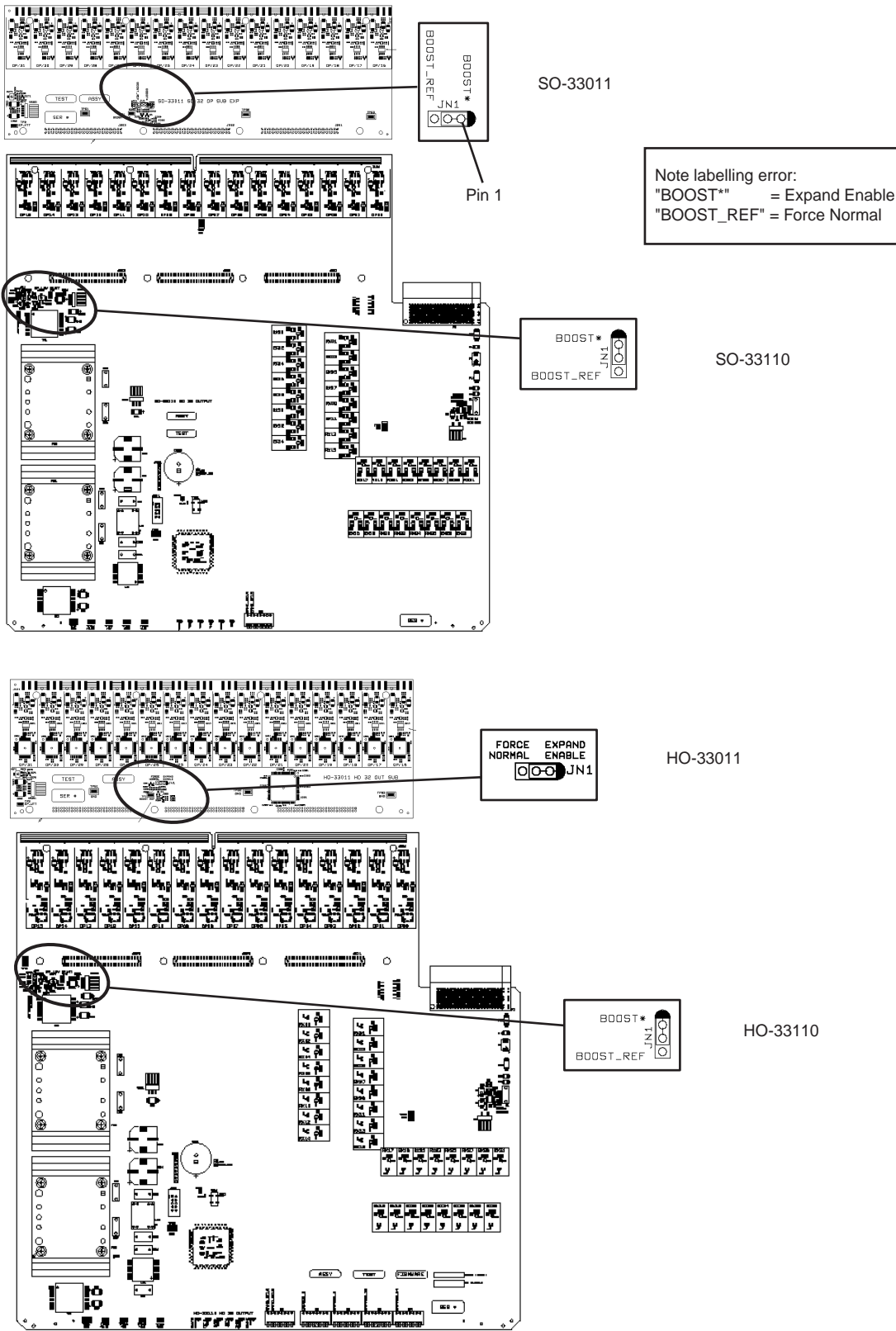


Figure 17. Location of gain switches for HO-33120 Universal Output base board and HO-33121 Universal Output mezzanine board.

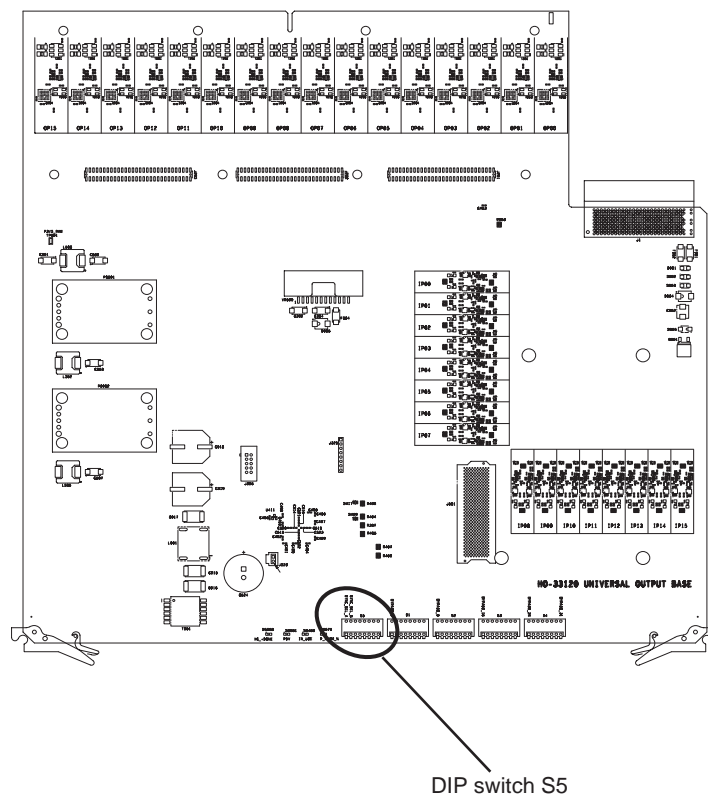


Table 1. HO-33120 DIP switch S5 settings.

	S5-3 HO-33120 (base board) outputs	S5-4 HO-33121 (mezzanine board) outputs
<b>Expand Enable:</b> Use rear-panel “Input Expand” boost switch setting for these 16 outputs	Closed	Closed
<b>Force Normal:</b> Hold gain at 800 mV (do not boost) these 16 out- puts. This setting over- rides the rear panel switch.	Open	Open

