EEG DE351 HD NAS Decoder

Product Manual

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The revision date for this manual is **August 15, 2011**.

Section 1: Introduction

Product Description

The EEG DE351 HD NAS Decoder enables affiliate stations to receive NAS (Network Alert System) messages and network time transmitted over an HD video signal. The DE351 features high-resolution video burn-in of NAS message data for display on an HD or SD monitor, and works with a custom, full-featured web tools suite for browsing messages remotely.

The DE351 is a full replacement for the EEG DE341 SD decoder, with a familiar front panel interface and features including automatic hard-copy printout, GPO tallies for an alarm connection, and NAS message storage and review. New features include separate Program and Source video inputs, Web-based browsing of stored messages, optional email distribution module, and an optional redundant power supply.

Basic Package Includes:

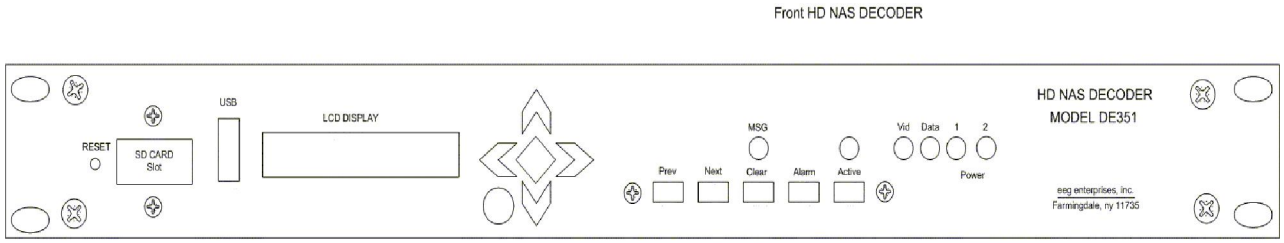
- High resolution on-screen NAS message display with improved size and readability compared to the SD system
- Connection to a USB printer for automatic paper copies
- Onboard, non-volatile storage of up to 100 NAS messages
- Front panel and GPI switches for browsing stored messages on-screen
- GPO tallies for connection to an audible alarm
- Relay-bypassed Program video chain, and independent Source input

Web Features Package Adds:

- Convenient web-based NAS inbox to browse stored messages remotely
- Web-based inbox auto-refreshes and highlights new messages as they arrive
- Live-updating virtual front panel reflects the status of decoder LEDs
- Diagnostic and configuration tools for printer connection, software upgrades, and more
- Email notification module with configurable recipient lists based on HD message metadata (optional)

Section 2: Installation

Front Panel



Prev Button — Displays the most recently received stored message. Continue pressing the button to step through the stored message list in reverse chronological order. Pressing Previous or Next will also clear the New message LED and GPO.

Next Button — Step through the stored message list in chronological order. Pressing Previous or Next will also clear the New message LED and GPO.

Clear Button — Clears the current message from the on-screen display. Also clears the MSG LED, and the GPO New tally.

Alarm Button — Silences the GPO Alarm tally.

Active Button — Toggles the Decoder between active operation (LED on) and Relay Bypass mode (LED off). In Relay Bypass mode, the signal at the Program video input is routed directly through to the Program video output, with no on-screen display created. All other inputs and outputs are inactive. No NAS messages will be received while in Relay Bypass mode.

MSG LED — Lights to indicate a new message has been received. Clears when the Clear button or GPI is triggered, or when an upstream Erase signal is received from the network.

Vid LED — Lights to indicate that a valid HD-SDI or SD-SDI video source has been detected at the Program video input.

Data LED — Lights to indicate that an NAS carrier signal has been detected on the HD video at either the Source video input (if connected), or the Program video input otherwise.

Power 1 LED Indicates status of the unit's first power supply.

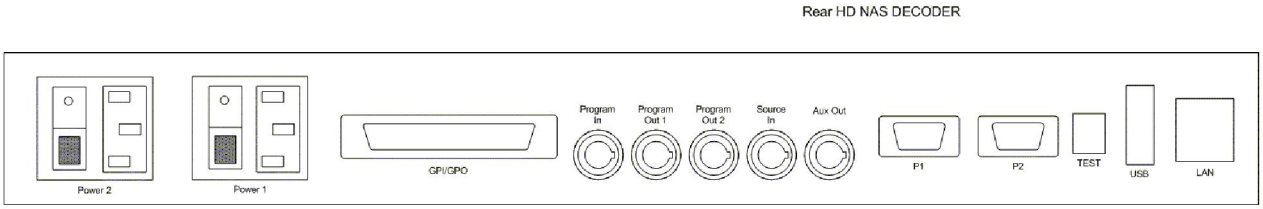
Power 2 LED Indicates status of the unit's second power supply (for redundant supply equipped units only).

LCD Screen The LCD Screen will provide access to the unit's front panel configuration menu. When the menu is not in use, video status is shown. See the next section for front panel configuration options.

Control Pad The Control Pad navigates menus and changes settings in the front panel configuration menus. The control pad buttons are: **ENTER** (marked by a check), **CANCEL** (marked by an 'X'), **LEFT, RIGHT, UP,** and **DOWN.** In most configuration menus, use **LEFT** and **RIGHT** to navigate between parameters, **UP** and **DOWN** to change the value of the selected parameter, **ENTER** to select a category or save a change, and **CANCEL** to return to the previous menu without saving changes. See "Front Panel LCD Menu" in "Decoder Operation" for further details.

USB Port A front panel USB port is provided to enable quick and easy software upgrade.

Rear Panel



Rear panel shown with optional redundant supply

Power 1 AC power input, 120 – 240 V, 50-60 Hz tolerant. Connect to the unit's primary power source. Turn on/off with switch next to connector.

Power 2 AC power input, 120-240 V, 50-60 Hz tolerant. Redundant power source connection. Turn on/off with switch next to connector.

Program In Video input for the Program video chain. The on-screen display will be burned onto this video signal. The Program video input will also be used as the source of NAS data if the Source video input is not connected.

Program Out 1 Relay-bypass protected decoder video output

Program Out 2 Non relay-bypass protected copy of the decoder output signal

Aux Out Non relay-bypass protected copy of the decoder output signal

Source In Video input for NAS source video signal

USB Standard USB port for printer connection. See page 16 for a list of supported printers and other details.

LAN 100-Base Ethernet port for network features including web tools suite.

GPIO GPI and GPO connector. See page 17 for GPI and GPO pinouts and instructions.

Section 3: Decoder Operation

Startup

The DE351 may take up to 2 minutes to fully power-up. When the Decoder has booted, a brief self-test mode will start. All of the software-driven front-panel LEDs (excluding power supplies and video presence) and all of the GPOs will go on, and a test message will appear on the OSD. The power-on test lasts approximately 5 seconds. The test message will stay on the screen until an NAS time update or a new NAS message is received on the video input.

Front Panel LCD Menu

The front panel LCD screen and Control Pad are used to configure decoder settings and networking, perform flash updates. The interface is organized in a series of hierarchical menus; use the **LEFT** and **RIGHT** keys to scroll between menu options and the **ENTER** or **DOWN** keys to select options or enter sub-menus. Press the **CANCEL** key from any menu screen to return to the top of the menu hierarchy.

When the front panel menu is inactive, the display will revert to a status screen. The top left shows the format of the Program video input. The bottom left shows the format of the Source video input. The top right will display “LAN” if the Ethernet connection is active, and the bottom right will display “PRN” if a supported printer is detected, and XXX if an unsupported printer is detected. Press any key on the Control Pad to return to the top-level menu from the status screen.

System Setup Menu

Set OSD Size

Controls the message display text size on the decoder output video. The choices are Small, Medium, and Large. The default size is Small. The change will take effect immediately.

Set OSD Opacity

Controls the background opacity for the message display on the decoder output video. The setting ranges from 100% (black) to 0% (transparent). There is also a "Default" setting which is roughly 70% opacity.

LCD Display

The LCD Display menu contains display options for the front panel LCD screen.

- **LCD Contrast** sets the contrast level of the display screen. The value ranges from 0 (lightest) to 20 (darkest). Use the **UP** and **DOWN** keys to make changes, which will take effect on the screen immediately. When you are finished making changes, use the **ENTER** key to exit the menu and save changes, or the **CANCEL** key to exit the menu and reject changes.

- **LCD Backlight** sets the brightness level of the display screen's backlighting. The value ranges from 0 (darkest) to 50 (brightest). Use the **UP** and **DOWN** keys to make changes, which will take effect on the screen immediately. When you are finished making changes, use the **ENTER** key to exit the menu and save changes or the **CANCEL** key to exit the menu and reject changes.

Version

View the current versions of hardware, firmware, and all software modules installed on the unit. Use the **UP** and **DOWN** buttons to scroll through the list and **ENTER** or **CANCEL** to exit.

Network Config

The Network Configuration menu contains the IP address and subnet mask that the Decoder will use when connected to a local network.

- **IP Address** sets a fixed network address for the unit on your LAN. Use the **LEFT** and **RIGHT** keys to move the cursor between digits and the **UP** and **DOWN** keys to change the selected digit. When you are finished making changes, use the **ENTER** key to exit the menu and save changes or the **CANCEL** key to exit the menu and reject changes. If you pause for more than 20 seconds while entering the IP address a timeout will occur and the display will revert to the status screen. Press the **ENTER** key to return to the IP Address configuration screen.

- **Subnet Mask** should be set to match the bit mask used on your LAN.

- **Gateway** should be set to the address of the computer or device that the unit will use to communicate outside of your local network, when applicable.

Delete All Permanently deletes all stored messages from the decoder. Deleted messages will no longer be available to browse from the web interface or the on-screen display.

Delete All Permanently deletes all stored messages from the decoder. Deleted messages will no longer be available to browse from the web interface or the on-screen display.

Firmware Update The Firmware Update utility provides a fast, simple, and convenient way to upgrade your unit to the latest version of the EEG firmware or add additional software modules. Begin by downloading a firmware update file from the EEG website and transferring the file to any standard USB memory device. Insert the memory stick into the front panel USB port, navigate to the Update option in the System Setup menu, and press **ENTER**. The update utility will find the installation file on the memory device, display the revision number, and prompt you to continue. Press **ENTER** to proceed and install the new firmware, or **CANCEL** to end the utility. A message will appear on the LCD screen when the update utility has finished. **Do NOT remove the memory device while the update utility is running.** When the update utility is finished, the new firmware is completely installed; there is no need to reboot the unit. Depending on the size and type of memory device used, there may be a momentary delay before the device is detected. If you see "Cannot Update: Insert USB Disk", wait a few seconds and try again.

Printer Setup Menu

Test Printer Print a test page to a supported printer connected to the DE351 unit. For a list of supported devices and further information, see page 16.

Flush Printer Print any NAS messages that have been stored waiting for a full page worth of messages to arrive. There will only be messages to flush if the printer form feed mode is set to Continuous Page and messages have arrived that are less than one full page long since the last time a page was printed.

Form Feed The Form Feed selector enables you to decide whether you would like each NAS message to come out on its own page, or on a shared page with other NAS messages. If you select 'Continue Page', you will save on paper usage, but you will have to wait until a full sheet of paper fills

up to get your printed copy. If you select ‘New Page’, you will receive each message immediately on its own sheet of paper.

If you are using a continuous-feed or roll printer, select the ‘Roll Printer’ form feed option. With the ‘Roll Printer’ option, all messages are printed immediately.

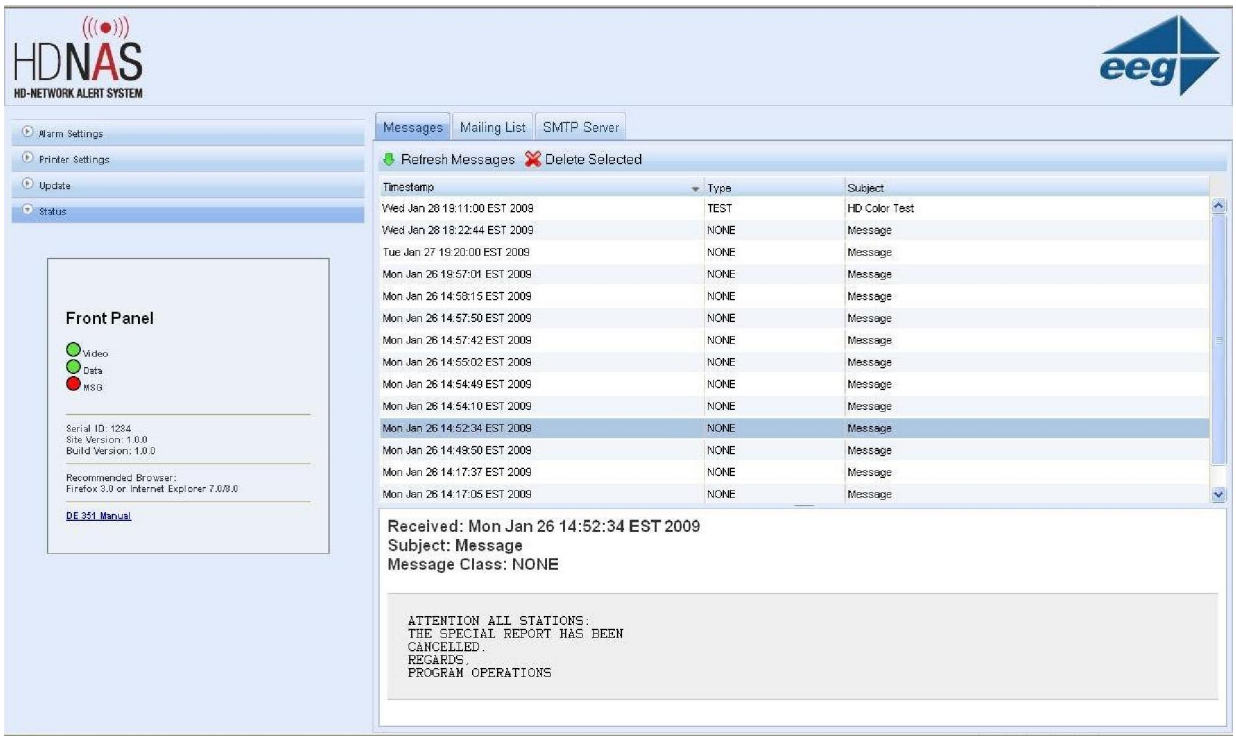
Web Tools Suite

The Web Tools module is a high-powered network-driven remote application for the DE351 that provides new ways to view NAS messages, and advanced configuration and monitoring tools.

To use Web Configuration, the Decoder first must be connected to a 100-Base LAN, and configured with a valid IP address and subnet mask for that LAN through the front panel Network menu. Once the decoder has been given an address, access the web tools by typing the decoder's IP address into a web browser from any computer on the same LAN. The recommended browsers for optimum viewing of the web tools are Firefox 3 or Internet Explorer 7 or 8.

Message Viewing Module

The Message Viewing Module displays all of your stored NAS messages in an intuitive interface that can be viewed from any number of computers across your LAN. This is the starting page in the main pane of the NAS Web Suite.



The top pane shows an abstract of all of your stored messages. New messages appear in **bold**. To read a message, click on it in the top pane. You will then see a detailed view of that message, with the complete text, in the bottom pane. When a message is read through the web interface on any computer, it will return from a bold to a regular font.

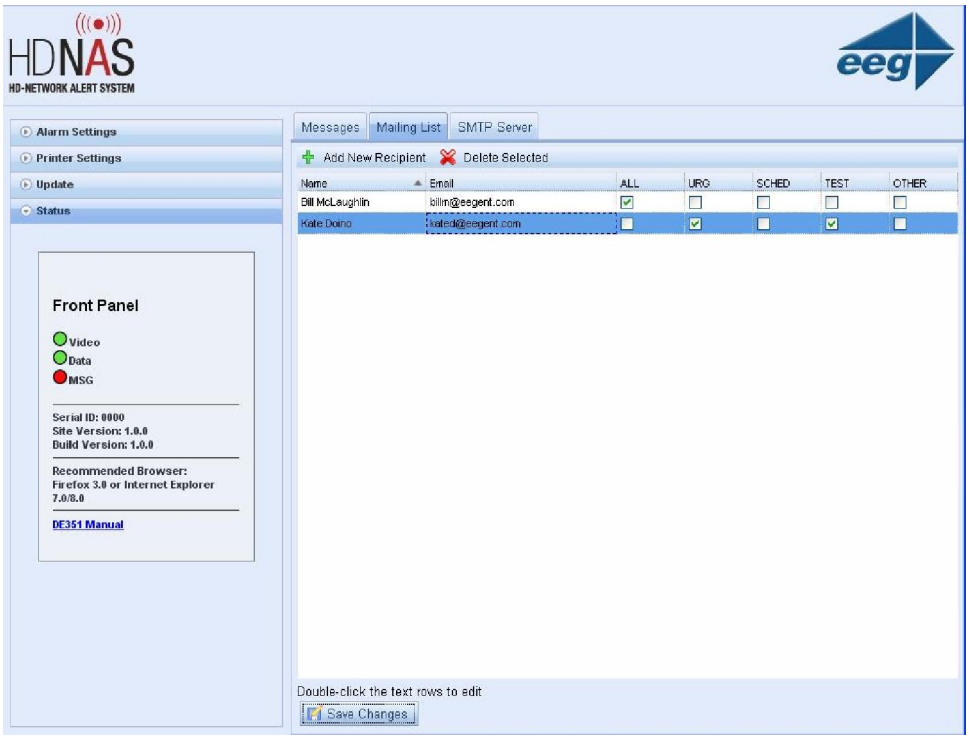
The Message Viewing Module is auto-refreshing, and any new messages will come up in bold until they are read. To force an immediate fetch of new messages, press **'Refresh Messages'** at the top of the pane.

To get a printout of the currently selected message, press **'Print Message'** at the top of the message pane. This will open a new window in your browser with a text-only view of the selected message. A print dialog should also open. Use the print dialog to print to any printer that is connected either locally or over a network to the computer that you are browsing from- this printer does not need to on the list of local printers that are supported with the decoder.

Up to 100 messages will be stored in your NAS mailbox- when more than 100 messages have been received (not counting system test messages) the oldest messages will automatically be deleted.

Email Distribution Module

The Email Distribution Module offers a new way to receive and distribute NAS messages in real-time, in or out of the office. The module forwards each incoming NAS message to a configurable list of email addresses. The NAS message will be sent to recipients' standard email addresses, with a header saying "NAS Message: *Subject*" for easy sorting and filtering.



To add or remove recipients from the automatic emails, click on the 'Mailing List' tab in the main pane. To add a recipient, click 'Add New Recipient', and a blank row will be added to the bottom of your list. Fill in the recipient's name and email address, and check the boxes that correspond to the types of NAS messages that should be forwarded to this recipient. You may choose any number of boxes for each user.

Choose 'ALL' to receive all new NAS messages (except system tests). Choose 'URG', 'SCHED', or 'TEST', to receive messages marked with the metadata flags Urgent, Schedule, or Test, respectively. Choose 'OTHER' to receive messages marked with unlisted metadata flags, or no metadata flags at all.

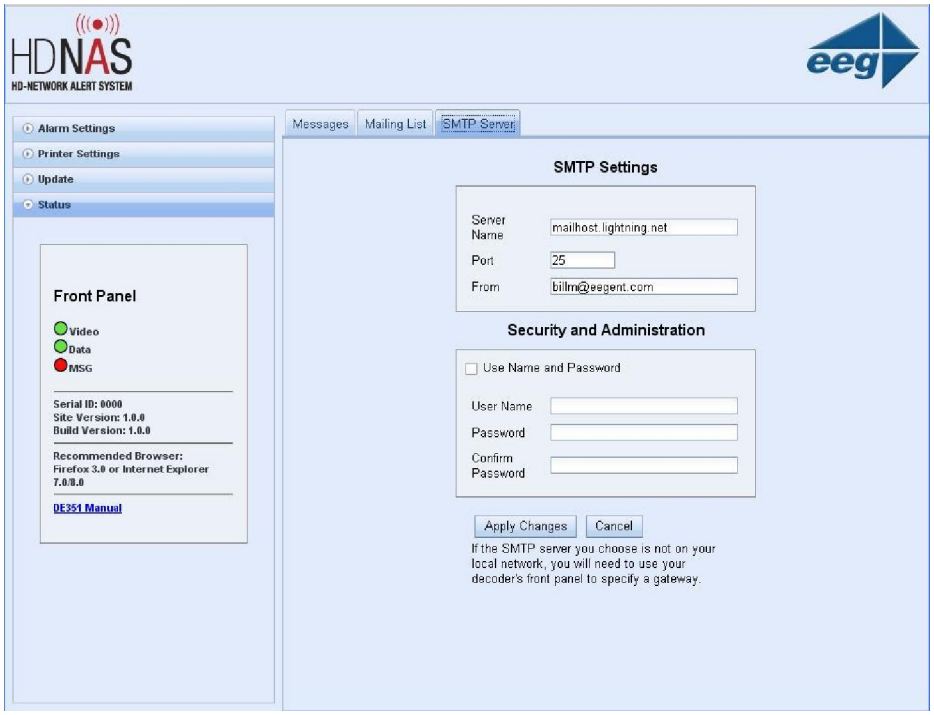
During the SD to HD transition, messages may be sent over the HD system using the legacy SD message format. To receive messages authored in the legacy message format, you must check either 'ALL' or 'OTHER'.

To remove a recipient, select the user's row by clicking on it, then press 'Delete Selected'.

To edit a recipient's data, just double-click on the field that you want to change and type in the new data. **You must press 'Save Changes' for your changes to take effect.**

Configuring SMTP Settings

The Email Distribution Module needs to be given the address of an SMTP server that will be used to deliver the emails. To set this up, click on the 'SMTP Server' tab in the main pane. To get the correct SMTP settings, you should check with your network administrator. Typically, the same SMTP server settings that you use for sending email in a program like Microsoft Outlook will work here.



Set **'Server Name'** to the name of your SMTP server, for example 'smtp.yourcompany.com'. Set **'Port'** to the connection port for that server; this is usually 25. Set **'From'** to the email address you want to appear in the From field of the automatic emails that the DE351 generates. For many SMTP servers, this will need to be a valid email address with an account on that server.

Some SMTP servers require secure authentication. If your SMTP server requires authentication, check the box **'Use Name and Password'**, and enter your User Name and Password for accessing the SMTP server.
Click **'Apply Changes'** when you have finished editing your SMTP settings.

Note that if your SMTP server is not on your local LAN, you will need to set the **'Gateway'** setting through the front panel as described on page 6. The Gateway setting provides a network path for the decoder to send outside the local LAN.

Testing SMTP Settings

Press the **'Send Test Email'** button to try sending an automated test email using your SMTP settings. If communication with your server is successful, a pop-up confirmation dialog will appear. The test email should be delivered to all the addresses in your notification list that have the 'TEST' or 'ALL' options checked.

If the Decoder is not successful in sending the message to the SMTP server, a pop-up dialog will ask if you want to see a log. When you press 'Yes', a new window will open in your browser showing a full SMTP transaction log. Some common problems to look for are:

- Connection attempt failed: check that the server name is correct, and that your decoder is connected to the network and has a proper gateway setting.
- Authentication failed: check that the username and password are correct.
- Must issue a STARTTLS command first: the Decoder does not currently support SSL/TLS encrypted SMTP.

Status Tab

The Status Tab features a virtual front panel which shows a live-updated snapshot of the state of the front panel LEDs on the DE351 for remote viewing. This tab will also give you your unit's NAS address and software version number.

Font Settings Tab

The Font Settings Tab allows you to control the message display text size on the decoder output video. The choices are Small, Medium, and Large. The default size is Small. The change will take effect immediately.

Printer Settings Tab

The Printer Settings Tab has features to help you connect a USB printer for automatic paper copies of NAS messages. The 'Printer Status' field will display "Connected" if a compatible USB printer is detected. Click 'Refresh' at any time to search again. If a USB printer without a supported driver interface is connected, the status field will display "Not compatible". If no USB printer is connected, the status field will display "Not connected".

Click ‘Print Test Page’ to print a test message out to your printer. If the test page prints successfully, your printer is compatible and the interface is working correctly.

Click “Flush Printer” to print out any messages that may be stored in the system waiting for a full page of messages to fill up. Messages are only kept waiting for a full page if the printer is set in ‘Continue Page’ form feed mode.

The Form Feed selector enables you to decide whether you would like each NAS message to come out on its own page, or on a shared page with other NAS messages. If you select ‘Continue Page’, you will save on paper usage, but you will have to wait until a full sheet of paper fills up to get your printed copy. If you select ‘New Page’, you will receive each message immediately on its own sheet of paper.

If you are using a continuous-feed or roll printer, select the ‘Roll Printer’ form feed option. With the ‘Roll Printer’ option, all messages are printed immediately.

Alarm Settings Tab

The Alarm Settings Tab enables full local control over the function of the GPO alarm. Selecting ‘Default’ causes the alarm GPO to trigger only when ‘Alarm On’ is specified within the NAS messages. Select ‘All’ to trigger the alarm on all new messages. Select ‘Urgent’ to trigger the alarm on all messages with the Urgent metadata flag. Select ‘None’ to disable the alarm feature.

Updates Tab

The Updates Tab can be used to upload and run an EEG software upgrade. Use the Download Upgrade link to view available upgrades on the EEG website and download one to your PC, or use an upgrade file you received from EEG support.

Once you have an EEG software upgrade file, click the Start Update button. On the new screen, click the Select Upgrade File button and point to the location of the upgrade file on your PC. Press OK, and the click Apply Update when you see the filename you selected in the text window. Some updates may cause the decoder to restart, which will cause an interruption in web service. If this occurs, wait for 1-2 minutes and then refresh the web interface. Your software version number in the Status pane should reflect the new software from your upgrade.

Printer

When connected to a supported USB printer, the DE351 provides a printed copy of all NAS messages received. The DE351 will automatically detect the printer and load the appropriate driver for supported printers. The following printers are currently supported with the DE351:

- HP Deskjet D4360 (inkjet printer)
- HP LaserJet P2055dn (laser printer)
- Star Micronics TSP651 (thermal roll printer - recommended)

Additional printer drivers may be provided by EEG through upgrades as available models change.

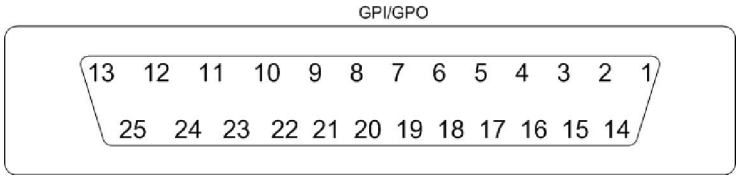
The front panel LCD indicates the status of the connected printer in the lower right corner:

- 'PRN' solid – supported printer connected
- 'PRN' flashing – unsupported printer connected
- '---' – configuring printer. Please wait.
- No display – No printer connected

The printer behavior can be configured through either the front panel LCD Printer Settings menu or the configuration website Printer Settings tab.

GPI / GPO

The following picture shows the 25-pin GPIO connector on the rear panel.



The GPI inputs are on pins 17-24, with a common ground on pin 25. Each switch is ON when connected to the common ground, and OFF when open or floating.

The GPI input functions are CLEAR, NEXT, PREV, and SILENCE, and have the same functions as the front panel switches.

The GPO outputs are on pins 1-16. Each pair of successive pins forms a switch that is ON when closed and OFF when open.

The GPO output functions are NEW, which activates on every new NAS message, and ALARM, which activates on NAS messages that have the Alarm attribute set by the network operator, or specific metadata tags, as configured in the Alarm Settings Tab with the web tools.

The pins for the NAS receiver functions are:

Input Function	Pins
CLEAR	17
NEXT	18
PREV	19
SILENC	20

Output Function	Pin
ALARM	1 & 2
NEW	3 & 4