



## *E7030 Analog Station Bridge Configuration Manual*

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# Configuring the Analog Station Bridge

The Nyquist Analog Station Bridge (ASB) allows the Nyquist solution to use the existing analog call switch and speaker infrastructure when upgrading from Multicom 2000, Quantum Multicom IP, and third-party intercom systems. When used exclusively as a networked component of the Nyquist paging and intercom solution, the Nyquist ASB permits a 'hybrid' Internet Protocol (IP)/analog system configuration through use or connection of analog 25V speakers and associated analog call switches (for example, CA15C type). This ASB has 24 station connections that attach to wired speakers and their associated call switches. While each connection has its own Session Initiation Protocol (SIP) addressable Station ID, the ASB itself uses a single network IP address.

You can let the Nyquist server automatically discover and configure the ASB, or you can manually configure it through the ASB's web-based user interface (web UI).

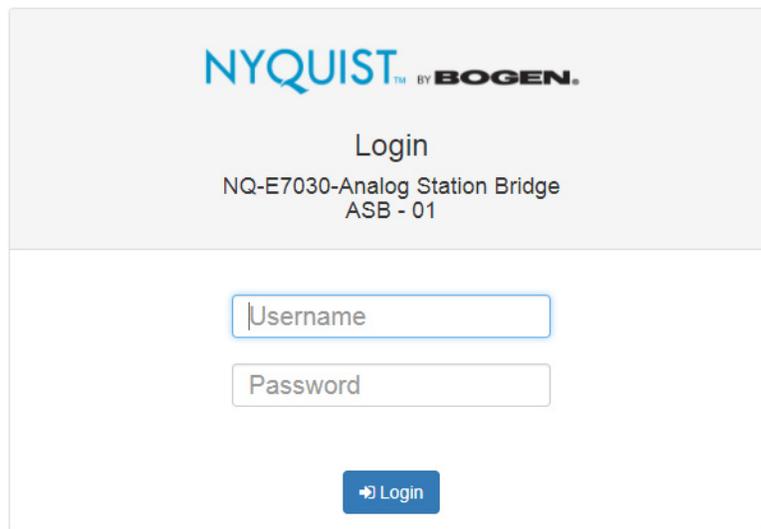
A short press of the appliance's **Reset** button reboots the device. If you press the **Reset** button for 10 seconds, the appliance returns to the factory default configuration settings. Returning to the default configuration settings does not change the appliance's firmware.

The following sections describe the process for manual configuration. For information about using Nyquist's automatic configuration process, refer to the *E7000 Series System Administrator Manual*.

**Note:** Do not use third-party Chrome browser extensions with the Nyquist user interface.

To access the appliance's UI:

- Step 1 Access the appliance's web UI by doing one of the following:
- a On your web browser, enter the IP address for the appliance as the URL.
  - b From the Nyquist web UI navigation bar, select **Stations**, select **Stations Status**, navigate to the device that you want to configure, and then select the **Link** icon.



The image shows a login page for a Nyquist appliance. At the top, the logo reads "NYQUIST BY BOGEN." Below this, the word "Login" is centered. Underneath, the device name "NQ-E7030-Analog Station Bridge" and its identifier "ASB - 01" are displayed. The page contains two input fields: "Username" and "Password". A blue button with a right-pointing arrow and the text "Login" is positioned below the password field.

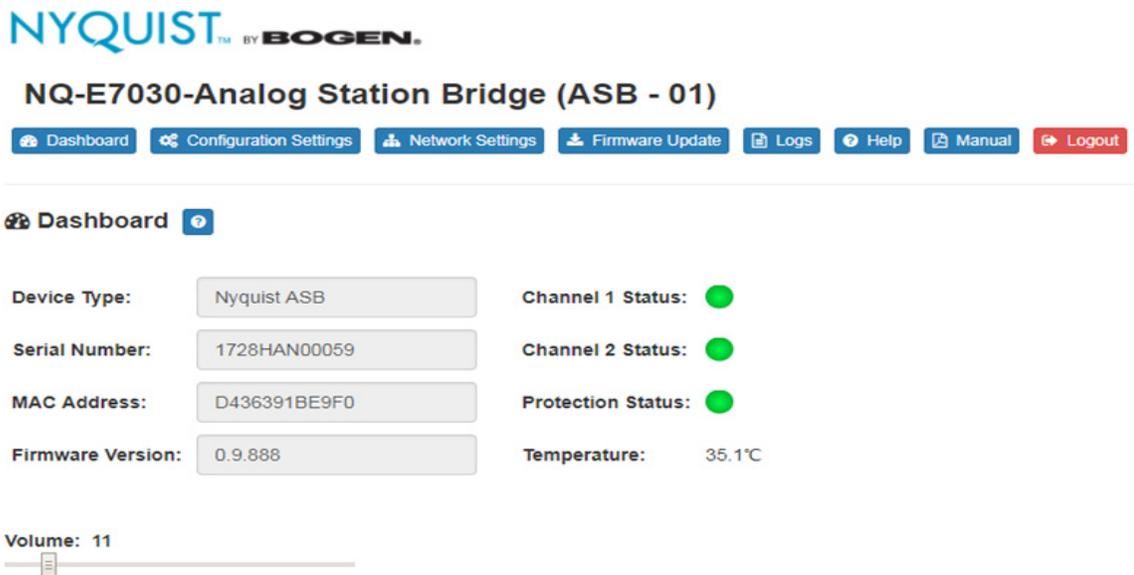
**Figure 1, Nyquist Appliance Login**

- Step 2 At the Nyquist Appliance - Login page, enter username and password, and then select **Login**.

The dashboard for the selected appliance appears.

# 1 Using the Dashboard

The ASB dashboard displays information about the ASB, including LEDs and temperature output that provides status of the ASB. You can also adjust the ASB volume using a volume slider that appears at the bottom of the ASB dashboard. The volume can be adjusted on a scale from 0 to 100.



**Figure 2, Nyquist Analog Station Bridge Dashboard**

The dashboard displays the following read-only fields:

**Table 1, Appliance Dashboard Read-Only Fields**

<b>Device Type</b>	Identifies the physical device used by the station.
<b>Serial Number</b>	Identifies the serial number for the device.

**Table 1, Appliance Dashboard Read-Only Fields (Continued)**

<b>MAC Address</b>	Specifies the Media Access Control (MAC) address, which is a unique identifier assigned to network interfaces for communications on the physical network segment.
<b>Firmware Version</b>	Provides the firmware version installed on the station.

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Real-time statuses that can be viewed from the dashboard are described in the following table:

**Table 2, ASB Status Indicators**

<b>Channel 1 Status</b>	Provides clipping status for Channel 1. Clipping is sound distortion that occurs when an amplifier attempts to deliver an output voltage or current that is beyond its maximum capability. If this indicator is green, the channel is not clipping. Red means the channel is clipping. Gray means that the appliance's web UI is not receiving data from the appliance's web server, indicating that the ASB may be offline or rebooting.
<b>Channel 2 Status</b>	Provides clipping status for Channel 2. Clipping is sound distortion that occurs when an amplifier attempts to deliver an output voltage or current that is beyond its maximum capability. If this indicator is green, the channel is not clipping. Red means the channel is clipping. Gray means that the appliance's web UI is not receiving data from the appliance's web server, indicating that the ASB may be offline or rebooting.

**Table 2, ASB Status Indicators (Continued)**

<b>Protection Status</b>	<p data-bbox="763 241 1427 346">Indicates if the ASB is in partial shutdown mode to protect the built-in two-channel amplifier module.</p> <p data-bbox="763 388 1427 766">In this case, the appliance itself may remain “on” as indicated by its front panel Status and Power LEDs. However, the ASB’s amplifier module senses various faults that can be caused by factors such as incorrect speaker wiring (for example, shorts or too low an impedance). These faults can overload the amplifier output capability (overcurrent/ clipping) and/or amplifier thermal conditions (overheating).</p> <p data-bbox="763 798 1427 1092">If the indicator is green, the amplifier module is operating in a normal capacity. If the indicator is red, the amplifier module is in protection mode and audio will not be passed to any ASB port. If the cause is temporary or intermittent (for example, signal clipping), the amplifier module will quickly return to normal mode.</p> <p data-bbox="763 1123 1427 1312">If the system remains in protection mode for an extended period of time, this likely indicates some sort of wiring fault or low-impedance condition is present that must be rectified.</p> <p data-bbox="763 1344 1427 1575">When the indicator is gray, the ASB's web UI is not receiving protection status information from the appliance’s web server. This usually indicates that the network connection has been interrupted or dropped or that the device is rebooting.</p>
<b>Temperature</b>	<p data-bbox="763 1585 1427 1845">Provides a snapshot of the amplifier module’s temperature in degrees Celsius during any transition (that is, change state) on the Channel 1, Channel 2, or Protection Status indicators. The ASB’s UI does not receive or display continuous real-time amplifier module temperature readings.</p>

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The dashboard also contains the following buttons:

**Table 3, Appliance Dashboard Buttons**

<b>Dashboard</b>	Refreshes the dashboard.
<b>Configuration Settings</b>	Accesses the Configuration Settings page where you can either manually set various options, such as the SIP Username, or select to receive configuration settings from the server.
<b>Network Settings</b>	Accesses the Network Settings page where you can view and set network settings, such as the static IP address.
<b>Firmware Update</b>	Accesses the Firmware Update page where you can view the current Nyquist version, check for updates, restore factory settings, and reboot the appliance.
<b>Logs</b>	Accesses log files, which record either events or messages that occur when software runs and are used when troubleshooting the appliance.
<b>Help</b>	Accesses the appliance's online help.
<b>Manual</b>	Displays the Nyquist Analog Station Bridge Configuration Manual.
<b>Logout</b>	Logs out of the appliance's dashboard.

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## 2 Updating Firmware

When you select **Firmware Update** from the appliance's web UI, the Firmware Update page appears. From this page you can determine which Nyquist version the appliance is using and if an update is required. You can also use this page to restore factory settings and to reboot the appliance.

**Note:** A Nyquist appliance connected to the Nyquist network receives a configuration file from the Nyquist server that includes the latest firmware available from the server. If the firmware is later than the one installed on the appliance, an automatic firmware update occurs unless the **Firmware** parameter for the station is left blank. Refer to the *Nyquist System Administrator Manual* for more information.

### ↓ Firmware Update ⓘ

✓ Current Nyquist Version: 0.9.765  
New Nyquist Version: None

⬆ Upload Firmware

↺ Restore Factory Settings

⏻ Reboot Appliance

Figure 3, Firmware Update Page

***To use the Firmware Update page:***

- Step 1 On the appliance web UI's main page, select **Firmware Update** to ensure you have the latest firmware version.
- Step 2 Select **Upload Firmware** to upload firmware from the server to the appliance.

If you select this option, a popup screen appears that allows you to select the file that you want to upload. You can navigate to the file's location. After you select the file, select **Upload**. If Nyquist discovers a new firmware version, the Firmware Update page displays an **Update Firmware** button. Select this button if you want to update the appliance's firmware to the new version.

- Step 3 If you want to return your appliance to its original state (undoing firmware updates), select **Restore Factory Settings**.
- Step 4 Select **Reboot Appliance** to restart your appliance.

### **3 Setting Network Tab Parameters**

Network settings can be configured dynamically by the Nyquist server or manually by using the appliance's web UI.

*To manually configure network settings:*

- Step 1 On the appliance web UI's main page, select **Network Settings**.
- Step 2 Select your desired network settings.
- Step 3 Select **Save**.

## Network Settings

Static IP:

172.31.100.2

Netmask:

255.255.255.0

Gateway:

172.31.100.1

VLAN ID:

100

VLAN Priority:

5 - Voice ▾

NTP Server:

pool.ntp.org

TFTP Server:

172.31.100.1

DHCP Server Override:

Yes ▾

DHCP Enabled:

Yes ▾

Reboot Appliance:

No ▾

 Save

Figure 4, Network Settings

Network settings are described in the following table:

**Table 4, Network Settings**

<b>Static IP</b>	Identifies the fixed IP address assigned to the appliance by a system administrator.
<b>Netmask</b>	Identifies the subnetwork subdivision of an IP network.
<b>Gateway</b>	Identifies the address, or route, for the default gateway.
<b>VLAN ID</b>	Identifies the Virtual Local Area Network (VLAN) for this appliance. Values range from 0 to 4094.
<b>VLAN Priority</b>	Identifies the priority of the network traffic on the VLAN. Priority can range from 0 through 7.
<b>NTP Server</b>	Identifies the IP address or the domain name of the Network Time Protocol (NTP) Server. This field is read only.
<b>TFTP Server</b>	Identifies the IP address of the Trivial File Transfer Protocol (TFTP) server. TFTP is used by Nyquist VoIP phone and appliance provisioning. A TFTP server runs on the Nyquist server on port 69 (the standard TFTP port #).  Device provisioning files are stored on the Nyquist server in directory: <code>/srv/tftp</code> . This is the only directory exposed by the TFTP server.
<b>DHCP Server Override</b>	Indicates if you want to override the TFTP server information provided by the Dynamic Host Configuration Protocol (DHCP) via <code>option_66</code> .  DHCP supplies IP addresses to the Nyquist server and associated devices. It also supplies the TFTP server IP address or name via <code>option_66</code> .

**Table 4, Network Settings (Continued)**

<b>DHCP Enabled</b>	Indicates if the device is enabled to use DHCP.
<b>Reboot Appliance</b>	Allows you to save the network options and reboot the appliance.

## 4 Setting Configuration Tab Parameters

The easiest way to configure Nyquist appliances is to obtain configuration settings from the Nyquist server. However, you can manually configure an appliance through the appliance’s Web UI.

*To manually configure your Nyquist appliance:*

- Step 1 On the appliance Web UI’s main page, select **Configuration Settings**.
- Step 2 Select your desired settings.

**Configuration Settings**

Call Configuration From Server

Web Username:

Web Password:

Web Confirm Password:

Server:

	IP Address	Port Number	Volume	Station List
Emergency-All-Call:	<input type="text" value="239.0.0.1"/>	<input type="text" value="60001"/>	<input type="text" value="30"/>	<input type="text" value="4,5,6,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,23,24,3,1,2,11"/>
All-Call:	<input type="text" value="239.0.0.2"/>	<input type="text" value="60002"/>	<input type="text" value="25"/>	<input type="text" value="4,5,6,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,23,24,3,1,2,11"/>
Audio Distribution:	<input type="text" value="239.0.0.3"/>	<input type="text" value="60003"/>	<input type="text" value="25"/>	<input type="text" value="4,5,6,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,23,24,3,1,2,11"/>
Multicast 1:	<input type="text" value="239.0.0.10"/>	<input type="text" value="60010"/>	<input type="text" value="20"/>	<input type="text" value="4,5,6,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,23,24,3,1,2,11"/>
Multicast 2:	<input type="text" value="239.0.0.150"/>	<input type="text" value="60150"/>	<input type="text" value="30"/>	<input type="text" value="4,5,6,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,23,24,3,1,2,11"/>
Multicast 3:	<input type="text" value="239.0.0.160"/>	<input type="text" value="60160"/>	<input type="text" value="35"/>	<input type="text" value="4,5,6,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,23,24,3,1,2,11"/>
Multicast 4:	<input type="text" value="239.0.0.50"/>	<input type="text" value="60050"/>	<input type="text" value="30"/>	<input type="text" value="4,5,6,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,23,24,3,1,2,11"/>

Save

**Device Stations**

Port Number	Port Type	Account Id	Local Port	Username	Digital Call Switches
1	Digital-Call-Switch-With-Speaker	slp:0201@10.10.10.10	5060	0201	1730HAN00779
2	Digital-Call-Switch-With-Speaker	slp:0202@10.10.10.10	5060	0202	
3	Digital-Call-Switch-With-Speaker	slp:0203@10.10.10.10	5060	0203	
4	Digital-Call-Switch-With-Speaker	slp:0204@10.10.10.10	5060	0204	
5	Digital-Call-Switch-With-Speaker	slp:0205@10.10.10.10	5060	0205	
6	Digital-Call-Switch-With-Speaker	slp:0206@10.10.10.10	5060	0206	

**Figure 5, Configuration Settings for ASB**

**Table 5, Configuration Settings**

<b>Web Username</b>	Provide a web username for this appliance.
<b>Web Password</b>	Provide a web password for logging into the appliance.
<b>Web Confirm Password</b>	Re-enter the password used to log into the appliance.
<b>Server</b>	Identifies the IP address of the Nyquist server.
<b>Local Port</b>	Identifies the local port.
<b>Emergency-All-Call</b>	Identifies the IP address, port number, and volume used for emergency all-calls pages.
<b>All-Call</b>	Identifies the IP address, port number, and volume used for all-calls pages.
<b>Audio Distribution</b>	Identifies the IP address, port number, and volume used for audio distribution.
<b>Multicast #</b>	Identifies the multicast IP address for a zone that the speaker is included in. If a speaker is added to multiple zones, the multicast IP address for each zone appears.

*The following parameters appear for each of the 24 ports associated with the Analog Station Bridge.*

<b>Port Number</b>	Identifies the port number of the Analog Station Bridge.
<b>Port Type</b>	Identifies the device type that the port connects to (speaker only, analog call switch and speaker, or digital call switch and speaker).
<b>Account ID</b>	Provides the SIP account (IP address) associated with the device preceded by the extension of the device associated with this port.
<b>Local Port</b>	Provides the port used for SIP.

**Table 5, Configuration Settings (Continued)**

<b>Username</b>	Identifies the username or extension for the station associated with the port.
<b>Digital Call Switches</b>	Identifies by serial number the Digital Call Switch assigned to the ASB port.

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## **4.1 Digital Call Switch Management**

You can assign digital call switches to ports on an ASB via the appliance's **Configuration Settings** tab. If an analog switch was configured as a station with type of **Digital Call Switch & Speaker**, it will also appear on the Configuration Settings/Digital Call Switch Management page. (Refer to the Managing Stations and Zones section of the *E7000 Series System Administrator Manual*.)

⚙️ Configuration Settings / Digital Call Switch Management ⓘ

Manage ports:

Available Digital Call Switches

+ 1730HAN00526
+ 1730HAN00534
+ 1730HAN00559
+ 1730HAN00574
+ 1730HAN00579
+ 1730HAN00600
+ 1730HAN00610
+ 1730HAN00611
+ 1730HAN00612
+ 1730HAN00620
+ 1730HAN00626
+ 1730HAN00806
+ 1730HAN00823
+ 1730HAN00850
+ 1730HAN00853

Port1 (0225)

+ 1730HAN00513

Port2 (0226)

+ 1730HAN00514

Port3 (0227)

+ 1730HAN00518

Port4 (0228)

+ 1730HAN00521

Port9 (0233)

+ 1730HAN00830

Port10 (0234)

+ 1730HAN00855

Port11 (0235)

+ 1730HAN00866

Port12 (0236)

+ 1730HAN00733

Port13 (0237)

+ 1730HAN00847

+ 1730HAN00860

+ 1730HAN00865

Figure 6, Manage Ports

*To assign a digital call switch to a port:*

- Step 1 On the appliance Web UI's main page, select **Configuration Settings**.
- Step 2 Select the **Manage** button next to the Digital Call Switches column.
- Step 3 On the Configuration Settings/Digital Call Switch Management page that appears, drag each **Available Digital Call Switch** to its port.

You can assign multiple digital call switches to the same port. If an analog call switch was configured as a station with the type of **Digital Call Switch & Speaker**. (Refer to the Managing Stations and Zones section of the *E7000 Series System Administrator Manual*.)

- Step 4 When done, select **Save All Changes**.

## 5 Accessing Log Files

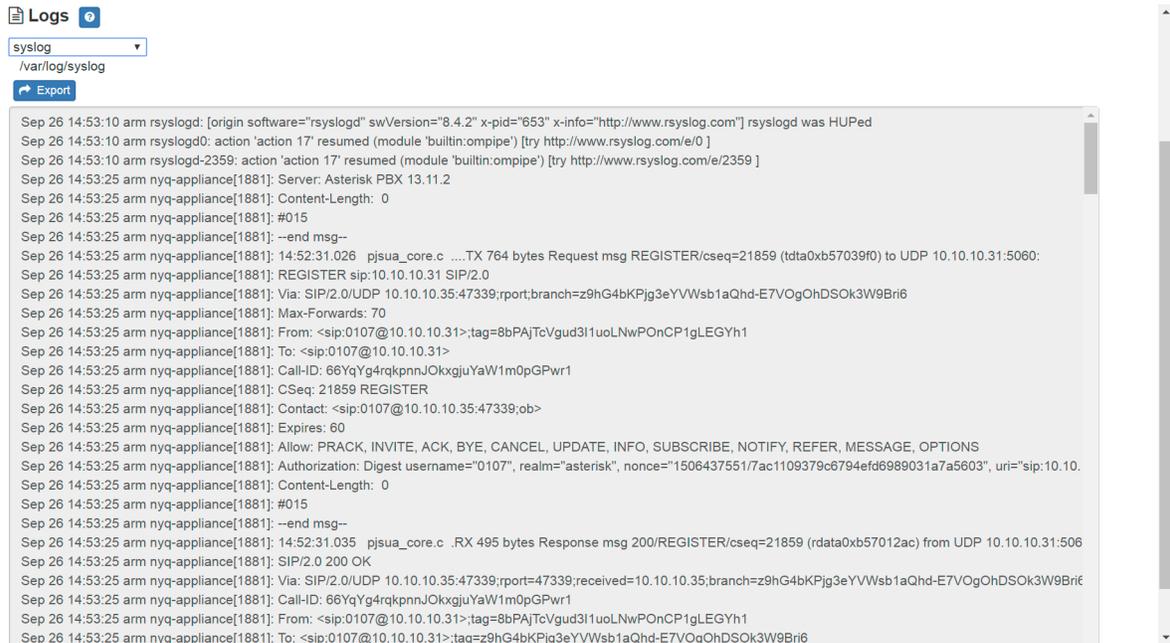
A log file records either events or messages that occur when software runs and is used when troubleshooting the appliance. From the appliance's web-based UI, log files can be viewed directly or exported via download to your PC, Mac, or Android device and then copied to removable media or attached to an email to technical support.

***To view a log file:***

- Step 1 On the appliance Web UI's main page, select **Logs**.
- Step 2 From the drop-down menu, select the log that you want to view.

Multiple versions of the same log and zipped copies of the log may be available.

- Step 3 To export the file, select **Export**.  
A link to a .txt file appears in the screen's lower left.



**Figure 7, Logs**

Available logs are described in the following table:

**Table 6, Logs**

Log	Description
alternatives.log	Contains information by the update-alternatives, which maintain symbolic links determining default commands.
ampws.log	Contains information about protection status and logs protection events with temperature information at the time of event.
auth.log	Contains system authorization information, including user logins and authentication methods that were used.
bootstrap.log	Contains information actions, errors, and warnings that occur during booting of the appliance.
btmpt	Contains information about failed login attempts.

**Table 6, Logs (Continued)**

<b>Log</b>	<b>Description</b>
daemon.log	Contains information logged by the various back-ground daemons that run on the system.
debug	Contains errors and debug information.
dmesg	Contains kernel ring buffer information. When the system boots up, the screen displays information about the hardware devices that the kernel detects during the boot process. These messages are available in the kernel ring buffer, and whenever a new message comes, the old message gets overwritten.
dpkg.log	Contains information that is logged when a package is installed or removed using dpkg command.
faillog	Contains user failed login attempts.
kern.log	Contains information logged by the kernel and recent login information for all users.
lastlog	Contains information on the last login of each user.
messages	Contains messages generated by Nyquist.
php5-fpm.log	Contains errors generated by the PHP script.
syslog	Contains list of errors that occur when the server is running and server start and stop records
user.log	Contains information about all user level logs.
wtmp	Contains historical record of users logins at which terminals, logouts, system events, and current status of the system, and system boot time.
wvdialconf.log	Contains basic information about the modem port, speed, init string, and Internet Service Provider (ISP).

