BROADCAST tools ®
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PROBLEM SOLVED

Installation and Operation Manual

AES Switcher Sentinel 4 XLR
Web-enabled AES/EBU Digital Audio Switcher/Router

Manual update: 07/07/2022
Firmware version 0.8 and higher. If you need a firmware upgrade, contact Broadcast Tools®

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ALL SPECIFICATIONS AND FEATURES FOR THIS PRODUCT ARE SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: We recommend the use of Chrome, Firefox or Safari as your browser.

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INTRODUCTION

Thank you for your purchase of a Broadcast Tools® AES Switcher Sentinel 4 XLR transparent four input, one output switcher/router (referred to as the AES Switcher Sentinel 4 XLR throughout this manual). We're confident that this product will give you many years of dependable service. This manual is intended to give you all the information needed to install and operate the Broadcast Tools® AES Switcher Sentinel 4 XLR.

SAFETY INFORMATION

Only qualified technical personnel should install the AES Switcher Sentinel 4 XLR. Any attempt to install this device by a person who is not technically qualified could result in a hazardous condition to the installer or other personnel or damage to the AES Switcher Sentinel 4 XLR or other equipment. Please ensure that proper safety precautions have been taken before installing this device. If you are unfamiliar with this type of equipment, please contact a properly qualified engineer to handle the installation and setup of the AES Switcher Sentinel 4 XLR. Broadcast Tools, Inc., is unable to support NON-Broadcast Tools software, hardware, or NON-Broadcast Tools computer/hardware/software problems. If you experience these problems, please research your hardware/software instruction manuals, or contact the manufacturers technical support department.

WHO TO CONTACT FOR HELP

If you have any questions regarding your product or you need assistance, please contact your distributor from whom you purchased this equipment. If you would like more information about BROADCAST TOOLS® products, you may reach us at:

Broadcast Tools, Inc.
131 State Street
Sedro-Woolley, WA 98284-1503 USA
Voice: 360.854.9559
Fax: 866.783.1742

Internet Home Page: www.broadcasttools.com
E-mail:support@broadcasttools.com

THANK YOU FOR CHOOSING
BROADCAST TOOLS® BRAND PRODUCTS!

Broadcast Tools is a Veteran Owned Business

Designed, Assembled and Supported in WA State, USA

CAUTION!

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure.
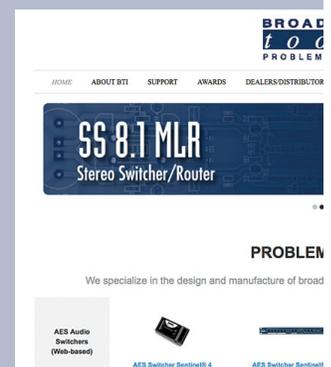
NOTE:

This manual should be read thoroughly before installation and operation.

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INTRODUCTION

③

Product Overview

The AES Switcher Sentinel 4 XLR is a web enabled, zero latency, transparent four input, one output switcher/router with mechanical latching relays designed to pass AES/EBU digital audio. The AES Switcher Sentinel 4 XLR is perfect for passive AES signal switching via front panel controls, web browser controls, contact closures or logic remote control. When audio silence, out-of-phase audio, and/or AES error is detected on the AES output it can automatically switch to a different AES input. The AES inputs/output feature XLR jacks. Switching is accomplished via mechanical latching gold contact relays, which means that the unit can route a signal in either direction and will keep routing the AES signal even after losing power.

AES Switcher Sentinel 4 XLR can be configured and monitored locally and/or remotely over any IP network, including private networks, IP-based industrial control networks, and the Internet. Users can operate the product using a desktop web browser or web-enabled mobile device. Email notification may be configured to alert up to eight recipients when an AES error, audio silence and/or out-of-phase audio is detected. SMTP username and passwords using STARTTLS or Base64 authentication are supported. SNMP traps and SET/GET are built into allow multiple units to be monitored and configured with SNMP management software.

Features/Benefits

- Built-in web server provides simple, web-based notification, monitoring, configuration, and control.
- AES output features silence sensor/stereo phase monitor with front panel sample rate, AES error, and alarm LED indicators.
- Front panel, remote, and web-based switcher controls.
- TCP control command interface for automated control.
- Email logging of system status, along with the site ID may be emailed in time spans from once an hour to once a day.
- Email alarm notification may be configured to alert up to EIGHT recipients.
- Support for STARTTLS secure SMTP authentication (Gmail.)
- Zero latency, transparent signal switching via mechanical latching sealed relays utilizing 2-form-C bifurcated – crossbar silver alloy with gold overlay contacts.
- Remote control via contact closures and 5-volt TTL/CMOS logic levels.
- Four normally open dry contact closure outputs for remote channel status.
- Neutrik XLR jacks for AES inputs and output.
- Removable euro-block screw terminal connectors are used for remote control connections. Necessary mating plugs are supplied.
- If power is lost, the last selected channel is passed to the output.
- Fully RFI proofed.
- Powered by a high-performance ARM® Cortex™ processor.
- Includes PS-1515 +/-15VDC universal desktop power supply with IEC inlet.
- Up to two units may be mounted on the optional RA-1 rack shelf. Desktop and wall mounting is also possible.

Applications

Source switching; Studio selection and routing; Audio processing selection; Exciter input selection; Remote broadcast input selection; STL source selection; PA switching; IFB selection; Satellite audio channel switching and console monitor input and output selection.

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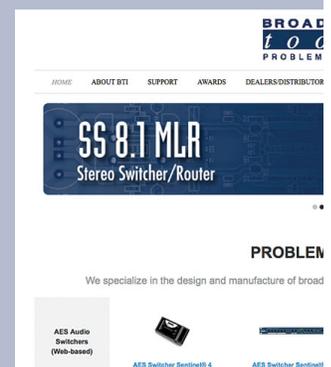
Inspection

Please examine your AES Switcher Sentinel 4 XLR carefully for any damage that may have been sustained during shipping. If any damage is present, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package should contain the AES Switcher Sentinel 4 XLR, a 7-foot BLUE straight-through CAT 5 cable, a 7-foot GRAY crossover CAT 5 cable, and a +/-15 VDC desktop power supply with domestic IEC cable. Manuals may be downloaded from our web site.

Installation

Surge Protection

The AES Switcher Sentinel 4 XLR has built-in resistance to voltage changes; we recommend that you use a power surge protector or line conditioner on the incoming AC line. Lightning strikes and/or other high voltage surges may damage your AES Switcher Sentinel 4 XLR and connected equipment if it is not properly protected. For lightning protection devices, check out www.polyphaser.com and www.itwlinx.com.

UPS Standby Power System

We recommend that you connect your AES Switcher Sentinel 4 XLR to a UPS system. A UPS, like the BE600M1 from APC helps to minimize the risk to the AES Switcher Sentinel 4 XLR and provides power during a power outage.
NOTE: If power is lost, the last selected channel is passed to the output.

Mounting

The AES Switcher Sentinel 4 XLR is designed to be rack mounted in the optional "RA-1" 19" 1-RU rack shelf. It should be mounted in an area that is accessible from the rear and preferably away from sources of heat. We recommend that you bench test and become familiar with the operation of the unit before permanently installing it.

Power Supply Connection

Insert the universal AC input PS-1515/IEC DC switching power supplies latching 3-pin connector into the power receptacle labelled "PWR" on the rear panel of the AES Switcher Sentinel 4 XLR. When ready, plug the power supply into the appropriate AC receptacle.

CAUTION!

Only use the power supply provided with this product.

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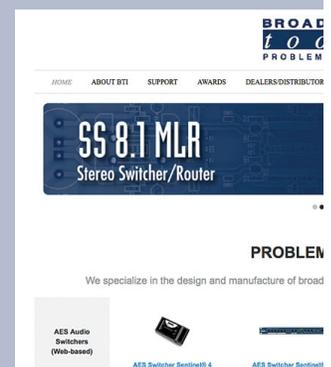
Installation/Operation

Front Panel Controls

The first four front panel push buttons labelled 1-4 represent the four input AES/EBU digital audio channels that can be routed to the switcher's output. Each input push button has an associated LED indicator. When an input channel is selected its LED will light and the previously selected channel is deselected (interlock). Only one input can be routed to the output at a time. When the Mute button is pressed the switcher will deselect all inputs and stop routing audio. The Enable (safety) function can be turned on, which will require the user to hold down the enable push button while selecting any of the other front panel push buttons, the Enable LED is illuminated when this function is engaged.

SW8 Enable Configuration Switch:
IN = Front panel enable switch defeated.
OUT = Front panel ENABLE push button is active and the Enable LED is illuminated.

NOTE: When SW8 is in the OUT position the enable push button must be held closed to operate any of the other front panel push buttons and isn't associated with any of the remote-control functions.

Output AES Silence/Phase/Error Sensor

The AES Switcher Sentinel 4 XLR's AES output signal is monitored by a digital to analog converter (DAC) and silence/stereo phase detector circuit as well as an AES/EBU error detector. These circuits can be configured to send alarm emails and trigger automatic switching.

LED indicators
- "Power" LED: Blinks to indicate normal operation. (Green)
- "Enable" LED: Illuminates when the front panel enable push button option is enabled. (Yellow)
- "SS/P" LED: Lit = AES Silence or out-of-phase audio detected at output. (Red)
- "Error" LED: Lit = AES not detected or invalid data at output. (Red)
- "32k" "44.1k" "48k" LEDs: Illuminate to indicates AES sample rate detected at output.
- "1" "2" "3" "4" Channel LEDs: illuminate when the input channel is selected. (Green)

Headphone Output

"HdPh" jack: ¼" stereo headphone monitor output. Fed by the internal DAC monitoring the switcher's output signal.

"HdPh Lvl" knob: Headphone monitor output audio level/volume adjustment knob.

Defaults Button

The reset to defaults button is located behind a recessed opening on the far left of the front panel. To reset the unit to default settings, apply power and wait for the Power LED to begin flashing then hold down the defaults button for 10 seconds. Releasing the defaults button will trigger a reset to defaults.

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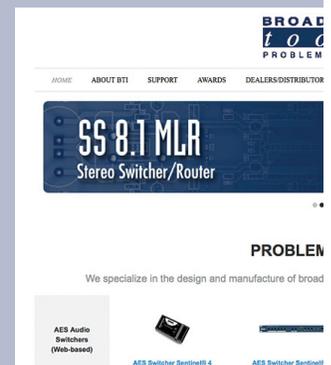
INSTALLATION

Rear Panel Connections:

LAN / NET Ethernet Jack
RJ45 Ethernet jack for 10/100baseT LAN/WAN connection.

Chassis Ground screw (CHS GND)
The #4-40 sized chassis ground screw should be tied to the station (house) or system ground.

Audio Inputs and Outputs
The AES Switcher Sentinel 4 XLR's AES/EBU digital audio inputs and output use 3-pin XLR jacks.

Switching is accomplished via mechanical latching gold contact relays, which means that the unit can route a signal in either direction or will keep routing that signal even after losing power.

XLR Connector Pinout
The input and output XLR connector pinouts conform to 3-pin XLR wiring standards:
Pin 1 = Ground/shield. Pin 2 = Positive. Pin 3 = Negative.

For AES/EBU signals please use AES/EBU digital audio qualified cable.

Remote Control Inputs
The AES Switcher Sentinel 4 XLR has five PIP/remote control trigger inputs that can be used that may be configured for PIP ("triggers") or remote-control switching operation. The inputs accept momentary contact closures (sustained, if break before make); open collector or TTL/CMOS input logic levels.
For example, in the default Remote Control mode, pulsing the "I2" input to ground would switch Input 2 to the output of the AES Switcher Sentinel 4 XLR. Once an input is having been switched to it will stay on that input until a front panel source switch is pressed, a different remote-control input is activated.

PIP mode is enabled via the "PIP Mode Enable" setting on the Email & Network Setup page.
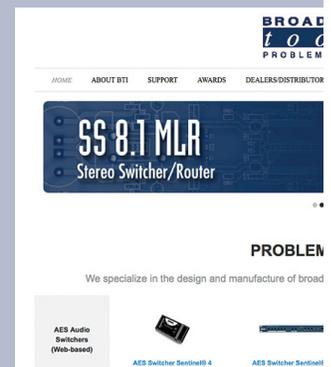
PIP/Remote Control Inputs
(Top row, TB1)

I1 (Input 1) PIP1	I2 (Input 2) PIP2	I3 (Input 3) PIP3	I4 (Input 4) PIP4	Mute PIP5	Gnd (Ground)

See Below
(Bottom Row, TB1)

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HOME   ABOUT BTI   SUPPORT   AWARDS   DEALERS/DISTRIBUTOR

SS 8.1 MLR
Stereo Switcher/Router

PROBLEM

We specialize in the design and manufacture of broad

AES Audio
Switchers
(Web-based)

AES Switcher Sentinel® 4   AES Switcher Sentinel®

INSTALLATION

Relay Outputs

The AES Switcher Sentinel 4 XLR has four normally open relay contact closure outputs that indicate switch position. Relay output "O1" indicates when Input 1 is selected, "O2" indicates for Input 2, etc. The relay output for the selected channel will connect to the "Com" (common) terminal providing a return for an LED indicator, TTL/CMOS logic, or relay.

(Top row, TB3)

O1 (Relay Out 1)	O2 (Relay Out 2)	O3 (Relay Out 3)	O4 (Relay Out 4)	Com (Relay Common)	Gnd (Ground)

Relay Outputs
(Bottom Row, TB3)

INSTALLATION
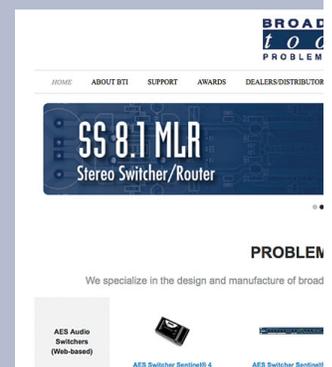
Web Setup and Operation
Ethernet "Quick Start" Guide

CAUTION! NEVER DOWNLOAD FIRMWARE UPDATES OR CHANGES TO THE BNET WEBSERVER UNLESS INSTRUCTED TO DO SO BY BROADCAST TOOLS®. DOING SO DELETES ALL SOFTWARE AND VOIDS ALL WARRANTIES FROM BROADCAST TOOLS, INC.

CAUTION! If you are not familiar with Ethernet enabled equipment, it may be useful to contact your IT department, network administrator or network consultant for assistance. Assigning an IP address already in use by another device may cause problems with your network!

Instructions for changing the IP address of the computer that will be used for the configuration of this product are given here. Note that these instructions are specifically for computers with the Windows 10 operating system but will also work with Windows 7. For setup using other operating systems, refer to the appropriate OS user's manual.

Step 1: Open the control panel by clicking on the Start Menu, click on settings, then click on Control Panel. Click on View network status and tasks under Network and Internet.
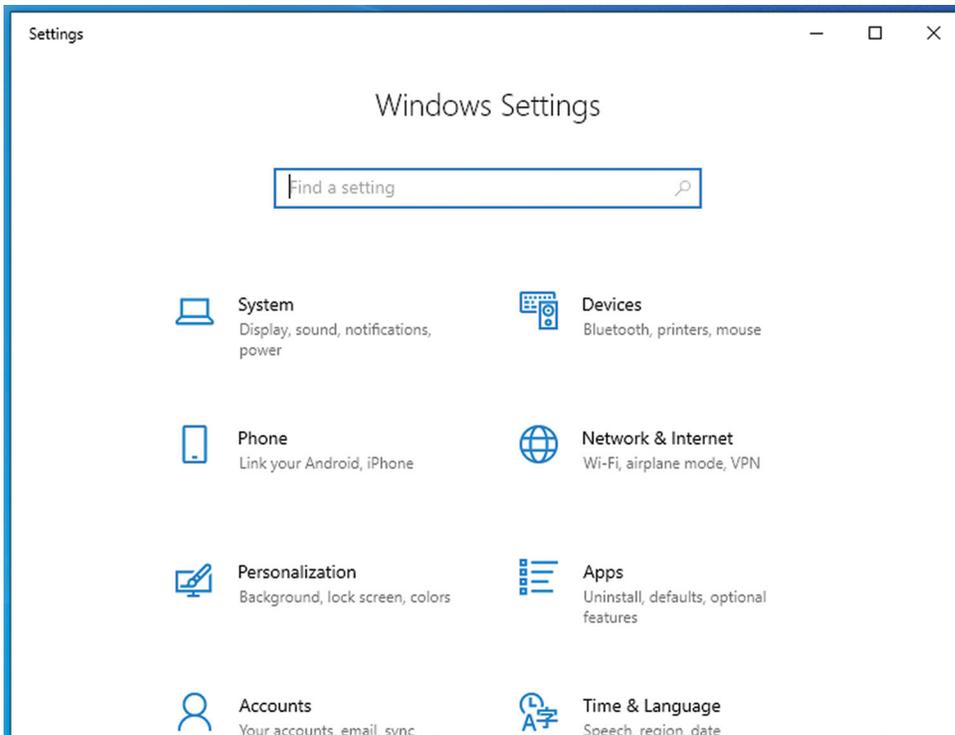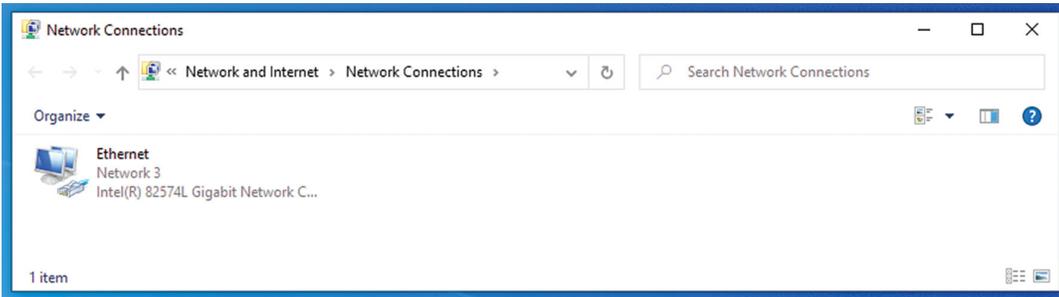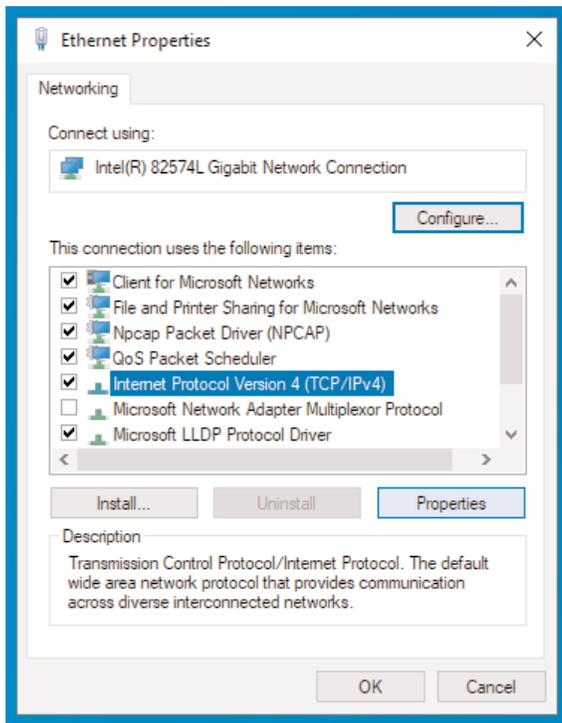

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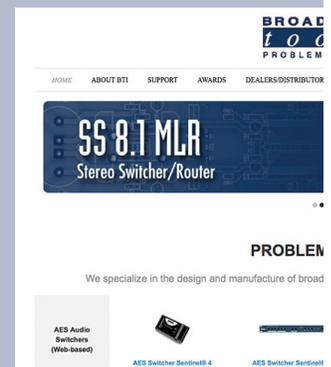
Step 2: Click on the sidebar labelled Change adapter settings. The Network Connections windows will pop up, as shown below.
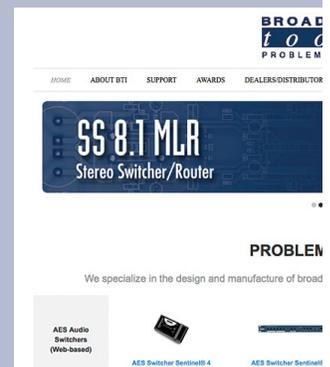

Step 3: Right click on the icon labeled Local Area Connection or Ethernet. A menu will appear. Select the option at the bottom of the menu labeled Properties. The Ethernet Properties window will appear.
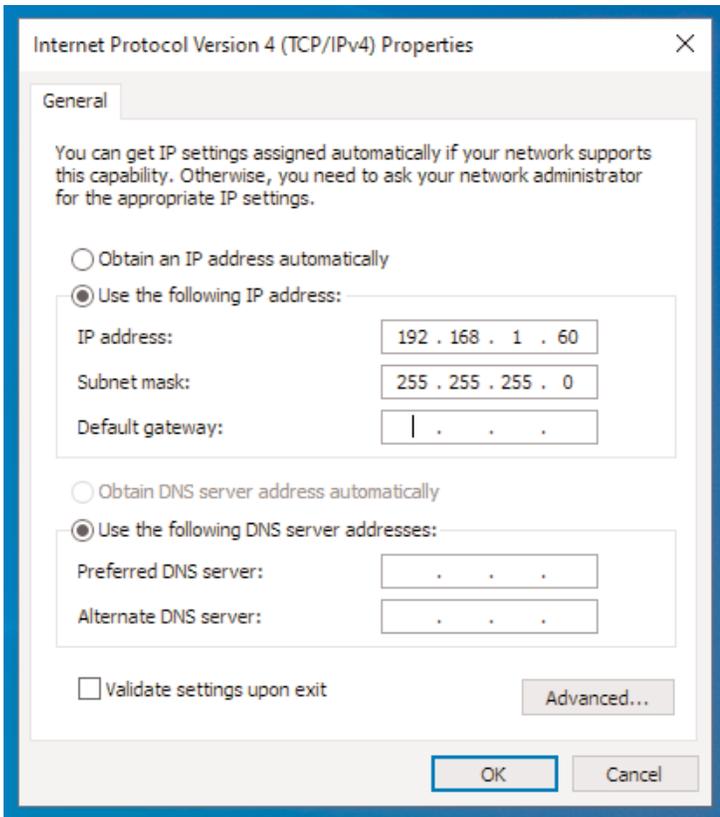

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Step 4: On the Local Area Connection Properties page, double click on Internet Protocol (TCP/IPv4) to display properties.

Step 5: Before making any changes to the network settings, write down the current settings (or screen capture the page and print) so that they can be restored once the unit is configured. Next, select the radio button labeled "Use the following IP address" and type in the IP address 192.168.1.60. Type in the subnet mask of 255.255.255.0. Leave the default gateway field blank. Click OK to apply the new settings.

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Ethernet (NETWORK) port LED indicator functions

Link LED Left Side	
Color	Meaning
Off	No Link
Amber	10 Mbps
Green	100 Mbps

Activity LED Right Side	
Color	Meaning
Off	No Activity
Amber	Half Duplex
Green	Full Duplex

NOTE: We recommend the use of Chrome, Firefox, or Safari for as your browser.

Opening the LOGIN Web Page

1. Connect the supplied GRAY colored XOVER cable between the PC's Ethernet port and the products "NET" network RJ45's jack.

2. Connect the included power supply. Verify that the green PWR/Heartbeat LED is blinking and the left "LINK" LED above the "NET" Network RJ45 is illuminated

3. Open the product's login page by typing the following URL into the browser: http://192.168.1.55 The username and password is required to change any parameter and the fields are case sensitive.

Factory "login" defaults: username: admin (lower case)
                                    password: 1234

NOTE: You may view the password by checking the "Show Password" box.

4. Press the "Submit" button to login in. Once you are logged in, follow this manual for setup and/or operational information.

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"Login" Web Page

The Login screen displays the Username and Password entry points as well as the date, time, and site ID.

You may view the password as you type by checking the "Show Password" box.
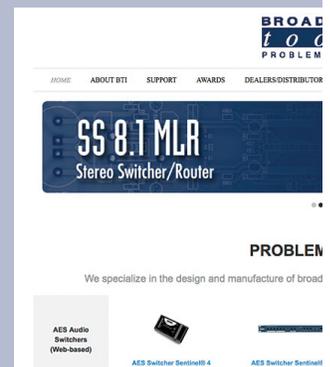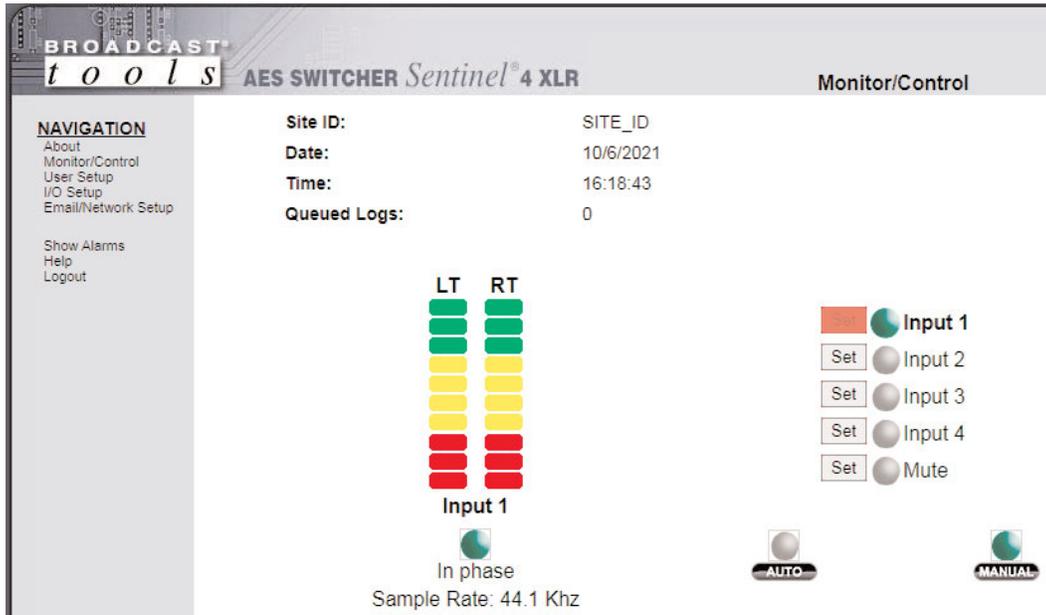

After you have successfully logged in, the Monitor/Control page will be displayed.

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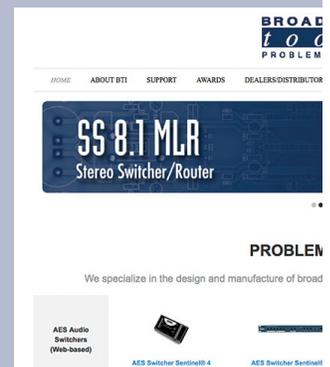**OPERATION**

"Monitor/Control" Web Page

The Monitor/Control page allows the monitor and/or control of the AES Switcher Sentinel 4 XLR. The following is an explanation of each item on this page:

Site ID:	Identifies the unit and location.
Data/Time:	Current date/time from the AES Switcher Sentinel 4 XLR.
Queued Logs:	Displays the number of queued log entries scheduled to be emailed.
LT/RT meters:	Audio output level bar graph.
In Phase/Below Threshold:	Indicates if the output audio is Above Silence Threshold/In Phase, Out of Phase, or Below Silence Threshold.
Sample Rate:	Indicates AES output signal sample rate or error detected.
Set Buttons/Indicators:	Switch position indicators and manual controls.
Auto/Manual:	Indicates whether the device is in Auto or Manual switching mode. You can switch between the modes by clicking the "Auto" and "Manual" buttons. The behavior of the device in Auto mode is defined on the I/O Setup page.

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"User Setup" Web Page

Eight Usernames and Passwords may be configured for up to three access levels:

1.   "Admin" allows complete access for configuration and control.

2.   "Monitor/Control" allows access to these pages:
        About, Monitor/Control, Show log, Help, and Logout.

3.   "Monitor Only" allows access to these pages:
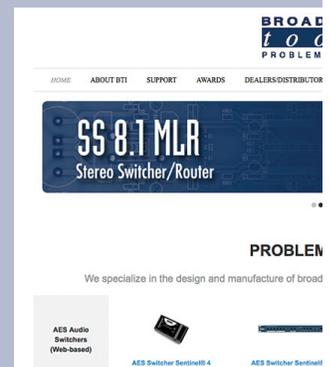   About, Monitor only, Help, and Logout.

Only users with "Admin" access can make changes to this page.

The Site ID is displayed and can be changed on the Email/Network Setup page.

NOTE: After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

OPERATION

"I/O" Setup Page

NOTE: **After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.**

Override Mode: Allows front panel and/or remote-control input to over-ride Auto mode and manually switch to an input. Checking the "Override Turns Off Auto Mode" check box causes an override action to turn Manual mode on and Auto mode off, otherwise Auto mode remains on.

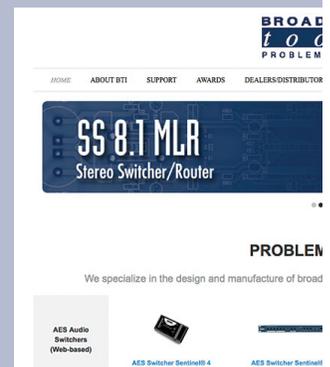When Booting Switch To: Sets the power up input channel either 1,2,3,4, Mute, or Last Source Selected.

Channels dropdown: Select the input channel (1-4) to be configured.

Label: Each input can be given a custom label for easy identification.

Email Addresses: Email messages can be sent when an input source becomes active because of auto mode or manual control. Each input can have up to eight email address assigned to using the checkboxes labeled 1-8.

Action Sequences: The behavior of the AES Switcher Sentinel 4 XLR when in Auto mode (as indicated/controlled on the Monitor/Control page) is defined by the conditional statement:
If (Input x) is active and is less than (audio threshold in dB), wait (time in seconds) then (action.)
By default, the AES Switcher Sentinel 4 XLR is configured to wait for 5 seconds after on the selected input and then switch to next input in ascending order.

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"Email/Network Setup" Web Page

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"Email/Network Setup" Web Page – Device Network Settings

Device Address: Enter a static IP address here.   Default: 192.168.1.55

Device Netmask: Enter the Netmask here: Default: 255.255.255.0

Gateway Address: Enter the Gateway IP here: Default: 192.168.1.1

DNS Server IP Address: Enter your DNS address here.   Default: 8.8.8.8

HTTP Port: Normally Port 80   Default: 80

"Email/Network Setup" Web Page – SMTP Settings

SMTP Server Address: SMTP (Simple Mail Transfer Protocol) server address. Used to send emails.

SMTP Port: Normally Port 25 or 587.   Default: 25

SMTP Return Address: Enter your return email address here. Emails from the AES Switcher Sentinel 4 XLR will indicate they are from this address. If an email cannot be delivered, a message stating why will be sent to this address.

SMTP Host ID: Enter something here to identify the device. Can be left blank.

Secured SMTP: STARTTLS secure authentication is supported by most providers. This must be enabled for many SMTP servers, like Gmail. Leave disabled for standard Base64 authentication.

SMTP Authentication: When checked SMTP authentication (username/password) is used. Most SMTP servers require authentication.

SMTP Username: Enter SMTP server username here.

SMTP Password: Enter SMTP server password here.

NOTE: The user must enter the following items before an email can be successfully sent: SMTP Server Address, SMTP Port, SMTP Return Address, and SMTP Host ID. SMTP username and SMTP password must be supplied, and authentication turned on if the SMTP server requires authentication. An email address must be entered into Recipient Address field #1.

The user must press the "Save Settings" button after entering the SMTP information before attempting an email test. If authentication fails, the email is not sent, please ensure that the username and password are correct.

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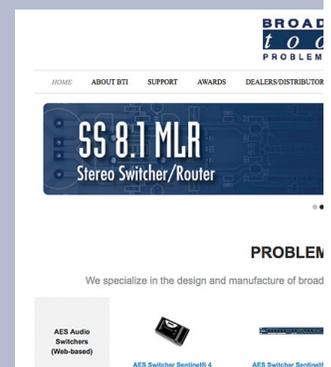
"Email/Network Setup" Web Page – Email Logging Settings

Logging Email Address: Email address for the "Logging" email recipient (may be different from the 8 "Alarm" Recipient Addresses. Logging emails and Daily emails are sent to this address only.

Logging Email Snapshot Interval: The period in hours that a snapshot is taken of the system. The logging email is not sent on this interval.

Logging Email Update Interval: The period in hours that snapshots are emailed. This email may contain multiple snapshots if the Snapshot Interval is less than the Update Interval. Each snapshot will be identified by the date and time.

"Email/Network Setup" Web Page – Email Alarm Settings

Email Alarms: Choose Immediate and/or daily. If Immediate is selected, then an email will be sent out as soon as an alarm is generated. If daily is selected, then each alarm is queued and emailed as a digest every 24 hours. Both can be used at the same time. The number of queued alarms is displayed on the Monitor/Control page.

Daily Alarm Email Time: The time that queued alarms are sent. Queued alarms are sent to the Logging Email Address only.

"Alarm" Recipient Address: Email addresses for up to 8 addresses. These addresses correlate to the 8 email addresses selectable on the I/O Setup page.

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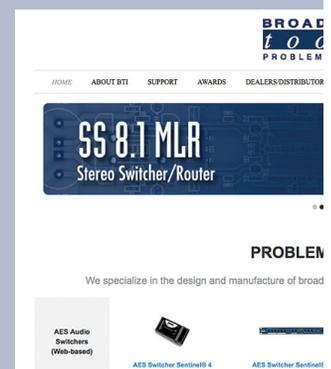
"Email/Network Setup" Web Page – SNMP Manager Settings

SNMP Enable Traps: When checked, SNMP trap messages will be sent. When unchecked, no trap messages will be sent to the manager.

SNMP Manager IP Address: This is the IP address of the SNMP manager. The system only accepts SNMP requests from this IP address, and will send traps to this IP address only.

SNMP Manager Trap Port: This is the port number that SNMP trap messages will be sent to at the manager IP. Default port 161.

SNMP Read Community: This is the community name used for Read-Only access.

SNMP Write Community: This is the community name used for Read-Write access.

NOTE: A cold-start trap will be sent when the unit boots up if the SNMP Enable Traps are enabled and trap messages will be sent when a device enters or exits an alarm condition, depending on whether alarms are enabled.

"Email/Network Setup" Web Page – NTP Settings

NTP Enabled: Enable for NTP network time sync. Default: Enabled
NTP (Time) Server Address: Enter the NTP address here. Default: pool.ntp.org
NTP Port: Port used to connect to NTP server. Default: 123
NTP Update Interval (Min):   Interval between time updates.   Default: 60

"Email/Network Setup" Web Page – TCP Control Settings

See the TCP Control Commands section for more information.

TCP Enable: Enables TCP control of the unit. Default: Disabled

PIP Mode Enable: Enables PIP/triggers over TCP. Default: Disabled

TCP Listen Port: The port at which the unit will accept TCP control connections. Default: 56.

TCP Timeout (sec.):   The time the unit will keep a TCP connection open after inactivity. Default: 10 seconds.

Command Format: TCP string format, see control commands section.

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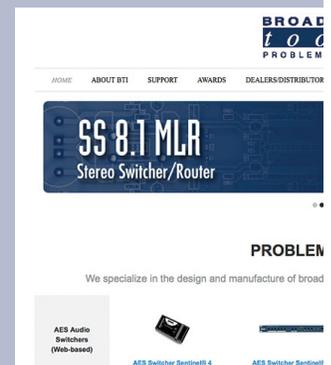
"Email/Network Setup" Web Page – Other Settings

Site ID:
: This is the Site Identifier that is displayed on the web and in email.

Monitor Refresh Time (Sec):
: Interval at which the Monitor page refreshes. Shorter times may increase network traffic.

Time Zone Offset from UTC:
: Sets the time zone used for the internal clock. Default: -8

Enable Daylight Savings:
: Adjusts the clock for daylight savings time.

Set Time:
: The hour, minute, second, month, day and year boxes can be used to set the time of the real time clock. The time is only updated if you click "Save Time" and not when you "Save Settings".

Enable Event Logging:
: Event logging will generate an alarm, but it will not send an email. If the system is configured for Daily Alarm emails, then that Daily Alarm email will contain the event logging alarms as well as the alarms configured on the I/O Setup page.

Login:
: When someone logs into the unit, the username and date/time will be logged.

Email:
: When an email is sent, the type of email and date/time will be logged.

Reboot:
: When the device boots the date/time will be logged.

Alarms Cleared:
: When the Daily Logs or Normal Alarms are cleared, the type of log cleared, and date/time will be stored. When Daily Logs are sent, the Daily Logs are also cleared; this will cause an event log as well.

WEBSITE:
Visit our web site for product updates and additional information.

OPERATION

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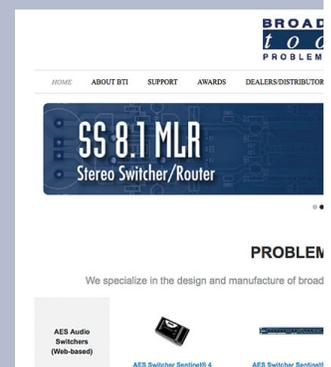
"Email/Network Setup" Web Page – Controls

Save Settings:

After pressing the "Save Settings" button, the device will reboot (If you changed the IP address, you must navigate your web browser to the new IP address (if the HTTP port was changed from port 80, be sure to add the new port number after the IP: xxx.xxx.xxx.xxx:port #). If you didn't change the IP address, then you will be returned to the login screen after the device reboots.

Reboot Device:

When you press the "Reboot Device" button, the internal web server restarts.

Send Test Email:

Press this button to send a test email to recipient address #1.

NOTE: After you are done making changes to the Email/Network Setup page, you MUST press the "Save Settings" button to save your changes.

Reload Defaults:

When you press the "Reload Defaults" button, the device resets to factory default settings.

Clear Daily Logs:

When you press the "Clear Daily Logs" button, the daily logs stored in memory will be cleared. Keep in mind that if the Alarms Cleared Event is enabled, this event will post after the logs are cleared.

Send Daily Logs:

When you press the "Send Daily Logs" button, the system will send the daily logs email and clear the log queue.
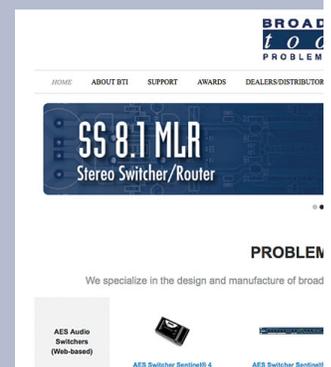
Import Settings:

Browse to locate and import a saved. ncs settings file.

Export Settings:

Clicking save will allow you to download a backup copy of the settings entered the unit as .ncs file.

Firmware:

Browse to locate and apply a firmware updated file saved on your computer.

WEBSITE:
Visit our web site for product updates and additional information.

"Show Alarms" Web Page

This page displays current alarms.

Device/Event :   Labels the device or event.

Message: Describes event/alarm condition.

Date: Displays the date that the event/alarm was logged.

Time: Displays the time that the event/alarm was logged.

Controls
Disable Sound: Mutes the alarm sound.

Silence Alarms: Marks active alarms as acknowledged.

Clear Alarms: Empties the Alarm Log.

NOTE: With the "admin" access level, the user may control all functions.

With the "Monitor/Control" or "Monitor" only access level, the user may view the "Show Log", enable/disable PC speaker sound and silence alarms.

OPERATION

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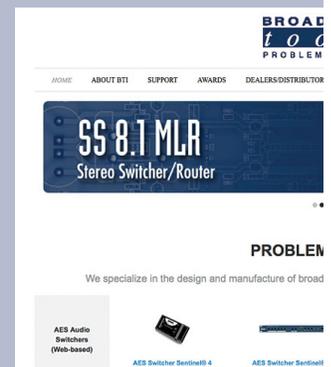
"About" Web Page

The "About" Web Page displays the product name, firmware version numbers, and Broadcast Tools® Web site link.

WEBSITE:
Visit our web site for product updates and additional information.
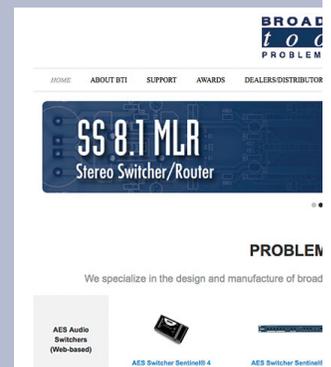
OPERATION

TCP Control Commands

The AES Switcher Sentinel 4 XLR can be configured to accept ASCII control strings over TCP. The TCP port used, TCP timeout and TCP enable check box can be found on the Email/Network Setup page. TCP must be enabled for TCP control to work.

By default, when enabled, the AES Switcher Sentinel 4 XLR uses TCP port 56 for control. A Telnet client such as PuTTY may be used to test the TCP control interface.

Audio Switch Control Commands: (Carriage return not required)
*uii   - Select input "ii".
Command example: *001
Where * (asterisk) is the beginning of string, "u" is unit ID, zero on these products and "ii" is the two-digit input number: 01, 02, etc.

*uMA - Mute outputs.
Command example: *0MA
Where * (asterisk) is the beginning of string, "u" is unit ID, zero on these products and "MA" is the command.

*uCAx - Auto/Manual mode.
Command example: *0CAY
Where * (asterisk) is the beginning of string, "u" is unit ID, zero on these products and "CA" is the command and "x" is the modifier. Where x = y to turn Auto mode on, and x = n to turn auto mode off (manual mode).
When x =? the unit will return C0A,1<CR><LF> if Auto mode is On and C0A,0<CR><LF> if auto mode is Off.

Information Retrieval Commands: (Carriage return not required)
*uSPA - Send PIP Input Status.
Command example: *0SPA
Where * (asterisk) is the beginning of string, "u" is unit ID, zero on these products, and "SPA" is the command.
Response example: "S0P, A,0,0,0,0,1<CR><LF> says that PIP input 5 is active.
The response will list all inputs, "1" if the input is active and zero "0" if inactive.
Note: Status is automatically sent each time a channel is changed.

*uSL   - Send Audio Status.
Command example: *0SL
Where * (asterisk) is the beginning of string, "u" is unit ID, zero on these products, and "SL" is the command.
Response example: "S0L,0,0,0,1<CR><LF> says that input 4 is selected.
The response will list all inputs, "1" if the input is selected and zero "0" if not selected.
Note: Status is automatically sent each time a channel is changed.

*uSS   - Send status of Silence or AES activity detector.
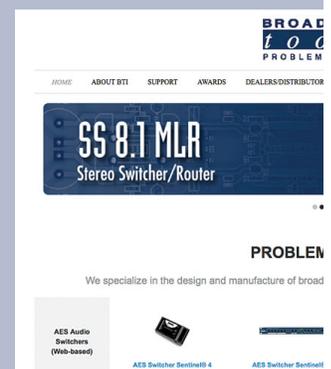
Command example: *0SS

Where * (asterisk) is the beginning of string, "u" is unit ID, zero on these products, and "SS" is the command.

Response example: S0S,1<CR><LF>

0 = Audio/AES activity, 1 = No Audio/AES activity.

Note: Status is automatically sent each time an error is detected.

*uU   - Send unit firmware version and Site ID strings. Comma separated…

Command example: *0u

Where * (asterisk) is the beginning of string, "u" is unit ID, zero on these products, and "U" is the command.

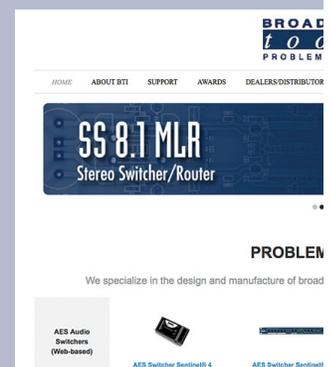Response example: <AES Switcher Sentinel 4 XLR 0.5, SITE_ID><cr><lf

Note: Unit information is automatically sent each time this information is requested.

WEBSITE:

Visit our web site for product updates and additional information.

OPERATION

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Specifications

Ethernet Interface:	RJ45, 10base-T or 100base-TX, auto sensing with link & activity LED indicators - Full/half duplex.
Supported Protocols	TCP/IP, UDP/IP, ARP, ICMP, SNMP, HTTP, ESMTP, SMTPS.
Audio Inputs/Outputs:	Balanced AES/EBU Digital Audio.
Audio Switching Method:	Passive. Zero-latency, transparent signal path. Mechanical latching sealed relays utilizing 2-form-C bifurcated-crossbar silver alloy with gold overlay contacts.
Operation Control:	Front Panel - Momentary switches. Remote - Momentary or sustained, compatible with 5 volts CMOS/TTL logic, open collector or contact closures to ground.
Status:	Front Panel - LED Indicators. Remote – Four channel relay status output contacts, normally open, shared common. 30 VDC @ 1 amp maximum.

CAUTION! For safety, never connect 120 Vac circuits to the relays!

Interfacing:	AES/EBU Audio I/O - balanced XLR jacks. Remote control - Rear panel pluggable screw terminals. Mating connectors supplied.
Power Requirements:	PS-1515/IEC universal switching power supply with IEC inlet and domestic AC cable included. +/-15 VDC 500mA output with 3-pin AMP-style latching power connector.
Physical Dimensions:	8.50” x 7.10” x 1.576” (WDH) aluminum extrusion chassis with (4) #6-32 screw thread mounting holes for optional RA-1 rack shelf
Weight:	3.0 lb.
Shipping Weight:	4.0 lb.
Accessories	RA-1, 1-RU rack shelf. Accommodates 2 units.

WEBSITE:
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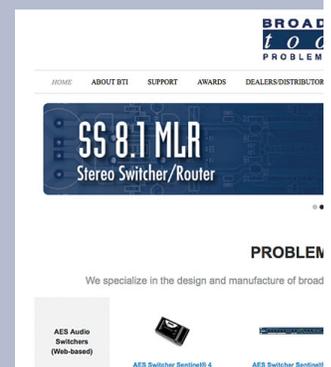
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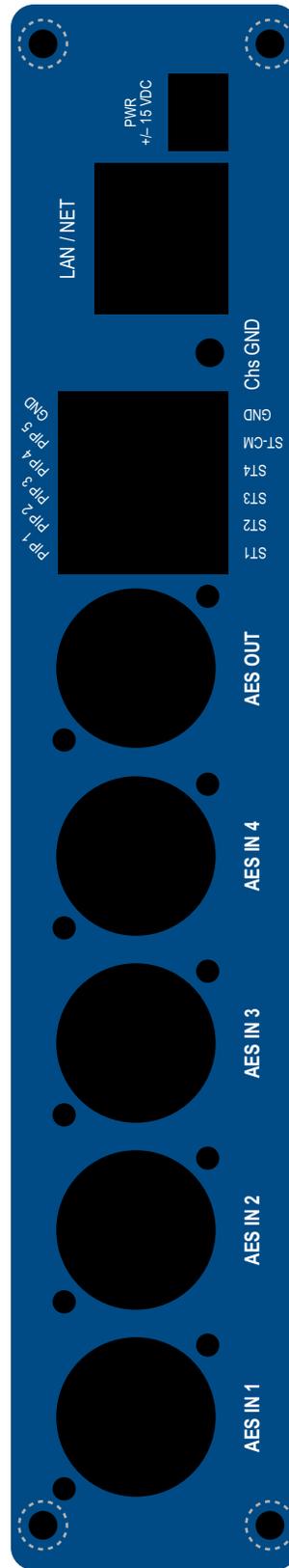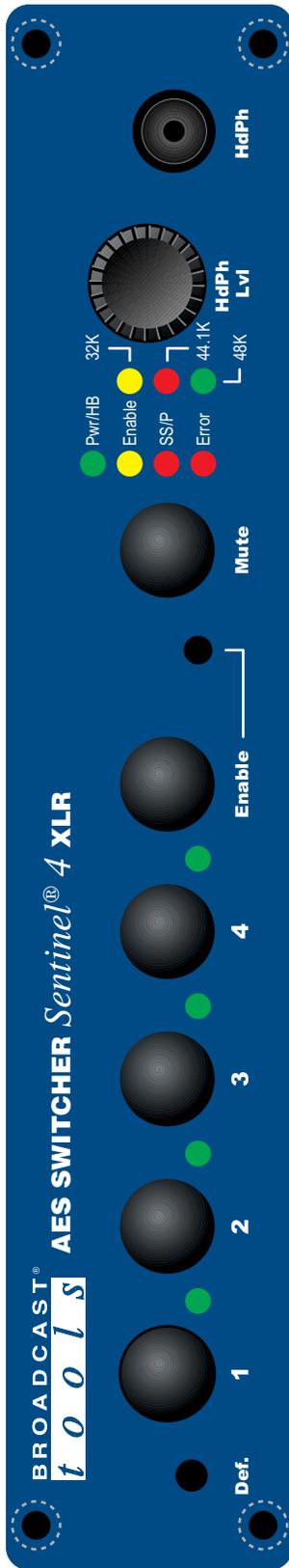
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Functional Diagram

Stereo AES Inputs

XLR

1

XLR

2

XLR

3

XLR

4

Front Panel Switches

Power

Enable

5 Remote/GPI Port

4 Remote/GPO Port

Ethernet Port

+/-15vdc Universal
Power Supply

**P
S**
- 15 vdc
+ 15 vdc
+ 5 vdc
+ 3.3 vdc

Web Server,
Mechanical
Latching,
Relay
Switching,
I/O Switching,
Monitoring
& Control

DAC, Silence,
Phase and
AES Error
Detectors

XLR

Stereo AES Output

32 KHz

44.1KHz

48 KHz

AES Error

SS/Phase

HdPH Level

1/4" HdPH Jack

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