BROADCAST tools ®

Installation and Operation Manual

Status Sentinel

Manual Update: 04/15/2009

Visit **www.broadcasttools.com** for important product update information.

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e-mail: support@broadcasttools.com   voice: 360.854.9559   fax: 866.783.1742

INTRODUCTION

Thank you for your purchase of a Broadcast Tools® Status Sentinel™ Web enabled three-input status/digital module (referred to as the Status Sentinel™ 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® Status Sentinel™.

SAFETY INFORMATION

Only qualified personnel should install Broadcast Tools® products. Incorrect or inappropriate use and/or installation could result in a hazardous condition.

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 98284-1540 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.
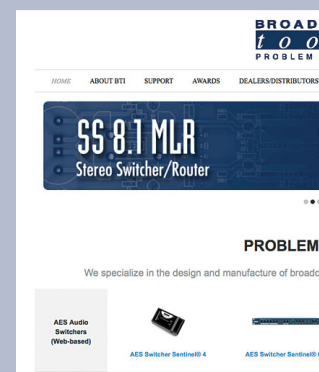
NOTE:

This manual should be read thoroughly before installation and operation.

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Product Overview

The Status Sentinel™ is a robust, full-featured; Ethernet based data acquisition device with three optically isolated status (digital) inputs. The Status Sentinel™ can be controlled and/or monitored over any IP network including private networks, IP-based industrial control networks, and the Internet. Users can operate the product using a web browser or web-enabled mobile device, while email notification may be configured to alert up to four recipients when alarms are detected. The user may also enable a sound effect to play when an alarm is generated. Logging of input status, along with the site ID text may be emailed from once an hour to once a day.

The Status Sentinel™ may be paired with the Relay Sentinel™ to form a "Relay Extension Cord".

Inspection

Please examine your Status Sentinel™ carefully for any damage that may have been sustained during shipping. If any damage is noted, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package should contain the Status Sentinel™, this manual and/or CD, 7 foot BLUE straight-through CAT 5 cable, 7 foot GRAY crossover CAT 5 cable, and the 7.5 VDC @ 500ma wall transformer.

Installation

Surge Protection

The Status Sentinel™ 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 Status Sentinel™ 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 Status Sentinel™ to a UPS system. A UPS helps minimize the risk to the Status Sentinel™ and provides power during a power outage.

"NET" network RJ45 connector

Connect one end of the supplied CAT5 (straight or crossover) cable to the desired ETHERNET (WAN/LAN) or PC port.

POWER 7.5 VDC connector

This is the connector used to power the unit. Never use any type of power supply other than the specified power supply.

CAUTION!

Installation of the Relay Sentinel™ in high RF environments should be performed with care. The station ground should be connected to the designated chassis ground terminal or chassis ground screw using a 20 to 24-gauge wire.

Installation

Status/Digital (OPTO +/-) 1,2,3 input connections

The optically isolated status/digital inputs accept (WET) voltages from 5 to 24 volts DC. Higher voltages may be applied if an appropriate value external current limiting resistor is used. Connect the positive voltage to the desired "OPTO +" terminal (anode) and ground or minus voltage to the desired "OPTO –" terminal (cathode). **NOTE:** Please observe proper polarity.

Connecting (DRY) contact closures to the status/digital input requires the user to connect the 5VDC terminal to the desired OPTO + terminal. Connect one side of the external contact closure to the GND terminal and the other side of the external contact closure to the desired OPTO – terminal.

NOTE: Please observe proper polarity. The on-board 5VDC power source may be used to power the (DRY) inputs.

Power LED

Indicates power is applied.

OPTO-Input 1,2,3 LED's

Illuminates when the appropriate status/digital input is activated.

On-board 5VDC power source

The on-board five-volt DC power source may be used to power the status/digital input and/or external equipment. The supply is current limited to 100ma. Connections should be made to the "5VDC" and "GND" terminals.

CHS GND connector

Connect the station ground to this terminal.

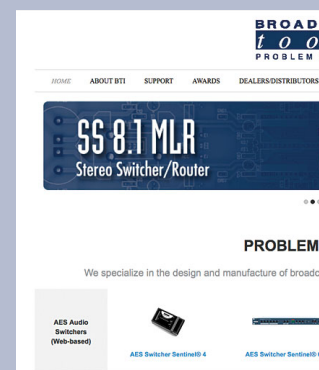## Web Setup/Operation

Ethernet "Quick Start" guide

M 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 help. 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 XP operating system. For setup using other operating systems, refer to the appropriate OS users manual.

CAUTION!

NEVER DOWNLOAD FIRMWARE UPDATES OR CHANGES TO THE XPORT WEB-SERVER UNLESS INSTRUCTED TO DO SO BY BROADCAST TOOLS®. DOING SO DELETES ALL SOFTWARE AND VOIDS ALL WARRANTIES FROM BROADCAST TOOLS, INC.
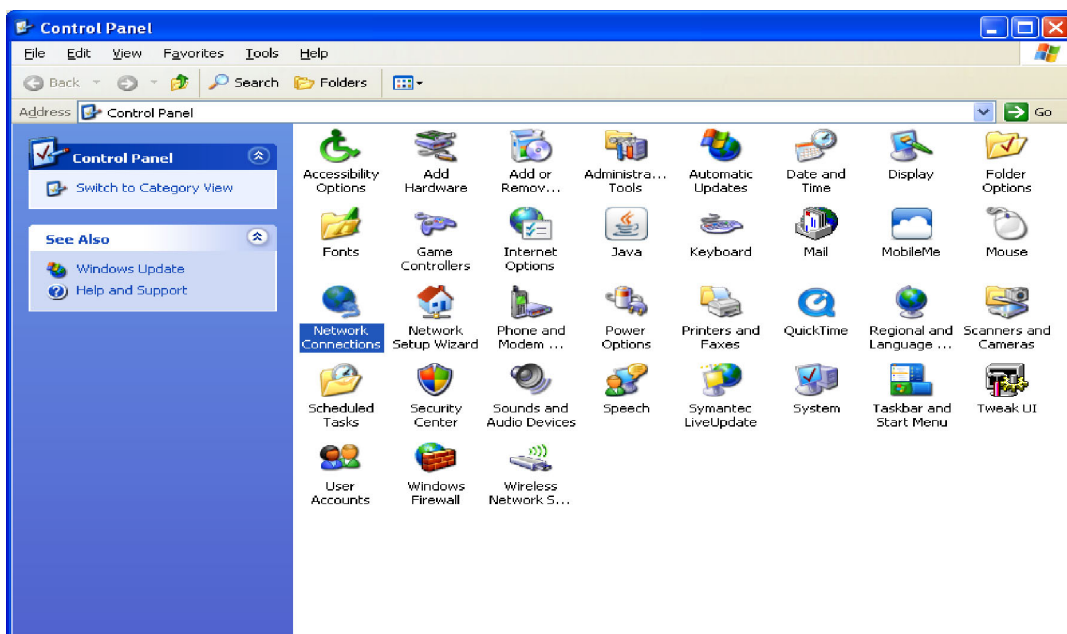
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Web Setup/Operation

Step 1: Open the control panel by clicking on the start menu, click on settings, then click on Control Panel. (Note that the control panel shown is in "Classic View". If control panel is in "Category View" select the "Classic View" option before proceeding.)


Step 2: Double click on the icon labeled Network Connections. The following menu will pop up.
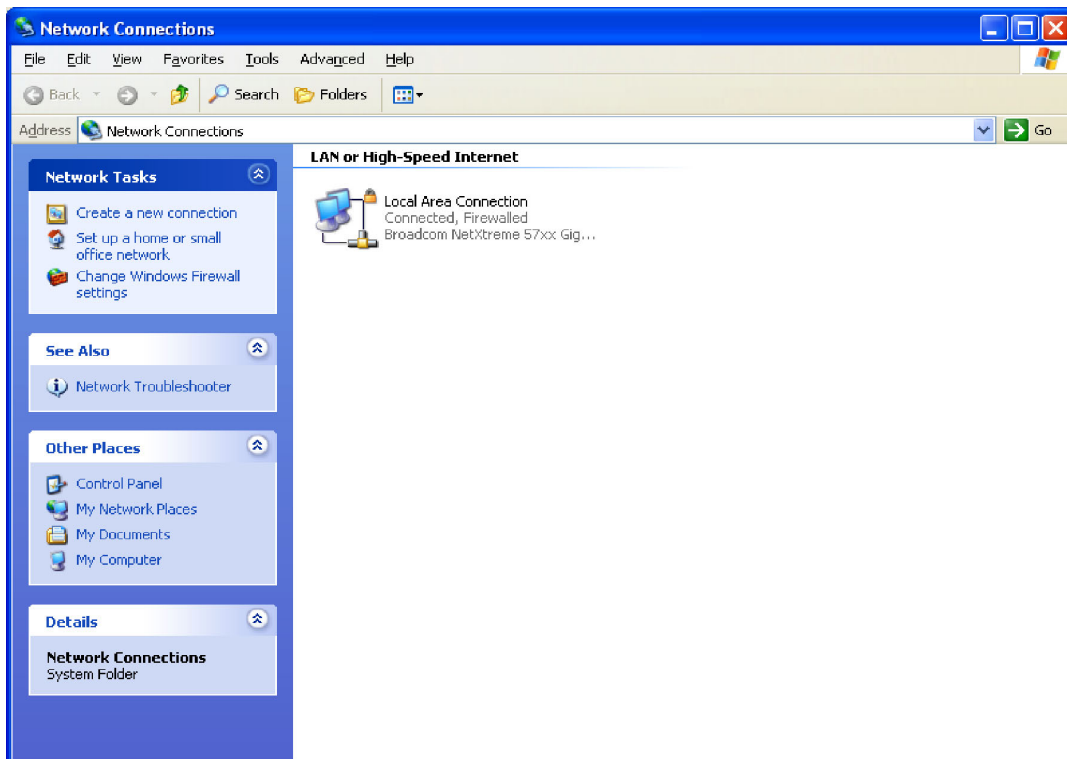
Step 3: Right click on the icon labeled Local Area Connection. Another menu will appear. Select the option at the bottom of the menu labeled Properties. The Local Area Connection Properties window will appear.
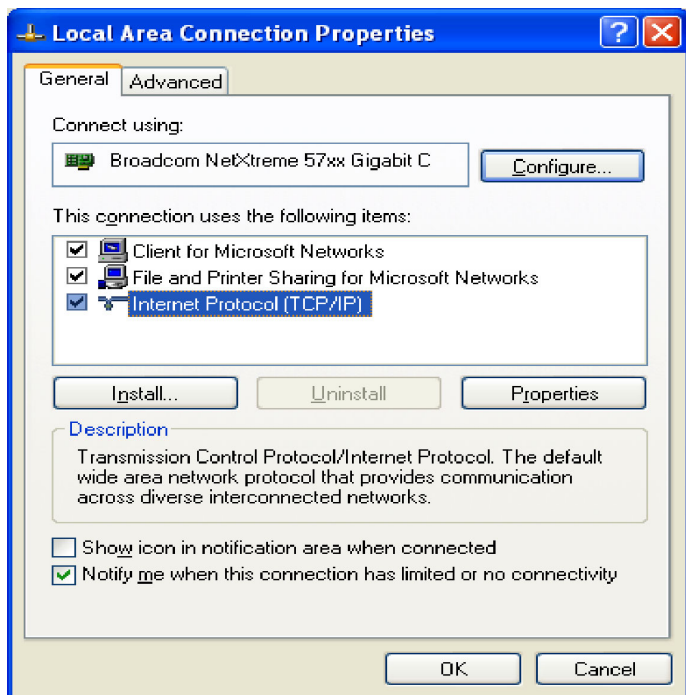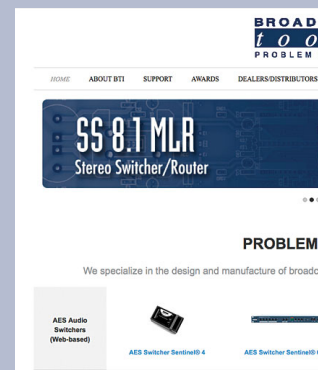

Step 4: On the Local Area Connection Properties page, double click on Internet Protocol (TCP/IP) to display properties.
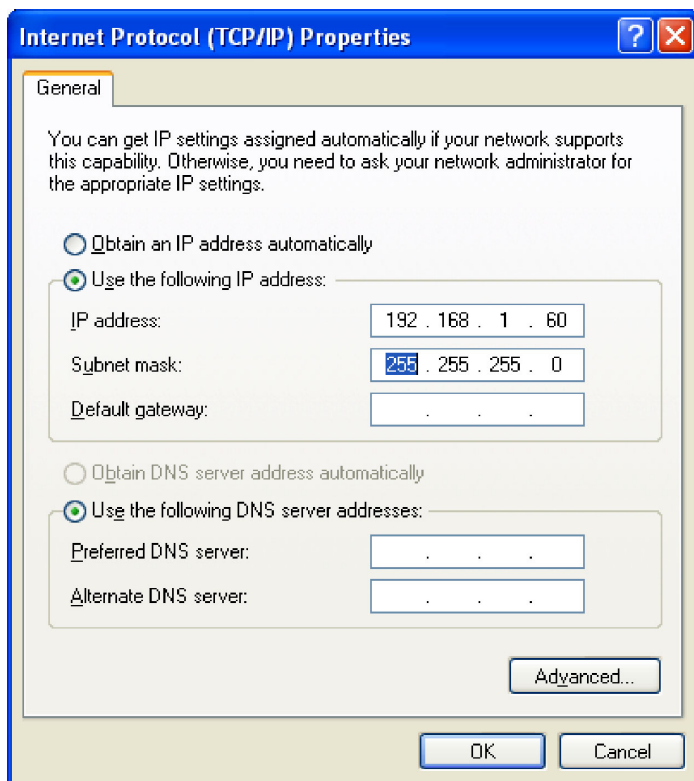
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Step 5: Before making any changes to the network settings, write down the current settings (or screen capture the page and print) so that they can be restored once the unit is configured. Next, select the radio button labeled "Use the following IP 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.

Opening the LOGIN Web Page

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

2. Connect the supplied 7.5 VDC power supply to the product's power jack labeled Power 7.5 VDC. Verify that the green POWER LED and left "LINK" LED above the "NET" Network RJ-45 are illuminated

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

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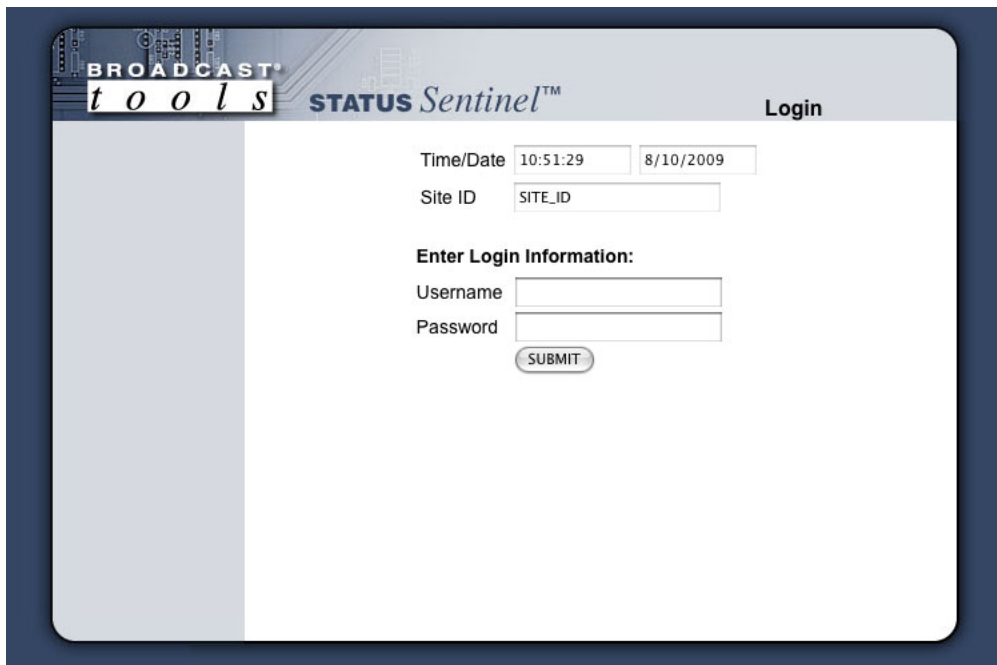
   Factory "Login" defaults:

   username: admin (lower case)
   password: 1234

4. Once you are logged in, follow this manual for setup and/or operational information.

"Login" Web Page

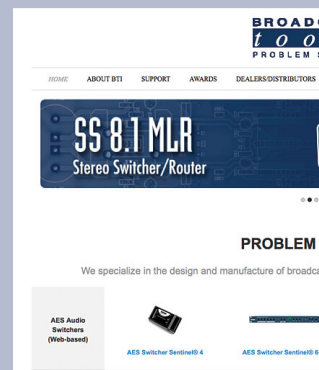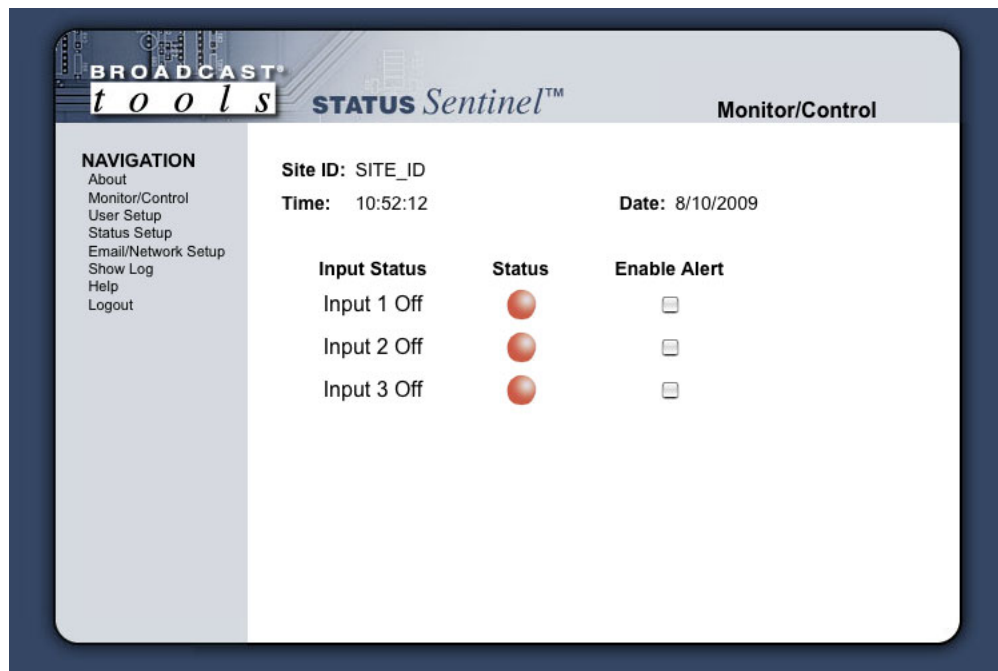The Login screen displays the username and password entry points.

After you have successfully logged in, the Monitor/Control page will be displayed. Depending on your access level, you may or may not be able to control or modify the product's configuration.

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"Monitor/Control" Web Page

The Monitor/Control page allows the monitoring of each status/digital input via each status LED. The alert function may also be enabled on this page.

Input Status: Used to identify the status/digital input.

Status ON: This indicator will display GREEN when ON.

Status OFF: This indicator will display RED when OFF.

Enable Alerts: Must be checked to enable each Status/digital alert.

The user defined Site ID, Time and Date is also displayed.

To select other pages (if authorized), make your selection under the left hand Navigation column.

"User Setup" Web Page

This page can only be configured with (factory default) the "admin" access level.

The site ID may be used to display up to 29 numbers and/or characters labels.

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

1. "admin" allows complete product configuration access.

2. "Monitor/Control" allows the following access:
    About, Monitor/Control, Show log, Help, and Logout.

3. "Monitor Only" allows the following access:
    About, Monitor only, Help, and Logout.

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

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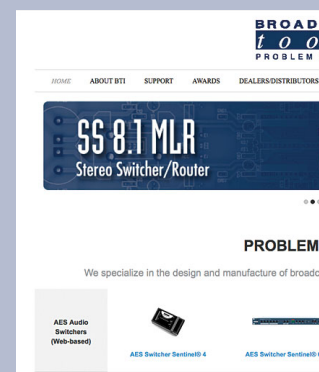
"Status Setup" Web Page

Input selection drop-down:	Allows for the selection of each input.
Input Status Message:	Used to identify each input.
OFF Alert:	This box must be checked to enable alarms when the input is OFF. The box labeled 1,2,3,4 allows the user to enable up to four different email addresses.
ON Alert:	This box must be checked to enable alarms when the input is ON. The box labeled 1,2,3,4 allows the user to enable up to four different email addresses.
Delay:	The delay is in seconds. This option specifies the wait time from when a status/digital input changes state before an alarm is activated. **NOTE:** Set to zero when paired with the Relay Sentinel™.
Normal Signal Level:	This drop-down allows the selection of current logic level. This normally set for High, but may be set to low. **NOTE:** When the "Normal signal level" is set to High = When NO voltage is applied to the input, it's considered OFF, when voltage IS applied to the input, it's considered ON. **NOTE:** When the "Normal signal level" is set to Low = When voltage IS applied to the input, it's considered OFF. When NO voltage is applied to the input, it's considered ON
Relay:	Normally disabled. When paired with the Relay Sentinel™ to form a "Relay Extension Cord". This drop-down should be set to enable. **NOTE:** You will also need to enter the IP address of the Relay Sentinel™ and port.

NOTE: By enabling the ON and/or OFF monitoring and NOT enabling an email box, the device will log the events, but not send an email. If the device is exiting a OFF alarm condition, then the email addresses used will be those notified when the OFF alarm condition was entered.

Page Refresh Time: This option specifies how often the web page is automatically refreshed in seconds.
NOTE: After any item has been changed, you MUST press the "Save Settings" button for your changes to be saved.

"Email/Network Setup" Web Page
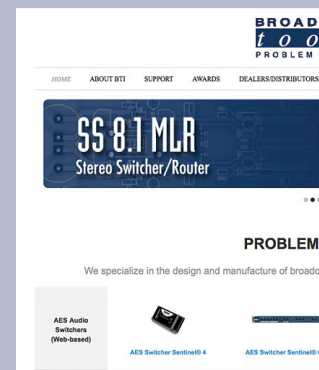

Restoring Network Factory Defaults
The Status Sentinel™ factory defaults may be restored by shorting pins 3 & 4 on the module RJ11 jack while powering up the product. Remove the short after 3 seconds.

HTTP Server Address: Enter a static IP address here.   Default: 192.168.1.55
HTTP Server Net mask: Enter the Net mask here: Default: 255.255.255.0

SETUP

HTTP Server Gateway: Enter the Gateway IP here: **Default: 192.168.1.1**

HTTP Port: Normally Port 80   **Default: 80**

Site ID: Enter text to identify the site, location, etc.

SMTP Server Address: The user can enter either an IP address in the xxx.xxx.xxx.xxx format or a URI in the form: smtp.comcast.net. In order to resolve the URI, a working DNS server must be present or it's IP address entered into the system.

SMTP Port: Normally Port 25   **Default: 25**

Return Address: Enter your return email here.

NOTE: The user must enter the following items before an email can be successfully sent: SMTP Server Address, SMTP Port, Return Address, Host ID and Recipient Address 1. The test email is sent to email recipient address 1. The user should press the "Save Settings" button after entering the SMTP information before attempting an email test.

Host ID: Enter something here, to identify the host.

Logging Email Address: IP address for the "Logging" email recipient (may be different from the four "Alarm" Recipient Addresses.

Logging Interval (Hours):   This determines how often the input status is emailed. If set to 0 (zero), no email will be sent.   **Default: 1**

"Alarm" Recipient Addresses: Email Recipient 1
Email Recipient 2
Email Recipient 3
Email Recipient 4

Relay Sentinel™ IP Address: Enter the IP address of the Relay Sentinel™ being used.

Relay Sentinel™ port: Enter the port of the Relay Sentinel™ . Normally 10001

NOTE: Normally left blank unless paired with the Relay Sentinel™ to form a "Relay Extension Cord". The above two entries will need the Relay Sentinel's IP address and port number entered in these locations.

Backup DNS Server IP Add: Enter your DNS address here.   **Default: 192.168.1.1**

NTP Server Address: Enter the NTP address here.   **Default: pool.ntp.org**

NTP Port: **Default: 123**

NTP Update Interval (Min):	Time between timing updates.	Default: 30
NTP Enabled:	Must be enabled for correct timing.	Default: Enabled
Time Zone Offset from UTC:	Must be set for correct timing.	Default: -8

NOTE: After you are done making changes to the Email/Network Setup page, you MUST press the "Save Settings" button to save your changes. 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 the web page will return to the login screen after the device reboots.

Send Test Email:	Press this button to send a test email.
Reload Defaults:	When you press the "Reload Defaults" button, the device resets and if the IP address was changed, 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 the web page will return to the login screen after the device reboots.

"Show Log" Web Page
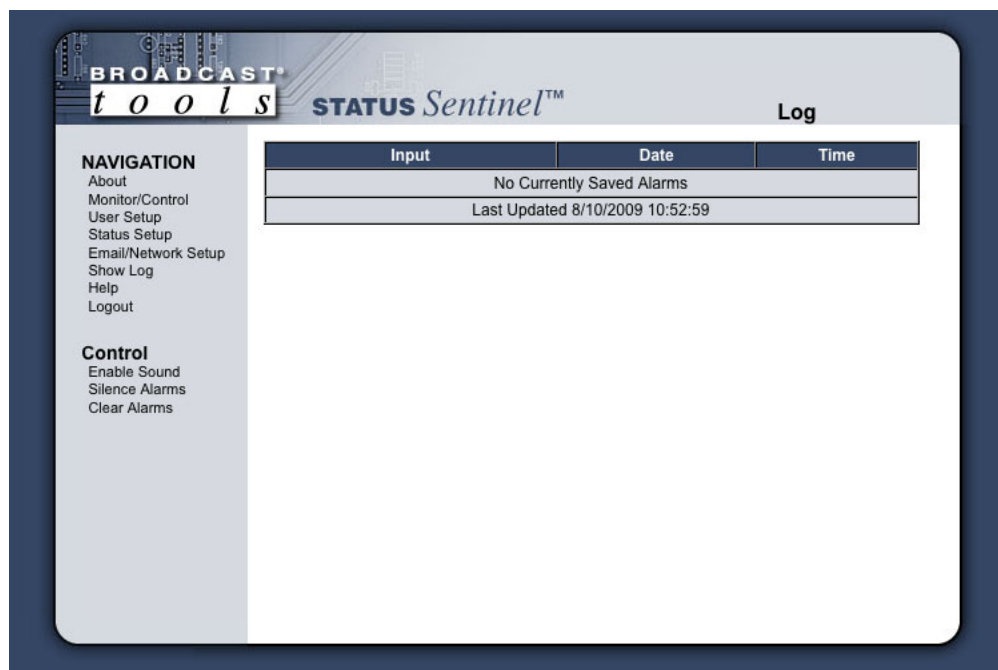
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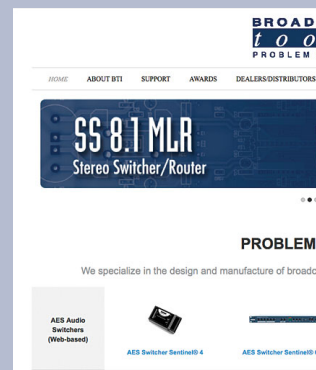
This page displays current alarms.

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

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

NOTE: Shock Wave "Flash" must be installed and operating properly on your PC for the "Alarm Sound" to work when enabled.

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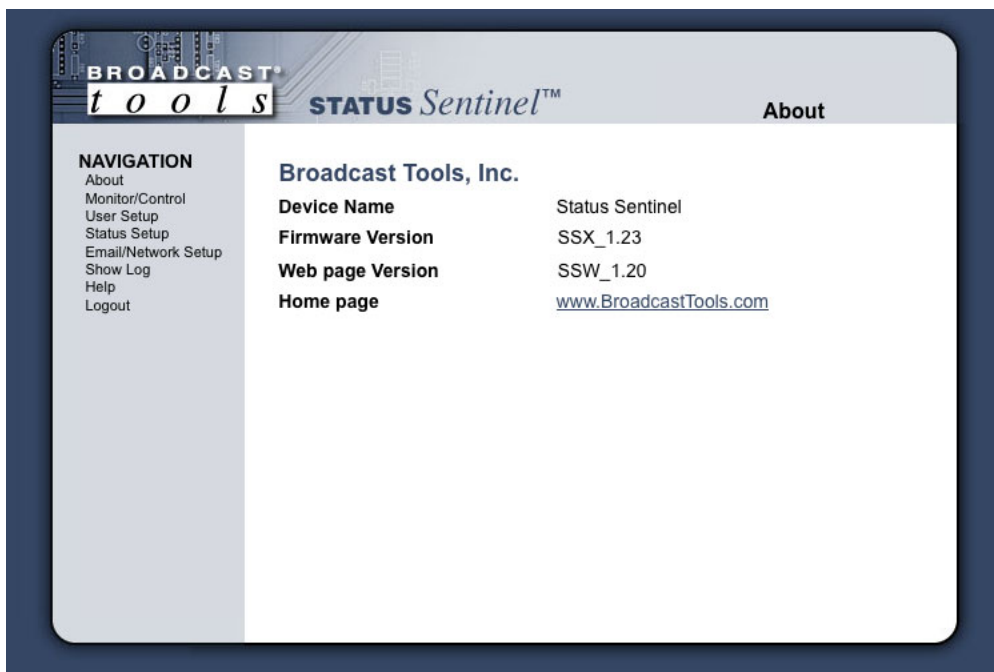
The "About" Web Page displays the product name, firmware version numbers, and Broadcast Tools® Web site link.

Specifications

Ethernet Interface:	RJ-45, 10base-T or 100base-TX, auto sensing with link & activity led indicators - Full/half duplex.
Protocols:	TCP/IP, UDP/IP, ARP, ICMP, SNMP, TFTP, Telnet, DHCP, BOOTP, HTTP, and AutoIP.
Status/Digital Inputs:	Three optically Isolated, 5 to 24 VDC. **Note:** The on-board 5VDC power source is used to power these inputs.
On-board 5VDC Power Source:	Five-volts DC, current limited to 100ma.
Connectors:	Removable euroblock screw terminals
EMI / FCC Compliance:	See the Declaration of Conformity page. Operation is subject to the following two conditions: 1) This device may not cause harmful interference, and 2) this device must accept any interference received, including that which may cause undesired operation.
Required power supply:	7.5 VDC only @ 500ma. 2.1mm ID x 5.5mm OD coaxial connector. Surge protected. Domestic PS supplied.
Operating Temperature:	32 to 122 °F / 0 to 50 °C for all operating voltage ranges.
Humidity:	0 - 90% RH, non-condensing.
Size:	6.18" x 3.70" x 1.42" (L,W,H)
Weight:	1.0 lb.
Options:	* CE certified 240 VAC power supply. * RA-1, 1-RU rack shelf. **Note:** Velcro may be used to secure the product to the RA-1 shelf.

WEBSITE:
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LIMITED WARRANTY

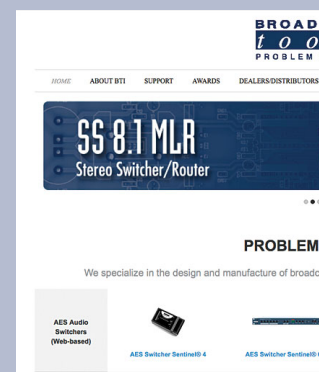The term "Buyer" as used in this document refers to and includes both (but only) (a) any person or entity who acquires such an item for the purpose of resale to others (i.e., a dealer or distributor of an item), and (b) the first person or entity who acquires such an item for such person's or entity's own use.

Broadcast Tools warrants to each Buyer of any item manufactured by Broadcast Tools that the item will be free from defects in materials and workmanship at the time it is shipped by Broadcast Tools if the item is properly installed, used and maintained.

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support@broadcasttools.com **e-mail**
www.broadcasttools.com **website**

Declaration of Conformity

The XPORT Device contained in the Status Sentinel™ conforms to the following standards: (according to ISO/IEC Guide 22 and EN 45014)

Manufacturer's Name & Address:
Status Sentinel™: Broadcast Tools®, Inc.
131 State Street, Sedro Woolley, WA 98284-1503 USA

XPort: Lantronix 15353 Barranca Parkway, Irvine, CA 92618 USA
Declares that the following product:

Product Name Model: XPORT™ Device Server
Conforms to the following standards or other normative documents:

Electromagnetic Emissions:
EN55022: 1998 (IEC/CSPIR22: 1993) Radiated RF emissions, 30MHz-1000MHz
Conducted RF Emissions – Telecom Lines – 150KHz – 30MHz
FCC Part 15, Subpart B, Class B
IEC 1000-3-2/A14: 2000
IEC 1000-3-3: 1994

Electromagnetic Immunity:
EN55024: 1998 Information Technology Equipment-Immunity Characteristics
Direct ESD, Contact Discharge
Indirect ESD
Radiated RF Electromagnetic Field Test
Electrical Fast Transient/Burst Immunity
RF Common Mode Conducted Susceptibility
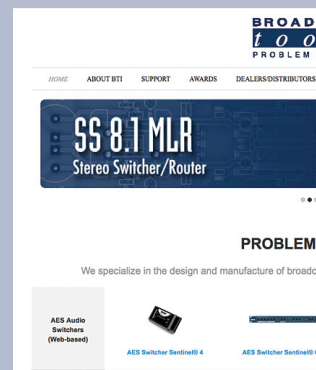Power Frequency Magnetic Field Test

Manufacturer's Contact:
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Tel: 360 . 854 . 9559   Fax: 866 . 783 . 1742

XPORT™
Lantronix:
Director of Quality Assurance
15353 Barranca Parkway, Irvine, CA 92618 USA
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WEBSITE:
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CONFORMITY

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