# Sentinel Quick Start Guide

The basic information required to use the Sentinel is below. Detailed information necessary to fully exploit the instrument's capabilities may be found in the User Manual and the online help.

Software Compatibility

The Sentinel web browser user interface requires Chrome v6.0, Mozilla Firefox v3.5.x, Safari v5.0, Internet Explorer 8 (with IE7 Compatibility View off) or later versions of these. We recommend Chrome since it's currently fastest. The log data features require the Java Runtime Environment v1.5.x (or later) be installed on your host computer and enabled in your web browser settings.

Connections
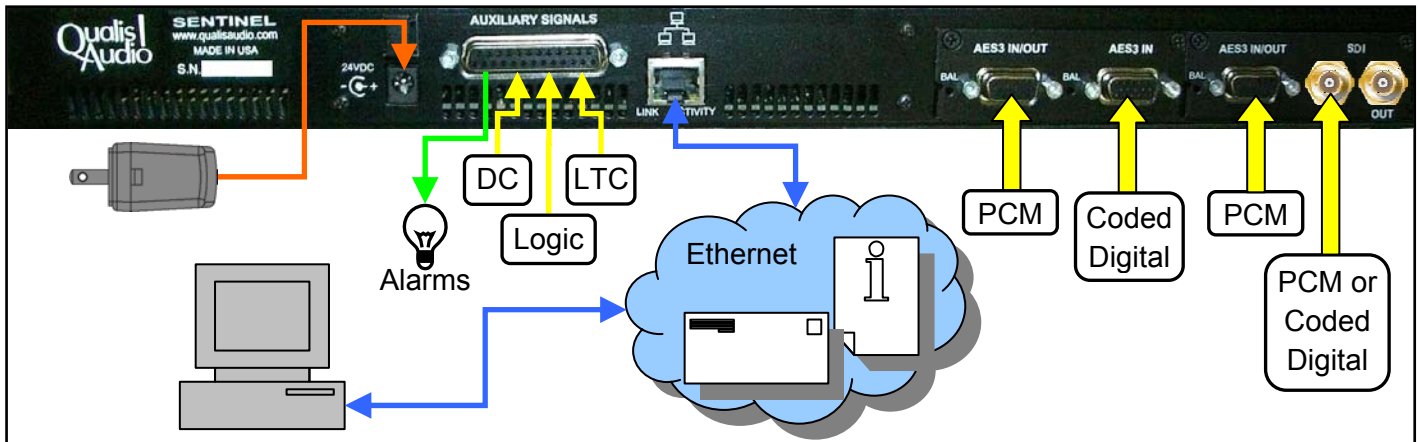
Connect the supplied 24VDC adapter, securing the cable in the plastic clip near the jack.

Connect to your network using an Ethernet cable. The Sentinel's default is to obtain its IP address automatically, using DHCP. You can configure it for static IP using the front panel Network Setup menu. Use the 'Select' button to open the menu system and to enter selections.

Connect the audio source. Unbalanced AES digital connections are made using a DB15-HD to BNC VGA monitor cable on the Red, Green, Blue and Horizontal Sync (usually white or grey) connectors. Balanced AES digital connections are made using a DB15-HD to XLR cable available from Qualis Audio. SDI signals connect to the "IN" BNC. Analog versions use the TASCAM standard DB25 pinout.

PCM audio must be applied to the "SDI IN" BNC or the "AES3 IN/OUT" DB15-HD, as appropriate. It cannot be used with the AES input labeled "AES3 IN". Dolby coded audio must be connected to the "SDI IN" BNC or the "AES3 IN" DB15-HD, as appropriate. Coded audio cannot be used with the AES input labeled "AES3 IN/OUT".

Linear Time Code (LTC) wires to pins 12 and 24 of the Auxiliary Signals connector.

Connect the automation control system to the loudness measurement control inputs: "Program/Commercial" or "Measure/Pause" goes to pin 1 and "New" or "Reset" to pin 14 of the Auxiliary Signals connector.

Connector pins for alarm outputs and DC inputs are given in the manual and online help.

Set the Sentinel real time clock date, time and time zone through the front panel menu.

Accessing the UI

The Sentinel's front panel LCD display shows the current date, time and IP address. Enter this IP address in your web browser as http://<Sentinel IP address>. Help is accessed using the ⊘ icon on any of the displayed panels. Settings that only affect the display are accessed with the ⊙ icons. These display settings are stored in browser cookies and don't affect instrument operation or measurements. Up to 3 users may simultaneously access the Sentinel and each may have a different combination of displayed panels and local settings.

Instrument Settings

Click the "Show Settings" icon to open the settings window. To change settings click the "Modify Settings" button, a dialog box appears the first time. Leave the username blank, enter *audio* as the password.

Click the "Inputs & Sources" button to access input and surround format options. For Dolby inputs select "Coded Audio" for the input Digital Mode. Select a Surround Format, for example "5.1 Ch" then assign the channels to the appropriate source channels. Other settings affecting measurements, error detection and alarms are accessed using the other buttons on this page.

Click the "Save Settings" button to send changes to the Sentinel. Click on the "Show Readings" button to return to the main display panel of the Sentinel.

Using Log Data

The Sentinel maintains 27 hours of data in memory. Longer storage requires copying data to a directory called the Log Repository. This repository is updated by a Java applet which may be run through the browser or using a Java Web Start application on any computer on the network.
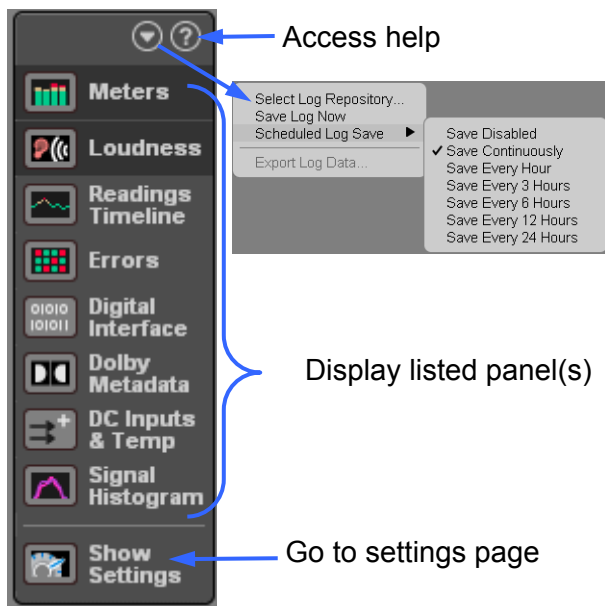
The Log Repository location is defined using the pull-down menu on the navigation panel (at left). This is required for the browser to find the repository, regardless of whether saves are performed through the browser or via the Java Web Start application.

The "Select Repository" option presents a file browser to select the desired directory. The "Scheduled Log Save" option enables periodic downloading of log data from the Sentinel to the repository, and sets the interval. The "Save Log Now" option performs an immediate download of all log data in memory.

The web interface saves these settings as cookies in your browser, so they are maintained from one browser session to the next. You will need to reenter the settings if they are lost, e.g. if you clear cookies, change browsers or change the Sentinel IP address.

Since the scheduled downloading is performed by the web interface, it works only if the browser remains open. To set up downloads independent of a browser see the user manual.

A folder shaped icon ▣ in the lower left corner of the Meters panel provides an indication of log repository status. It is green when there are no problems, yellow to indicate a warning, and red to indicate problems. An updating repository is indicated by a moving dot in the center of the folder. Placing the cursor over the icon will show a detailed status description.

Common Problems

If the panel selection buttons appear but the panels do not, check that cookies are enabled.

If the Log Repository settings are not available check that Java is enabled.

If the panels do not draw correctly in Internet Explorer 8, check that IE7 compatibility mode is not enabled. If panels do not draw correctly under other browsers check that the version meets the requirements above.

For other issues call Qualis Audio, Inc. at (503) 635-9376 or email support@qualisaudio.com.

Close — Qualis Audio Sentinel — Help

dBFS for digital
dBu for analog

True Peak

Level displays

Level display ballistics

Channel bandwidth

Connection Status

Log Repository Status

Serial number

Set Channel Order and
True Peak Hold Time

Sound field balance. Brightness
proportional to channel loudness

Surround program spectrum

Left, Right, Mono
Downmix level

Linear Time Code

Amount LFE cancels when
mixed with surround channels.

Instrument date & time.

Method of converting
1/30th octave data to
octave resolution.

Cancellation when downmixed to stereo and mono,
shows loss of any component in the mix.

dBu 6.7 -3.8 7.9 7.6 1.9 -2.6 dBu

Balance
LFE

Spectrum
0 -15 -30 -45
LFE 63 250 1k 4k 16k
0 -5 -10 -15
Average Downmix Compatibility

3.7 -1.1 1.3 dBu
+20 +10 0 -10 -20 -30 -40 -50

LF RF CF LFE LS RS Fast
Lo Ro M Fast

SN 2088DB 12-Jan-11 05:56:42 EST

LTC 14:28:17

Short-Term Loudness

Short-Term Loudness
Error Threshold

Loudness Target

Momentary Loudness

Program/Commercial
selection

Loudness

4.0 LU -0.8
+18 +12 +6 0 -6 -12 -18 -24 -30 -36
ML/SL IL
Max Peak 16.9
Range 10.2
P

Meter Scale ▶
Result Hold Time ▶

Integrated Loudness

Max. Momentary Loudness

Integrated Loudness
Error Tolerance

Loudness Range

Measurement Status

Maximum True-Peak

Loudness Range

Complete & Restart All
Integrated Measurements

Digital Interface

Input Format: 1920x1080/59.94 2:1 I

Channel Display ▶   ✓ All Ch. Sequentially
LF Only
RF Only
CF Only
LFE Only
LS Only
RS Only
LB Only
RB Only

LF RF CF LFE LS RS LB RB
Interface Rate: 48 kHz
Active Length: 20

Channel Status Metadata
Sample Time: 00:00:00
Time Of Day: 00:00:00
Source: SRC4
Destination: R

Common Metadata
Format: Professional Audio
Emphasis: None
Sample Rate: 48,000 Width: 24
Align. Level: -20dB
Ch. Mode: 2 Ch Ch #:
User Bits: 192-bit
Auxiliary Bits: Audio
Source Lock: Not Ind
Reference: No
Hidden Data: Not Ind

The information displayed applies to
the indicated channels. If channels
differ, the indicators will cycle at a 1.5
second interval.

At left, LB and RB have 20 active bits.
Source: SRC4 applies to all channels.
Destination: R applies to RF, RS, RB.
The Common Metadata shown applies
to all channels except LB, RB,

The dropdown menu allows display of
a selected channel's data.

Short-Term Loudness vs. Time

Target Loudness

Loudness Measurement
Blue: Program
Green: Commercial
Break: New segment

Timeline Traces ▶ — Select measurements to display
Playback Speed ▶ — Playback speed relative to real time
Timeline Scale ▶ — Time scale in measurements/pixel
Timeline Range ▶ — Range of data selected with slider

End of segment 1

Start of segment 1

Readings Timeline

Program Loudness

12:00   12:05   12:10

27-Jan-11 17:18:09

Type of segment
P: Program
C: Commercial
+, -, □: cursor defined

Current segment being measured

Selected segment

Delete *Selected* Segment

Add New Segment

Errors (yellow) & Alarms (red) vs. Time

Jump right to next cursor
Go to real-time if past last cursor

Jump left to next cursor

Play/Pause stored data playback

Current Position Cursor
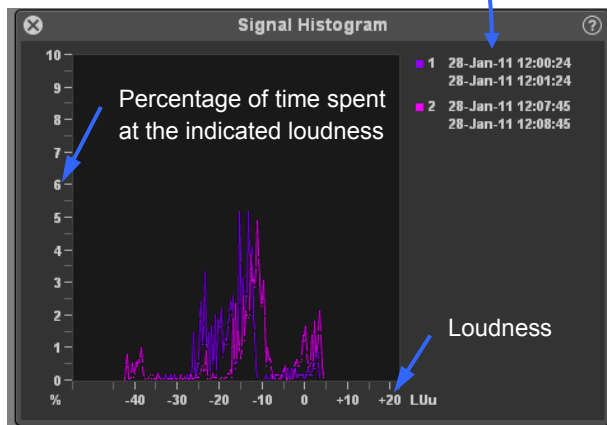
Timeline scroll bar

Segment table scroll bar

		Begin	End	Duration	LTC	Loudness	Peak	Range
	P	28-Jan-11 11:06:22	28-Jan-11 11:06:41	00:00:19		2.5	11.2	4.8
	P	28-Jan-11 11:06:42	28-Jan-11 12:12:53	01:06:10		-2.0	19.0	18.9
1	+	28-Jan-11 12:00:24	28-Jan-11 12:01:25	00:01:00		-5.0	8.5	11.1
2	+	28-Jan-11 12:07:45	28-Jan-11 12:08:46	00:01:00		-5.6	11.8	19.2
	C	28-Jan-11 12:10:10	28-Jan-11 12:10:43	00:00:33		-10.7	19.0	9.9
						-5.3	11.8	19.8

+, - will display on histogram and add-to or subtract-from *Total*
P, C, □ will not

Total of loudness, max peak and range over segments identified at left, loudness and peak in LKFS, range in LU

begin/end cursor manipulation
new   select and move   split

15:35   01-Feb-11 15:41:56 LTC 10:53:16

The Readings Timeline panel provides access to previous measurements and data stored in the log repository. Moving the Current Position Cursor away from the right edge of the graph puts the UI into log data display mode. The measurements for the time selected by the Current Position Cursor will be displayed on all meters and panels.

The Add New Segment button will cause a numbered pair of begin and end cursors to appear on the graph. Initially they will overlap. Select the right side and move it left (or the left side and move it right) to spread them apart. The region they define will appear in the segment table below the graph. Their locations may also be changed by highlighting the entry and using the keyboard. Loudness, true peak and loudness range values, along with time information, are displayed in the table. These segments may be summed to measure disjoint data ranges.

Lettered segments are generated by the Sentinel hardware based on hardware or software control signals. The P or C identify whether the segment was classified as Program or Commercial content.

The Play/Pause control will start and stop playback of stored data. Speed (from 1X to 64X real time) is controlled through the drop-down menu. If the Current Position Cursor is between begin and end cursors the playback will stop when the end cursor is reached.

Signal Histogram

10 9 8 7 6 5 4 3 2 1 0 %

Percentage of time spent at the indicated loudness

■ 1 28-Jan-11 12:00:24
       28-Jan-11 12:01:24

■ 2 28-Jan-11 12:07:45
       28-Jan-11 12:08:45

-40 -30 -20 -10 0 +10 +20 LUu

Loudness