SOUNDSTUDIO

STG 1608

Digital Audio Stagebox with SoundGrid Connectivity

User Guide

STG-1608 User Guide

Warning: Electrical Hazard

To ensure your safety, please read this manual thoroughly before using the unit. Kindly observe all of these safety rules.

1. Keep this user guide for future reference.
2. Take notice of and comply with all warnings included in the user guide or indicated on the device itself.
3. Do not expose this unit to rain or moisture. Do not spill water or other liquids on this unit.
4. When cleaning the cabinet or other parts of this appliance, use only a dry or slightly damp soft cloth.
5. Do not block any ventilation openings or interfere with the proper ventilation of this unit. Install in accordance with the instructions.
6. Do not defeat the internal ventilation fans.
7. Do not use or store near any heat sources such as radiators, heat registers, stoves, or other heat-producing appliances.

8. Protect the power cord from being walked on or otherwise damaged by items placed on or against it. Particular attention should be given to the plugs, receptacles, and the point where the cord exits the appliance.
9. To avoid the risk of electrical shock, do not touch any exposed wiring while the unit is in operation.
10. Only use attachments/accessories specified by the manufacturer.
11. Unplug this unit and all connected electrical equipment during lightning storms or when left unused for a long period of time.
12. Refer all servicing to qualified service personnel. Servicing is required when the appliance has been damaged in any way or fails to operate normally.

If you have questions about safe installation, please contact us at https://soundstudio.com/contact-us.

Product Overview

SoundStudio STG-1608 is a rugged stage box with 16 analog inputs and 8 line outputs. It's designed for both stage and studio applications. All connections on this 3U rack-mountable device are on the front panel, except the mains connection and power switch, which are on the rear panel.

In addition to analog mic and line inputs and line outputs, there are inputs and outputs for AES, word clock, and MIDI. There's also a SoundGrid-compliant Ethernet port network. All STG functions are controlled via software.

STG-1608 operates within in a SoundGrid Ethernet network, so it's an ideal interface for the Waves eMotion LV1 or MultiRack. The SoundGrid network can also be used with a DAW for recording.

What's in the box?

1 Cat 6 Ethernet cable (3 meters)

2 Mains cables (one US and one European)

3 Mains safety clips

4 Registration card with serial number

Using STG-1608 for Mixing, Processing, and Recording

STG-1608 uses Waves SoundGrid protocol to connect to an eMotion LV1 mixer, to a MultiRack processor, and to any DAW. A typical SoundGrid network consists of a host computer, a SoundGrid server, and I/O devices, all connected with Cat 5e (or better) Ethernet cables via a 1GB Ethernet switch.

1 Host Computer
2 SoundGrid Server
3 Ethernet Switch
4 SoundGrid I/O

Maximum distances between devices vary depending on configuration. However, maximum cable length between I/Os and switch is usually 100 meters. When connecting the Ethernet cable to an STG-1608, make sure that the connectors and the cable are protected from stage equipment and traffic. For up-to-date cable specifications, visit the Waves Support desk: http://www.waves.com/support.

Do not connect other networks to the SoundGrid switch. Use different network ports on your computer for other networks (such as internet).

A SoundGrid network is fully scalable. Connect multiple STG units within a SoundGrid network for a high channel count.

In this example, there are three STG-1608 I/O devices onstage. These are used for onstage microphones and monitoring. In the FOH are two SoundGrid servers (one primary and one redundant) and one I/O. This configuration includes an external control surface and a DAW, which can be used with the eMotion LV1 mixer or the MultiRack processing rack. It can also be used for recording.

STG Software

The STG-1608 stage box can be used with a number of SoundGrid applications, including eMotion LV1, MultiRack, and SoundGrid Studio. STG software drivers are installed with Waves Central, a Waves application for downloading software and managing licenses.

To install the driver, open Waves Central and log on. Select "Install" and choose "Online." This shows a list of all products on your Waves Cloud, including the STG-1608 driver. Locate the driver for your STG product. If the driver doesn't appear in the list, then check "All Waves Products." Select the correct driver and click "Install."

When the installation is finished you'll need to reboot your computer.

Launch the Waves Central Application

Select the INSTALL tab

Select ONLINE to see your Waves License Cloud

Locate and select the STG driver

Click INSTALL

Download Waves Central and the Waves Central user guide from the Waves downloads page:
https://www.waves.com/downloads/central.

System Inventory Tab

STG devices must be assigned to a host application. This is done within the application. Assignment is similar, but not identical, in all SoundGrid host applications. Refer to the application's user guide for detailed instructions.

Open the SoundGrid Studio application.

Select the SETUP window.

Choose the SYSTEM INVENTORY tab. This is where devices are assigned.

In this example, an STG-1608 will be assigned to SoundGrid Studio.

Assign 1608 to the Host Application

I/O devices are assigned in the Device Racks of the System Inventory tab. You can assign the STG-1608 to any Device Slot.

ASSIGN STG-1608 TO A DEVICE RACK
If the STG-1608 is not already assigned to the SoundGrid host, click on the arrow in an empty device slot. Choose the device from drop-down menu.

The 1608 device will appear in the device rack.

Access SoundStudio Control Panel

Use the STG-1608 Control Panel to adjust preamps and channel outputs, and to manage device clocking. Firmware version, serial number, and other hardware information are also displayed in the control panel.

Click the GEAR button to open the STG-1608 control panel.

To learn more about SoundGrid Studio, download the SoundGrid Studio user guide form the Waves download page: http://www.waves.com/downloads/manuals.

SoundStudio STG-1608 Control Panel

There are five tabs in the control panel. We'll focus on three of them: Clock, Input, and Output.

Clock Tab

Use the **Clock** tab to manage the clock relationship between the STG-1608 and the SoundGrid network. In this example, the device is locked to the network via Sync Over Ethernet (SOE). This is the most common configuration. You can also lock the STG-1608 to another clock source via AES or word clock.

Go back to the Setup page to establish which device is the SoundGrid SOE network master. Refer to the SoundGrid Studio user guide or the eMotion LV1 user guide to learn more about clock in a SoundGrid network.

LOAD/SAVE
Enables you import and export
preamp settings for later use.
Available in all tabs.

SAMPLE RATE

When the device is the SOE
master and is set to Internal
clock, the drop-down menu is
used to set the sample rate.
When the STG-1608 is not
the clock master, the window
displays the sample rate.

SOURCE SELECT

Request a clock source. If this
source is not available, the
device will poll all other
potential clocks. If there are
no available clock sources,
the device will switch to
internal clock.

STATUS
Displays device network sync
status

SOE
Indicates SOE status: on/off; SOE
Master/Slave

CURRENT CLOCK SOURCE
Indicates the actual clock source

Input Tab

The Input tab is used to configure the mic/line inputs.

STG-1608 has 18 inputs: 16 analog and 2 digital. Use the Input tab to control Input I/O parameters. Channel input controls set here are mirrored in the Mixer and Channel windows of the eMotion LV1. Inputs can be patched in the LV1.

48v ON/OFF

MIC/LINE SELECT

Select input: mic preamp or line input (XLR and TRS).

PREAMP GAIN and INPUT METER

ID Click this button and a light will blink on the STG-1608 device.

CLIP INDICATOR SELECT

Adjust the clip indicator level of the entire I/O.

AES INPUT METER

MONITOR

Shows the level of the monitor headphone jack on the front panel

Output Tab

The Output tab is used primarily to set the output headroom pre-channel. There are 8 analog outputs and 2 digital outputs.

HEADROOM SELECT
Choose between +18dB and +24 dB mixer headroom

CHANNEL OUTPUT METER

AES OUTPUT METER

MONITOR METER

Connections

Front Panel

MIC / LINE INPUT   LINE OUTPUT

[16]   [8]

Clip / 48V

HEADPHONES   AES   WORD   NETWORK   MIDI
/ VOLUME   I/O   CLOCK   PORT/   I/O
                           I/O   STATUS
                                     INDICATOR

Reset

Rear Panel

ON/
OFF

INPUT:
AC 100–240V
50–60Hz 0.3A

Specifications

XLR Input

Input Gain: Adjustable from 0 dB to 60 dB in steps of 1dB

Frequency Response:
+0/-0.2 dB, 16 Hz to 21 kHz @ 48 kHz sample rate (+4dBu input @ +20 dB gain)
+0/-0.2 dB, 17 Hz to 40 kHz @ 96 kHz sample rate (+4dBu input @ +20 dB gain)

Dynamic Range: (Measured bandwidth limited 20 Hz to 20 kHz) 110 dB Gain = 0

EIN (Gain 60, 150 ohms) -128 dBu A weighted

THD+N (Measured at 1 kHz @ +4dBu, Gain = +20) 0.0023%

Phase Response: +/- 10 Deg 20 Hz to 20 kHz

Input impedance : 2k ohms

48V phantom power available per input

TRS Input

Input Gain: Adjustable from 0 to 60 dB in steps of 1dB

Frequency Response:
+0/-0.2 dB, 16 Hz to 21 kHz @ 48 kHz sample rate (+4dBu input @ +20 dB gain)
+0/-0.2 dB, 17 Hz to 40 kHz @ 96 kHz sample rate (+4dBu input @ +20 dB gain)

Dynamic Range: (Measured bandwidth limited 20 Hz to 20 kHz) 110 dB Gain = 0

EIN (Gain 60, 150 ohms) -128 dBu A weighted

THD+N (Measured at 1 kHz @ +4dBu, Gain = +20) 0.0023%

Phase Response: +/- 10 Deg 20 Hz to 20 kHz

Input impedance: 10k ohms

XLR Balanced Outputs

Selectable maximum output level: +18 dBu or + 24 dBu

Frequency Response:
+0/-0.2 dB 16 Hz to 22 kHz @ 48 kHz sample rate
+0/-0.2 dB 17 Hz to 40 kHz @ 96 kHz sample rate

THD+N (Measured at 1 kHz, Gain = 0) 0.001%

Output impedance: 40 ohms

Digital I/O

AES-3, AES-EBU Stereo Output. Output sample rate 44.1 kHz to 96 kHz

Word clock input: Standard 5 Volt square wave. 50% duty cycle.

Word clock output: 1X sample rate Standard 5 Volt square wave. 50% duty cycle.

Word clock Input: 1X sample rates of 44.1 kHz, 48 kHz, 88.2 kHz and 96 kHz.

Headphone Output

1 watt per channel into 32 Ohm headphones.

Power

Universal input power supply 100V-240 VAC, 50/60 Hz, 1.0 Ampere

Power

Universal input power supply 100V-240 VAC, 50/60 Hz, 1.0 Ampere

Dimensions

19 x 5.1 x 10 inches (482 x 132 x 254 mm)

Weight

7.2 kg (15.9 lb)

Specifications subject to change without notice