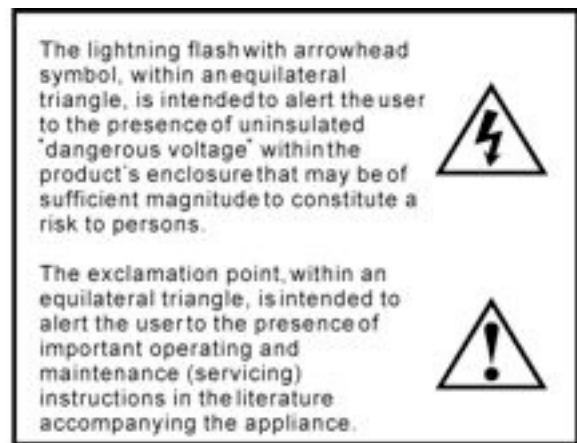




## **GS-3A STUDIO MONITOR SYSTEM**

**USER MANUAL 2.0 (preliminary)**



## **Important Safety Instructions**

### **1. READ THESE INSTRUCTIONS**

All the safety and operating instructions should be read before the product is operated.

### **2. KEEP THESE INSTRUCTIONS**

The safety and operating instructions should be retained for future reference.

### **3. HEED ALL WARNINGS**

All warnings on the product and in the operating instructions should be adhered to.

### **4. FOLLOW ALL INSTRUCTIONS**

All operating and use of instructions should be followed.

### **5. DO NOT USE THIS APPARATUS NEAR WATER**

Do not use the product near water. For example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

### **6. CLEAN ONLY WITH DRY CLOTH**

Unplug the unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

### **7. DO NOT BLOCK ANY VENTILATION OPENINGS**

Slots and openings in the cabinet back or bottom are provided for ventilation, to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or similar surface. This product should never be placed near or over a radiator or heat source. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacture's instructions have been adhered to.

### **8. DO NOT INSTALL NEAR ANY HEAT SOURCES**

This Product should be situated away from heat sources such as radiators, stoves, or other products (including amplifiers) that produces heat.

### **9. DO NOT DEFEAT THE SAFETY PURPOSE OF THE POLARIZED OR GROUNDING-TYPE PLUG**

A Polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prongs are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. PROTECT THE POWER CORD FROM BEING WALKED ON OR PINCHED PARTICULARLY AT PLUGS, CONVENIENCE RECEPTACLES, AND THE POINT WHERE THEY EXIT FROM THE APPARATUS.

11. ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.

12. Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to someone, and serious damage to the appliance. A unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

13. UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.

For added protection for this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.

14. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL. SERVICING IS REQUIRED WHEN THE APPARATUS HAS BEEN DAMAGED IN ANYWAY, SUCH AS WHEN THE POWER SUPPLY CORD OR PLUG IS DAMAGED, LIQUID HAS BEEN SPILLED OR OBJECTS HAVE FALLEN INTO THE APPARATUS, THE APPARATUS HAS BEEN EXPOSED TO RAIN OR MOISTURE, DOES NOT OPERATE NORMALLY, OR HAS BEEN FROPPED.

15. WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

16. APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

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# Guzauski-Swist Audio Systems

## **INTRODUCTION**

The Guzauski-Swist GS-3A Studio Monitor System consists of the finest state-of-the-art components currently available. Accurate full bandwidth frequency response and wide dynamic capability are hallmarks of this system.

The GS-3A is a robust monitor system that combines high dynamic and sound pressure capabilities for tracking sessions, with a highly accurate and translatable system for mixing function, all in a 14" (350mm) x 23" (580mm) x 15" (380mm) cabinet or 2 cubic foot sealed enclosure.

Intended for professional use, the system also offers the end user a high degree of room frequency compensation through its front end DSP processor. This allows for very precise integration into the acoustical environment in which it is installed.

**Essential Pre-installation Instructions:** Please be careful when removing the Mid/High Frequency Driver Enclosure from the shipping box so as to not damage the tweeter dome.

## **COMPANY NAME PRONUNCIATION**

1) Pronunciation #1: Guzauski = Ga - Zow - Ski 2) Pronunciation #2: Swist = Swiss - Te

## **SYSTEM COMPONENTS**

The complete GS-3A Studio Monitor System (2.0 Configuration) is comprised of the components listed and shown below.

- 1) Low Frequency Driver Enclosure
- 2) Mid/High Frequency Driver Enclosure w/ Integrated Acoustical Decoupling System
- 3) Mounting Bracket for Mid/High Frequency Enclosure
- 4) GSA3i Power Amplifier Module including the DSP Processor Module
- 5) 8-Pin Speakon Loudspeaker Cables



## **LOUDSPEAKER SET UP**

The GS-3A Studio Monitor System can be set up in either a horizontal or vertical configuration as shown below



**CAUTION:** Speaker stands must be robust and solid with a minimum weight capacity of 100 lbs (45.4 Kg) per stand.

### **Note About Configuration:**

Preference for which configuration to use will be determined by the end user and by the physical constraints of the room in which the system is being installed. Guzauski-Swist recommends that the vertical configuration be used in a mid-field application where there is sufficient distance from speaker to the listening position. The horizontal configuration is best used in near-field applications when the loudspeakers are set up close to the listening position such as over a console meter bridge.

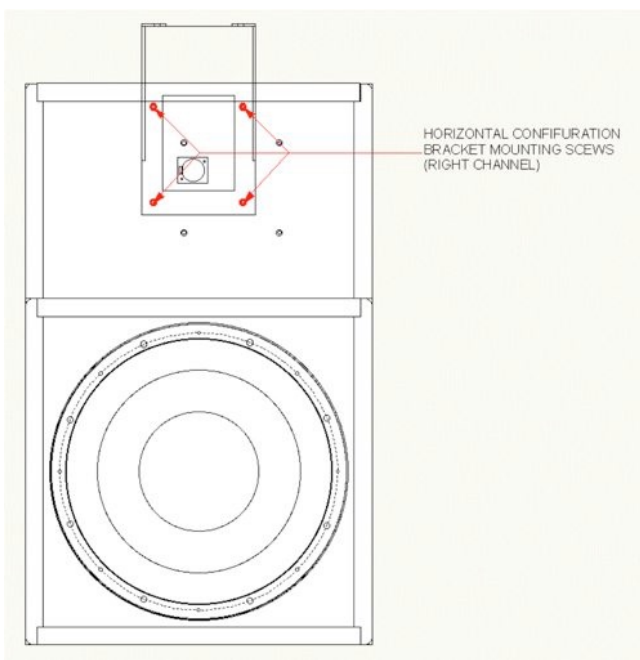
The vertical configuration provides the most linear phase alignment between all the drivers while the horizontal configuration minimizes phase anomalies due to mid and high frequency bounce off the console or work surface. So either solution is viable depending on the physical installation.

## **BRACKET MOUNTING**

Brackets are mounted to the low frequency enclosures with the (4) screws provided. Locations for each configuration are shown in the following diagrams.

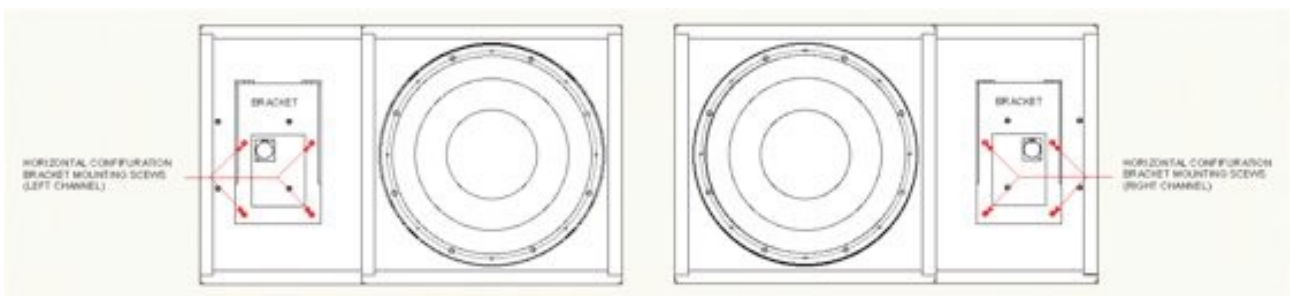
**CAUTION: DO NOT OVER TIGHTEN THE SCREWS. TURN SCREW UNTIL THE BRACKET JUST SEATS FIRMLY AGAINST THE ENCLOSURE.**

### **Vertical Configuration:**



### **Horizontal Configuration:**

NOTE: There are defined left and right mounting holes as shown in the diagram. These place the mid/high frequency enclosures on the outside of the low frequency enclosures.





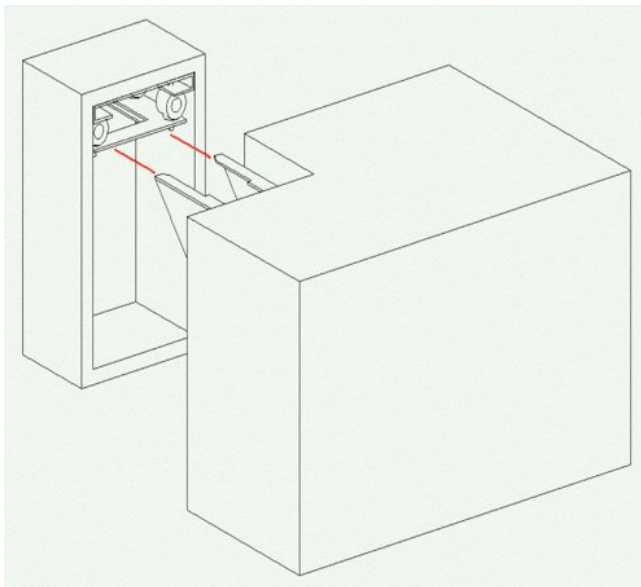
## **MID/HIGH FREQUENCY ENCLOSURE MOUNTING**

Inspect the attached wiring harness in the back of the mid/high frequency enclosure. Make sure that none of the wires going to the drivers have become detached during shipping. If they have become detached the color code is as follows:

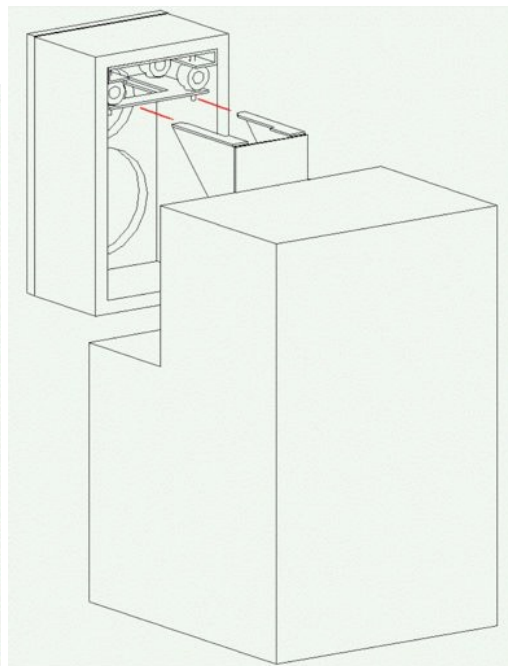
Midrange (+)	Orange (Dome Plug)	Tweeter (+)	Yellow (Lug)
Midrange (-)	Blue (Dome Plug)	Tweeter (-)	Brown (Lug)

Place the M/T enclosure near the mounting bracket. Connect the 4-Pin Speakon connector to the 4-Pin Female Speakon on the Low Frequency enclosure. It may be helpful for someone to help hold the M/T enclosure while you perform this operation.

Slide the M/T enclosure onto the bracket forks as shown below. Push the M/T enclosure onto the forks as far as it will go. The M/T enclosure should move freely on its isolation springs



Horizontal



Vertical

**NOTE:** Make sure the wiring harness stays behind the enclosure and does not stick out between the two enclosures. If necessary, reform the wires to stay in position behind the M/T enclosure.

## **AMPLIFIER GSA3i SET UP**

(A) Mount the two GSA3i Amplifier Modules in the appropriate location near the loudspeakers.



**CAUTION: KEEP AMPLIFIER MODULES TURNED OFF UNTIL ALL CONNECTIONS ARE SECURED**

### **Note:**

When mounting the two GSA3i Amplifiers in a rack enclosure, a minimum of one blank rack space is required both under and over the two GSA3i Amplifier Modules for heat dissipation.

### **Historical Note:**

The GSA3i Amplifier Modules can produce over 3.5 kilowatts per stereo pair. The Class D power amplifier circuits utilized are approximately 85% efficient and produce much less heat than older Class AB circuit designs. You could roast a pig on the heat sinks required on an AB amplifier producing similar power output as the GSA3i Amplifier Modules.

(B) On the backside of the GSA3i Amplifiers you can find the following connectors.



**Output:** The Speakon output ports on both GSA3i amplifiers are connecting the 8-Pin Speakon loudspeaker cables to both GS-3A Cabinets.

**Analog 1 In:** Analog line inputs for the left and right GSA3i amplifier modules. Please connect two symmetric XLR cables from your dedicated monitor controller / interface to feed the Analog 1 inputs on both left and right GSA3i amplifiers.

Note: the line levels feeding both Analog 1 inputs have to be attenuated before going into the amplifiers or can be attenuated by the input faders in the GScontrol software.

**Analog 1 Out:** The Analog Input 1 is linked through to Analog Out 1 for further connections for example to feed an external meter.

**Analog 2 In:** additional line input

**Analog 2 Out:** same as Analog 1 Out

**AES/EBU In:** digital AES/EBU input features an digital input for sample rates up to 96Khz. You have to run a AES/EBU XLR Cables to the left GSA3i amplifier and link through AES/EBU Out to the AES/EBU In of the right GSA3i amplifier.

**AES/EBU Out:** link through to the right GSA3i AES/EBU input

**Control:** Ethernet connector for Dual Band WiFi router or direct ethernet connection to the computer. This port features the remote connection between the GScontrol software and the GSA3i amplifier.

**fan XQ / fan Q:** switch controls the fan speed of the internal fan in the GSA3i amplifier.

**local / external power trigger:** not in use

**Peak Limit Signal:** Signal control LED shows present line signal going into the line in or AES/In of the GS-3X amplifier. Limit shows the active state of the internal Peak Limiter. Peak shows the clipping indicator.

**AC Power:** AC power input for 95-240Vac input voltage 50/60Hz

You have the mains power switches on the back of both GSA3i amplifiers and also an additional power switch on both front panels.

(C) Connect the power cables to the appropriate source. The power supplies in both units are self detecting 95 - 240 Volts AC.

**You are now ready to power up the system!**

You have to enable the mains power switch on the back of both amplifiers and the power switches at the front panels. After that the units should power up.

The first preset which is factory preloaded is called GUZAUSKI-SWIST - 01\_Flat\_limit.

The setting boots up automatically when you turn on the amplifiers.

You can change between the two factory presets 01\_Flat\_limit and 02\_Flat.

With the menu button and the rotary encoder on the front panel you can easily access the input gain for Analog in 1, Analog in 2, AES/EBU in and change between presets.

The exit button returns to the loaded preset state and lets you leave the menu.

The control access on the front panel features the basic functions of the GSA3i DSP.

If you want to get into deeper access levels the GScontrol Software comes into play.

The next chapter explains the versatile functions of the GScontrol software which controls the two internal DSPs of the GSA3i amplifiers.

## **GS-Control Software and Remote operation with the GSA3i:**

### **Introduction:**

Please make sure you have installed the latest GScontrol software **031316 Guzauski V3821**. The GS-Control Software is the remote software to control all DSP functions of the GSA3i amplifiers.

The GSA3i must be connected via a wired Ethernet connection to the same network as the control computer. The control computer can be connected to the network wired or through Wi-Fi.

Note: Because of continuous development, some screens may differ from the representation in this document. Screenshot may differ slightly over various operation systems.

### **Getting Started:**

It is recommended that a router with DHCP server is connected to the network so that it assigns the unit an IP address.

When the controller is connected to the network, you can check or set its IP address via the unit window under Hardware - > Configure - > Network Settings → IP address. The default setting is DHCP (Auto IP). If Fixed IP address has been set, and this is no longer known or been forgotten, it can be requested via the display on the device. Press the menu button four times and turn the encoder wheel to the right three times to display the IP address.

This Software Manual explains the remote setup and operation of the system through a network. The operation is basically same for all platforms; where differences exist they will be noted.

The software consists of a network window that list all known GSA3i devices on the local network, and one or more unit windows for settings of a device. In the following sections we will discuss the GScontrol program for IOS. The mac version works very similar to the Windows version. The mac menu bar is different from Windows for most programs, the same differences are present with GScontrol.

Switch on the DSP and launch the ALLDSP software. It will show the devices found on the network together with their mac address and IP address similar to Figure 1.



Figure 1: GScontrol network panel

**Note:** you can control the unit from only one PC at the same time. If you want to switch control from one to the other, shut down the GSControl software on the previous control platform first.

The '>' icon at the right side may be either > or >.

When >, the GSA3i unit is online and can be activated by clicking the >.

The main purpose of the control app is to select a particular unit for manipulation and/or to group several units in a Group.

The File menu item functions to Exit the program. The available Tools commands are shown in Figure 3: Tools menu items.

Note: you can modify the Unit Name in the ALLDSP ALLControl program slot for the connected unit by just typing a new name.



Figure 2: Tools Menu item

## **Tools**

### **Tools|Set Software Password**

Allows you to set up a password to access the graphical DSP software unit window. The DSP software has a separate extensive system of operation modes with passwords and access controls and system locking.

### **Tools|New Group**

This command allows you to combine several online units into a named group. The group will be shown in the Control screen, see Figure 4.

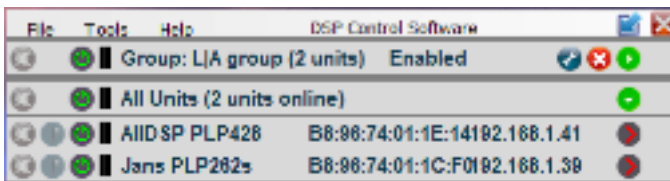


Figure 3: network window showing a named Group consisting of two units

Clicking the cross icon on the right deletes the Group; clicking the blue tool icon opens a screen where you can select the members of the Group; you will be able to select any unit which is on-line to become a member of the group. A further selection from this screen opens a dialog where you can specify which parameter, for which setting and for which channel you wish to link within the Group. For instance, you can link only gain, or gain and limiter settings for only output channels. An example Group setting screen is shown in the following Figure:

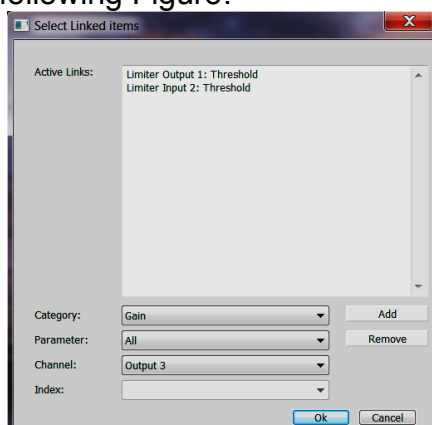


Figure 4: Sample selecting box showing some linked items for a group

### **Tools|Enter Demo Mode**

Allows you to exercise the functionality of an GSA3i unit without hardware present for training and familiarization purposes.

### **Tools|Disable/Enable Updates**

When set to Enable Updates, there will be an indication when firmware

updates for the unit will be available. This is shown on the right edge of the unit identification in the control program with a 'rotary' icon, see Figure 6. The icon turns yellow color when updates are available. Clicking the icon will initiate the update.



Figure 5: rotary' icon yellow color at right indicates firmware update for this unit is available

This is a 'brute force' update which will also restore the unit after a crash or other unrecoverable situation. All presets and other settings will be lost however.

Clicking the green > symbol at the right of the connected unit info line in the ALLDSP ALLControl window will load the software for the unit. At this point, the software will go through a synchronization cycle and, if a Personal Identification Number (PIN) was defined before, will ask for the PIN.

The Main graphical interface screen will come up similar to Figure 7 ; this is the opening screen of the actual application controlling the settings of the unit.

## Other settings

### **Power-On Preset**

In the menu item Hardware - > Configure - > Power On Preset, a preset can be selected, which is automatically loaded when the device starts.

### **GSA3i Unit window: main panel**

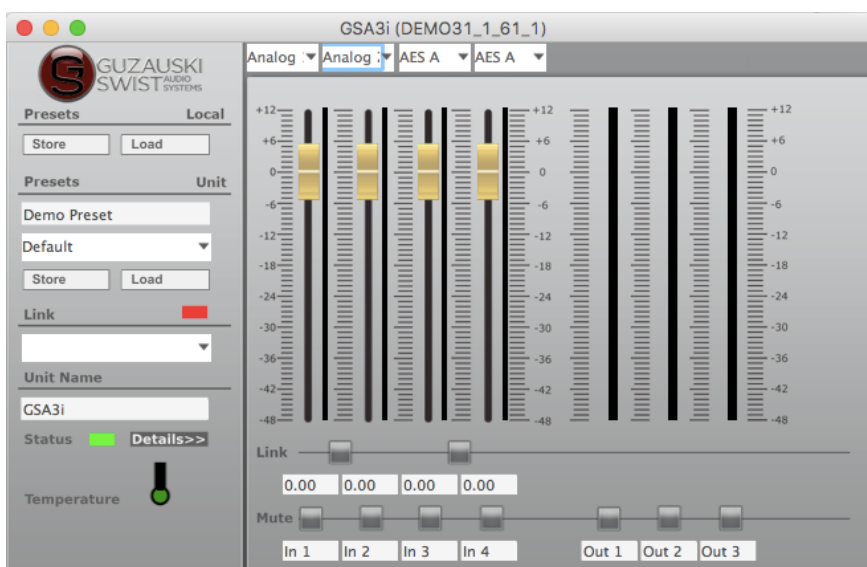


Figure 6: online GSA3i unit. You'll have two of those windows for each GSA3i unit separately.



## **Unit window menu**

Figure 6: unit window shows the unit window from which all setup screens and options can be reached. Clicking the exit cross will close the software but leave the network Control program running.

## **File commands**

### **FileOpen and FileSave**

Presets are the snapshot of all settings for a particular configuration. With these commands you can save a preset, and reload it at a later time. In addition it offers the choice to use the .preset file format or the .txt format. Text files are a way to archive settings for documentation purposes.

### **FileBackup presets and FileRestore presets**

These commands operate similarly to Save and Open, but will save all presets in the unit in one directory, or load all presets from a directory.

### **FileQuit** – self-explanatory

## **Hardware commands**

The Hardware menu offers several functions as shown in Figure 7: unit panel Hardware menu items.

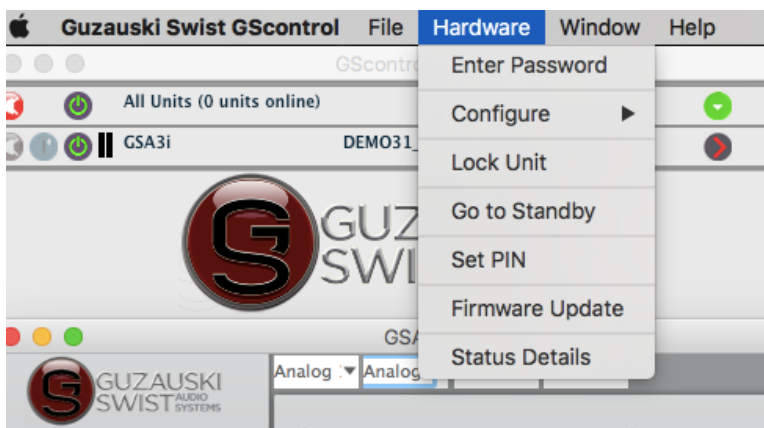


Figure 7: unit panel Hardware menu items

## **Hardware\Enter password**

The GS3Ai unit have two different access levels available. Entering the right access level password unlocks that access level.

In **Operational mode** the level called **User mode** uses the password “**GSA3i**” and features the Access level Access to MAIN, no access to IN and OUT.

The second level called **Administrator mode** uses the password “**set\_GS**” and features the Access level Access to MAIN and IN sections.

## **Hardware\Configure**

The Configure menu item opens an additional screen where several options are presented. *However, the options shown will depend on the access level currently in force – to be discussed.*

### **Hardware\Configure\Power On Preset**

allows you to select a preset that will be automatically loaded at power-on; however any changes to this preset will not be carried over to the next power-on cycle unless you have saved the new setting, i.e. it will revert to the saved preset.

**Hardware\Lock Unit** *Clicking this menu item will lock the unit. When locked, the unit window shows input levels but no controls or other settings, and nothing can be changed, as shown in Figure 8: detail of unit panel in locked state.*

An attempt to lock the unit will generate a warning that unlocking will only be possible with a valid password. *The actual operation of this function depends on the access level as described later.*

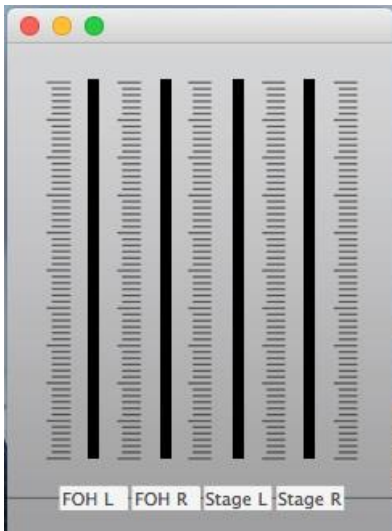


Figure 8: detail of unit panel in locked state.

### **HardwareGo to Standby**

will place the unit in Standby. In this state, outputs are disabled but all settings can still be manipulated.

### **HardwareSet PIN**

Clicking this option allows you to enter a 4-digit PIN number. When this is set, you will need to enter the PIN number at any time you connect to the unit. Note: the PIN control can be switched off by setting the PIN to 0000.

## **Main setup screen functions**

### **Unit window functionality**

On the left side, the Unit window (**figure 4-1**) gives access to the cross-over settings screen as well as all settings screens for each individual Input- and Output channels. These will be discussed later. The following commands are found in the center of the Unit window:

#### **Presets - Local**

These commands allow you to save and re-load configurations as .preset files on the connected PC.

#### **Presets - Unit**

These commands are similar as the other Save and Load commands but with the distinction that presets can be saved to and reloaded from the unit internal memory. The drop-down menu under Default Preset shows a list of memory slots where named presets

can be stored and recalled. Since this is internal in the unit they will be available independent of the stored presets in a computer.

### **Link**

Under **Link** there are several status related indications. The indicator at the right will be green for an active link with the unit or red when the unit is off-line. The name and MAC address of the connected unit is also shown.

### **Unit Name**

Shows the unit name of the connected unit, which can be edited by typing in a new name. The new name will be reflected in the Link slot as well as in the name field in the GScontrol window (fig 1-1).

### **Unit window Channel settings**

On the right side are the Channel settings. This area is divided into several subsections:

#### **- Level faders for Input channels**

These faders control the level from each of the physical input connectors as sent to the Input processing channels. Channel names are shown at the bottom line. Level settings are also shown numerically below the faders, and can also be set by entering a specific value in the corresponding text field.

#### **- Input selection for input faders**

Your units are equipped with two Analog inputs 1 and 2 and two AES/EBU inputs, so you can select the source for inputs 3 and 4 from this pull down menu.

#### **Level faders for Output channels**

These faders are locked with factory preset values and control the levels for the physical Output channels at the rear-panel output connectors.

**Faders auto-zero:** Whenever you double-click on a fader, that fader moves to the default position. This is usually 0dB (unity gain) for gain faders. This operates on all views and screens. When two channels are linked, the odd-numbered channel can be used to manipulate both linked channels.

#### **- Link buttons**

When activated, all settings for the related pair of channels pairs are linked together and can only be changed with the left (odd numbered) fader of the pair. The right fader will follow. Similarly, entering numeric values in the level fields will only be accepted for the left channel of a pair, with the right-channel numeric value following. The even- numbered channel of a linked pair will be unresponsive but follow the odd-numbered channel settings. To reset a paired level to 0dB you must therefore double-click the odd-numbered fader.

## - Mute buttons

Mute buttons allow muting of an Input- or Output channel on a per-channel basis, independent of any linking in effect.

## Digital inputs (option)

Your device is equipped with and AES / EBU input, you can set the source of input channels 3 and 4.

The AES / EBU input signal can be fed via AES XLR socket in the controller. Available are analog and AES / EBU formats.

## AES failover:

In the menu item Hardware -> Configure -> AES analog failover, a radio button can be turned on so that when there is no AES / EBU signal, the unit automatically switches to the analog input.

## Input Channel setting Screen

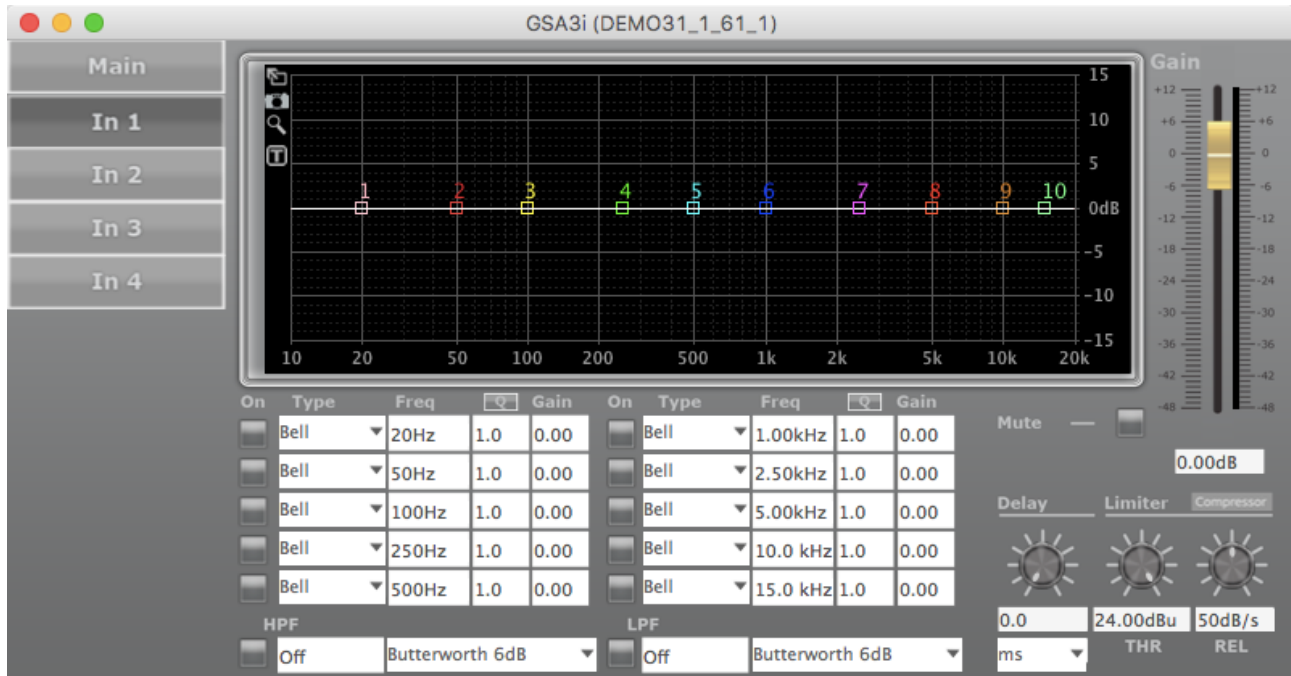


Figure 9: Input channel settings window

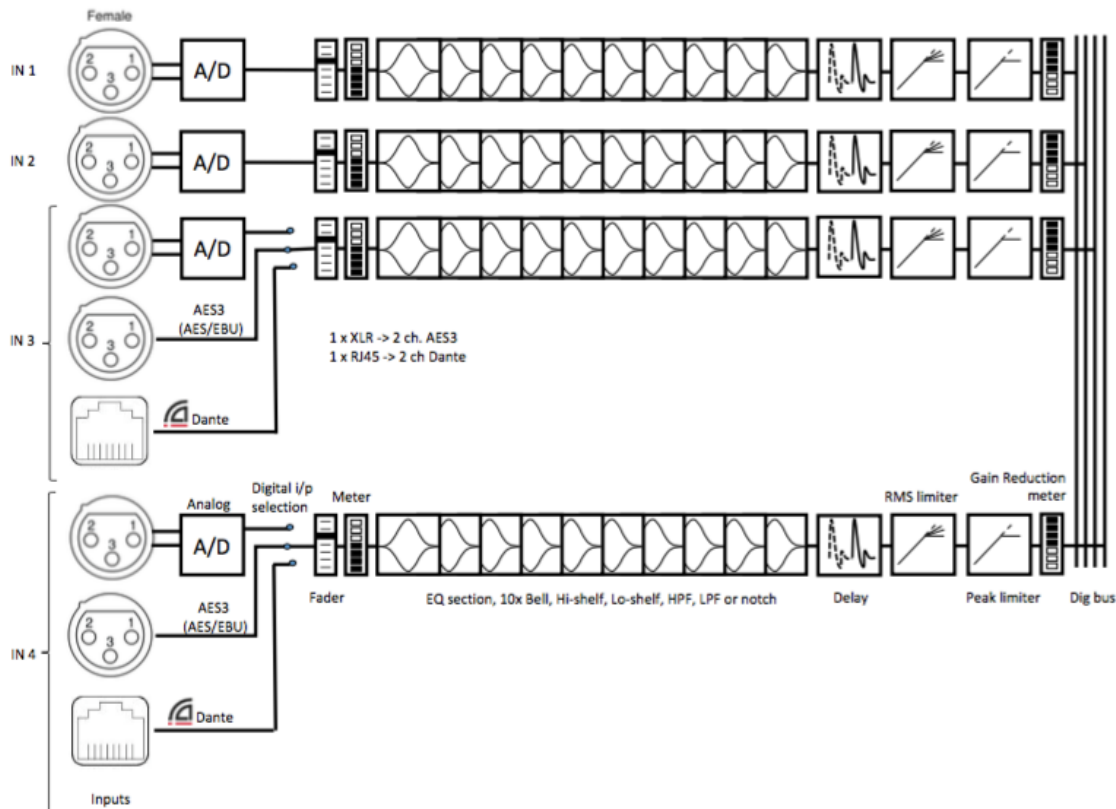


Figure 10: Input signal flow

Clicking on an Input channel number in the Unit window will bring up the input channel settings screen see Figure 9. In this screen, individual input channels can be equalized and/or filtered.

## Filtering and EQ

All input channels can have filtering and equalization applied individually, or as linked pairs. Input channels can be linked in the Unit window, and in that case, all EQ and filter settings for the pair will be linked. If input channels are linked, EQ and filters for each pair can only be set for the odd number – for example, setting an EQ for input channels 1 and 2 can thus only be done in the Input 1 screen.

EQ can be set either in the graphical screen by cursor dragging, or in the numerical fields and drop-down lists below the graphical screen. Type, Freq., Q/BW and Gain can be set for each input or pair of linked inputs. All settings are reflected real-time in the graphical screen. The Q/BW column toggles from indicating Q or bandwidth (BW) every time the column label is clicked.

### **Warranty:**

2 years with registration : [www.guzauski-swist.com](http://www.guzauski-swist.com)

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