



Owner's Manual

For

Spirito

Reference Series Preamplifier

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## ***Introduction***

Congratulations on your selection of a Viola Audio Laboratories product. Viola Audio Labs is devoted to the design and manufacture of the world's best audio equipment. It is our goal to provide you with the equipment that will offer you the most pleasurable listening experiences of your life. This component is designed to have the highest degree of compatibility with most other high-end components, regardless of manufacturer. However, it is one part of a Viola system that was designed to work together for maximum compatibility. The reference system consists of the Spirito Reference Preamplifier, Bravo Reference Amplifier, the Basso and Allegro modular speaker components and a choice of highest quality interconnects (Blues Silver and Swing Copper) and the Jazz Reference Speaker Wire. We encourage you to try all components of this system.

## ***The Spirito Reference Preamplifier***

Spirito is a modular designed preamplifier that utilizes open architecture to provide you with maximum flexibility for customization, upgrading and expansion.

The Spirito is a mainframe preamplifier with a separate power supply chassis. The Spirito mainframe has ten open card slots that load from the rear and permit you to configure the preamp as you wish. The Spirito is a Class A preamplifier with discrete circuitry and fully balanced throughout. The basic model has one V20 reference input card and one V30 reference output card. Future development will provide opportunity for phono stages, DAC and EQ stages.

## Important Safety Instructions

**WARNING:** To reduce the risk of fire or electrical shock, do not expose this appliance to rain or moisture.

**CAUTION:** To reduce the risks of electrical shock do not remove the cover from this product. There are no user serviceable parts within this product. Refer all servicing to qualified and authorized personnel.



**Figure 1: Lightning Flash With Arrowhead - "Dangerous Voltage"**

The symbol shown in figure 1, a lightning flash with an arrowhead within an equilateral triangle, is intended to alert the user to the presence of non-insulated "dangerous voltage" within the preamplifier's enclosure. This voltage may be of sufficient amplitude to constitute a risk of serious electric shock to the user.



**Figure 2: Exclamation Point - Important Operating and Maintenance Instructions**

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in this manual.

**Note:** The "CE" symbol indicates compliance of this device with the EMC Electromagnetic Compatibility (EMC) and Low Voltage Directive (LVD) standards of the European Community.

**Notice:** This equipment has been tested and found to comply with the limits for a Class AB analogue device, pursuant to Part XV of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. There is, however, no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is

encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver  
Please read all instructions and precautions carefully and completely before operating your preamplifier.
- Connect the equipment into an outlet on a separate circuit from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.  
**Caution:** *Changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate the equipment.*

The information contained in the manual is subject to change without notice. The most current version of this manual will be posted on our web site at <http://www.violalabs.com>.

### **1.1 Additional Points of Concern and Attention**

- 1) Always disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.
- 2) This product **must** be terminated with a three-conductor AC mains power cord, which includes an earth ground connection. To prevent shock hazard, all three connections must **always** be used.
- 3) AC extension cords are not recommended for use with this product.
- 4) **Never** use flammable or combustible chemicals for cleaning audio components.
- 5) **Never** operate this product with any covers removed.
- 6) **Never** wet the inside of this product with any liquid.
- 7) **Never** pour or spill liquids directly onto this unit.
- 8) **Never** block airflow through ventilation slots or heat sinks.
- 9) **Never** bypass any fuse.
- 10) **Never** replace any fuse with a value or type other than those specified.
- 11) **Never** attempt to repair this product. If a problem occurs, contact your Viola retailer.
- 12) **Never** expose this product to extremely high or low temperatures.
- 13) **Never** operate this product in an environment with flammable fumes in the air.
- 14) **Always** keep electrical equipment out of the reach of children.
- 15) **Always** unplug sensitive electronic equipment during lightning storms.

## **Unpacking Your Preamplifier**

**Caution:** *Do not attempt to unpack your Viola Spirito preamplifier unassisted! Personal injury and damage to the product is quite likely to occur unless the procedures and recommendations listed below are strictly complied with.*

Your new Viola Spirito preamplifier is very heavy. The shipping weight of the Spirito is approximately 121 pounds (55 kg) .We highly recommend the use of two people to unpack this unit safely.

- Exercise care lifting your preamplifier from its packing carton [unassisted].
- **Never attempt** to lift your preamplifier while bending from the waist.
- Always stand as straight as possible and use your leg muscles to lift your preamplifier and supply.

After unpacking your Viola Spirito preamplifier, store all packing materials for future use during transport. In the event that shipment of your preamplifier is ever required, only the original, product specific shipping carton is acceptable for safe transport. Any other method of shipping this heavy product will almost certainly result in damage to the preamplifier. Please note that any such damage will not be covered by the terms of the product warranty.

**Note:** *Please inspect your preamplifier for any obvious damage due to shipping. If you discover any problems, contact your VIOLA dealer immediately so an appropriate freight claim can be made.*

## **System Set-up and Installation**

### **1.2 Breaking in Your New Preamplifier**

Although your Viola Spirito preamplifier delivers outstanding performance straight out of the box, you should expect to hear it continue to improve as it reaches its normal operating temperatures and its various components "break-in". It has been our experience that the greatest changes occur within the first 25-50 hours, but that the preamplifier will continue to improve in sound quality for about 300 hours, after which time it remains quite constant.

The only exception to this rule is if power is removed from the unit, allowing it to cool down. This can occur due to extended power outages, unplugging the preamplifier supply from the wall during a vacation, or by leaving the preamplifier in sleep mode rather than in standby. In these cases you should expect a brief warm-up period before the amplifier's sound quality is at its best. Fortunately, you will never have to repeat the full 300-hour break-in period.

### **1.3 Placement Considerations**

#### **1.3.1 Ventilation**

**Important!** For your protection, please review "Important Safety Instructions", *Section 1 above*, before installing your preamplifier.

Your Viola Spirito preamplifier is specifically designed to accommodate a wide range of installation options. This preamplifier may be placed near the amplifiers or at an established distance. They may be located on shelves, if indeed the shelves are sturdy enough to support the weight of the preamplifier. The ventilation system employed by the Viola Spirito preamplifier will maintain optimal operating temperatures even if the preamplifier and supply are stacked one above the other.

The preferred configuration is to locate the preamplifier near the listening position. This approach provides maximum comfort for the listener and may necessitate longer interconnecting cables from the preamplifier to the power amplifier. The advantage of this strategy lies in the fact that the interconnecting cables carry low current signals that are more readily transmitted over distances with great accuracy than are the necessarily high current signals required between the amplifier and the loudspeakers.

Please note that adequate clearance for the AC cord and connecting signal cables must be left behind your preamplifier. We suggest leaving at least six inches (15 cm) of clearance behind your preamplifier so all cables have sufficient room to bend without crimping or being subjected to undue strain.

Mechanical drawings are included in this manual to facilitate special installations where necessary. Please see "Dimensions" at the end of this manual.

## **Special Design Features**

Congratulations on your purchase of a SPIRITO Reference Preamplifier by Viola Audio Labs. While your new preamplifier is straightforward in everyday use, it includes several design features that are responsible for its outstanding performance.

The Spirito preamplifier is a two box set, a stereo preamplifier with separate power supply. The separate power supply assures complete freedom from electro-magnetic interference (EMI) produced by the electromagnetic power supply components, i.e. the power transformer and inductor (or choke).

The inductor (choke) input filter power supply design was chosen because it produces far less EMI than conventional capacitor input systems. The inductor (choke) input filter system greatly reduces the electrical stress placed on the power supply components. Therefore, this greatly increases the life span and reliability of the power supply components. Capacitor lifespan in particular can be increased by at least an order of magnitude. The virtual elimination of the high peak ripple currents also minimizes intermodulation distortion on the power supply “rails” and ground returns.

Additional power factor (PF) correction circuitry increases the PF from .9 (typical for “choke” input supplies) to .96 (a power factor of 1 [unity] is considered ideal).

The power supply utilizes large, conventional components instead of a switching power supply because they can operate at power levels several times their continuous power ratings for longer periods. Given the duty cycles found in even the most demanding music, large conventional magnetic components can be used in audio preamplifiers whose continuous sine wave power ratings would otherwise require a switching power supply rated at 3 times that of the conventional type.

The conventional magnetic supply used for this preamplifier does not utilize high frequency switching and therefore is devoid of any high frequency noise. It offers much higher reliability and does not have to be derated nearly as much as an equivalent switching power supply for a given ambient temperature.

### **1.4 Balanced design**

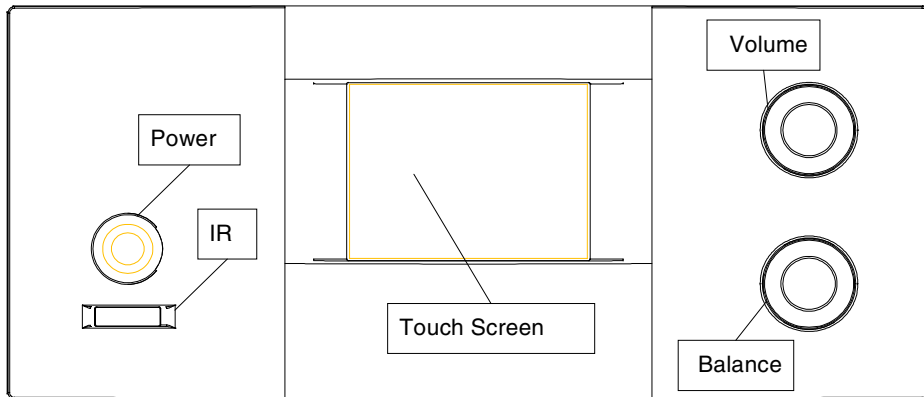
A truly balanced input topology eliminates the need for an input buffer amplification stage and allows the first stage differential amplifier to be driven directly by the source. Matched impedances are presented to the source and both signals travel through identical circuit paths. A balanced input signal remains balanced throughout the voltage gain stages.

Rejection of common mode noise and distortion is achieved in the final, current gain stage.

### **1.5 Use of Adaptors**

Your Spirito preamplifier uses state of the art balanced circuit topology. **When using an adaptor to go from the Spirito balanced output to an unbalanced input, pin 1 and pin 3 must be connected together.** Pin 2 is the non-inverting output and pin 1 and 3 are ground. The same configuration is true when connecting an unbalanced source to a Spirito balanced input. The V20 Reference Input Card does provide one unbalanced RCA input. Whenever possible use balanced connections to the Spirito.

### **1.6 Front Panel**



**Figure 3: Spirito Front View**

### **1.6.1 Power Indicator Light**

- The ring around the power button is an LED that shows the operational status of your preamplifier:
- Completely off indicates that the amplifier is not connected to the AC Mains. Note: If the amplifier will not turn on, you should check your AC connections and inspect the fuses.
- Green indicates that the Spirito is on and ready to be used.
- Amber indicates that the Spirito is in standby mode. The display backlight turns off and the outputs are muted.
- Red indicates high AC line voltage or over temperature. Check that the AC voltage on the supply is set to the proper voltage and that the Spirito has proper ventilation.

### **1.6.2 IR Window**

- IR communication is full duplex. The Spirito can send and receive data across the IR. The Palm OS program that comes with the Spirito is used to turn a Palm OS device into a remote control and also to update the Palm when you add more modules.

### **1.6.3 Display and touch screen**

- The Spirito incorporates a touch screen for various functions. Soft keys are used for the onscreen controls. This allows for new onscreen controls when future modules are added.

### **1.6.4 Volume Control**

- The Spirito volume control is used for several functions depending on the mode of operation. It is used for main volume, setting the channel volume offsets and to scroll through the ASCII character set for board and channel names.

### **1.6.5 Balance Control**

- The Spirito balance control functions, if enabled through the V30 output screen, as a true pan pot type balance control. The balance control will shift the image to the right or left with no increase in volume. The balance control also is used to advance the cursor when renaming board or channel names.

## 1.7 Rear Panel

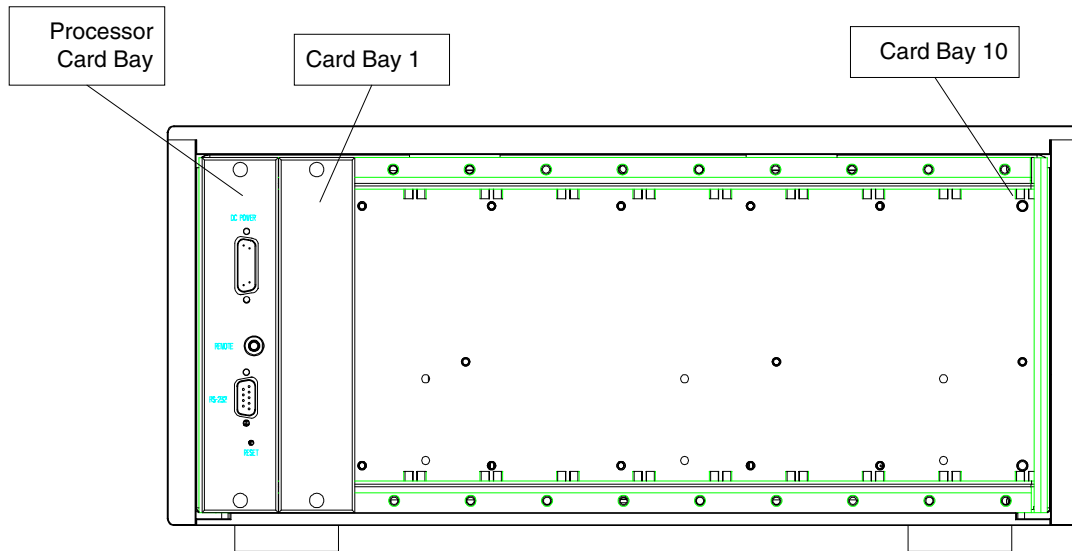


Figure 4: Spirito Rear View

### 1.7.1 Processor Card Bay:

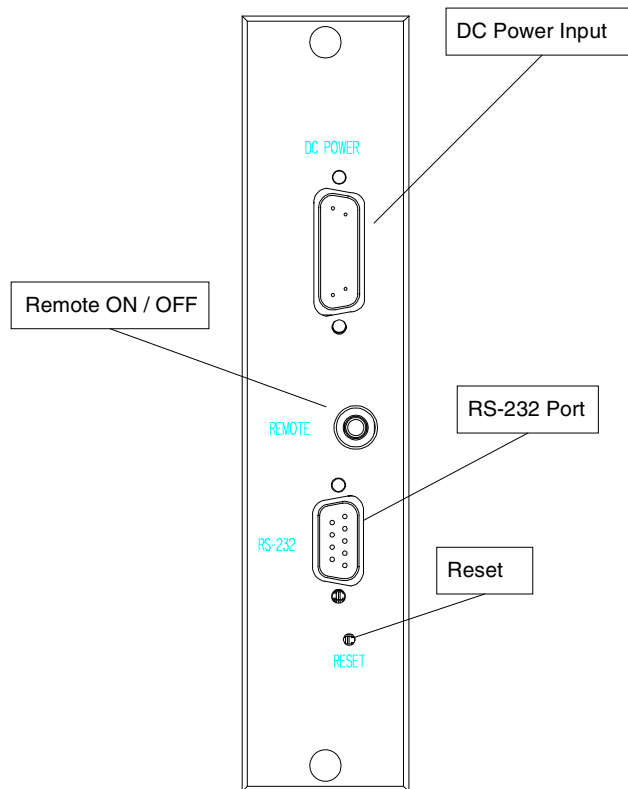
- The first card slot holds the Spirito Processor Card. The only card that will fit in this slot is the processor card. **Do not attempt to put any other card in this card slot. You may damage the connectors on the backplane board.** Refer to the section of this manual for features of this card.

### 1.7.2 Card Bays 1 – 10:

- The Spirito has room for 10 single bay cards or 5 dual bay cards. Card slot 1 is shown with the blank bay rear plate installed. **Do not attempt to place a processor card in any of these card slots. You may damage the connectors on the backplane board.**

## 1.8 Spirito Reference Modules

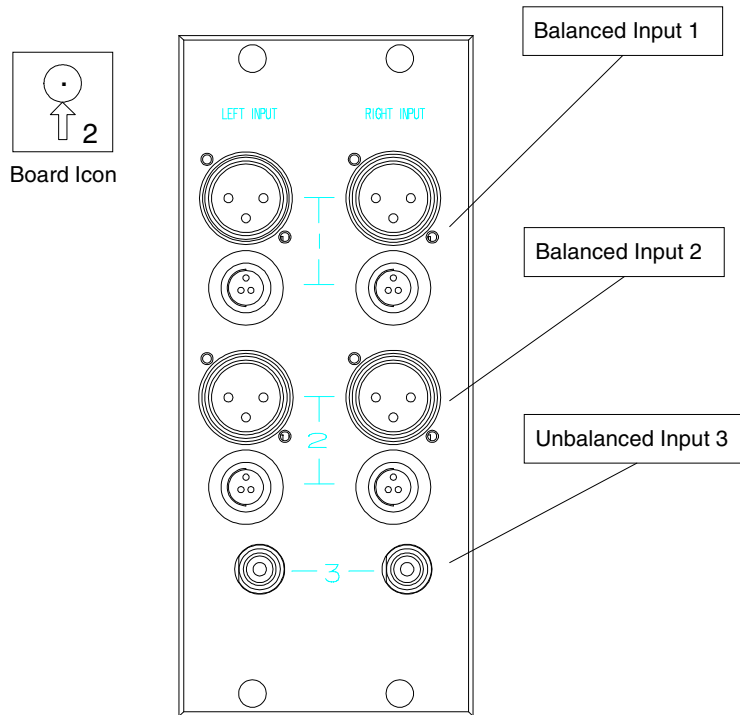
### 1.8.1 Spirito Processor Card



**Figure 5: Spirito Processor Card Connectors**


- Spirito DC power input connector. The processor card routes power to all modules via the backplane.
- Remote ON / OFF provides +12vdc ON, or +0vdc OFF signal to remotely turn on power amplifiers like the Bravo.
- RS-232 Port provides remote control via a 9 pin serial cable from a computer or other controller
- Processor reset button

### 1.8.2 V20 Reference Input Card



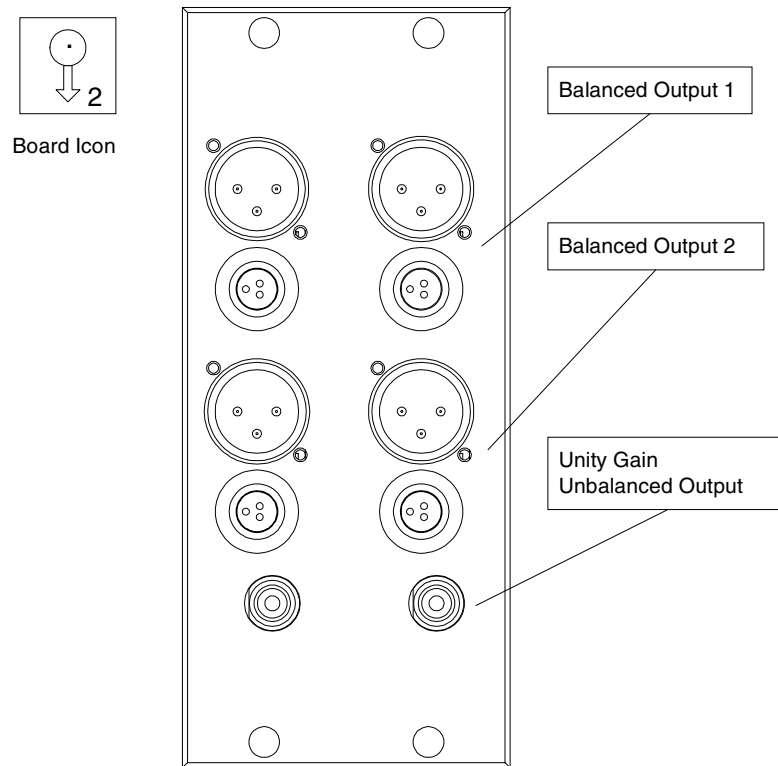
**Figure 6: Spirito Reference Input Card Connectors**

- Spirito will accept a signal from a source with balanced outputs via a high quality XLR or Fischer connector. There are two sets of balanced inputs on the Reference Input Card. Balanced input 1 has a XLR and a Fischer connector. The connectors are in parallel so use one or the other. Balanced input 2 is configured the same as input 1. Input 3 is single ended for a connection to source equipment that does not have balanced outputs.
- The pin assignment of the common Preamplifier XLR-type female input connector is.

	
Pin 1	Signal Ground
Pin 2	Signal +
Pin 3	Signal -
Connector ground lug or case connection	Chassis Ground

- These pin assignments are consistent with the standards adopted by the Audio Engineering Society. Refer to the operating manual of your source equipment to verify- that the pin assignments of its output connectors correspond to the Spirito input card. If not, wire the cables so that the appropriate output pin connects to the equivalent input pin.

### 1.8.3 V30 Reference Output Card



**Figure 7: Spirito Reference Output Card Connectors**

- Spirito will accept a signal from a source with balanced outputs via a high quality XLR or Fischer connector. There are two sets of balanced inputs on the Reference Input Card. Balanced input 1 has a XLR and a Fischer connector. The connectors are in parallel so use one or the other. Balanced input 2 is configured the same as input 1. Input 3 is single ended for a connection to source equipment that does not have balanced outputs

## Main Screen Controls

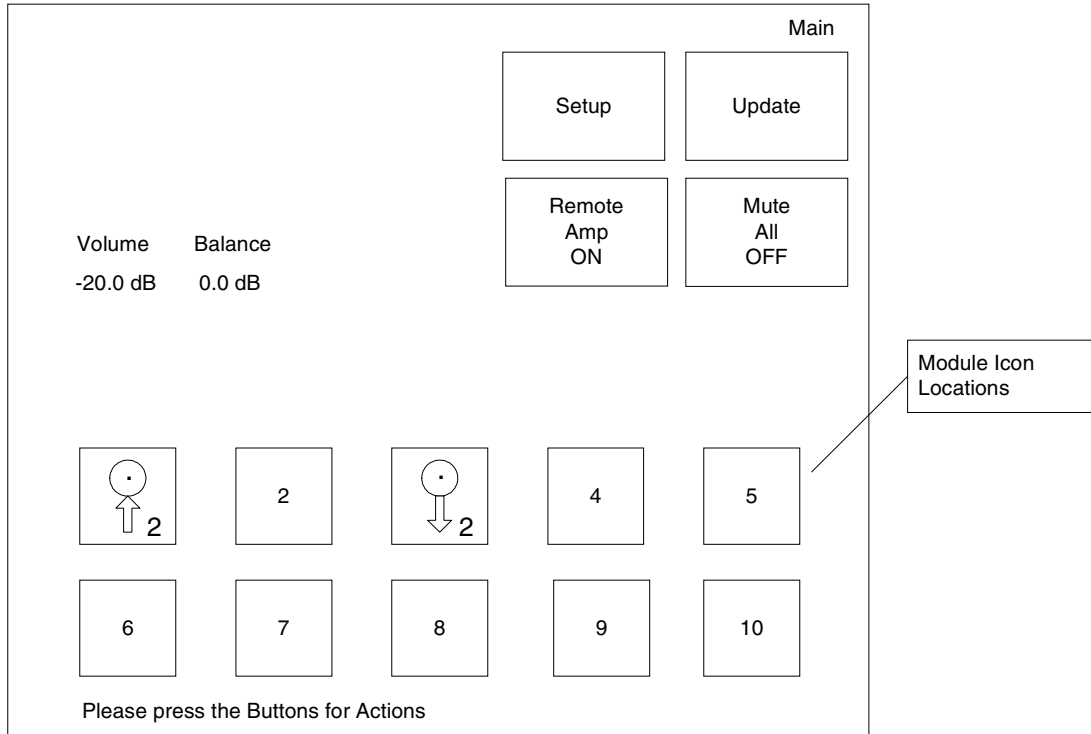


Figure 8: Spirito Main Screen Icons

### 1.9 Main Amp On / Main Amp Off

- This button initially appears with **Remote Amp On** as the button nomenclature (refer to figure 8 above). When this button is selected, the nomenclature will toggle from **Remote Amp On** to **Remote Amp Off**.
- When Remote Amp On is selected there is +12 volts dc at the remote connector and the main amps will be activated.
- When Remote Amp Off is selected there is 0 volts dc at the remote connector and the main amps will be deactivated.

### 1.10 Mute All On / Mute All Off

- This button initially appears with **Mute All OFF** as the displayed button nomenclature (refer to figure 8 above). When this button is selected, the nomenclature will toggle from **Mute All OFF** and **Mute All ON**.
- If selected when the nomenclature is **Mute All ON**, the volumes of all available output boards will be muted.
- If selected when the nomenclature is **Mute All OFF**, the volumes of all available output boards will be un-muted.

## 1.11 Board Icons

- Board icons occupy the lower half of the main screen. When the Spirito is turned on the processor will poll each of the ten card slots. When a module is found an icon for the board type is displayed on the main screen, *refer to figure 8*. Selecting a board icon will display a menu for that module. Selecting the input module icon brings you to the following screen.

## 1.12 Setup Menu

- Pressing the **Setup** button on the main screen will take you to the setup menu screen.
- Pressing the **Brightness** button will highlight the surrounding box. Use the volume control to adjust the screen brightness. When finished press the brightness again to deselect.
- The **Calibrate Touch Screen** button will bring you to a calibration screen. Follow the instruction on the calibrate screen. When you finish you will be returned to the setup menu. **The screen calibration is set at the factory and should not need adjustment.** If you feel the calibration is off you can use the button to perform a fresh calibration.
- Press **Return** to go back to the main screen.

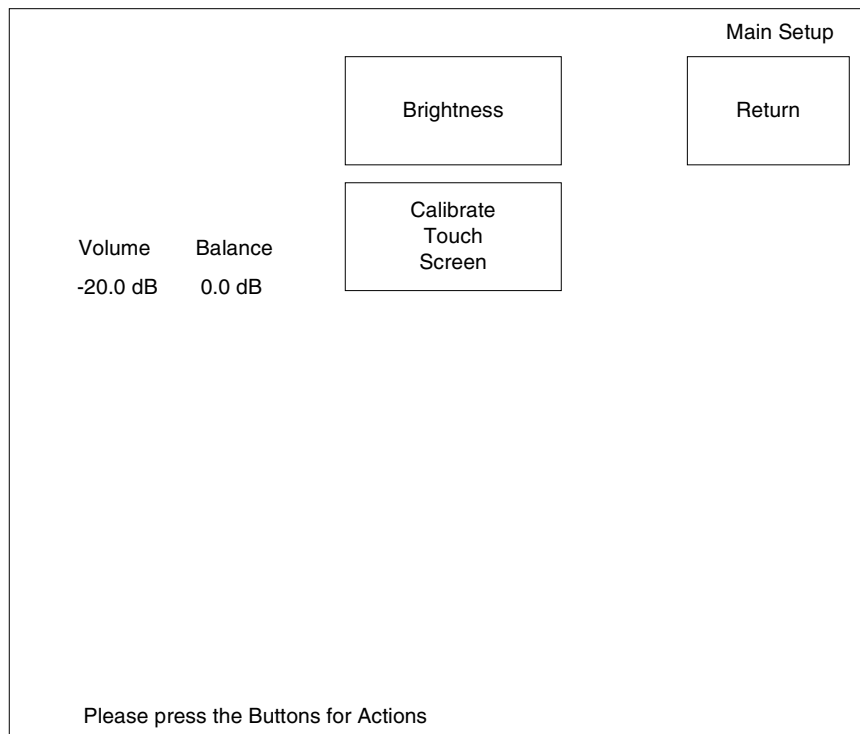


Figure 9: Spirito Status Display screen

### 1.13 System Update

- Pressing the **Update** button on the main screen will bring you to the system update screen.
- Pressing the **Upgrade Firmware** button will initiate a firmware upgrade thru the RS-232 port on the processor card. New firmware downloads will be available on our website, [www.violalabs.com](http://www.violalabs.com).
- Pressing **Store Update Locally** will store your configuration to local flash memory on the Spirito.
- Pressing **Restore Update Locally** will restore your configuration from local flash memory.
- Press **Return** to go back to the main screen

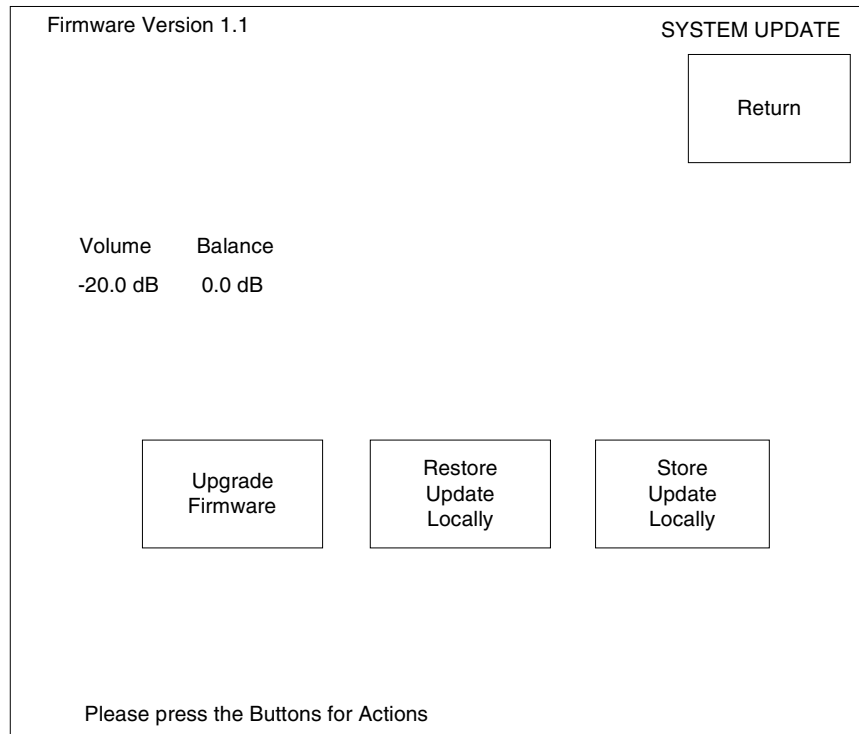


Figure 10: System Update Display screen

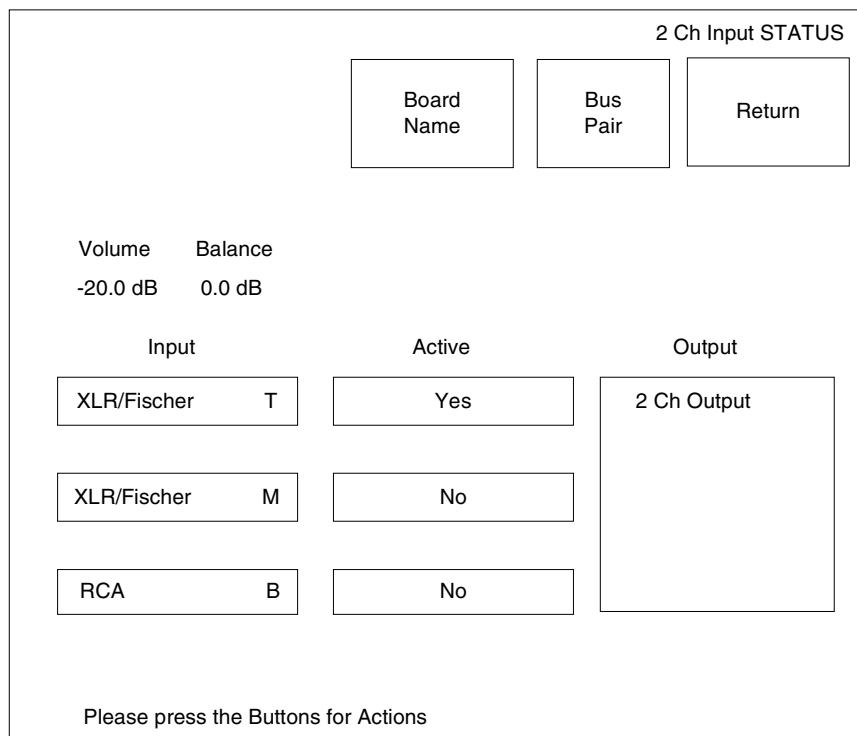
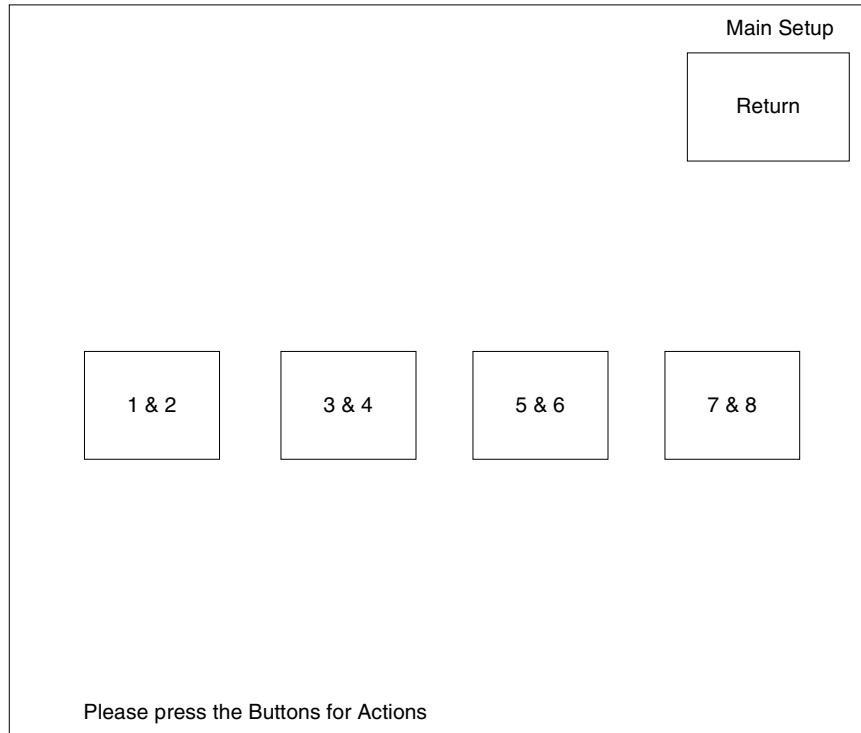


Figure 11: Reference Input Menu Screen

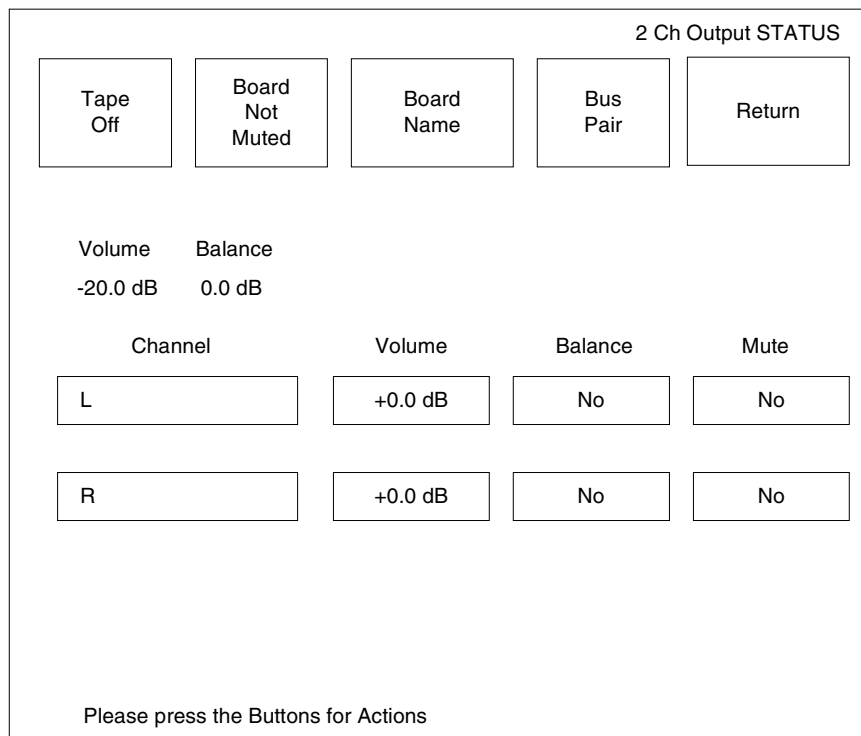
### 1.14 V20 Reference Input Card

- The *input* group allows you to select any one of the three inputs. As shown in figure 11, the top balanced input is active. This is the default channel selection on power up. Selecting a box under the *active* column will activate the channel to the left.
- The *output* box displays, which output module, has been assigned to this input module. Up to four V30 reference output modules can be assigned to one V20 input module. This can be used for multi room applications.
- Tap inside the board name to highlight the box. While the box is highlighted turning the volume will scroll through the ASCII character set. The balance control will move the cursor to the next character position. When you are done un-highlight the box and the new name will appear in the board name field at the top right of the display.
- Selecting the *bus pair* icon will bring you to the bus pair screen shown in Figure 4. This is where the module bus routing is configured. The V20 input module can be assigned to all four-bus pairs. This feature is useful for multi-room and surround applications with multiple V30 output modules. Highlight the bus pair box you want and then with the box highlighted hit the return box.



**Figure 12: Buss Pair Assignment**

**1.15 V30 Reference Output Module**



**Figure 13: V30 Main Screen**

- *Tape On/Off* box enables or disables signal at the tape outputs. The signal at the tape output is a fixed output, the volume and balance control have no effect on this signal.
- *Board Not Muted* will mute only the local V30 module. This is used if you have multiple V30 modules and want to mute only one of them in the system.
- *Board Name* box is used to rename the V30 module. Highlight the box, a cursor will appear. Use the volume control the cycle through the ASCII character set and the balance to move the cursor one position to the left or right. When you are through un-highlight the box and the new name will appear at the top of the screen and in the V20 output box.
- *Bus Pair* box works the same as the V20 bus pair box. The only difference is that only one V30 can be on the same bus at one time. The software will not allow more than one bus pair box to be enabled.
- *Return* will bring you to the previous menu.
- The *Channel* group contains the individual channel names. The names can be renamed using the same method as the board name.
- The *Volume* group is used to put in a volume offset. Highlight the box, use the volume control to put in the offset then unselect the box. The volume offset will now track with the main volume control.
- *Balance* group enables or disables the balance control for the local V30. This feature is useful in multi-room applications.
- *Mute* is used to mute an individual channel.