HALL RESEARCH

VSA-51
Switch-CAT ™
Digital AV Room Control System

Quick Start Guide

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QSG1182
Rev 1.1

Getting Started

Congratulations on purchasing this VSA-51 system. This product is one of the most advanced room control systems in existence with a myriad of capabilities.

Before you install and start using it, **we highly recommend** that you pre-configure at least one unit on the bench with the projector you intend to use in the application, and get the system operating just as you like. Once you have pre-configured one unit, then you can save the configuration file and upload it to other systems in your campus via LAN (assuming identical room setups). Even then, you need to be able to identify each unit's IP so that you can tie each to the room it is in, so please read the following section, and refer to the full *pdf* manual on the product's website.

Configuring the IP

One of the main features of this system is that for normal operation you don't have to install any software on your PC or any app on your tablet or smart phone. You can define your projector's commands, # of AV inputs, and many other parameters using the built-in web pages in the appliance. Once configured, you can also control the system from a web page using a browser. Furthermore, the elements on the displayed webpage are live and updated bidirectionally in real-time. This means that if someone changes any setting from the physical hardware in the room (such as increasing the volume), the control page on your browser updates the volume bar in real-time with no perceptible delay.

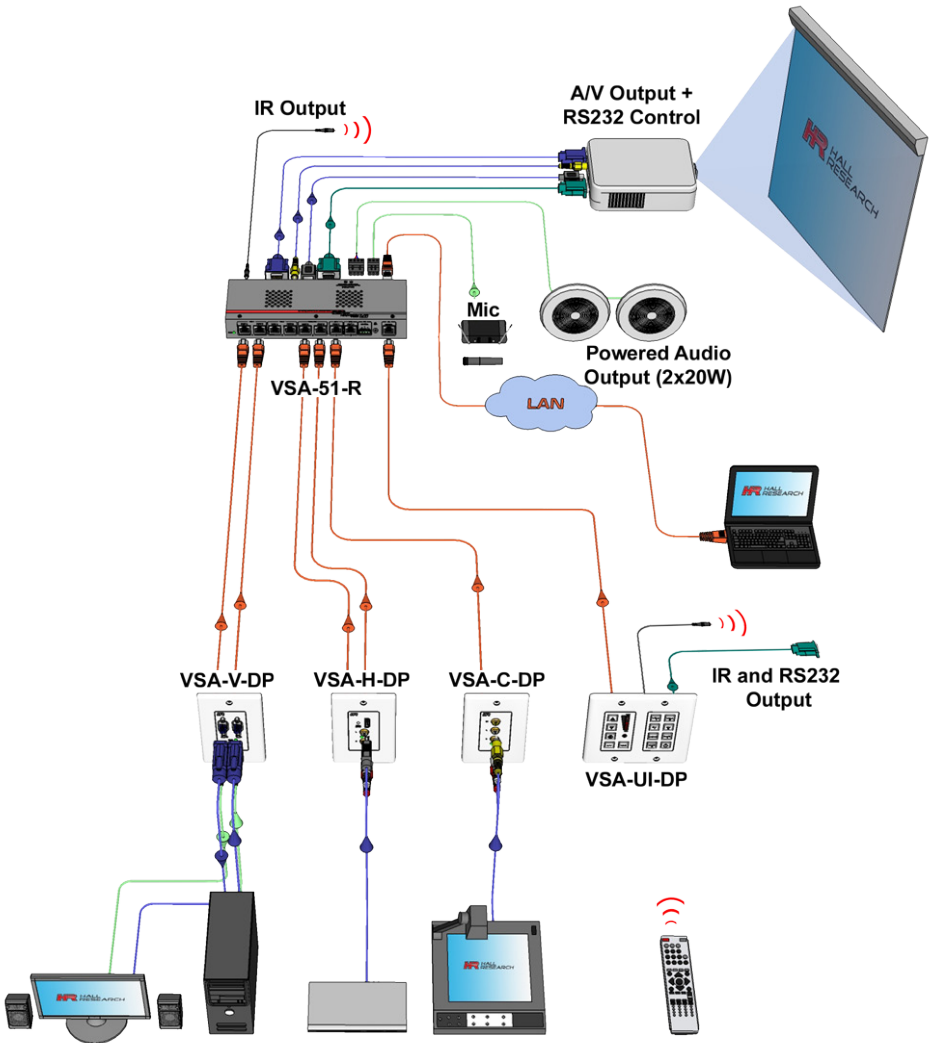However, before you can do any of that you need to assign IP addresses to each box.

IP Address   *As shipped, the appliance employs DHCP. This means that it will be assigned an IP address by your Network. This makes the unit visible on your LAN. Hall Research provides a software tool used to find the VSA-51's and their assigned IP addresses. Once you have the IP address, you can use a browser to gain access to the web pages in the unit where you can change to a static IP address if desired. Please see the full User's Manual for details.*

Each box has a unique MAC address. If you will be configuring each box on the bench and assigning then IP addresses one at a time, then knowing the MAC address in not important. However if installed prior to being assigned a static IP address, the only easy way to identify each box is via its MAC address. Each unit has a label with the MAC address. Please make a note of these and the room it will be installed in **prior to installation**, if you do not plan to pre-configure all units prior to installation.

*This **Quick Start Guide** is not meant to replace the full **User's Manual**. Please refer to the complete VSA-51 User's Manual, available at: www.hallresearch.com for further information on hardware and IP Manager.*

Hardware Installation

A typical setup is shown below. The most important piece of the setup is the VSA-51-R. It would normally be located close to the Projector and typically placed in an enclosure or vault. The entire system uses only one power supply which is connected to the VSA-51-R (power supply is not shown in the diagram).

IR Output

A/V Output + RS232 Control

Mic

Powered Audio Output (2x20W)

VSA-51-R

LAN

VSA-V-DP   VSA-H-DP   VSA-C-DP

IR and RS232 Output

VSA-UI-DP

A V   i n p u t s

All AV inputs are truly plug and play. They connect to the VSA-51-R via UTP (Cat5e/6) cable. The Receiver automatically compensates for the length of the cable so no user adjustment is needed. The VSA-51 allows for up to 5 input sources: *2x* VGA, *2x* Composite, *1x* HDMI/DVI. The VGA and HDMI input plates require two UTP cables while the composite wall-plates need only one.

Make sure that you connect the cables to the correct ports.
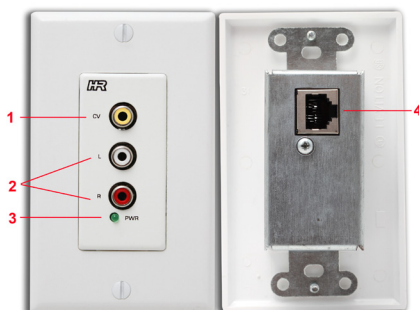
VSA-C-DP Front and Rear *(Max distance to Receiver 1,000 ft)*

1. **Composite Video input**.
2. **Left and Right audio input** on RCA connectors.
3. **Power LED** indicates power received from VSA-51-R.
4. **RJ45 Port A** connects to Port A of CV1 or CV2 on the VSA-51-R via Cat5 cable.
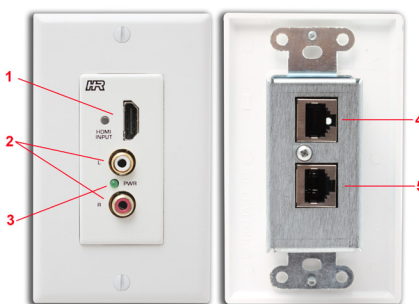
VSA-H-DP Front and Rear*(Max distance to Receiver 150~200 ft)*

1. **HDMI input** with threaded insert for compatible locking HDMI cables.
2. **Left and Right audio input** on RCA connectors.
3. **Power LED** indicates power received from VSA-51-R.
4. **RJ45 Port A** connects to Port A of HDMI/DVI on the VSA-51-R via Cat5 cable.
5. **RJ45 Port B** connects to Port B of HDMI/DVI on the VSA-51-R via Cat5 cable.
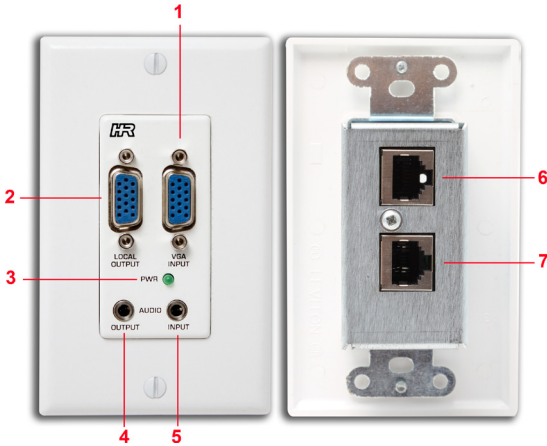
VSA-V-DP Front and Rear*(Max distance to Receiver 750 ft)*

1. **VGA input** accepts both RGBHV and YPbPr signals on an HD15 connector.
2. **Local VGA Output** loops the VGA input signal out for use at a local display.
3. **Power LED** indicates power received from VSA-51-R.
4. **Audio Output** loops the Audio input out for use at a local audio monitor.
5. **Audio input** accepts stereo audio on a 3.5mm jack.
6. **RJ45 Port A** connects to Port A of VGA1 or 2 on the VSA-51-R via Cat5 cable.
7. **RJ45 Port B** connects to Port B of VGA1 or 2 on the VSA-51-R via Cat5 cable.

Receiver Connections
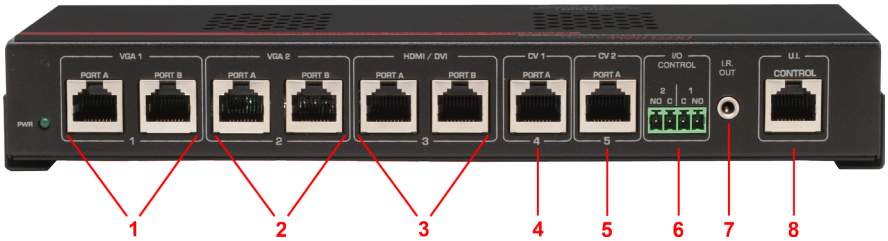
VSA-51-R Front

1. **VGA input #1**. Connect to a VSA-V-DP via 2x UTP cables.
2. **VGA input #2**. Connect to a VSA-V-DP via 2x UTP cables.
3. **HDMI input**. Connect to a VSA-H-DP via 2x UTP cables.
4. **Composite input #1**. Connect to a VSA-C-DP via 1x UTP cable.
5. **Composite input #2**. Connect to a VSA-C-DP via 1x UTP cable.
6. **Discrete outputs** via Phoenix connector.
7. **IR output** via 3.5mm jack *(use with Optional IR Emitter Cable Model CIR-EMT)*.
8. **User Interface input**. Connect to VSA-UI-DP via 1x UTP cable.

VSA-51-R Rear

9. **Power input**. Accepts 18-24VDC.
10. **IP/LAN** for network based configuration and control.
11. **Preamp Audio output**. Line level via 3.5mm jack.
12. **Page Sensor input** for optional page sensor kit *(VSA-PGSNS See User Manual Section 2.8)*.
13. **Microphone input** via Phoenix connector- differential input to eliminate noise.
14. **Speaker terminals** for use with 8 or 16 Ohm speakers.
15. **RS232 Serial output**. Connects to the primary display.
16. **Video Outputs** to display via HDMI, composite video or VGA/YPbPr.


NOTE *The Audio Amp can drive loads equal to or greater than 8 Ω. Using lower loads may cause over-current shutdown of the Audio amp, which would require an All-Mute procedure to reset the amp. If you will be using a single speaker connection for each side use 8 or 16 Ω speakers. The amp can drive around 45 watts total into 8 Ω loads, which can be very loud for a small room. Using 16 Ω speakers will cut the power delivered by half.*

To drive 2 speakers from each side, you need to connect two 16 Ω speakers in parallel or two 8 Ω or 4Ω speakers in series as shown below. Never connect two 8 Ω speakers in Parallel!
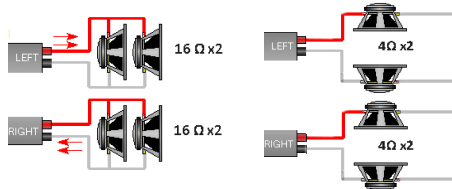
VSA-UI-DP User Interface Keypad

The VSA-UI-DP is the optional wall mount keypad used to control the system. Of course the system can be controlled via the state-of-the-art web control using Smart phones, tablets, or PCs, however, the UI gives the ability to control the system directly, adds IR capabilities (extends IR as well as issuing programmed IR commands), and adds a 2nd RS-232 port.

Hard Buttons
Fixed Functions

Soft Buttons
User Definable
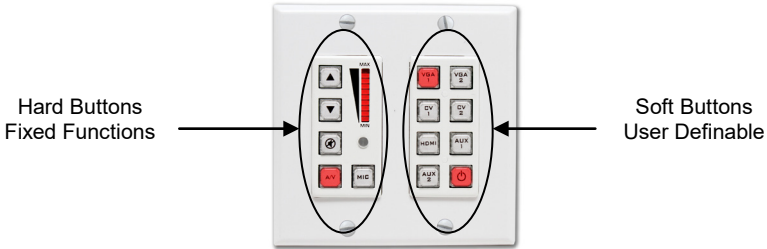
The UI buttons are configured as above when shipped, however 8 of the buttons are user configurable. So if you don't have all 5 inputs, you can assign the extra inputs (and the 2 Auxiliary buttons) for other purposes, such as screen up/down control, projector lift control, or serial or IR control of other equipment such as DVD players.

Recovering from Audio Amp Shutdown

In rare instances it is possible for the audio amp in the Receiver to shut down due to an instantaneous over current condition. The amp requires 8 Ω or higher load. If the load has lower resistance and if you have a large impulse on the audio input exceeding several volts, the audio amp will shut-down to protect against damage.

Double-Mute   *If there is no amplified audio output, the audio amp may be shut-down due to over current. To recover from this condition, mute the microphone and the A/V source simultaneously. This will reset the amp. Upon un-muting either source, the Amp should be working*

Accessories

Several accessories are available with the VSA-51 system. These include:

VSA-MNT
The VSA-MNT is a ceiling projector drop mount with locking cage. The projector mount is universally compatible with most projectors. The VSA-51-R mounts inside the cage keeping connections securely fastened and all electronics below the ceiling. The projector inversely mounts to the bottom of the cage and can be adjusted on 3-axis using the adjustment knobs.

VSA-UI-8
The VSA-UI-8 expands the UI panel capability by adding 8 additional buttons. Each button is programmable via the Web Manager software. The VSA-UI-8 connects directly to the VSA-UI-DP via a short cable.

VSA-PGSNS
The VSA-PGSNS is an optional kit to enable the Priority Page Sense Mute feature. It uses a non-invasive sensor that monitors existing PA lines without having to splice into the wires. The sensor detects when the PA system is activated and sends a signal to the VSA-51 to mute the audio. Once the PA line goes quiet the VSA-51 resumes audio.

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HIGH-DEFINITION MULTIMEDIA INTERFACE