SmartAudio: SSA-4004 6 x 4 Audio Matrix

Description

The SSA-4004 provides 6 x 4 distributed audio and control, all in one compact 1U rack-mountable fan-less design. It is the ideal multi-room audio solution effortlessly controlled by an iPhone®, iPod touch®, iPad®, or iPad mini® running Savant's TrueControl II App.

Eight RCA jack connections are available for passing analog line-level audio to an external amplifier of your choice (see AMP-8040 / AMP-8125).

The SSA-4004 delivers a complete Savant SmartSystem™ when paired with an external host.

6 x 4 Audio Matrix Switcher
The SSA-4004 provides four analog and two digital inputs to manage all your stereo audio sources.

Advanced DSP
The SSA-4004 includes four zones of high-performance pre-amplification with digital signal switching, including independent control of volume, balance, bass, and treble along with a 7-band equalizer (EQ).

Common Applications
The SSA-4004 distributes audiophile-grade music to every room playing the same song (party mode) or different songs, simultaneously, and independently.

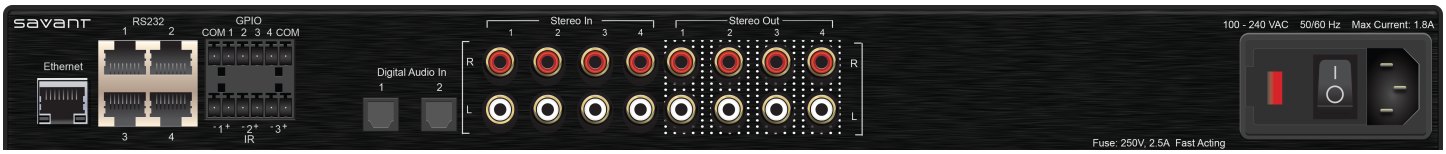
When paired with an optional Savant Media Server, the SSA-4004 will support local music libraries and the most popular streaming services including Pandora, Spotify, Rhapsody, SiriusXM, and TuneIn radio.

Scan this QR code for additional product information.

Feature Summary

- Advanced 4-Zone distributed audio solution for residential and commercial markets
- Provides four pre-amplified stereo zone outputs
- Provides 4 analog and 2 digital inputs
- Independent control of volume, balance, bass, and treble along with 7-band Equalizer
- Integrated Controller with 11 control ports including serial, IR, and GPIO
- Complete control of all your audio zones when paired with Savant user interface
- 1U rack-mountable fanless metal enclosure
- Low power consumption, cool-running operation
- Use RacePoint Blueprint™ design tool to configure the SSA-4004

Front View



Rear View

Included Items

Description	Quantity
SmartAudio SSA-4004-00	1
1U Rack Mounting Brackets (071-0603-xx)	2
Phillips Screws for Brackets (M3 x 8MM Flat) (039-0017-xx)	4
Power cord C13, (6 feet) (N. America) (064-0079-xx) or appropriate international power cord	1
6-Pin Screw Down Plug in Connector for IR and GPIO Ports (028-9352-xx)	2
Quick Reference Guide	1

Required System Components

Description	Model Number
Savant Host	Smart or Pro Host depending on installation
Ethernet Network	Enterprise-grade network deployment

Optional Accessories

Description	Model Number
Savant Pro or Smart Host	HST-XXXX or SVR-XXXX
8 Channel Power Amplifier	AMP-8040 or AMP-8125
SmartMedia Server Single-source	SMS-001A
SmartMedia Server 2 Source	SMS-002A
SmartMedia Server 5 Source	SMS-005A
Savant Wi-Fi® Remote	SUR-0500
Infrared (IR) Emitters (10 pack)	IRB-1010
Serial Adapter Kit	SAK-1000
RJ-45 Serial Adapters Flow Null (10-pack)	CON-10FN
RJ-45 Serial Adapters Flow No Null (10-pack)	CON-10FNN
DB9 Mini Gender Changer (10 pack)	CON-10GEN
RJ-45 Serial Adapters No Flow Null (10-pack)	CON-10NFN
RJ-45 Serial Adapters No Flow No Null (10-pack)	CON-10NFNN
Mini Gender Changer (10-pack)	CON-10GEN

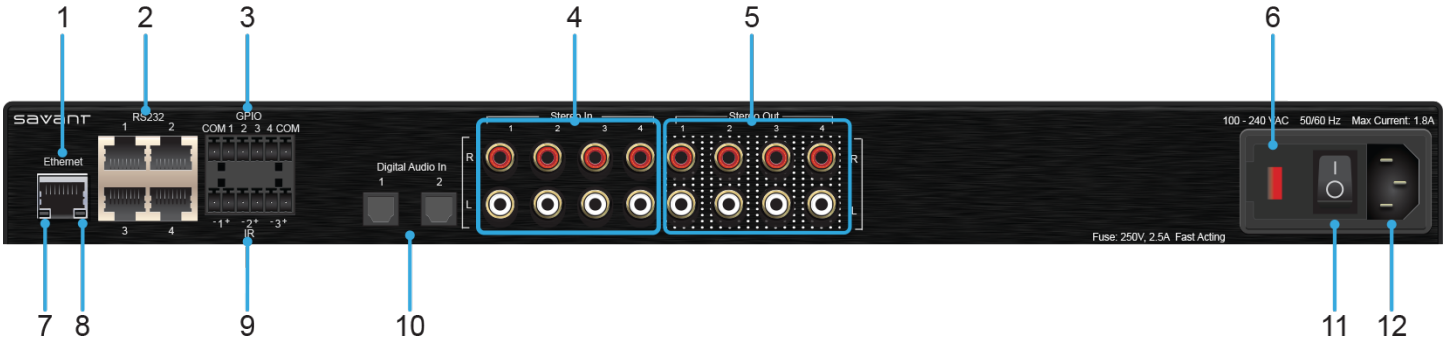
Specifications

Environmental	
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% Relative Humidity (non-condensing)
Cooling	3 cubic feet per minute (CFM) recommended.
Maximum BTUs	61 BTUs per hour
Dimensions and Weight	
Height	1.71 in (4.34 cm)
Width	17.30 in (43.94 cm)
Depth	8.69 in/22.08 cm
Weight	Net: 5.25 lb (2.38 kg) Shipping: 7.8 lb (3.54 kg)
Rack Space	1U
Power	
Input Power	100-240V AC, 50/60 Hz, 1.8 Amp
Nominal Power	12 watt
Maximum Power	18 watt
Stereo Preamp Parameters	
Total Harmonic Distortion + Noise (THD+N)	<0.005%, 20Hz - 20KHz, -100dB@1kHz
Dynamic Range	115dB
Signal-to-Noise Ratio (SNR)	>105dB
Frequency Response	20Hz - 20kHz +0dB +/-0.1dB
Output Impedance	50 ohms
Crosstalk	<-80dB
Supported Sample Rates	44.1 kHz/48 kHz/96 kHz/192 kHz at 16-bit or 24-bit resolution
Supported Audio Output Formats	
Audio Source Signal Type	Stereo PCM
Audio Output Connector Type	RCA Stereo Left and Right
Enclosure	
Metal enclosure, black	
Compliance	
Safety and Emissions	FCC Part 15 | S Mark | CE Mark | C-Tick
RoHS	Compliant
Minimum Supported Release	
Savant OS	da Vinci 6.0.1

Front Panel

Number	Item	Description
1	Reset button (hole)	Resets Static IP address. Insert pin into hole for 5 seconds to reset.
2	Power Bi-color LED	**Green** indicates the system has adequate power and is operating normally. **Red** indicates the system is in standby mode. In standby most of the Controller circuitry is powered down. **Off** indicates that the system is getting no power.
3	Status Bi-color LED	**Green** indicates the Host has established communications with the embedded system. **Green flashing** indicates the embedded system is ready (running with DHCP IP address), but the Host has not established communications with the embedded system. **Off** indicates the embedded processor is resetting or is powered up; and is booting the embedded firmware. **Red** indicates the Host has determined the firmware needs to be updated, but a problem occurred during the process that will initiate a reset. **Red flashing** indicates the embedded firmware is running, but has not received a DHCP IP Address. **Amber** indicates the Host is currently updating the embedded firmware. **Amber flashing** indicates the embedded system has a valid link-local IP Address and is waiting to connect to the Host. **Hardware Failure** If the Controller has a hardware failure, the Status LED indication will be interrupted every 3 seconds with a solid red indication. For example, if the LED is flashing green when a hardware failure occurs, the LED will flash green, solid red, etc in 3 second intervals.
4	RS-232 LED	**Green** indicates RS-232 serial port data activity. **Off** indicates no RS-232 serial port activity.
5	GPIO LED	**Green** indicates GPIO port signal activity. **Off** indicates no GPIO port activity.
6	On/Off button (hole)	Insert pin into hole for about 5 seconds to place into standby mode. The Power LED turns red. Insert the pin again for about 1 second to take system out of standby mode. The **I/O** power switch on the back of Controller must be On (**I**) to enable this function. To turn the power off for the entire system, use the switch on the rear panel.
7	HDMI LED	HDMI not included with the SSA-4004 - This LED is not functional.
8	IR LED	**Green** indicates IR port signal activity. **Off** indicates no IR port activity.

Rear Panel



Number	Item	Description
1	Ethernet	RJ-45 10/100 Base-T, auto-negotiating port with Link/Activity and Speed LEDs.
2	RS232/422/485 (1-4)	RJ-45 ports used to transmit and receive serial binary data transmission.
3	GPIO (1-4)	General Purpose Input and Output ports. Uses 6-pin screw-down connector. The digital GPIO ports are binary I/O ports used for contact closure, trigger (output), or detect (input). The COM pin is used for common ground.
	GPIO Input	When configured as an input, the port detects a voltage present. GPIO inputs can safely detect the presence of a voltage 0-30V DC with a threshold of approximately 2.4V DC.
	GPIO Output	When configured as an output, a GPIO port outputs a voltage below 12V DC. The maximum current per port is 150 milliamps. The combined maximum current for all GPIO outputs is 550 milliamps. An overcurrent condition shuts down the output if that number is exceeded.
4	Stereo In	4 Analog Audio Inputs (4 Right and 4 Left)
5	Stereo Out	4 Stereo line-level audio outputs (4 Right and 4 Left RCA jacks)
6	Fuse	100-240V, 2.5A—Fast acting fuse. This is field-replaceable.
7	Link/Activity LED	**Green** indicates an Ethernet link has been established. **Green flashing** indicates Ethernet activity. **Off** indicates an Ethernet link has not been established.
8	Ethernet Speed LED	**Green** indicates an Ethernet speed of 100 Mb.
9	IR (1-3)	Infrared transmitter ports. Uses 6-pin screw down connector. (3.81 mm each).
10	Digital Audio In	Receives stereo PCM signal from TosLink digital audio connection.
11	I/O	On/Off switch - I is used to power the controller to the On state. O is used to power the controller to the Off state.
12	Input Power	100-240V AC, 50/60 Hz, 1.8 Amp

Supported Devices

Port Type	Port Qty	Typical Uses
101101100 RS-232/422/485 Serial	4	Lighting, Displays, Door Entry Systems, and Heating Ventilation Air Conditioning (HVAC)
GPIO General Purpose Input/Output	4	Equipment Power Sensing and Voltage Control Applications
IR Infrared	3	Blu-ray Players, Displays, and Set Top Boxes (Cable and Satellite)

Network Requirements

Savant requires the use of business class/commercial grade network equipment throughout the network to ensure the reliability of communication between devices. These higher quality components also allow for more accurate troubleshooting when needed.

Connect all Savant devices to the same local area network (LAN), virtual local area network (VLAN), or subnet as the host. Savant recommends not implementing any type of traffic or packet shaping in your network topology for the Savant devices as this may interfere with performance.

Network Configuration

To ensure that the IP address of the SSA-4004 will not change due to a power outage, a static IP address or DHCP reservation should be configured. Savant recommends using DHCP reservation within the router. By using this method, static IPs for all devices can be managed from a single UI avoiding the need to access devices individually.

DHCP Reservation

Setting DHCP reservation varies from router to router. Refer to the documentation for the router on how to configure DHCP reservation.

Network Changes

The SSA-4004 requires rebooting after connecting to a new network, changing routers, or if the IP address range is changed in the current router. If the SSA-4004 is not rebooted after making network changes, the controller will not sense the changes made to the network or IP settings. The Status LED (Front Panel item 3) will start to flash and reports will be logged within System Monitor.

To reboot the controller preform one of the following steps.

- **Reset IP via Front Panel Button**
  See Front Panel item 1.
- **Cycle Power**
  Disconnect the controller from the AC power source for 15 seconds, and then reconnect.
- **Hot Plug the Ethernet (LAN) Connection**
  Disconnect the Ethernet (LAN) connection from the controller for 15 seconds, and then reconnect.

Wiring Requirements

RJ-45 to DB9 Adapters

Savant uses RJ-45 connectors for RS-232/422/485, other manufacturers control systems may use the standard DB9. To make connection easy, Savant offers RJ-45 to DB9 adapters in a variety of configurations that can be used to connect to SmartAudio for RS-232/422/485 control. Be sure and choose the adapter that provides a proper connection to the control systems RS-232/422/485 port. Refer to the manufacturers support for the control systems configuration.

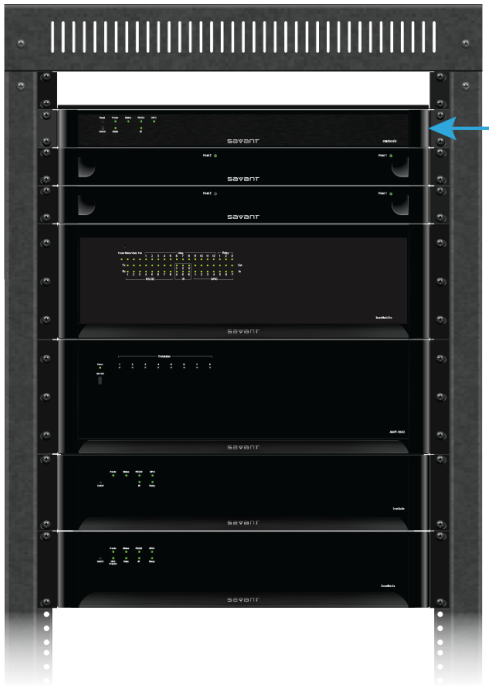
For more information on Savant RJ-45 to DB9 adapters, see RS-232 Conversion to DB9 and RS-422/485 Pinout application note located on the Savant Portal.

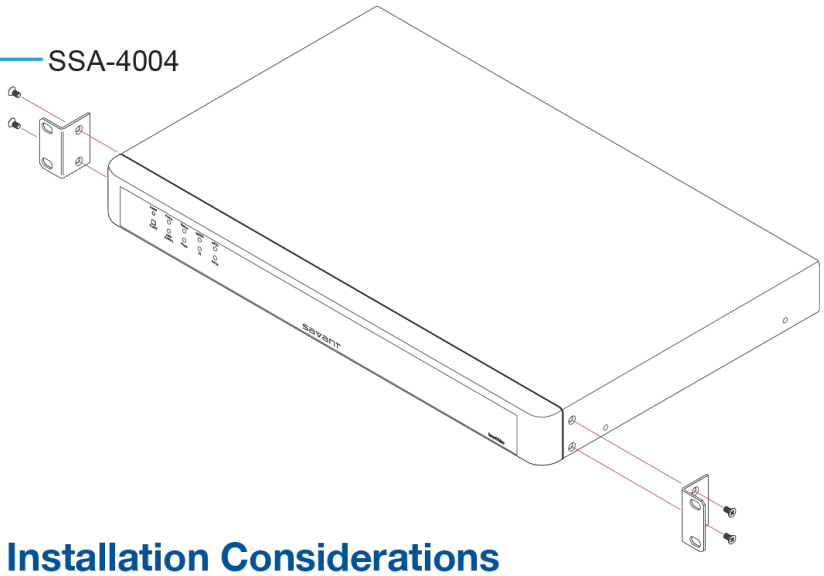
⚠ IMPORTANT! If you are using RJ-45 to DB9 adapters not supplied by Savant:

- Ensure that any wires required for communication/control are terminated within the adapter.
- Ensure that all wires NOT required for communication/control are NOT terminated in the connecter.
- Ensure that the unused wires in the connector are cut to prevent them shorting out, as they are still terminated in the RJ-45 connector on the controller side

Rack Mounting

The SSA-4004 can be mounted in a 1U rack style enclosure and is compatible with all standard 19-inch National Electrical Manufacturers Association (NEMA) rack-mounts.





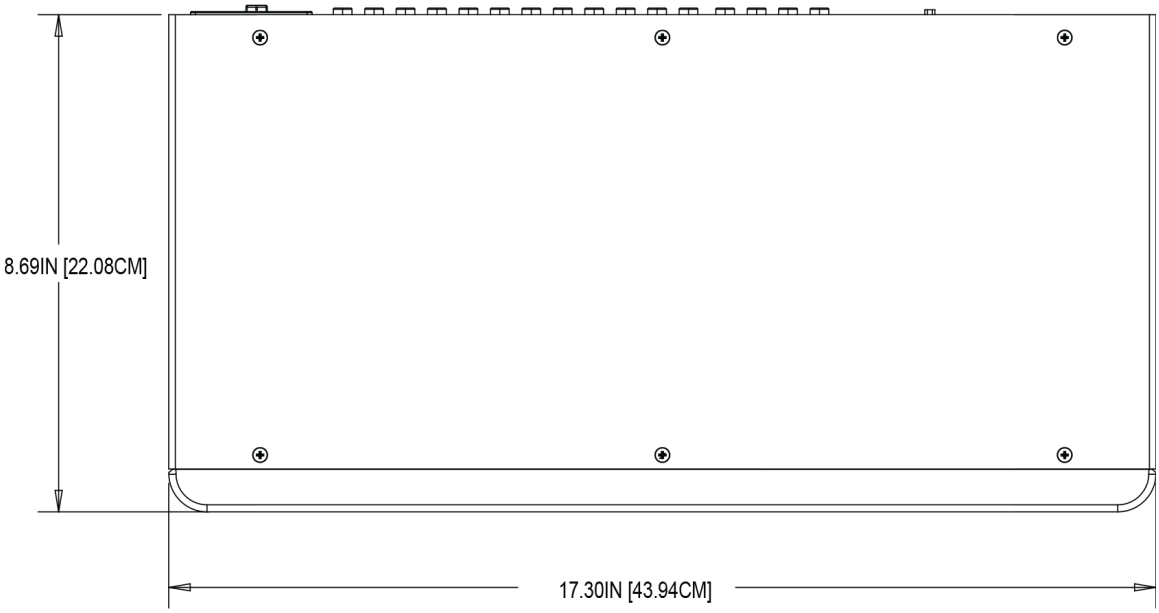
Installation Considerations

Savant recommends using cable supports on the rear of the chassis for audio/video control cabling.

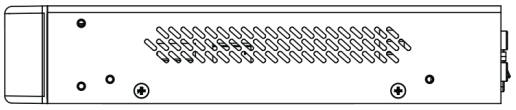
Dimensions

FRONT

1.71IN [4.34CM]



TOP



SIDE