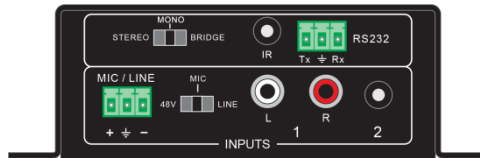Installation Guide

20W Power Amplifier

SY-2A-20W

The SY-2A-20W is a 20W stereo Power Amplifier that may be used with other SY HD-BaseT products, or with the SY-HD-3.5AD HDMI Audio De-embedder, or even as standalone amplifier. This amplifier also features a voiceover capability that will allow its use in presentation applications.

Features

- Two selectable line level inputs
- Talk-over microphone input
- Talk-over microphone has three operating modes: 48V, MIC level, or LINE level
- Three operational modes: Stereo, Mono or Bridge
- Stereo line level output
- Auto muting when no input signal present
- IR control to adjust the amplifier remotely (Optional)
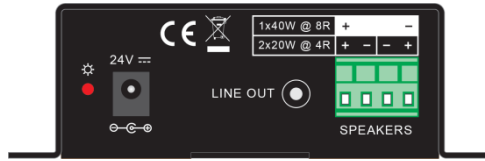- RS232 control for computer control

Connectors and Controls

Front

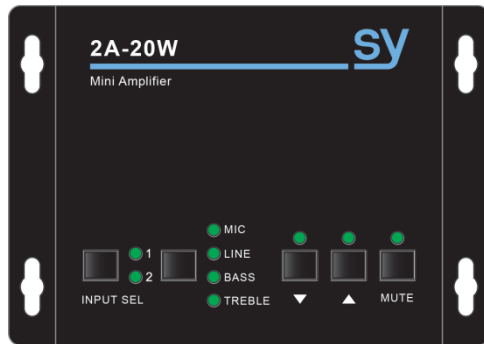| Name	Description
Amplifier Configuration Switch	Sets how the power amplifier is configured: **Stereo**, **Mono** or **Bridge**
IR	Remote IR detector Input (3.5 mm jack) , used with the IR key pad
RS232 (3-way terminal)	RS232 Tx and Rx connections
MIC / LINE (3-way terminal)	Input for the talk-over microphone, the operating mode of this input is set by the switch next to it. This connector can accept balanced signals or single-ended signals
MIC / LINE mode switch	Sets the operating mode of the MIC / LINE input connector: MIC level with 48V phantom power MIC level (without phantom power) LINE level (without phantom power)
Line Input 1	Two phono (RCA) connectors for Left and Right line level inputs
Line Input 2	3.5 mm stereo line level input

SY-2A-20W

Rear

Name	Description
24V DC	24V DC Power input – only use the power supply provided
Line Out	Stereo 3.5mm line out signal
Speakers	Connect the speakers in accordance with the amplifier configuration switch

Top
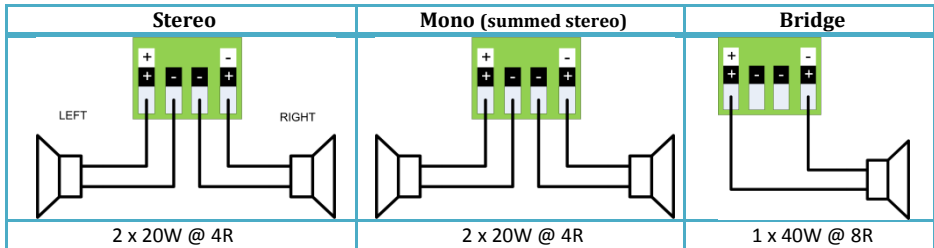
Name	Description
Input Select	Amplifier input 1 or 2 selection
Adjustment Select	Selects the parameter adjustment for: MIC, LINE, BASS, TREBLE
Decrease Button ▼	Press to decrease the selected parameter value
Increase Button ▲	Press to increase the selected parameter value
Mute Button	Mute the Amplifier output

SY-2A-20W

Using the SY-2A-20W Power Amplifier

Connecting the Outputs and Inputs

Firstly, decide on the output configuration you require as this affects how the speakers are wired to the SY-2A-20W:

Stereo	Mono (summed stereo)	Bridge
2 x 20W @ 4R	2 x 20W @ 4R	1 x 40W @ 8R

Second, decide on the microphone connector mode. **Do not switch to 48V phantom power mode while the SY-2A-20W unit is powered up** as this may damage the power amplifier MIC / LINE input, the microphone, or both.

48V phantom power mode should only be used with microphones that require it, such as some condenser microphones.

Where phantom power is not required and the source signal level is not known, always begin with the switch set to LINE and then try the MIC setting if no sound can be heard even after adjusting the controls on the SY-2A-20W unit.

Once the two three-position switches have been set, the remaining audio sources should be connected and the amplifier can be powered up.

Using the Top Panel Controls

The INPUT SEL switch toggles between Line input 1 and line input 2. In either case, the MIC / LINE input will always be present at the output.

The next switch controls the volume of either the MIC / LINE input or the selected LINE 1 or LINE 2 input. This switch also provides control for the bass and treble settings for the LINE OUT and the speaker output. Use the up (▲) and down (▼) buttons to adjust the value of the selected setting. The LED above the button will flash for each press of the up or down button. If the LED above the button remains on then the maximum or minimum value has been reached.

Setting	Up / Down Buttons Control:
MIC	Volume of the MIC / LINE input
LINE	Volume of the selected LINE input
BASS	Bass response of the output
TREBLE	Treble response of the output

The MUTE button turns off all audio output while its LED is lit.

SY-2A-20W

Cascading SY-2A-20W Amplifiers

The SY-2A-20W can be cascaded to provide more speaker outputs to cover a larger space by connecting the LINE OUT of the preceding SY-2A-20W to either of the two LINE inputs of the next SY2A-20W amplifier.

Using IR Remote Controls

Connect the IR sensor to the IR socket and place the detector in sight of the remote control keypad. The keypad controls the same amplifier functions as the top panel buttons:

Button	Function
Input Select 1	Selects line input 1
Input Select 2	Selects line input 2
Mic Mute	Mutes the MIC / LINE input
Line Mute	Mutes the selected line input signal
Speaker	Unmutes both the MIC / LINE and the selected line input.
MIC+ & MIC-	Increase or decrease the MMIC / LINE input volume
LINE+ & LINE-	Increase or decrease the selected line input volume
BASS+ & BASS-	Increase or decrease the bass response
TREBLE+ & TREBLE-	Increase or decrease the treble response

RS232 Control Commands

The following RS232 commands provide control of the SY-HD-S41 from a PC, laptop or programmable control panel. The RS232 settings are: 9600 baud, 8 bits, no parity, and 1 stop bit.

All response values given in the following table are examples only. The actual response values will reflect the changes that the transmitted RS232 command has just made.

Numerical values for the direct setting commands are in decimal only.

Action	Command	Response
Select input 1	1A1.	A: 1 -> 1
Select input 2	2A1.	A: 2 -> 1
Mute MIC / LINE input and Line Out	0A0.	Mute Audio
Mute MIC / LINE input only	1A0.	Mute MIC
Mute Line Out only	2A0.	Mute LIN
Check the status of the amplifier settings	600%	A: 1 -> 1 Volume : 30 Bass: 00 Treble: 00
Raise MIC / LINE volume	601%	Volume of MIC: 51
Lower MIC / LINE volume	602%	Volume of MIC: 50
Raise LINE volume	603%	Volume of LINE: 51
Lower LINE volume	604%	Volume of LINE: 50

SY-2A-20W

Action	Command	Response
Raise BASS level	`605%`	`Bass of LINE: 04`
Lower BASS level	`606%`	`Bass of LINE: 03`
Raise TREBLE level	`607%`	`Treble of LINE: 04`
Lower TREBLE level	`608%`	`Treble of LINE: 03`
Return to default values	`609%`	`Init OK`
Direct setting of MIC / LINE volume	`5xx%` `xx is from 00 to 60`	`Volume of MIC: 50`
Direct setting of LINE volume	`7xx%` `xx is from 00 to 60`	`Volume of LINE: 50`

Direct setting of BASS level	`8xx%`
	`xx` is from `00` to `08`
	(`804%` gives flat response)
		`Bass of LINE: 04`

Direct setting of TREBLE level	`9xx%`
	`xx` is from `00` to `08`
	(`904%` gives flat response)
		`Treble of LINE: 04`

Safety Instructions

To ensure reliable operation of this product as well as protecting the safety of any person using or handling these devices while powered, please observe the following instructions.

1. Use the power supplies provided. If an alternate supply is required, check the voltage, polarity and that it has sufficient power to supply the device it is connected to.

2. Do not operate this product outside the specified temperature and humidity range given in the above specifications.

3. Ensure there is adequate ventilation to allow this product to operate efficiently.

4. Repair of the equipment should only be carried out by qualified professionals as these products contain sensitive devices that may be damaged by any mistreatment.

5. Ensure that this product operates in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with these products.
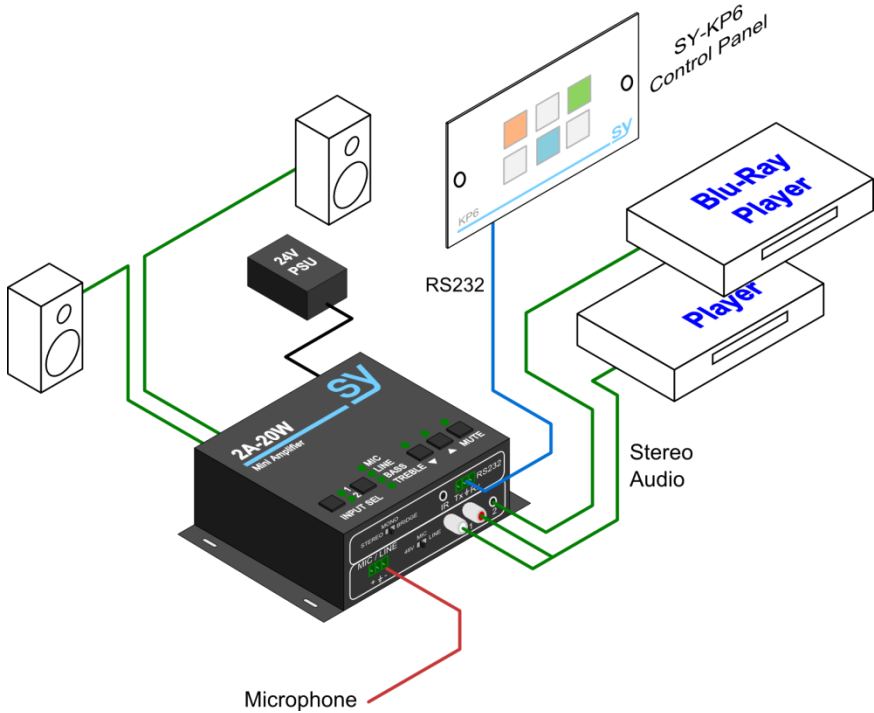
SY-2A-20W

Figure 1 – SY-2A-20W Connection Diagram

SY-2A-20W

Specifications

General

Power Supply	5V DC
Power Consumption	1.4 W max
RS232	9600, 8 data bits, 1 stop bit, no parity – No handshaking

Audio

Frequency Response	20 Hz to 20 kHz
Channel Separation	> 75 dB
Input Impedance (LINE 1 & 2)	10 k ohms
Input Impedance (MIC / LINE)	10 k ohms
Speaker Output	2 x 20 W into 4 ohms

Environmental

Operating Temperature	0 - 40 °C non condensing

Physical

Dimensions (W x H x D)	99 x 39 x 86 mm (not including connectors or flanges)
Weight	270 g

After Sales Service

1. Should you experience any problems while using this product, firstly refer to the Troubleshooting section in this manual before contacting SY Technical Support.

2. When calling SY Technical Support, the following information should be provided:
   - Product name and model number
   - Product serial number
   - Details of the fault and any conditions under which the fault occurs.

3. This product has a two year standard warranty, beginning from the date of purchase as stated on the sales invoice. Online registration of this product is required to activate the full three year extended warranty. For full details please refer to our Terms and Conditions.

4. SY Product warranty is automatically void under any of the following conditions:
   - The product is already outside of its warranty period
   - Damage to the product due to incorrect usage or storage
   - Damage caused by unauthorised repairs
   - Damage caused by mistreatment of the product

5. Please direct any questions or problems you may have to your local dealer before contacting SY Electronics.