32Classic MS Mix Strip

User Guide

www.harrisonaudio.com

Nashville - Music City USA

Visit Harrison Audio LLC at:
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Harrison Audio LLC

As research and development is a continual process, Harrison Audio LLC reserves the right to change the features and specifications described herein without notice or obligation.

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PLEASE READ ALL INSTRUCTIONS, PAY SPECIAL HEED TO SAFETY WARNINGS.

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Overview

Introduction

The 32Classic MS is a 19” 1 RU analog channel strip that include the 32Classic MS mic-preamp with transformer, a front panel mic/instrument (HiZ) input, balanced insert point, Harrison’s classic 32C 4 band EQ with high pass and low pass filters and a channel direct output level control “Fader” section with 0dB fixed level switch.

The unit also includes a mix bus routing section which allows the channel signal to feed a stereo Mix bus with panning. The balanced Mix bus can be cascaded across other 32Channel MS units via rear panel “summing” bus connectors The Mix bus can then be connected to one of the cascaded 32Channel MS units utilizing an included jumper cable whereby the Mix Master section on that channel provides the master summing and output level controls.

This unique feature allows the customer to build an analog mixer one 32Classic MS (Mix Strip) at a time in a 19” rack.

Input Section

Each 32Classic MS includes the exact transformer mic preamp found in the Harrison 32Classic large format analog console. The preamp includes 48v phantom power, a fixed -20dB pad and polarity reverse.

The microphone signal can be injected into the 32Classic MS unit via the rear XLR connector or the front panel XLR (combo jack) connector when the (FRONT) MIC switch is selected. An instrument signal can be injected into the preamp via the front panel ¼” connector (combo jack) when the (FRONT) HiZ switch is selected.

Note: if both the MIC and HiZ switches are selected the HiZ (instrument) input will be the active preamp source.

A Line input to the 32Classic MS is also included via a rear XLR. The Line input has a switch for activation and a potentiometer providing +/- 6dB input level trim.

The Input Section also includes and Insert Point with an activation switch (INS) on the front panel and rear XLR connectors. The insert point is directly after the input section and before the EQ section in the signal flow.

Lastly the Input Section provides a bi-color signal (SIG) meter LED.

32Classic MS EQ Section

Each 32Classic MS unit includes a four-band parametric EQ with High Pass and Low Pass filters. This is the exact same EQ design found in the Harrison 32Classic large format analog console and is based on the legendary original Harrison 32 Series console from 1975.

The four EQ bands range from LO (40-600Hz), MID (200-3.1kHz), MID (400-6kHz) and HI (900-13kHz) with +-10dB of boost and cut. Each band features a proportional Q design whereby the Q changes as the boost and cut is adjusted. The LO and HI bands are Shelf bands by default and can be switched to bell mode via the bell switch provided.

The EQ section also includes a pair of the famous Harrison High Pass (HP) and Low Pass (LP) filters. The filters have extremely wide ranges HP (25-3.15kHz) and LP (160-20kHz).

The EQ section provides separate in / out switches for the filters (FLT) and the EQ (EQ).

Routing Section

The 32Classic MS provides a unique Routing Section that includes output level control, with routing and panning to a stereo mix bus. When a 32Classic MS unit is used on its own, only the FADER potentiometer and 0dB output level controls are utilized. When multiple 32Classic MS (Mix Strips) are connected the panning, routing and mix output controls can be used.

Features

- 32Classic Mic Preamp with Jensen transformer.
- Separate Line input with level trim.
- 48v phantom power.
- -20dB Pad.
- Polarity Reverse.
- Input Signal Meter LED.
- Front Panel Mic (XLR).
- Front panel instrument ¼” jack (HiZ).
- Balanced insert point (INS).
- Harrison 32Classic 4 band parametric EQ w/proportional Q.
- Harrison legendary High Pass and Low Pass filters.
- Output level control (FADER) with 0dB switch.
- Stereo mix bus routing section w/ pan and bus assign switch.
- Master stereo bus level control and LR meters (used when connected to other units).
- 19” 1RU design.
- AC power pass through for connected units.

Installation

Unpacking

The unit has been carefully packed and inside the box you will find the following items.

- 32Classic MS
- IEC power cord for your country
- Safety Sheet
- 1 Bus Link Cable and 1 Sum Link Cable

It is always a good idea to save the original box and packing just on case you ever need to send the unit in for service.

Rack Mounting, Heat and Ventilation

The 32Classic MS is a 1U, 19” rackmount piece of equipment designed to sit in the racking of a producer’s desk or similar. It is recommended that ventilation space is left above and below the unit so any heat generated by the 32Classic MS or other equipment mounted above or below the 32Classic MS can naturally disperse. Always allow the unit to cool down before handling.

Safety Notices

Please read the safety notice information included on the Safety Sheet inside the box before using the 32Classic MS. This information is also available in Appendices section of this User Guide.

Hardware Overview

This section provides an overview of the 32Classic MS hardware. The tutorial section covers each control in more detail.

Front and Rear Panel

1 - Front panel combo XLR / TRS jack.

2 - Mic or HiZ (instrument) input selections via combo connector.

3 - Mic input gain control with -20dB pad and 48v phantom power.

4 - Line input select switch with trim control.

5 - Polarity reverse switch, insert point switch, and bi-color input meter (SIG).

6 - High pass (HP) and low pass (LP) filters with in/out (FLT) switch.

7 - Four band parametric EQ with proportional Q on all bands, HIGH and LOW bell mode switches, and EQ in/out switch.

8 - Output FADER knob, 0dB selection, MIX bus routing, PAN knob w / pan in switch, MIX OUT knob for use with additional units.

9 - Power switch located conveniently on the front panel.

10 - AC main IEC input connector with AC pass through connector for additional 32Classic MS units.

11 - Mix output XLR connectors for the left and right mix bus outputs.

12 - Mix bus connectors, jumper multiple 32Classic MS units together via the included bus link and sum link cables.

13 - Channel outputs pre and post fader XLR connectors.

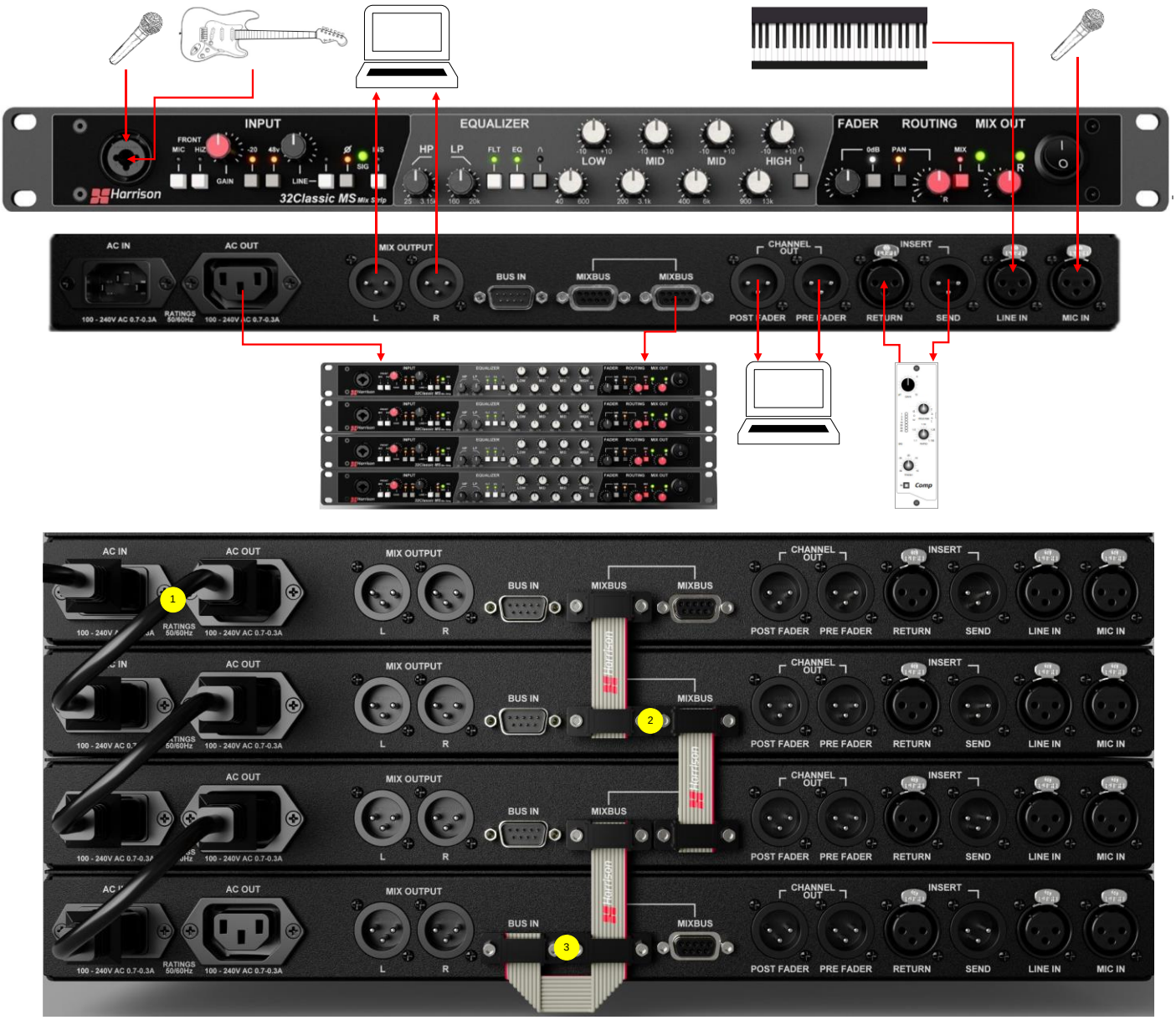
14 - Insert point send and return XLR connectors.

15 - Microphone and line input XLR connectors.

Connections Overview

This section provides an overview of the 32Classic MS hardware. The tutorial section covers each control in more detail.

Front and Rear Panel Connections



1 – AC pass through to connect multiple units.

2 – Bus link cables to connect additional units to build a side car mixer.

3 – Sum link cable to dedicate the bottom unit in a stack as the bus master unit.

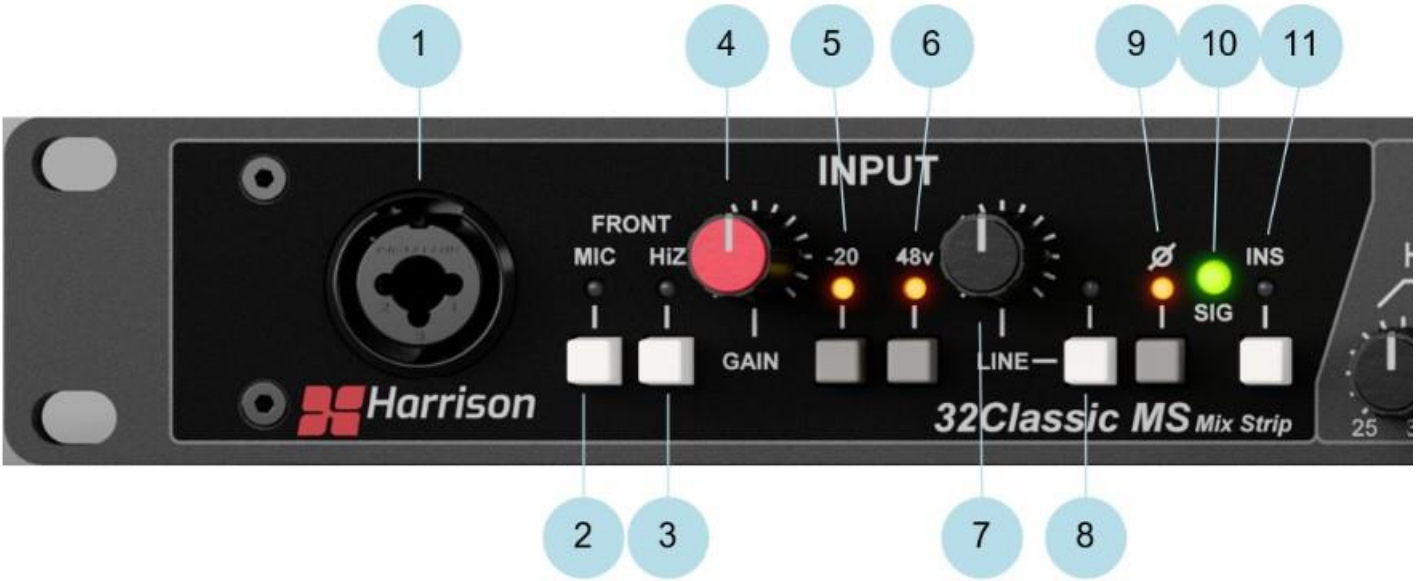
Tutorial

Power On

Power on the unit by toggling the power switch (far right end of the 32Classic MS to the up (I) position. Power off the unit by toggling the power switch down to the (O) position.

Front Panel Controls

Input Section



1 - Front Combo Connector

Connect a Microphone (XLR) or Instrument (1/4” jack) to the 32Classic MS via the front panel combo connector.

2 - MIC

The MIC switch activates the front panel XLR input as the source for the 32Classic MS unit.

3 - HiZ

The HiZ switch activates the ¼” jack as the source for the 32Classic MS unit.

Note: If both the MIC and HiZ switches are depressed, the HiZ ¼” jack will be the active source for the 32Classic MS unit.

4 - GAIN

Continuously variable input gain for the 32Classic MS mic preamplifier.

5 – (-20)

Activates a 20dB fixed pad on the mic preamplifier.

6 - 48v

Activates 48-volt phantom power for the 32Classic MS mic preamp. +48V phantom power, required for certain condenser and active ribbon microphones. Dynamic or Passive Ribbon microphones do not require phantom power to operate and in some cases can cause damage to the microphone. If in doubt, make sure +48V is disabled before plugging in any microphone.

7 - LINE (Potentiometer)

Control the input trim +-6dB when the line input is selected as the source for the 32Classic MS source.

8 - LINE (Switch)

Activates the line input as the source for the 32Classic MS unit.

9 - POLARITY (Ø)

Flips the polarity of the selected input source of the 32Classic MS unit. When dealing with multi-mic'd instruments such as drums, phase cancellations can occur due to the microphones receiving the sound waves at different times. Flipping the polarity (or phase as it is often referred to) on certain channels can help resolve these cancellations.

10 - SIG (LED)

Bi-colored LED meter for the selected input source of the 32Classic MS unit. Green (present) Yellow (0dB) Red (peak).

11 - INS

Activate the 32Classic MS insert point for inserting other outboard gear for use in conjunction with the 32Classic MS channel strip.

Front Panel Controls

Equalizer Section

1 - High Pass Filter Potentiometer

Variable control of the high pass filter frequency setting from 25 (Hz) to 3.15 (kHz).

2 - Low Pass Filter Potentiometer

Variable control of the low pass filter frequency setting from 160 (Hz) to 20 (kHz).

3 - FLT

Switches the high pass and low pass filters in and out of the 32Classic MS signal path.

4 - EQ

Switches the Equalizer in and out of the 32Classic MS signal path.

5 - LOW Bell

Toggles between shelf mode (default) and bell mode on the LOW band EQ. When bell mode is selected the Q is proportional to the boost and cut of the LOW band EQ.

6 - LOW Frequency

Variable frequency control for the LOW band EQ from 40 (Hz) to 600 (Hz).

7 - LOW Boost / Cut

Variable boost and cut for the LOW band EQ from -10 to +10 dB.

8 - MID Frequency

Variable frequency control for the MID band EQ from 200 Hz to 3.1 kHz.

9 - MID Boost / Cut

Variable boost and cut for the MID band EQ from -10 to +10 dB.

10 - MID Frequency

Variable frequency control for the MID band EQ from 400 Hz to 6 kHz.

11 - MID Boost / Cut

Variable boost and cut for the MID band EQ from -10 to +10 dB.

12 - HIGH Frequency

Variable frequency control for the HIGH band EQ from 900 Hz to 13 kHz.

13 - HIGH Boost / Cut

Variable boost and cut for the HIGH band EQ from -10 to +10 dB.

14 - HIGH Bell

Toggles between shelf mode (default) and bell mode on the HIGH band EQ. When bell mode is selected the Q is proportional to the boost and cut of the HIGH band EQ.

Front Panel Controls

Mix Output Section

Note: Use the supplied ‘Sum Link’ cable to access the MIX OUTPUT section of the 32Classic MS during single unit use.

1 - Fader Output Level

Controls the 32Classic MS post fader output level. Also adjusts the level to the MIX bus when routed.

2 - FADER 0dB

Locks the 32Classic MS post fader output level at 0dB bypassing the FADER potentiometer.

3 - PAN

Activates the pan potentiometer allowing the signal to be Panned left and right when routed to the MIX bus.

4 - MIX

Routes the 32Classic MS channel to the mix bus.

5 - MIX OUTPUT

Controls the final MIX bus output from the 32Classic MS unit that has the Sum Link rear cable connected to it.

6 - MIX Meters LR

Bi-colored LED meters the left and right mix bus signals pre the mix out level control. Green (present) Yellow (0dB) Red (peak).

Specifications

Microphone Preamp / Instrument Input (Common Specifications)

- Minimum Gain (Pad Out): 20 dB, +/- 1 dB
- Maximum Gain: 70dB, -0.5 / + 1.75 dB
- Frequency Response: 20 Hz – 20 kHz, +/- 0.25 dB
- Input Pad: -20dB
- Maximum Input Level, Pad Out: +4 dBu
- Maximum Input Level, Pad In: +24 dBu

Microphone Preamp

- Jensen Microphone Transformer
- THD+N (1kHz -20dBu @ 40dB Gain): < 0.004%
- Noise A-Weighted (@ 40dB Gain): -84 dBu
- EIN (150 Ω source): < -127 dBu
- Input Impedance, Pad Out: 6.8kΩ
- Input Impedance, Pad In: 1.3kΩ
- Phantom Power: +48V, switchable

Instrument Input

- THD+N (1kHz -10dBu @ 40dB Gain): < 0.01%
- Noise A-Weighted (@ 40dB Gain): -71 dBu
- Input Impedance: 1.2MΩ

Line Level Inputs (Line Input, Insert Return)

- THD+N (1kHz 10dBu @ Unity Gain): < 0.002%
- Noise A-Weighted (@ Unity Gain): -94 dBu
- Frequency Response: 20 Hz – 20 kHz, +/- 0.25 dB
- Line Trim: +/- 10.5 dB
- Input Impedance: 10kΩ
- Maximum Input Level, Pad In: +24 dBu

Line Level Outputs (Insert Send, Pre Fader, Post Fader, Mix Left, Mix Right)

- Electronically balanced
- Maximum Output Level: +24 dBu
- Output Impedance: 30Ω
- Insert Send, Pre Fader, Post Fader (@ Unity Gain)
    - THD+N (1kHz 10dBu @ Unity Gain): < 0.0008%
    - Noise A-Weighted: < -99 dBu
- Mix Left, Mix Right
    - THD+N (1kHz 10dBu @ Unity Gain): < 0.001%
    - Noise A-Weighted (@ Unity Gain): < -95 dBu
- Pan Law: -3 dB

Signal Metering

- 3x Bi-Color LED signal presence
- Green >= -14 dBu
- Yellow >= 4 dBu
- Red >= 18 dBu

Physical

- Width: 19” (48.2 cm)
- Height: 1.75” / 1 RU (4.4 cm)
- Depth (from rear of rack ear): 10.25” (26.0 cm)
- Weight: 8.1 lbs (3.67 kg)

Safety Notices

General Safety

• Please read and keep this document and adhere to all warnings and instructions.

• This electrical equipment should not be exposed to dust, water, or other liquids.

• Clean only with dry cloth or products compatible with electrical devices and never when the unit is powered.

• Do not operate near any heat sources, in direct sunlight or near naked flames.

• Do not place heavy objects on the unit.

• Only use attachments/accessories recommended by the manufacturer.

• Unplug this apparatus during lightning storms or when unused for long periods of time.

• Do NOT modify this unit, alterations may affect performance, safety and/or international compliance standards.

• The unit can only be serviced by qualified personnel – seek immediate service if the unit has been exposed to water or if it ceases to operate normally.

• Harrison does not accept liability for damage caused by maintenance, repair or modification by unauthorized personnel.

• When using this apparatus either fix it into a standard 19” rack or place it on a secure level surface.

• If the unit is rack mounted, fit all rack screws. Rack shelves are recommended.

• Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.

• Always allow free flow of air around the unit for cooling.

• Ensure that no strain is placed on any cables connected to this apparatus. Ensure that all such cables are not placed where they can be stepped on, pulled, or tripped over.

Power Safety

• This equipment is supplied with mains lead however if you wish to use a mains cables of your choice refer to the following information:

• Refer to the rating label on rear of the unit and always use a suitable mains cord.

• The unit should ALWAYS be earthed.

• Please use-compliant 60320 C13 TYPE SOCKET. When connecting to supply outlets ensure that appropriate sized conductors and plugs are used to suit local electrical requirements.

• Maximum cord length should be 4.5m(15’).

• The cord should bear the approval mark of the country in which it is to be used.

Additionally:

- The appliance coupler is used as the disconnect device, ensure that it is connected to an unobstructed wall outlet.
- Connect only to an AC power source that contains a protective earthing (PE) conductor.
- Only connect units to single phase supplies with the neutral conductor at earth potential

ATTENTION! This product must always be earthed.

CAUTION! No user-serviceable parts inside. In the event of damage to the unit contact Solid State Logic. Service or repair must be done by qualified service personnel only.

UK CA

This product complies with the following United Kingdom Legislation:
UK Electrical Equipment (Safety) Regulations 2016 (SI 2016/1101)
UK Electromagnetic Compatibility Regulations 2016 (SI 2016/1091).
The Eco-design requirements for Energy related products (ErP) 2009/125/EC.
The Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS2) Regulations 2012 (SI 2012/3032).

CE

This product complies with the following European Union Harmonisation Legislation:
EU Low Voltage directive (LVD) 2014/35/EU,
EU Electromagnetic Compatibility directive (EMC) 2014/30/EU.
The Eco-design requirements for Energy related products (ErP) 2009/125/EC.
The Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS2) 2011/65/EU.

Instructions for disposal of WEEE by users in the European Union

The symbol shown here, which is on the product or on its packaging, indicates that this product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

FCC Certification

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 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 the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, 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 receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Industry Canada Compliance

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Electromagnetic Compatibility

BS EN 55032:2015, Class A. BS EN 55035:2017.

WARNING: The audio input/output ports are screened cable ports and any connections to them should be made using braid screened cable and metal connector shells to provide a low impedance connection between the cable screen and the device.

Electrical Safety

IEC 62368-1:2018

BS EN IEC 62368-1:2020+A11:2020

CSA CAN/CSA-C22.2 No. 62368-1 3rd Ed.

UL 62368-1 3rd Ed.

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Environmental

Temperature: Operating: +1 to 30 degrees Celsius. Storage: -20 to 50 degrees Celsius.

Further information

For additional information, product downloads, knowledge base and technical support visit

www.harrisonaudio.com.

ECO Statement

80% recycled cardboard will be used in the packaging design as a minimum.

100% recyclable packaging.

No polyfoam will be used in the packaging design. Pulp based packaging inserts will be used as an alternative.

Packaging will be optimized to reduce its volume and weight and packaging materials will be easily separated for recycling.

Where allowed, user documentation will be available for download only. Only mandatory safety information will be provided in hard copy.

80% post-consumer recycled aluminum will be used in the front panel design.

Given their major contribution to the product's carbon footprint, PCBs will be optimized to minimize board area, layer count and to limit wastage.

Low power operation will be a focus throughout the design.

To promote switching off the unit after use, the power switch will be located on the front panel to maintain accessibility when rack mounted.

Component selection and lifetime testing will be based on a minimum life expectancy of 10 years. The design will support user servicing allowing individual connectors, pots, switches, and other parts to be replaced easily to ensure economically viable repair by a competent user or local repair center extending the product's service life.

The unit's construction method will allow easy dis-assembly supporting separating and recycling core components when the product reaches its end of life.