MM-15USB
Mini mixer

Owner's Manual

NADY AUDIO

Contents

Congratulations on your choice of the MM-15USB mini mixer — you have purchased one of the finest mixing units on the market today.

This unit was developed using the expertise of professional sound engineers and working musicians. You will find that your new NADY AUDIO MM-15USB has superior performance and greater flexibility than any other mixer in its price range. Please read this manual carefully to get the most out of your new unit.

Thanks for selecting NADY AUDIO as your choice in USB mixer.

Features

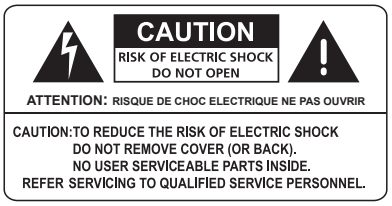
With up to 15 simultaneous inputs and 10 outputs (including complete USB interface), this versatile desktop mini-mixer is a valuable tool for almost any studio recording, computer, home audio, or live performance application.

- 2 Mono channels with balanced Mic and Line Inputs and 2 Stereo Channels with Line and RCA Inputs; each channel has Trim, 3-Band EQ, Aux Send, Pan, and Level Controls with Peak indicator LED's
- USB 1.0 I/O Interface to send or receive digital audio signals to or from any computer
- Stereo Mini Jack iPod/MP3 inputs
- Separate Main Mix, Control Room, and Headphone Outputs; Stereo Aux. Return Inputs with Level Control; Tape In/Out RCA connectors plus Stereo Mini-Jack output
- Selectable Low-Cut, PFL, 48V Phantom Power switches
- Dual 4-segment LED display bargraph meters
- Ultra-low noise mic preamps for optimum signal integrity; Full spectrum frequency response with wide dynamic range and superior headroom; SMD technology for most compact design
- Miniature 7" x 8" durable steel casing and superior construction for long life and maximum reliability

Warning

When using this electronic device, basic precautions should always be taken, including the following:

1. Read all instructions before using the product.
2. Do not use this product near water (e.g., near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, etc.).
3. This product should be used only with a cart or stand that will keep it level and stable and prevent wobbling.
4. This product, in combination with headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be positioned so that proper ventilation is maintained.
6. The product should be located away from heat sources such as radiators, heat vents, or other devices (including amplifiers) that produce heat.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
8. The power supply cord should: **(1)** be undamaged, **(2)** never share an outlet or extension cord with other devices so that the outlet's or extension cord's power rating is exceeded, and **(3)** never be left plugged into the outlet when not being used for a long period of time.
9. Care should be taken so that objects do not fall into, and liquids are not spilled through, the enclosure's openings.
10. The product should be serviced by qualified service personnel if:
    - **A.** The power supply cord or the plug has been damaged.
    - **B.** Objects have fallen into, or liquid has been spilled onto the product.
    - **C.** The product has been exposed to rain.
    - **D.** The product does not appear to operate normally or exhibits a marked change in performance.
    - **K.** The product has been dropped, or the enclosure damaged.
11. Do not attempt to service the product beyond what is described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.



An equilateral triangle enclosing a lightning flash/arrowhead symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure which may be of sufficient magnitude to constitute a risk of electric shock.

An equilateral triangle enclosing an exclamation point is intended to alert the user to the presence of important operating and service instructions in the literature enclosed with this unit.

Date of Purchase Dealer's Name

City State Zip

Model # Serial #

INSTALLATION

To ensure years of enjoyment from your NADY AUDIO MM-15USB mixer, please read and understand this manual thoroughly before using the unit.

1. INSPECTION

Your NADY AUDIO MM-15USB was carefully packed at the factory in packaging designed to protect the units in shipment. Before installing and using your unit, carefully examine the packaging and all contents for any signs of physical damage that may have occurred in transit.

[Please note: Nady Systems is not responsible for shipping damage. If your unit is damaged, do not return to Nady, but notify your dealer and the shipping company (if shipped to you) immediately to make a claim. Such claims must be made by the consignee in a timely manner].

2. POWER CONNECTION

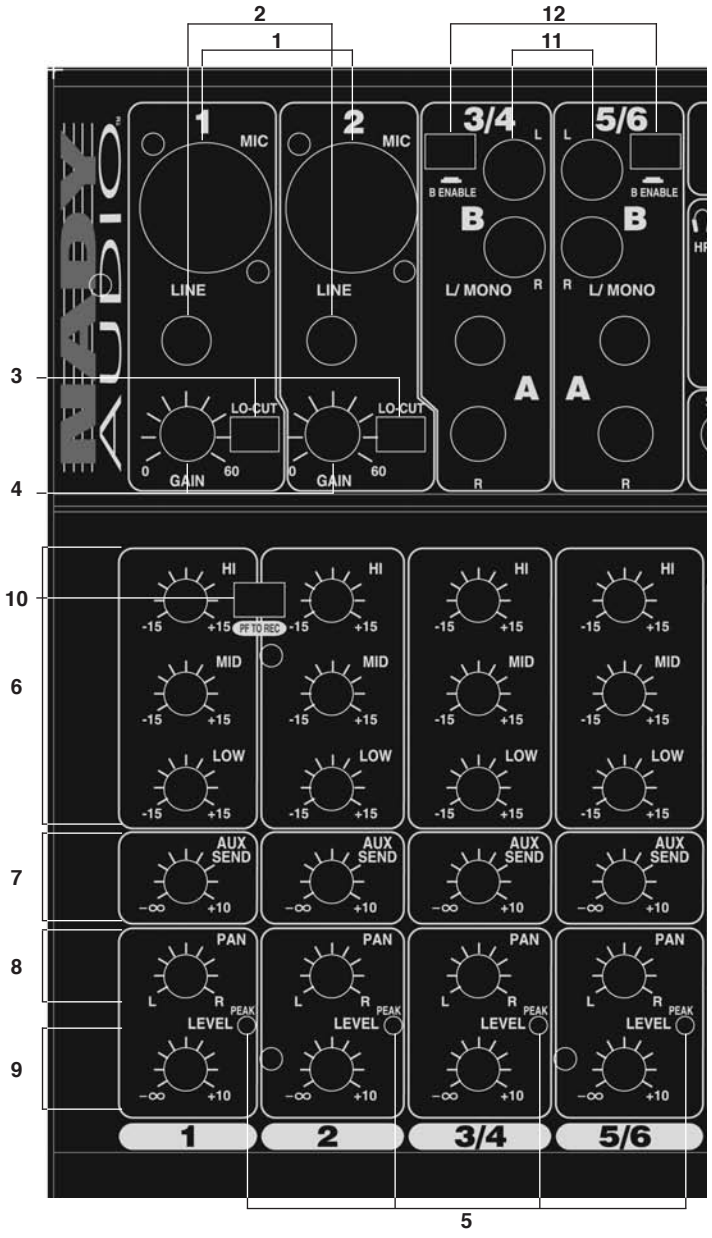
The MM-15USB is designed to operate with the supplied external power adapter. Please make sure that the adapter supplied is marked for the correct voltage in your area (120VAC/60 Hz or 230VAC/50Hz). Power requirements for electrical equipment differ from area to area. In new installations and portable sound systems, or any situation in which the AC power is in question, it is wise to confirm the voltage and use the appropriate power adapter unit before connecting it to power sources. Check to see that the power adapter is set to the voltage for your area by referring to the table below:

Europe (except UK): 230V, 50Hz
UK and Australia: 240V, 50Hz
USA and Canada: 120V, 60 Hz

For other areas, please check with local authorities.

When ready to operate, connect the switched-off MM-15USB and power adapter first, then plug the adapter to a power source or wall outlet. Make sure that the unit is turned off before connecting to the AC power source to avoid possible loud transients, which can damage your speakers or your ears. Set the **Main Level**(21) fader control to minimum to further reduce the chance of undesired noise when first powering up. Turn on your MM-15USB using the rear panel ON/OFF switch.

Controls & Connections



Channel Section

1. CHANNEL SECTION

(1) MIC INPUT

This electronically balanced XLR input is designed to accept signals from any balanced or unbalanced low impedance (Low Z) microphone. The XLR jack is configured for: Pin1 = ground, Pin2 = positive (+), Pin3 = negative (-).

(2) LINE INPUT

This ¼" input is designed to accept balanced or unbalanced line-level signals such as those from keyboards, drum machines, or samplers. If a balanced signal is to be connected to the line input, then a ¼" TRS (stereo) phone plug should be wired for: Tip = positive (+), Ring = negative (-), Sleeve = ground. Unbalanced signals should use a typical ¼" TS plug.

[Note: Only the Mic or the Line input of a given channel should be connected at one time. Do not connect both at the same time].

(3) LOW CUT FILTER

Use this Low-Cut (high-pass) filter (18 dB/octave, -3 dB at 110Hz) for reducing floor rumble, popping, breathing noises, woolly bottom end, and to tighten up channels in a mix, etc. It is most effective when used carefully in conjunction with the **Equalizer Controls**(6).

(4) GAIN CONTROL

The Gain control adjusts the input sensitivity of the mic and line inputs on each channel. This control can be adjusted to accommodate input signals from a wide variety of sources, from the high outputs of keyboards or drum machines to the small signal outputs of microphones. The best balance of S/N and dynamic range will be achieved if you adjust the Gain control on each channel separately so that the maximum level signal can be input without distortion. While speaking, singing, or playing an instrument at maximum performance level, increase the Gain control until the **Peak LED**(5) flashes, then turn down the Gain control until the flashing stops.

(5) PEAK LED INDICATOR

The Peak LED illuminates when a channel input is overloading. It detects the peak level after the **Equalizer Controls**(6) and will light just before clipping to warn that the signal is approaching overload. You do not want the Peak LED to light except very intermittently. If it lights persistently, reduce the **Gain Control**(4).

(6) EQUALIZER CONTROLS
All channels are fitted with a three-band EQ - HIGH, MID, and LOW. All three bands have up to 15 dB of cut and boost, with a center detent for OFF. The frequency response is flat when all three EQ knobs are in the center detent position. The HIGH and LOW shelving controls have their frequencies fixed at 10KHz and 80Hz respectively. The MID control has a peaking response at 2KHz. The channel EQ is a valuable feature of the mixer as it allows the user to control the tonal characteristics of each channel separately. For example, boosting the LOW can fatten the sound, add warmth to vocals, or extra punch to bass, drums and synths; the MID control can be used to define the midrange or bring out the vocals; and adjusting the HIGH control can provide a crisp sounding high end. Another very important, yet often overlooked technique is to use the EQ to subtract from the mix. Cutting the HIGH control can reduce unwanted sibilance, hiss, cymbals, or high frequency feedback, while attenuating the MID or LOW can also eliminate feedback or clear up a muddy sounding mix. Cutting the HIGH and LOW, then pushing up the **Channel Level Control**(6) is equivalent to mid range boost!

*[Note: Always check the channel's **Peak LED Indicator**(5) after altering the amount of equalization].*

The key to successful equalization is to avoid excess. Too much equalization on the input channels will result in a mix that is smeared together with nothing specifically defined. During rehearsals, experiment with the equalizer controls on various instruments, vocals and combinations of these mixed together to become familiar with various equalizer settings.

(7) AUX SEND CONTROL
This control adjusts the level of signal sent to the **Aux Send**(23) output. The channel Aux Send control is mono, post-EQ, and post-Level control meaning the signal level sent to the Aux bus will also be affected by the **Channel Level**(9) setting.

(8) PAN
The channel Pan positions the output of the channel in the left/right stereo field of the Main mix. Its constant-power design ensures there are no level discrepancies whether a signal is hard-panned, center-stage, or somewhere in-between. For channels ¾ and ⅝ this acts as a balance control.

(9) CHANNEL LEVEL
This controls the volume of the channel signal sent to the Main bus.

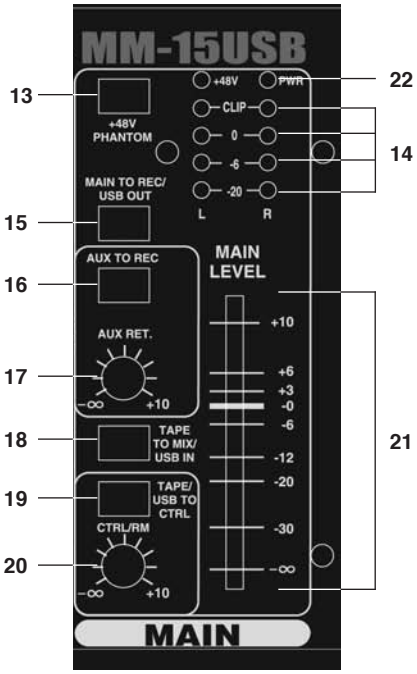
(10) PRE-FADER TO RECORD SWITCH
Enabling this switch will route the input signal of the channel to the **Record Outputs**(30). The signal will be post-EQ and pre channel level control.

(11) CHANNEL 3/4 & 5/6 STEREO INPUTS
These ¼" and RCA unbalanced inputs are designed to accept line level signals such as those common to CD/tape players, keyboards, direct outputs and home stereo or DJ equipment. The ¼" inputs can also be used as standard mono line inputs by plugging into the L input only. This signal will be routed equally to the Pan control and the left and right outputs in the same way as the standard line input channels.

For each channel there are separate A and B stereo inputs. Using both sets of inputs simultaneously can cause some level issues, which may require the volume of the preceding equipment to be adjusted. The "A" 1/4" inputs are always enabled. To utilize the "B" RCA inputs, the **B Enable Switch**(12) must be depressed. This allows the user to switch on the B input source instantaneously.

(12) B ENABLE SWITCH
Depressing this switch will turn on the B Inputs of channels 3/4 and 5/6.

Controls & Connections



Main Control Section

2. MAIN CONTROL SECTION

(13) PHANTOM POWER
When this switch is depressed, +48V of phantom power will be supplied to the XLR mic inputs to power condenser microphones. The phantom power LED will illuminate when the switch is depressed to ON.

*[Note: When turning on the **Phantom Power**(13) turn the Main Level fader to minimum to avoid audible transient noise].*

(14) DUAL CHANNEL LED METER
This dual 4-stage stereo output LED VU meter will display the relative output level of the Left and Right Main output or the 1/8" mini stereo input if the **Tape/USB to Control Room**(19) switch is enabled.

The top red Peak LED will light when the output signal is just below clipping. It is acceptable if the red LED lights occasionally. If the red LED lights more than occasionally, you should turn down the corresponding volume control to avoid audible distortion.

(15) MAIN TO REC/USB OUT SWITCH
This switch enables the Main left and right signals to be sent to the ⅛" mini output, rear panel Record Outputs, and the USB output.

(16) AUX TO REC SWITCH
This switch enables the channel Aux Send signals to be sent to the ⅛" mini output, rear panel Record Outputs, and the USB output. Both the Main left and right signals and the Aux Send signals can be simultaneously sent to these outputs if both switches (15 & 16) are enabled.

(17) AUX RETURN LEVEL
This adjusts the level from the Aux Return(24) that is sent to the Main Mix.

(18) TAPE/USB TO MIX
Enabling this switch actually mixes a set of inputs onto the main bus. Depressing this pushbutton switch will send the rear panel **Tape Inputs**(31), **USB Input**(32), and **Stereo Mini Input**(25) signals to the Main mix which can then be adjusted by the **Main Level**(21) fader control.

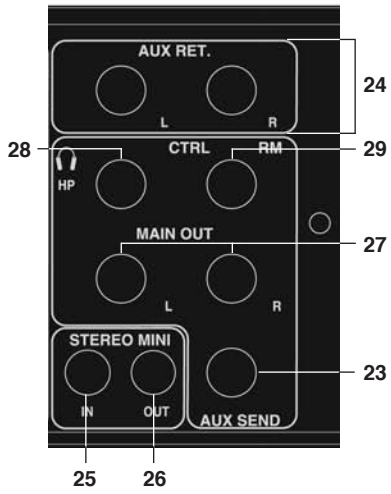
(19) TAPE/USB TO CONTROL SWITCH
This switch will toggle between monitoring the Main mix and a set of other inputs. When the switch is disabled (button out), the Main mix signals are sent to the Control Room and Headphone outputs. Enabling the switch (button depressed) will send the rear panel **Tape Inputs**(31), **USB Input**(32), and **Stereo Mini Input**(25) signals exclusively to the Control Room and Headphone outputs. Either signals can then be adjusted by the **Control Room Level**(20) control. Also, when this switch is enabled, the **Dual Channel LED Meter**(14) will indicate the signal levels of the rear panel Tape Inputs, USB Input, and Stereo Mini Input signals and not the Main mix.

(20) CONTROL ROOM LEVEL
This adjusts the level of the Control Room and the Headphones outputs.

(21) MAIN LEVEL
This fader control adjusts the final level of the main stereo signal that is sent to **Main Outputs**(21).

(22) POWER LED
The LED will illuminate when the unit is switched on.

Controls & Connections



Master Input/Output Section

3. MASTER INPUT / OUTPUT SECTION

(23) AUX SEND
The Aux Send jack provides a mono mixed signal from the input channels, which can be connected to an external effects unit or other devices. The signal is adjusted by the channel **Aux Send**(7) controls of each channel and is post channel level control.

(24) AUX RETURN
These balanced Left and Right Aux ¼" inputs can be used to return the effected signal into the MM-15USB or it can be used as an auxiliary input for line level devices. The signal level is adjusted by the **Aux Return(**17) control.

(25) STEREO MINI INPUT
This 1/8" stereo mini input can be used to input stereo audio signals from any piece of equipment with line level or headphone level outputs, in particular cassette, CD, or MP3 players. The **Tape/USB To Mix**(18) pushbutton switch must be enabled for the 1/8" input signal to be mixed onto the Main bus.

(26) STEREO MINI OUTPUT
This 1/8" TRS jack outputs a line level stereo signal. When the **Aux to Record**(16) switch is enabled, the Channel Aux bus signal is sent to both L and R connections on the TRS jack. When the **Main to Rec/USB**(15) switch is enabled the ⅛" output signal is post Main fader and true stereo L/R. Both Aux and Main signals can be output simultaneously. When both switches are disabled, there is no output at the ⅛" output.

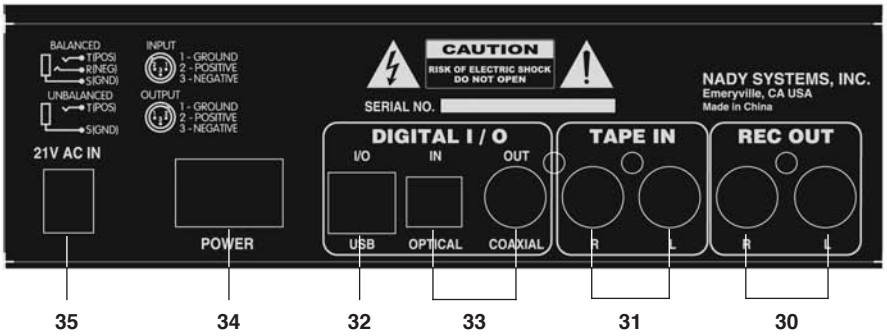
(27) MAIN OUTPUTS
These unbalanced ¼" jacks output the final Main Mix Left and Right line level signals.

(28) HEADPHONES
The Headphones ¼" stereo output can be used to monitor either the Main mix or a set of other inputs depending on the position of the **Tape/USB to Control**(19) switch.

The headphone jack will power headphones with impedances of 8Ω or greater. The Control Room output jack must be left unplugged while headphones are being used. Inserting a plug into the **Control Room** (29) output automatically configures the unit for Control Room mode, thereby disabling the headphone Right signal and allowing the Headphones jack to be used as a Control Room Left output.

(29) CONTROL ROOM
Inserting a plug into the Control Room right ¼" jack automatically configures the unit for Control Room mode. This ¼" TS jack will output the Right signal. **The Headphones**(28) ¼" TS jack will output the Left line level signal. These L-R outputs can be connected to an amp used to power stereo control room monitor speakers, or used for any output application.

Controls & Connections



Rear Panel

4. REAR PANEL

(30) RECORD OUT
The Record Out Left and Right RCA jacks provide signal output to recording devices, home audio equipment, or external amplifiers. These outputs take the signal from the Main bus, the Aux Send bus, or a combination of both depending on the positions of the **Main To Rec/USB**(15) and **Aux To Rec**(16) switches.

(31) TAPE IN
The Left and Right Tape Input RCA jacks allow stereo receivers, cassette recorders, CD players, or any external equipment, to be added to the Main mix outputs pre-Main Level control.

(32) USB INPUT/OUTPUT
The USB I/O can be connected directly to any computer with a USB 1.0 (or higher) port for easy plug-and-play operation using a standard “A-B” USB cable. For playback, make sure the **Tape/ USB To Mix**(18) and **Tape/USB To Control(**19) switches are set appropriately for desired signal routing. For recording, Make sure the **Main To Rec/USB Out**(15) and **Aux To Rec**(16) switches are set appropriately to select your desired signal source.
Windows
1. Connect the MM-15USB to the computer using a standard “A-B” USB cable. Your computer may automatically set up the MM-15USB as its Playback and Recording Device. If not, to set your MM-15USB as such a device, open the control panel.
2. Access Sounds and Audio Devices through the Setting>Control Panel.
3. In the Audio tab, select “USB Audio Device” as the Sound Playback device if you want to send audio from the computer to the MM-15USB. For sending audio from the MM-15USB into the computer, select “USB Audio Device” as the Sound Recording device.
4. Your audio player or recording software may also input and output configurations that need to be to the “USB Audio Device”
Mac OS
1. Connect the MM-15USB to your Mac using a standard “A-B” USB cable.
2. Configure your DAW software to select the mixer as your input or output device. This can usually be done in your Hardware Options by selecting “USB Audio Device”.
3. Or, you can select “USB Audio Device” as your input device in your Sound options under System Preferences.

You may experience a delay in hearing your audio if monitoring in real time. Such a slight delay is called “latency” and is common for many types of software used with this unit. If real time coincidence of the input and amplified signal heard though the computer monitors is required then certain software may be necessary.

(33) S/PDIF OPTICAL INPUT AND COAXIAL OUTPUT
The S/PDIF I/O exclusively provides a direct digital link between the USB interface and compatible S/PDIF devices. This facilitates a direct digital transfer at sample rates of up to 48kHz.
The digital optical input receives S/PDIF digital input through a TOSLINK cable. Digital input is automatically selected when a proper input signal is detected. The digital input will automatically override the audio from the mixer section to the USB output.
The digital coaxial output transmits S/PDIF digital output to compatible devices. The coaxial connection requires 75 ohm coaxial cable.
Note also that optical input will not be converted to analog, nor will analog be converted to digital coax. The top panel selector buttons have no effect on this operation. Also, this interface does not require the mixer to be on. USB power is all that is needed.
When transmission is first initiated, or if it is interrupted, it may be necessary to restart software applications and/or unplug and reconnect USB cable.

(34) POWER ON/OFF SWITCH
Use this rocker switch to turn the unit on and off. *[Note: When operating the power switch, turn the Main Level fader to minimum to avoid audible transient noise].*

(35) AC IN SOCKET
Connect the corresponding plug of the supplied external AC power adapter to this socket before plugging the AC power adapter into a wall outlet.

Specifications

BALANCED XLR MIC INPUTS CH. 1-2
Maximum Total Gain (EQ's @ mid): +63dB
Maximum Input: +6.5dBu
Input Impedance: 1.2kΩ
Sensitivity: -53dBu

BALANCED TRS LINE INPUTS CH. 1-2
Maximum total gain (EQ's @ mid): +42dB
Maximum Input: +17dBu
Input Impedance: 15kΩ
Sensitivity: -33dBu

BALANCED MONO/STEREO ¼" LINE INPUTS CH. 3-4
Maximum Total Gain (EQ's @ mid): +17dB
Maximum Input: > +17dBu
Input Impedance: 20kΩ (10kΩ mono mode)
Sensitivity: +6dBu nominal

STEREO RCA LINE INPUTS CH. 3-4
Maximum Total Gain (EQ's @ mid): +15dB
Maximum Input: +13dBu/ +10dBV
Input Impedance: 10kΩ
Sensitivity: +2dBu/ 0dBV

EQUALIZER
Low, Mid and High EQ's: ⁒15dB @ 100 Hz, 2.5kHz, 12kHz
Low Cut Switch: -6dB cut @ 110Hz

AUX RETURN, BALANCED, STEREO ¼"
Maximum Total Gain (EQ's @ mid): +10dB
Input Impedance: 12kΩ
Sensitivity: +17dBu

AUX SEND ¼" OUTPUT
Maximum Output: +23 dBu
Output Impedance: 100Ω

MAIN UNBALANCED L/R STEREO OUTPUTS
Maximum Output: +17dBu
Output Impedance: 100Ω

¼" CONTROL RM/ HEADPHONE OUTPUTS
Maximum Output (into 10k Ω load): + 17 dBu
Maximum Power: 112mW (into 32Ω load)
Output Impedance: 500Ω

⅛" MINI-JACK STEREO INPUT
Maximum Total Gain: +17dB
Input Sensitivity: +5.5dBu
Input Impedance: 10kΩ

⅛" MINI-JACK STEREO OUTPUT
Maximum Output: +9.5dBu/ +7dBu
Output Impedance: 4kΩ

STEREO RCA TAPE INPUTS
Maximum Total Gain: +17dB
Input Sensitivity: +2dBu
Input Impedance: 10kΩ

STEREO RCA TAPE OUTPUTS
Maximum Output: +14dBu
Output Impedance: 1kΩ

DIGITAL I/O
USB: B style connector for USB 1.0 or higher.
Optical Input: TOSLINK (S/PDIF)
Optical Output: Coaxial for 75Ω cable (S/PDIF)

GENERAL
Phantom Power: +48VDC, globally selected
Frequency Response: 20Hz – 22kHz (⁒3dB)
THD: <.1%
S/N Ratio: -92dB
Noise Floor: 200uV (all controls at mid)
AC/AC Power Adapter: Input 115VAC / 60Hz
Output 21VAC 800mA

Weight: 2.65 lbs. (1.2 Kg)
Dimensions (HWD): 2.1" x 6.75" x 8.3" (53 x 171 x 211mm)

The specifications above are correct at the time of printing of this manual. For improvement purposes, all specifications for this unit, including design and appearance, are subject to change without prior notice.

Notes

Service For Your NADY AUDIO Product

(U.S.) Should your NADY AUDIO product require service, please contact the NADY Service Department via telephone at **(510) 652-2411**, or e-mail at **service@nady.com.**

(International) For service, please contact the NADY AUDIO distributor in your country through the dealer from whom you purchased this product.

Do not attempt to service this unit yourself as it can be dangerous and will also void the warranty.

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