

Owner's Manual

Nº53
Reference
Power Amplifier

mark 
levinson®

FCC Notice

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 the 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.

Caution!

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.



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Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where it exits from the apparatus.
11. Only use attachments and accessories specified by the manufacturer.



12. Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury or tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged; liquid has been spilled or objects have fallen into the apparatus; or the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.
15. The MAINS cord is intended to be the safety disconnect device for this apparatus and shall remain readily operable at all times.
16. Ventilation should not be impeded by covering the ventilation openings with items such as newspapers, tablecloths, curtains and so on.
17. No naked flame sources, such as candles, should be placed on the apparatus.



18. Terminals marked with this symbol may be considered HAZARDOUS LIVE, and the external wiring connected to these terminals requires installation by an INSTRUCTED PERSON or the use of ready-made leads or cords.
19. This product must be terminated with a three-conductor AC mains power cord that includes an earth ground connection. To prevent shock hazard, all three connections must ALWAYS be used.

Warning!

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the apparatus.

Safety Terms & Symbols

Terms in This Manual

These terms may appear in this manual:

Warning!

Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in personal injury or death.

Caution!

Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in damage or destruction to part or all of the component.

Note

Calls attention to information that is essential to highlight.

Symbols on the Product

These symbols may appear on the product:



Appears on the component to indicate the presence of noninsulated, dangerous voltage inside the enclosure – voltage that may be sufficient to constitute a risk of shock.



Appears on the component to indicate important operation and maintenance instructions included in the accompanying documentation.



Appears on the component to indicate compliance with the EMC (Electromagnetic Compatibility) and LVD (Low-Voltage Directive) standards of the European community.

Documentation Conventions

This document contains general safety and operation instructions for the N°53 reference monaural power amplifier. It is important to read this document before attempting to use this product. Please pay particular attention to safety instructions.

This manual is not intended as a general reference guide for home theater systems. If you're uncertain how to set up or maintain your system, seek the advice of a professional installer or ask your dealer for a recommendation.

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Introduction

Thank you for purchasing the N°53 Reference monaural power amplifier. Totally redesigned and incorporating patented new technologies, the N°53 outperforms even the esteemed N°33 in both audio presentation and power performance.

Product Description

The Mark Levinson® N°53 Reference monaural power amplifier elevates amplifier performance to an entirely new level of excellence. After extensive listening tests and exhaustive measurements, the N°53 demonstrates a phenomenal level of performance capability with a larger dynamic range, cleaner operation, and higher power levels through our proprietary Interleaved Power Technology (IPT). The N°53 can pass a musical signal with utter integrity, regardless of how demanding that signal and the loudspeakers used might be.

The N°53 is capable of generating truly phenomenal power levels into virtually any speaker load to support both instantaneous and continuous demands. More impressive still, the N°53 accomplishes this feat without the slightest change in performance capability. Unlike most amplifiers, the N°53 has superbly efficient power management, maintaining a constant thermally-balanced operating temperature no matter how hard or long the amplifier is driven.

The N°53 design incorporates the best qualities of traditional Mark Levinson power amplifiers while adding our new IPT technology for vastly superior sonic performance and a noise floor so low, it must be experienced to be believed. From the isolated input circuitry to the unique Mark Levinson binding posts, special care was taken to minimize the introduction of noise. The input board is in a separate compartment, totally isolated from the other circuitry. Whether the input signal is single-ended or balanced, the input stage treats all incoming signals as balanced to maximize the rejection of common mode signals, preventing introduced noise from being applied to the amplifier.

The low-noise toroidal power supply features an oversized 2.8kVA transformer with four 47,000µF low-ESR capacitors for more than ample energy storage capacity. A separate, dedicated power supply for the control circuitry provides double isolation between the main audio supply and the noisier, digital control circuits. The second power supply also contributes to more efficient power management as the main supply is shut down during power save mode.

The chassis is comprised of four separate internal compartments to provide shielding and isolation of critical circuitry. The power supplies are placed in the bottom compartment, isolated and shielded from the rest of the amplifier, to reduce interference from magnetic fields and high current devices. The middle section contains four amplifiers arranged symmetrically and mirror-imaged

to maintain separation while minimizing critical current loop areas. The top compartment contains the control circuitry, also with its own independent regulated supplies and shielding from the heart of the amplifier. Special attention was made to critical signals that need to pass between different boards. Extensive use of low-voltage-differential signaling (LVDS) for control signals is used to maximize signal integrity while all critical analog signals remain balanced to offer superb noise rejection.

The four interleaved amplifier modules are the crux of the superior performance offered by the N°53 - a larger dynamic range, cleaner operation, and higher power levels. Our proprietary Interleaved Power Technology (IPT), developed and perfected through years of extensive listening tests and measurements, is based on the rudiments of digital switching while avoiding the common problems of most switching amplifiers.

“Dead bands” and output device limitations are common problems in typical switching amplifiers, which use different output devices for the positive and negative parts of the audio signal. Since both devices cannot be active at once without overloading their power capability, dead bands are caused by the lack of signal during the transition between the devices. Adding to the audible distortion resulting from these dead bands is the signal degradation caused by device limitations, such as output power and switching frequency. To compensate for these deficiencies, an aggressive filter is placed at the audio output to eliminate introduced switching noise but this in turn degrades the audio signal. The end result is an amplifier with very poor sound reproduction ability.

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The N°53 supports the activation of both switching devices concurrently, totally eliminating the problem of dead bands while reducing stress on the output devices, permitting much higher voltage rails and output power. Our proprietary IPT technology features the use of four separate amplifiers, each of which digitally manages a portion of the audio signal. The outputs of the amplifiers are then recombined for the final output stage. This approach provides the N°53 with a very high switching frequency, enabling a much smoother, cleaner roll-off by moving the noisier switching frequencies further out of the audible range – and since the frequency response extends well beyond the audio band, the output filter is much less aggressive, minimizing audio signal degradation.

With phenomenal output power capability, a larger dynamic range, cleaner operation, higher switching frequency, and a much lower noise floor than even most traditional linear amplifiers, the N°53 provides extraordinary audio performance and proves once again that Mark Levinson power amplifiers truly represent the finest audio amplifiers available.

What's in the Box

The N°53 Reference monaural power amplifier includes:

Item	Quantity
N°53 Reference power amplifier	1
N°53 owner's manual (this document)	1
Heavy white gloves	2 pairs
Cable with 3.5mm mini-plugs (for use with trigger)	1
Detachable AC power cord* <i>*varies by destination country</i>	1

Product Registration

Register your N°53 online at www.marklevinson.com within 15 days of purchase. Retain the original, dated sales receipt as proof of warranty coverage.

Installation Considerations

The Nº53 Reference power amplifier requires special care during installation to ensure optimal performance. Pay particular attention to instructions included in this section and to precautions included throughout this owner's manual.

Unpacking

DO save all packing materials for possible future shipping needs.

DO inspect the Nº53 for signs of damage during shipment. If damage is discovered, contact your authorized Mark Levinson dealer for assistance in making appropriate claims.

DO use the built-in handles located at the top of the chassis to lift and move the amplifier.

DO locate and remove the accessory bag from the carton. Make sure it contains all of the items listed in the "What's in the Box" table on the previous page. If not, contact your authorized Mark Levinson dealer.

Caution!

DO NOT attempt to lift or move the Nº53 power amplifier without adequate assistance. The shipping weight of the Nº53 exceeds what a single person should lift alone. To avoid injury or damage to the Nº53, at least two people are required to lift or move the amplifier.

Two pairs of heavy white gloves, with special gripping surfaces on the palms and fingers, are included with the Nº53. Wear these gloves when lifting or moving the amplifier.

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Placement and Ventilation

DO install the Nº53 Reference amplifier in a location providing it with proper ventilation. The Nº53 is designed for placement on the floor, but can also be installed side-by-side in a rack.

DO install the Nº53 chassis on a solid, flat, level surface.

DO install the Nº53 power amplifier close to associated components to keep interconnecting cables as short as possible.

DO select a dry, well-ventilated location out of direct sunlight.

DO allow at least 3 to 4 inches (8 to 10cm) of clearance above and on each side of the amplifier for proper heat dissipation.

DO allow at least 6 inches (15.24cm) of clearance behind the amplifier so that the power cord and cables have space to bend without becoming crimped or strained.

DO NOT place the N°53 on a thick rug or carpet or cover the amplifier with a cloth, as this might prevent proper cooling.

DO NOT obstruct the ventilation holes on the top and bottom of the unit or reduce airflow through the N°53.

DO NOT place the N°53 near low-level components. The power amplifier is capable of producing large output currents and hence significant magnetic fields, which can induce noise in sensitive components.

DO NOT expose the N°53 power amplifier to high temperatures, humidity, steam, smoke, dampness, or excessive dust. Avoid installing near radiators and other heat-producing appliances.

Warning!

MAKE SURE all components are properly grounded. Do not defeat the safety purpose of polarized or grounding-type plugs with “ground-lifter” or “cheater” adapters. Doing so may cause dangerous voltage to build up between components, which can result in personal injuries and/or product damage.

Power Requirements

The N°53 Reference power amplifier is configured at the factory for 100, 120, or 230 VAC power operation at 50Hz or 60Hz. Before operating the N°53, ensure that the voltage label on the rear panel near the AC input connector indicates the correct operating voltage.

Caution!

DO NOT attempt to adjust the operating voltage. Consult a Mark Levinson dealer if the operating voltage is incorrect or must be changed for relocation purposes.

Different operating voltages may require the use of different power cords and/or attachment plugs. Contact a Mark Levinson dealer for additional assistance.

The N°53 is capable of passing remarkable sound at exceptional power levels. Depending on listening habits, loudspeaker demands, and the number of power amplifiers present in the system, it is possible that the electrical service may become the limiting performance factor of your home theater system.

If this case occurs, consider installing a dedicated AC circuit for the home theater system. Contact a licensed electrician for assistance. If more than one AC circuit is providing power to the system, contact a licensed electrician to ensure that all components are operating with the same solid, low-impedance ground reference.

Caution!

Building regulations and electrical codes differ from location to location, making it impossible to anticipate the requirements of amplifier high-current AC circuits, such as those that the Nº53 is capable of using. Contact a local, licensed electrician for further information.

Operating States

The Nº53 Reference power amplifier is designed for continuous operation and has four operating states:

- **Off** – AC power is disconnected using the rear panel Power switch or by removing the power cord from the rear panel.
- **Power Save** – AC power is connected to the low-voltage power supply, the communication circuits, and the control circuits. All nonaudio functions, such as ML Net, are active.
- **Standby** – AC power is fully connected to the amplifier but the outputs are muted.
- **On** – the Nº53 is fully powered and all outputs are active.

The Nº53 should be unplugged during lightning storms and extended periods of nonuse as a precaution against potentially damaging power surges through the line.

Caution!

BEFORE moving the Nº53 Reference power amplifier, make sure it is powered off with the rear panel Power switch. Then make sure the power cord is disconnected from the rear panel connector and the electrical outlet.

Front Panel

The front panel contains one LED and one button, as shown.

Status LED

Indicates the operating state of the N°53 and provides basic diagnostic information when a fault condition occurs. Refer to the table below for descriptions of LED behavior.

LED Behavior	Description
Fully lit	Indicates that the amplifier is powered on.
Slowly blinking	Indicates that the amplifier is in Standby mode.
Dimly lit	Indicates that the amplifier is in Power Save mode or, when the Power switch is turned on, that the amplifier is initializing.
Not lit	Indicates that the amplifier is powered off.

Refer to the “Troubleshooting” section in the back of the manual for a description of the Status LED behavior when a fault is detected.

Standby Button

Places the N°53 into Standby or Power Save mode, depending upon the state of the rear panel Power Save Mode switch. Pressing the Standby button while the amplifier is in Standby or Power Save mode turns on the amplifier.

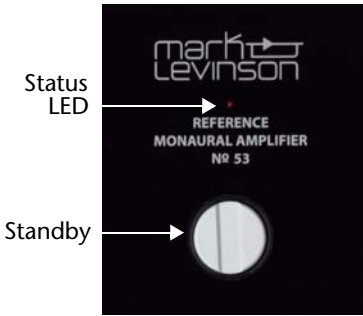
Standby mode provides full AC power to the amplifier but mutes the outputs. Power Save mode powers only the low-voltage power supply, control circuits, and communication circuits so that only nonaudio functionality is available.

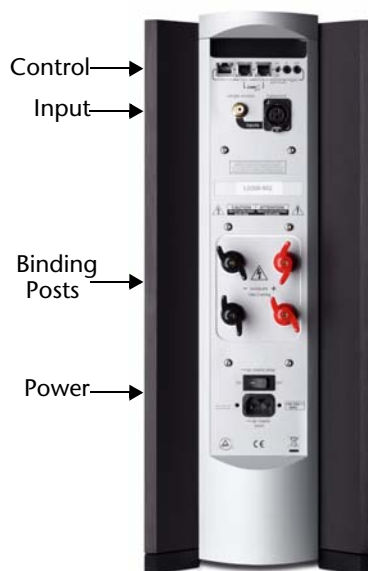
Note

When the amplifier enters or exits Power Save mode, there’s an extended initialization period before the amplifier is fully powered on. During this period, additional Standby button presses are ignored.



Front Panel





Rear Panel

The Nº53 rear panel, shown on the left, provides power controls and all of the cable connections for the amplifier.

The rear panel can be broken into four sections:

- Control – includes connections for ML Net, Link2, and triggers, as well as the Power Save Mode switch.
- Input – provides connections for the audio input.
- Binding Posts – provide connections for the loudspeaker output.
- Power – includes the AC input connector and main power switch.

Note

The audio outputs of this power amplifier are considered Class 2 (CL2) circuits in North America. This means the wire connected between this amplifier and the speaker(s) shall be rated at minimum Class 2 (CL2) and shall be installed according to the U.S. National Electrical Code (NEC) Article 725 or Canadian Electrical Code (CEC) Section 16.

Power



The power section of the rear panel contains the main Power switch and the AC input connector.

Power Switch (~ AC Mains Relay)

Provides power to the Nº53 internal circuits. When the rear panel Power switch is used to turn on the Nº53, the amplifier enters either Standby mode or Power Save mode, depending upon the state of the rear panel Power Save Mode switch.

AC input (~ AC Mains)

Provides AC power to the Nº53 when the supplied power cord is connected from the AC input connector on the Nº53 rear panel to an electrical outlet.

Caution!

Before operating the Nº53, verify that the voltage label near the AC input connector indicates an operating voltage compatible with the voltage level of the electrical outlet you intend to use.

Loudspeaker Binding Posts



Note

The N°53 has two pairs of custom-made, gold-plated, high-current “hurricane” loudspeaker binding posts; each pair connected directly to the output of the amplifier. The positive binding posts, labeled + (positive), are red; the negative binding posts are black and are labeled – (negative).

Ensure when connecting the loudspeaker that at least one positive and one negative binding post is used. There is NO ground reference.

Banana plugs can also be used to connect the speaker cables to the binding posts via the banana-plug sockets. Banana-plug sockets are not available for some models.

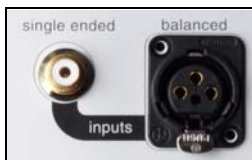
Caution!

DO NOT OVERTIGHTEN the binding posts. The innovative design of these binding posts provides more leverage, ensuring that high-contact, tight-pressure connections are achieved when finger-tightened.

DO NOT FORCE the binding-post “wings” over a bent or oversized connector. Doing so may damage the binding post.

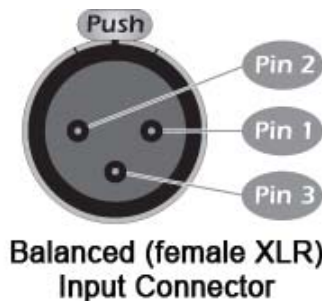
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Input



One balanced and one single-ended (unbalanced) connector are available for the audio input.

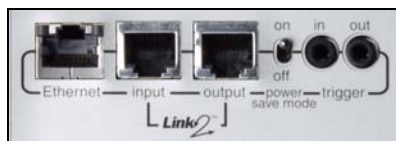
The pin assignments, shown below, of the XLR-type female input connector are consistent with the standards adopted by the Audio Engineering Society. Refer to the operating manual of your preamplifier to ensure that the pin assignments of its balanced output connectors correspond to the Mark Levinson N°53 power amplifier. If not, wire the cables so that the appropriate output pin connects to the equivalent input pin.



Pin Assignments:

- Pin 1: Signal Ground
- Pin 2: Signal + (non-inverting)
- Pin 3: Signal - (inverting)
- Connector Shell - Chassis Ground

Control



The control section of the N°53 rear panel contains the Ethernet and Link2 ports, the Power Save Mode switch, and the trigger input and output.

Trigger Input and Output

The rear panel of the N°53 has two trigger connectors – one input and one output. The trigger input can receive a 3-12Vdc signal from a connected component. The trigger output connects directly to the trigger input connector, enabling a daisy-chain of amplifiers to be controlled by a single trigger signal.

The triggers enable the power amplifier to be automatically powered on, or put into Standby or Power Save mode, by the state of other devices in the system.

Receiving a trigger signal causes the N°53 to change its power state. If the trigger input receives a 3-12Vdc signal, the amplifier powers up to the “On” mode. If the trigger input transitions from 3-12Vdc to 0Vdc, then the N°53 returns to the Standby or Power Save mode.

Power Save Mode Switch

The Power Save Mode switch on the rear panel provides the energy-saving mode.

- When set to ON, the amplifier enters Power Save mode when the rear panel Power switch is turned on. The front panel Standby button switches the amplifier between Power Save and On modes.
- When set to OFF, the amplifier enters Standby mode when the rear panel Power switch is turned on. The front panel Standby button switches the amplifier between Standby and On modes.

When Power Save mode is active, AC power is only connected to the low-voltage power supply, communication circuits, and control circuits. Therefore, nonaudio functions such as ML Net and Link2 are active, but the audio circuits are NOT powered. This means that there may be a small delay before the amplifier is fully operational when taken out of Power Save mode.

Link2 Ports

Use the Mark Levinson Link2 protocol to link together two or more Mark Levinson components. For more information on the Link2 protocol and how to use it with the N°53, refer to the “Link2” section found later in this manual.

Ethernet Port

This connection is designed for use with proprietary Mark Levinson external controllers, such as ML Net, and for use with a web browser, or it provides serial port control. For a list of available serial commands, refer to the separate document *Nº5 Series Power Amplifier Serial Protocol Definitions*.

The Ethernet port is a standard 10/100BaseT connection for use with external control and networking. The Nº53 supports connection to a router or network, and to a PC-compatible computer.

Network Setup

The Nº53 reference power amplifier supports network connection through the Ethernet port. The Nº53 can connect to a network through use of a router or directly to a computer.

The Nº53 can be:

1. **Connected to a router with DHCP active** – We highly recommend using this option. Since the DHCP (Dynamic Host Configuration Protocol) automatically assigns the IP (Internet Protocol) addresses, setup is much simpler.
2. **Connected to a router with DHCP not active** – This method requires more advanced networking knowledge to set up because it uses fixed static IP addressing.
3. **Connected directly to a computer with no router** – We recommend only using this option when a router is not available. This method requires more advanced networking knowledge to set up because it uses fixed static IP addressing and a special network crossover cable.

This section provides general instructions for all three methods.

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Material Requirements

The following materials are required to connect the Nº53 to the network with a router:

- Nº53 reference monaural power amplifier
- Two twisted-pair network cables
- PC-compatible computer with 10/100BaseT network card
- 10/100BaseT router

Note

The Nº53 does not support wireless connection. However, a cable attached from the amplifier to a wireless adapter can be used to interface with a wireless network.

The following materials are required to connect the Nº53 to a computer without the use of a router:

- Nº53 reference monaural power amplifier
- Network crossover cable
- PC-compatible computer with 10/100BaseT network card

Computer Requirements

The PC-compatible computer used to connect to the N°53 must have the following software installed:

- Windows® 2000 or Windows XP
- Web browser (Microsoft® Internet Explorer® 6.0 or higher preferred)

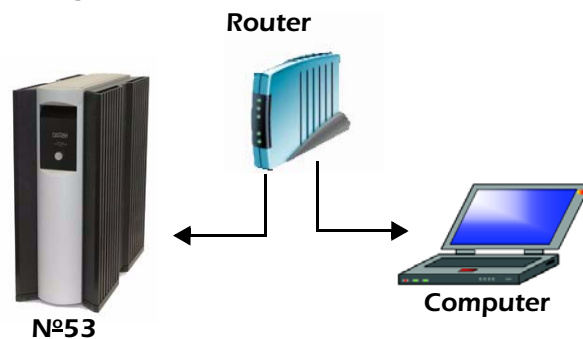
Note

If DHCP is not active, then the computer must be set up with a static IP address. Refer to the “Setting Up the Computer” section found later in this manual for instructions.

Connecting the Cables

The N°53 can be connected to the computer in two ways – through a router or directly to the computer. *Before connecting the cables, ensure that the computer and the N°53 are powered off.*

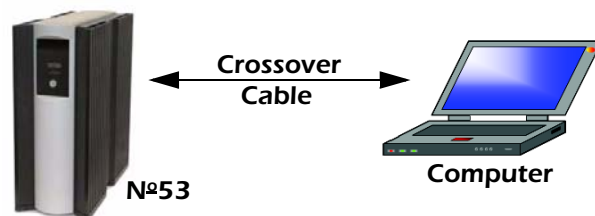
To Connect Using a Router:



1. Connect a network cable from the router to the Ethernet port on the rear panel of the N°53.
2. Attach a second network cable from the router to the Ethernet port of the computer.

To Connect Without a Router:

Use a **network crossover cable** to connect the amplifier directly to the computer. Different from a standard network cable, the crossover cable is designed to connect network access ports directly together without a hub, router, or switch.



Connect the crossover cable between the Ethernet port on the rear panel of the N°53 and the Ethernet port of the computer.

Internal Web Page

When connected to a computer, the Nº53 has an internal Web page that provides access to:

- **Network Setup** – allows the user to modify the network setup parameters. Accessing the internal Web page is the ONLY way to modify the network setup parameters of the Nº53 amplifier.
- **Display Intensity** – allows the brightness level of the Mark Levinson logo on the Nº53 front panel to be adjusted. Use the pulldown menu to select one of the four brightness settings available - High, Medium, Low, and Off.
- **Status Information** – provides basic status information of the Nº53 amplifier.
- **Error Reporting** – tracks system-related error messages for the Nº53 amplifier. This page is a diagnostics tool for Mark Levinson Customer Service use.

The Nº53 MUST be connected to a computer via the Ethernet port before you can access the internal Web page. Continue to the next section – “Network Setup” – for further instructions.

The Web page also has a Restore Defaults button, which resets the parameters to their factory default values. Clicking the Restore Defaults button displays a pop-up asking for confirmation; click Yes to restore the factory default values.

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Network Setup Parameters

Accessible only through the Nº53 internal Web page, the network setup parameters include:

- **Static IP Address** – provides a fixed IP address. This IP address is NOT automatically selected; it must be entered. If DHCP is on, then this parameter is not used. IP address 192.168.50.4 is the factory default value for the Nº53.
- **Subnet Mask** – identifies the subnet mask for the Nº53. This IP address is automatically assigned by DHCP. If DHCP is off, then the address must be entered manually and must agree with the subnet mask address of the router. IP address 255.255.255.0 is the factory default value for the Nº53.
- **Host Name** – indicates the network name given to the Nº53 amplifier. This host name is unique to each amplifier and is comprised of two parts, separated by an underscore. The first part contains one to eight characters that can be modified via the internal Web page of the amplifier.

The second part of the host name contains the last six characters of the MAC address. This MAC address is unique to each Nº53 amplifier. The default is “NO53_XXXXXX” where “x” stands for the last six characters of the unique MAC address for that amplifier.

- **DHCP** – turns the DHCP capability on or off. When activated, DHCP assigns a unique IP address to the N°53. The factory default value is On. *We recommend leaving DHCP set to On.*

Connecting With DHCP (Recommended)

Use this procedure if you are using a router with DHCP active to connect to the amplifier. Otherwise, skip to the next procedure.

1. Connect the amplifier to the router, as described in the earlier “Connecting the Cables” procedure. Make sure that everything is powered off before making cable connections.
2. Turn on the PC and router. Verify that the router has DHCP active.
3. Press the Power button on the amplifier.
4. On the computer, open the Internet Explorer Web browser.
5. Type “NO53_XXXXXX” on the address line (URL). The “x” characters stand for the last six characters of the unique MAC address for that amplifier.
6. Press Enter.

If Internet Explorer is unable to find the amplifier, then you must find the IP address that was assigned to the amplifier by the router. If required, refer to your router’s owner’s manual for further details. Repeat this step using the IP address for the amplifier that was assigned by the router.

7. The Home tab of the amplifier internal Web page is now displayed. The tab is in red text to indicate that it’s the current page.

The network connection is now complete.

Setting Up the Computer

If DHCP is not used, then the computer must be set up too. Use this procedure to set up the computer, then continue to the next procedure to connect to the amplifier. For the computer to find the amplifier, the LAN (Local Area Network) and TCP/IP (Internet Protocol) settings of the computer must be set up. The parameter setups vary slightly depending upon the operating system of the computer. Refer to the procedure below that matches the operating system on your computer.

Note

Due to your preference settings in the Windows operating system, the names and order of the dialog boxes may vary slightly from these instructions.

Network Setup for Windows XP

1. From the Start menu, select Control Panel.
2. Double-click on the Network Connections option.
3. Double-click on the Local Area Connection option.
4. Click the Properties button to open the Local Area Connection Properties menu. If the computer is not currently connected to an active network, Step 3 has already opened the Local Area Connection Properties menu.
5. Click on the Internet Protocol (TCP/IP) line item so that it is highlighted.
6. Click the Properties button.
7. Select the “Use the following IP address” option. The IP address, Subnet mask, and Default gateway boxes are no longer grayed out and can now be modified.
8. Enter the following values:
 - IP address: 192.168.50.x – where x stands for a number other than 0, 4, or 255
 - Subnet mask: 255.255.255.0
 - Do not enter a value in the Default gateway parameter

The computer must have a unique address and be on the same subnet as the amplifier.
9. Click “OK” to save and exit the menu.
10. Open the Internet Explorer Web browser.
11. From the menu bar, select the Tools ► Internet Options menu.
12. Select the Connections tab.
13. Click the LAN Settings button.
14. Verify that “Use a proxy server for your LAN” is NOT checked.
15. Click “OK” to save and exit the menu.

Network Setup for Windows 2000

1. From the Start menu, select Settings ► Control Panel.
2. Double-click on the Network and Dial-Up Connections option.
3. Double-click on the Local Area Connection option.
4. Click the Properties button to open the Local Area Connection Properties menu. If the computer is not currently connected to an active network, Step 3 has already opened the Local Area Connection Properties menu.
5. Click on Internet Protocol (TCP/IP) line item so that it is highlighted.
6. Click the Properties button.

7. Select the “Use the following IP address” option. The IP address, Subnet mask, and Default gateway boxes are no longer grayed out and can now be modified.
8. Enter the following values:
 - IP address: 192.168.50.x – where x stands for a number other than 0, 4, or 255
 - Subnet mask: 255.255.255.0
 - Do not enter a value in the Default gateway parameter

The computer must have a unique address and be on the same subnet as the amplifier.
9. Click “OK” to save and exit the menu.
10. Open the Internet Explorer Web browser.
11. From the menu bar, select the Tools ► Internet Options menu.
12. Select the Connections tab.
13. Click the LAN Settings button.
14. Verify that “Use a proxy server for your LAN” is NOT checked.
15. Click “OK” to save and exit the menu.

Connecting With Static IP Addressing

Use this procedure if you plan to connect with static IP addresses (DHCP is turned off). Otherwise, skip to the next procedure to connect directly to a computer. For the computer to find the amplifier, the TCP/IP and LAN settings of the computer must be set up. Refer to the previous “Setting up the Computer” procedure for instructions.

1. Connect the amplifier to the router, as described in the earlier “Connecting the Cables” procedure. Make sure that everything is powered off before making cable connections.
2. Turn on the PC and the router. Verify that the router has DHCP turned off, if required.
3. Set up the router to the IP address 192.168.50.x – where x stands for a number other than 0, 3, 4, 255, or the number used for the computer IP address. The router must be on the same subnet as the amplifier and the computer, but also must have its own unique address. Refer to the router’s owner’s manual for instructions on how to modify the IP address.
4. Press the Power button on the amplifier.
5. On the computer, open the Internet Explorer Web browser.
6. On the address (URL) line, type in the static IP address of the amplifier and press Enter. There may be a short delay before the amplifier Web page loads.
7. The Home tab of the amplifier’s internal Web page is now displayed. The tab is in red text to indicate that it is the current page.

8. Observe that the Status section of the Web page identifies the host name of the amplifier. The host name can be modified, but only the first eight characters are affected; anything after the underscore may not be modified.

To change the host name of the amplifier:

- A. Type the new name into the white box to the right of the parameter. The new name must be made from the capital letters, A to Z, and the numbers, 0 to 9. Underscores may also be used. Only eight characters are allowed.

Note

The host name MUST start with an alpha-character (A to Z). This is a standard networking rule.

- B. Click the Submit button to save the new value.
- C. Click the Refresh button in the Status section of the Web page to observe the new host name.
9. Observe that the Status section of the Web page also identifies the IP address of the amplifier. The static IP address can be modified, if desired.

To change the IP address of the amplifier:

- A. Type the new IP address into the white box to the right of the parameter.
- B. Click the Submit button to save the new value.
- C. Enter the new IP address of the amplifier into the browser. The amplifier Web page loads, reflecting the new information.

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The network connection is now complete.

Direct Connection

Use this procedure to connect directly to a computer if you are not using a router. For the computer to find the amplifier, the TCP/IP and LAN settings of the computer must be set up. Refer to the earlier "Setting up the Computer" procedure for instructions.

1. Connect the amplifier to the computer, as described in the earlier "Connecting the Cables" procedure. Make sure that both the amplifier and the computer are powered off before connecting.
2. Press the Power button on the amplifier.
3. On the computer, open the Internet Explorer Web browser.
4. On the address (URL) line, type in the static IP address of the amplifier and press Enter. There may be a short delay before the amplifier Web page loads.

5. The Home tab of the amplifier's internal Web page is now displayed. The tab is in red text to indicate that it is the current page.
6. Observe that the Status section of the Web page identifies the host name of the amplifier. The host name can be modified, but only the first eight characters are affected; anything after the underscore may not be modified.

To change the host name of the amplifier:

- A. Type the new name into the white box to the right of the parameter. The new name must be made from the capital letters, A to Z, and the numbers, 0 to 9. Underscores may also be used. Only eight characters are allowed.

Note

The host name **MUST** start with an alpha-character (A to Z). This is a standard networking rule.

- B. Click the Submit button to save the new value.
- C. Click the Refresh button in the Status section of the Web page to observe the new host name.
7. Observe that the Status section of the Web page also identifies the static IP address of the amplifier. The static IP address can be modified, if desired.

To change the IP address of the amplifier:

- A. Type the new IP address into the white box to the right of the parameter.
- B. Click the Submit button to save the new value.
- C. Enter the new IP address of the amplifier into the browser. The amplifier Web page loads, reflecting the new information.

The network connection is now complete.

ML Net

The ML Net protocol allows you to control two or more Mark Levinson products simultaneously via the Ethernet port.

Note

Since ML Net operates through the use of a router and the Ethernet connection, all devices must have networking capability. Refer to the previous “Network Setup” section of this manual to set up the Nº53 for network operation.

Masters and Slaves

ML Net uses a single “master” device to control specific functions of other ML Net-capable Mark Levinson products. An ML Net system can only have one master device; all other devices in the system become “slaves”. Slave devices receive and respond to the commands of the master device.

The Nº53 Reference power amplifier is always a slave device. A separate master device must be used in conjunction with the Nº53 amplifier.

As a slave device, the Nº53 responds to the following ML Net commands sent from the master device:

- **Status Reporting** – status conditions of the Nº53 slave(s) are reported to the master device; status includes Temperature, Session Time, Total On Time, and Fault Reporting.
- **Standby State** – the master device controls the Standby state of the Nº53 amplifier.
- **Synchronized LEDs** – the Standby LEDs of the master device and all assigned slave devices blink in unison.

Note

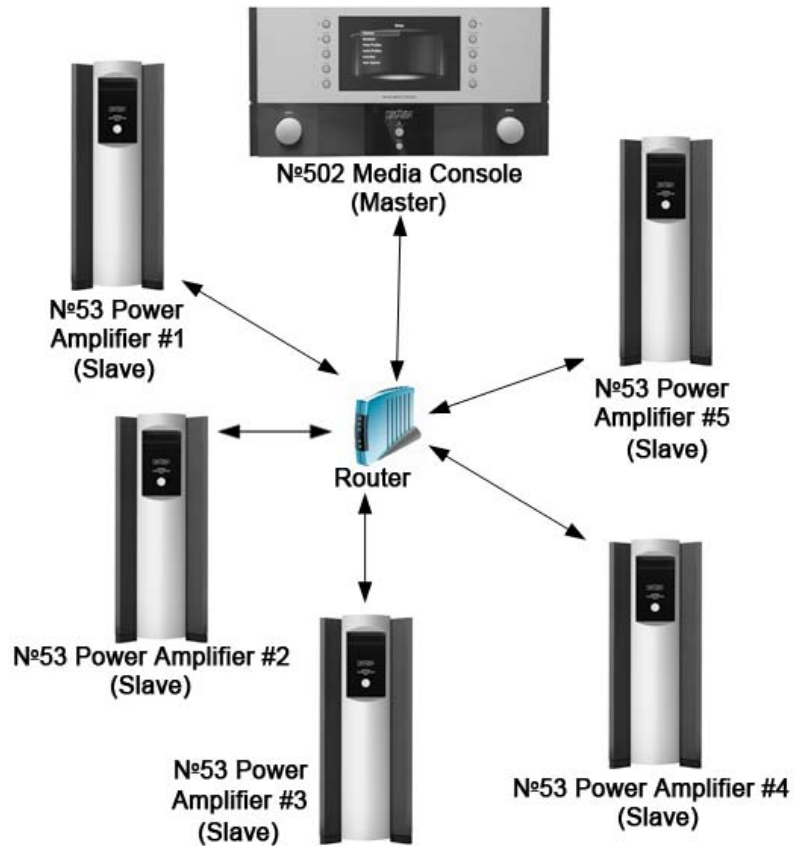
The Status LED on the front panel of the Nº53 does not blink if the amplifier is in Power Save mode.

Connecting the Devices

After configuring each device on the network, connect all of the devices together. *Ensure that all components are powered off or in Standby mode before connecting to the Ethernet ports.*

Each device must be connected to the same network and use the same subnet. Refer to the “Network Setup” section for instructions on how to connect the Nº53 to the network.

The figure below illustrates a typical ML Net setup:



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If more devices are desired than the router can handle, connect the additional devices first to a switch, then connect the uplink of the switch to a normal port on the router.

Discovering Slaves

Before the master device can control any slave device, the slave device must be “discovered” and assigned to the master device. Refer to the owner’s manual of the designated master device for further information about discovering and assigning slave devices.

ML Net and Link2

A system can use ML Net and Link2 together, but the Link2 control has priority. Status requests and notifications are sent to the ML Net master device, but commands sent by the ML Net master device are ignored as long as Link2 is connected.

Note

While ML Net is active from initial power-up, Link2 doesn’t activate until the master device is put into Standby mode (after initial power up). As a result, the amplifier can react initially to ML Net commands even though Link2 is connected.

Status Reporting

The Nº53 slave(s) can report the following status information to the master device:

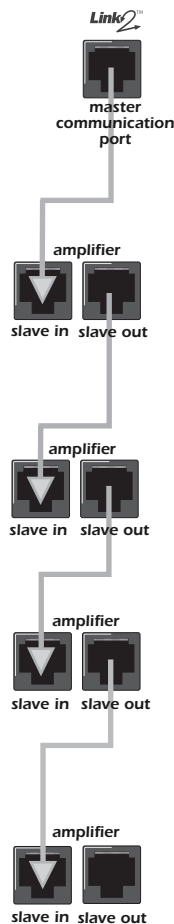
- **Temp (Temperature)** – the current operating temperature of the amplifier(s).
- **Session Time** – the amount of time that the amplifier(s) has been powered on.
- **Total On Time** – the total amount of hours that the Nº53 amplifier(s) has been powered on since its manufacture.

If a slave device is inactive, unassigned, or assigned to a different master, then status information is not available.

Fault Reporting

The Nº53 slave(s) also reports fault information to the master device. If a slave device is inactive, unassigned, or assigned to a different master, then error reporting is not available. For more information about possible fault conditions, refer to the “Troubleshooting” section of the manual.

Link2



The main purpose of the Mark Levinson Link2 protocol is to allow a single “master” device to control other “slave” devices. Refer to the product documentation of each Mark Levinson product to verify compatibility and cabling requirements.

To use Link2, all devices are daisy-chained together as demonstrated in the figure on the left. Each “chain” can have only one master device; all other devices in the chain become slaves. Slave devices receive and respond to the commands of the master device. The N°53 amplifier is always a slave device.

Ensure that all components are powered off before connecting the Link2 ports and ensure that there are no audio sources active. Once connected, power on the linked components **one at a time** to ensure proper functioning of the Link2 controls. The master device **must** be powered on first.

Allow each component to complete the initialization sequence before proceeding to the next component. When all components have been powered on, put the master device into Standby mode again. Link2 does not activate until the master device is put into Standby mode (after initial power-up).

The N°53 slave(s) can perform the following Link2 functions:

- **Synchronized LEDs** – the Standby LED of the N°53 blinks in unison with the master device.
- **Standby Link** – the master device controls the Standby state of the N°53 amplifier.
- **Fault Condition Reporting** – if the N°53 experiences a fault condition, the fault is reported on the master device.

The N°53 uses 8-to-8 pin Cat 5 or link cable. Older products use 8-to-6 pin link cable. We recommend using Cat 5 cables for greater quality and noise immunity.

Troubleshooting

Incorrect operation is sometimes mistaken for malfunction. If problems occur, use this section for troubleshooting information. If problems persist, contact your authorized Mark Levinson dealer.

No Power (Standby LED is off)

1. Examine the power cord to ensure that it is connected to both the rear panel connector of the N°53 and an electrical outlet.
2. Make sure the N°53 is powered on with the rear panel Power switch.
3. Examine the electrical circuit breaker to ensure that power is being supplied to the electrical outlet to which the N°53 is connected.
4. Verify that the voltage rating on the rear panel of the N°53 matches the voltage rating of the electrical outlet. If the voltages do not match, no power is sent to the outputs of the amplifier.

No Output

1. Make sure that the source device is powered on, playing audio, and set to the right output connector.
2. Make sure the N°53 is **not** in Standby or Power Save mode. The LED should be at full brightness.
3. Examine cables to ensure a solid connection between the N°53 and associated components.
4. Make sure the N°53 output connectors are connected to operational loudspeakers.
5. Ensure that the N°53 is not in a fault condition. When the N°53 experiences a fault, the output is muted and the Status LED on the front panel blinks in a rapid pattern, indicating:

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LED Behavior	Description
Rapidly blinking (on most of the time)	Indicates that a power-related fault has occurred.
Rapidly blinking (on half of the time)	Indicates that a signal-related fault* has occurred.
Rapidly blinking (off most of the time)	Indicates that a thermal-related fault has occurred.

**Signal-related faults include significant DC offset at the output due to either DC in the input signal or a failed component within the amplifier OR excessive current demands due to a short-circuited loudspeaker wire.*

In fault mode, the amplifier output is muted and the main power supply is shut down. The N°53 remains in fault mode until the fault condition is resolved and the amplifier is power-cycled (turn off the

rear panel Power switch, wait at least 10 seconds, then turn the Power switch on). If the fault cannot be resolved, contact your authorized Mark Levinson dealer or contact Mark Levinson customer service.

Can't Assign in ML Net

You must assign the slave from the master device. Verify that the slave you want to assign is listed in the master device list and check its current state. For further explanations on assigning slave devices, refer to the owner's manual of the master device.

No Response to Commands in ML Net

1. Verify that the master device and the N°53 are properly connected together with a router.
2. Verify that the N°53 network setup is correct. Access to the internal Web page via a computer is required to verify the network settings of the N°53. You may have to use the router status to verify network connectivity.
3. If status information is received on the master device, but commands cannot be sent to the amplifier, then verify that a Link2 connection does not also exist to the amplifier. If both Link2 and ML Net are connected to the amplifier, the N°53 ignores ML Net commands but status information is still sent.

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Link2 Not Working

1. Verify that all devices are properly daisy-chained.
2. Refer to the product documentation of each device to verify compatibility and the proper cabling.
3. Power down all of the devices, then power up the master device, followed by each slave device. Allow each device to go through its initialization process before powering up the next device. Then cycle the master device through Standby mode. The Standby LEDs should now be blinking in unison.

No Connectivity Via Ethernet

1. Verify that the network cables are properly connected between the router, switch, or hub and the N°532. If connecting to a computer, verify that the computer network cable is in the correct port.
2. Verify the age of the router, switch, or hub. There may be a communication issue with the N°532 and older network devices. Power cycle the N°532 and use a newer router, switch, or hub between the network and the N°532.
3. If connected directly to the computer, make sure a crossover cable is used.
4. Verify that the router and computer have valid IP addresses.

5. Verify that the proxy server in the computer's network setup is disabled. An active proxy server can interfere with the software upgrade procedure.
6. If the web browser cannot find the host name of the amplifier, verify the following:
 - Ensure that the local DNS server is properly configured. We recommend configuring the local DNS Server to "DNS Forwarding" mode. To configure the DNS Server, refer to the setup manual of the server.
 - If using a subdomain, enter the complete address into the browser. For example, *http://NO532.yourhome.network.com*
7. Enter the IP Address of the amplifier into the browser. For example, "*http://192.168.50.3*"

If All Else Fails...

1. Turn off the Nº53 using the rear panel Power switch, wait at least 10 seconds, then turn the Nº53 back on.
2. Restore the default settings on the internal Web page or by using the front panel button as described in the next section.
3. Visit www.marklevinson.com and search the knowledgebase for more information.
4. Contact your Mark Levinson dealer.

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Restoring Factory Defaults

Pressing the Factory Default button on the internal Web page of the Nº53 Reference amplifier resets all settings to their factory default values. If the internal Web page is not available, there is also a key press sequence available. Follow the instructions below to reset the factory default settings from the front panel.

1. Power off the amplifier.
2. Press and hold the Standby button.
3. Turn on the Nº53 rear panel Power switch.
4. Keep holding down the Standby button until the front panel LED blinks four times.
5. Release the Standby button.

Now reset to its factory default state, the amplifier will reinitialize.

Fault Protection

The N°53 is designed to prevent damage to itself and associated components. These extensive features protect both the critical circuitry of the amplifier itself and shield connected loudspeakers from serious damage due to critical high-power levels.

Basic protections designed into the N°53 include fuses on the AC input line for each transformer to protect against excessive current conditions, such as driving shorted outputs. Inrush limiting prevents premature aging of the power supply components during power-up; once the power supply has been charged, this feature goes off-line until the amplifier is powered up again.

The N°53 power amplifier also incorporates a controlled clipping circuit. This circuit reduces the harsh high-frequency harmonics typically generated when an amplifier goes into clipping.

ML Net Fault Conditions

The slave devices in an ML Net system can report fault conditions to the master device. Fault condition reports are displayed on the display of the master device when the fault occurs.

When a fault condition occurs, the N°53 mutes the amplifier output and the main power supply is shut down. The N°53 remains in fault mode until the fault condition is resolved and the amplifier is power-cycled (turn off the rear panel Power switch, wait at least 10 seconds, then turn the Power switch on). If the fault cannot be resolved, contact your authorized Mark Levinson dealer or contact Mark Levinson customer service.

The fault conditions reported are:

- **Slave Device DC Offset** – indicates that the N°53 amplifier is experiencing a signal-related fault.
- **Slave Device Over Current** – indicates that the N°53 is experiencing an over-current condition.
- **Slave Device Over Temperature** – indicates that the N°53 amplifier is overheating.
- **Signal** – indicates that the N°53 has experienced a general signal fault.

Care & Maintenance

The Nº53 requires routine care and maintenance to ensure optimal performance. The bulleted items indicate maintenance procedures that should be performed on a regular basis.

Turn off the Nº53 and unplug the rear AC power cord before performing maintenance to the amplifier.

Note

Failure to perform the maintenance procedures included in this section may void the manufacturer's warranty and/or standard repair policies.

- To remove dust from the Nº53 exterior surface, use a feather duster or a low-pressure blower.
- To remove dirt and fingerprints from the Nº53 exterior surface, use a soft, lint-free cloth. DO NOT use metal polish or a cloth made with steel wool.
- If needed, this cloth can be dampened with isopropyl alcohol. DO NOT dampen the cloth with Benzene, acetone-based cleaners, or other commercial cleaners.
- Wipe the Nº53 exterior surface in the same direction as the grain of the brushed aluminum.

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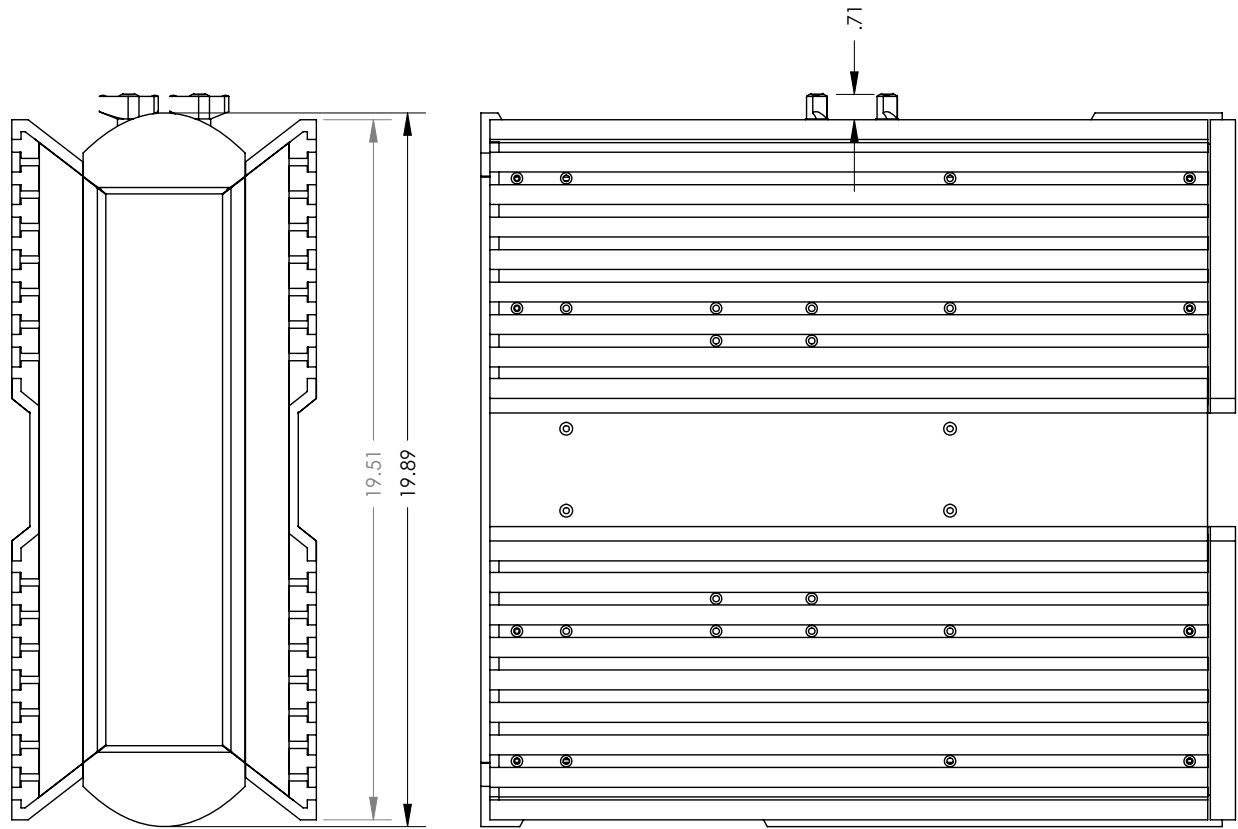
Caution!

DO NOT apply liquid directly to the Nº53 exterior surface. Doing so may damage electrical components.

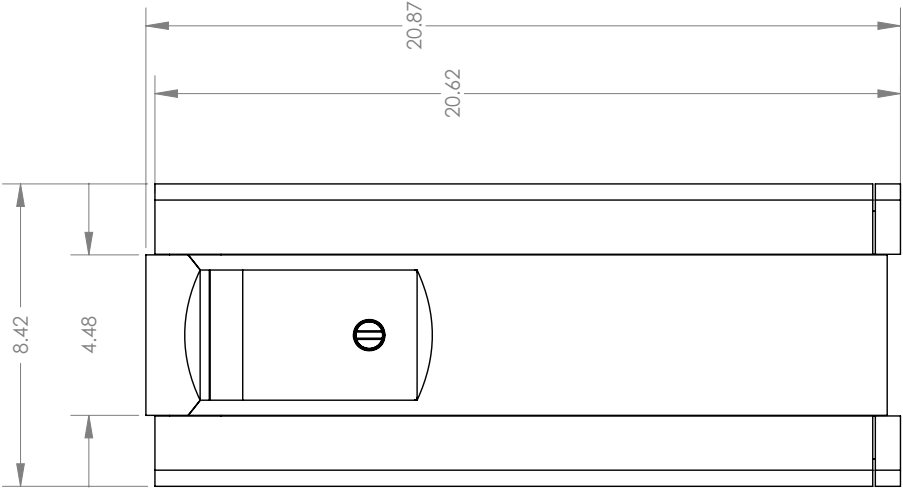
Specifications

All specifications are subject to change without notice.

Input & Output Connectors	• one balanced XLR input • one unbalanced RCA input • two pairs of “Hurricane” loudspeaker output binding posts with banana-plug sockets (banana-plug socket not available for some models)
Control Connectors	• two Link2 ports (one input and one output) • one Ethernet port • one 3.5mm mono (tip/sleeve) mini plug trigger input, 3-12Vdc • one 3.5mm mono (tip/sleeve) mini plug trigger output, 3-12Vdc • 3-pin IEC standard power connector
Rated Output Power	500W @ 8 Ω, 1000W @ 4 Ω Power ratings are measured as rms power from 20Hz to 20kHz with no more than 0.1% THD.
Frequency Response	within ± 0.1 dB from 10Hz to 20kHz
Signal to Noise Ratio	-85dB, reference level: 2.83 Vrms (1W @ 8 Ω)
Input Impedance	100 k Ω (balanced); 50 k Ω (unbalanced)
Voltage Gain	26.8dB
Input Sensitivity	2.89V for maximum rated output power
Power Requirements	100V~, 120V~, 230V~, 640W, factory set for destination country
Dimensions*	• Height: 20.87 in (530mm) • Width: 8.42 in (214mm) • Depth: 20.4 in (518mm) <i>*See Dimensions diagram on the next page.</i>
Weight	• Net weight: 135 lbs (61.24kg) • Shipping weight: 165 lbs (74.84kg)
Operating Environment	• Operating temperature: 0° to 35°C (32° to 95°F) • Storage temperature: -30° to 75°C (-22° to 167°F) • Relative humidity: 95% maximum without condensation



Mark Levinson No53
135lbs



Declaration of Conformity

Application of Council Directive(s):

2004/108/EC and 2006/95/EC, as amended.

Standard(s) to Which Conformity Is Declared:

EN 55013:2001 + A1:2003 + A2:2006
EN 55020:2007
EN 61000-3-2:2006
EN 61000-3-3:1995 + A1:2001 + A2:2005
EN 60065:2002

Manufacturer: Harman Specialty Group
3 Oak Park Drive
Bedford, MA 01730-1413

The equipment identified here conforms to the Directive(s) and Standard(s) specified above.

Type of Equipment: Power Amplifier
Models: Mark Levinson No. 53
Date: June 2008

Harman Specialty Group
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