



Musashi

Three Band EQ Bass Preamp

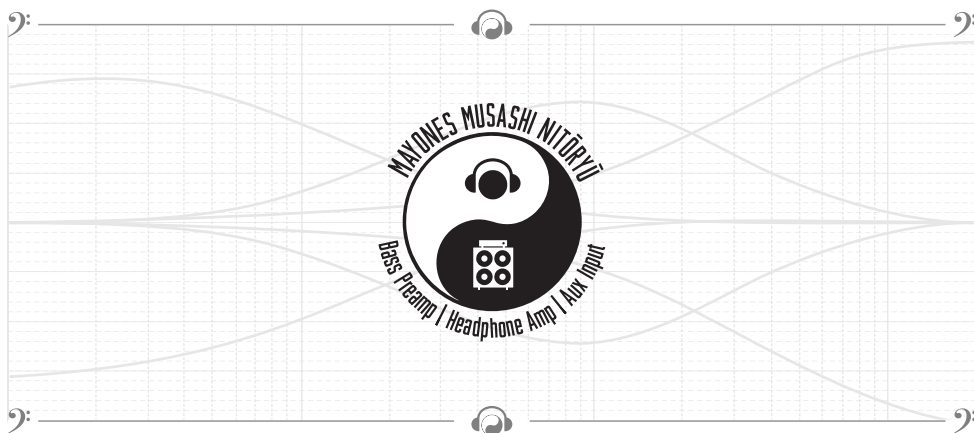


Nitōryū 2.0

Dedicated Stereo Headphone Amplifier with Extra AUX Input



Power Supply Unit module with Lithium-Polymer battery embedded



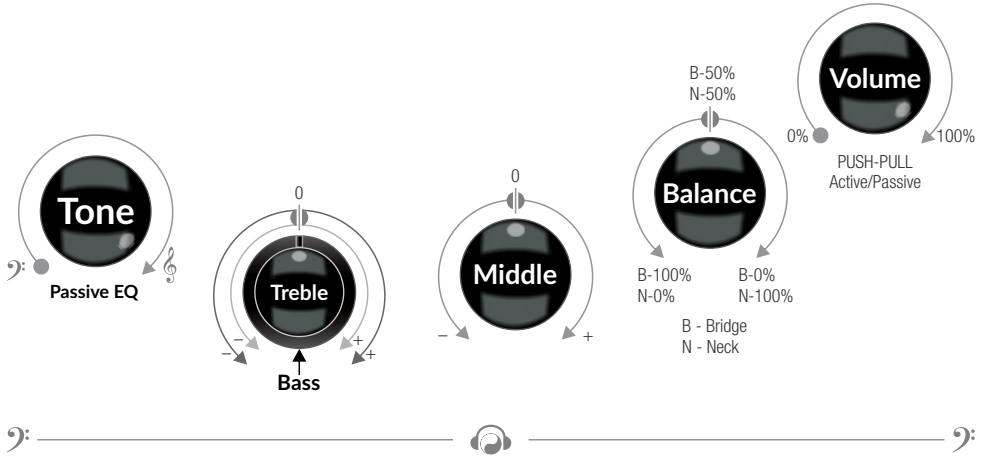
Your new Mayones bass now features **Musashi active onboard preamp with a three-band EQ** developed at Mayones, based upon years of R&D and consulting efforts, involving leading musicians all around the world. The preamp provides the user with a broad adjustment range in the low, mid, and high frequencies, while the operation profile is optimized for bass pickups.

The whole system of electronics features many **unique solutions** boosting the levels of instrument functionality. The presence of an embedded **Nitoryu 2.0 stereo headphone amp with stereo AUX-in input** is one of the key features as such. It allows the user to plug in a signal coming from an external device, such as a smartphone.

The push-pull switch integrated into the volume knob allows one to bypass the preamp and use the instrument in an entirely **passive mode**. In such a case, one can continuously adjust the pickups' tone, as it happens in the case of conventional basses. The last knob of the circuitry - **Tone** - is used for that. This is a function made for bass players who enjoy passive tone or use external preamps and FX processors, where most of their tone design efforts happen.

No more battery problems! The Musashi preamp, along with the Nitoryu 2.0 headphone amp, are both powered by a special module, powered by an onboard **lithium-polymer battery**. You can check the battery status at any given moment, thanks to the presence of a four-segment **battery charge level meter**.

If for some reason you forget to charge the battery, and the stage awaits, you can also use a **standard 9V battery** for the Musashi preamp. The 9V battery chamber is user-friendly, and easily accessible, thanks to a functional, magnetically-attached cover. No tools are needed in the process. Thanks to the special design, it's enough to press the battery cover with an index finger, the cover would be lifted, and then it can be freely removed. Remember to switch the power source!

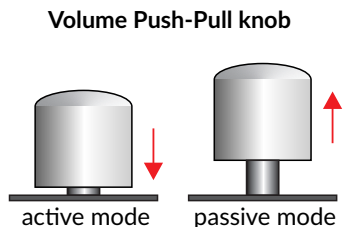


Volume, Balance, and Tone Adjustment

The active **Musashi** preamp of your bass guitar includes five knobs. In many cases, the sixth Tone knob is also present - used for passive tone adjustment, similar to conventional passive electronics used in bass guitars.

The first of the preamp knobs is used to adjust the **pickups volume**. The second knob acts as a signal **blender**, between the two pickups, allowing the user to smoothly adjust the **balance**. Looking at the knob from the front, the extreme right position allows you to use solely the neck pickup (N - neck = 100% / B - bridge = 0%). By turning that knob left, the share of signal from the neck pickup would be diminished, and the bridge pickup signal share would go upwards. The mid position of the pot has a detent. It designates the 50-50 (50% B, 50% N) setting, where both pickups are at full volume. The extreme left position, meanwhile, allows the user to use solely the bridge pickup (N 0% / B 100%). Noteworthy, the balance knob remains the baseline asset for the user in the tone-shaping endeavor. The third of the preamp knobs is used for **active EQ mids cut/boost**. The fourth, and the fifth knob are stacked and allow for active **treble** (upper knob), and **bass** (lower knob) adjustment. All three EQ knobs feature a distinct mid-position detent, when the knobs are set in that position, the EQ is flat. By turning the knobs right, the user boosts the given frequency range, while turning the knobs left results in frequency cutoff.

The last knob - **Tone** - is a classic, passive tone knob that solely darkens the tone of the instrument. One shall note that it can be used in both active and passive modes when the Volume knob is lifted (pulled). The tone knob, fused with the active EQ, is a very creative tone-shaping tool, as the output signal can be adjusted by two tone-shaping systems, paving the way toward an entirely new area of sound/tone design.



Passive mode

In certain circumstances, the use of active EQ may not be desirable - during studio work for instance, or when using an expansive pedalboard that offers a range of tone controls that remain far more precise, or in situations when we use several instruments (including ones that are exclusively passive), and we want all of them to retain their own, natural tone.

In the passive tone, the Tone, Volume, and Balance knobs all remain operational.



Musashi Preamp Variants

Depending on the model of the bass, one of many available Musashi preamp variants may be used. The above refers both to the number of knobs (separate bass and treble knobs, no balance knob if a single pickup is used, no passive tone knob), as well as the availability of extra functions, such as a mids knob with a push-pull pot, where rapid change of frequency between 400 and 800 Hz is available.

In some cases, one or two mini toggle switches are used, for different functions. When one of the Musashi preamp variants is used, please refer to the relevant manual.



Switching the Preamp Power On

The power switch is integrated with the 1/4-inch output jack. The preamp is turned on once the user plugs in the 1/4 inch jack to the input socket, and this is also signaled by a blue LED being turned on, on the backplate, designated **ON** (see the image on the right).



instrument 1/4"
output socket

Note: The headphone amp features a separate power switch, integrated with the 1/8-inch headphone jack. The headphone amp is only turned on after the headphone cable plug is inserted into that output.



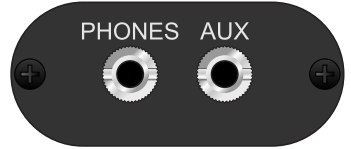
NITORYU 2.0 – DEDICATED STEREO HEADPHONE AMPLIFIER WITH EXTRA AUX INPUT



Plate with two 1/8 inch inputs

The presence of a stereo headphone amp onboard is a unique feature of your Mayones bass.

It includes **PHONES** output, and an extra stereo line input (**AUX IN**). That elevates the levels of instrument usability and allows one to play the bass with its true tone virtually anywhere, without disrupting anyone's peace of mind.



The usage of modern, energy-saving components and a highly-efficient lithium-polymer battery, along with a user-friendly charging system altogether extend the period over which the amp may be used, thus making the instrument available in several different scenarios.

However, there's more. The AUX 1/8-inch input jack creates a set of entirely new options. One can use a smartphone as a signal source, and play along with one's favorite songs or pre-prepared backing tracks. One shall remember - the bass player is a part of the rhythm section, and he is also a band member who remains responsible for keeping the tempo of the songs unified. Thus, when practicing using headphones, one may plug in an electronic metronome or use a metronome app on the smartphone.

One should note that the output signal of the Musashi Nitōryū preamp is sent to the headphone amp input. For the active setting, the EQ will have an impact on the tone one hears in the headphones. Thanks to this solution, an entirely new dimension is brought into practice, and the practice sessions may become even more engaging now.



PHONES 1/8" Output

Note: The headphone amp out has no separate volume knob, and one volume control knob is used for both outputs (along with the 1/4-inch jack output). One should remember this, especially when headphones and a recorder plugged into the main output are used at the same time.





Plugging In Stereo Headphones

The headphone amp can only work with stereo headphones fitted with a 1/8" (3.5 mm) TRS jack plug. Headphones with impedance ranging from 16 to 64 Ohms are acceptable. In the case of stereo headphones with a different plug, a proper adapter shall be used. Headphones and adapters shall be purchased separately. One shall not use mono (TS jack) headphones or headphones with an embedded microphone with a 1/8" (3.5 mm) jack with this instrument. OMTP, CTIA, or similar TRRS jack plugs are also not usable with this bass.

Although a stereo headphone amp is a part of the instrument, one shall note that the bass guitar is not a stereophonic instrument. For that reason, both channels of the headphones (left and right) transmit the very same, monophonic pickup signal that is only split between the two channels of the headphone amp.

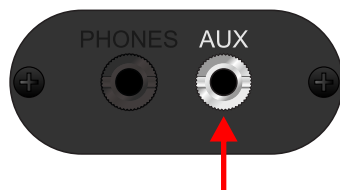


AUX In - Line Input

This 1/8-inch jack is used to plug in a line-level stereo input, from an external source - a smartphone, tablet, CD player, metronome, and so on.

Before plugging in an external device, mute it completely, and also turn down the volume of the instrument to prevent any strong signals that could damage one's hearing. After plugging in an external device, first adjust the instrument volume, until you reach comfortable volume levels, and only then increase the volume of the external device. Set the level properly, so that a balance is set between the external source and the bass.

One should remember that too high output volume of the external device may overdrive the input, thus distorting the sound coming from that input one hears in the headphones.



Please note! For safety and user comfort, the headphones should only be put on (or in your ears) after:

1. Presetting the instrument volume knob at the minimum (extreme left) setting,
2. If external AUX In is used, setting the signal volume of that source to a minimum is required as well,
3. Plugging in the headphones into the 1/8" Phones jack, which turns on the headphones out.

Only then should the instrument volume knob be used to set the comfortable volume levels, and increase the output signal levels for the external device, properly adjusting the balance between these two signals.



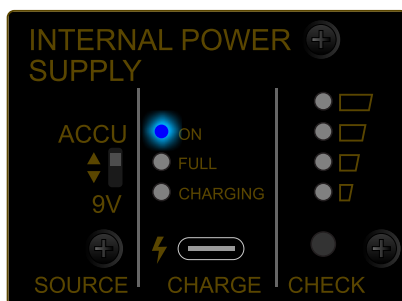
How to Switch the Headphone Amp On?

The headphone amp is turned on after headphones are plugged into the 1/8" (**Phones**) stereo out. The "on" status for the headphone amp is signaled by a blue LED on the backplate - designated "ON".



Note: The headphone amp works regardless of whether the instrumental cable is connected to the output 1/4" jack.

Note: Should a 9V battery be used as the alternative power source, the user cannot use the headphone amp.



Headphone Amp – How long can I use it on a single charge?

When the battery is fully charged, with 32 Ohm stereo headphones being plugged in, you can use the headphone amp for around 30 hours, with comfortable playing volume.

After one finishes playing, one should always remove the headphone cable, and the 1/4" jack instrument cable, to conserve the battery power. When not using the instrument, the blue status LED (ON) should not be active.



Accessing the Electronics Compartment

To access the components located inside the electronics compartment, use the PH1 Phillips screwdriver to unscrew all screws around the plate that attach the plate to the instrument's body.

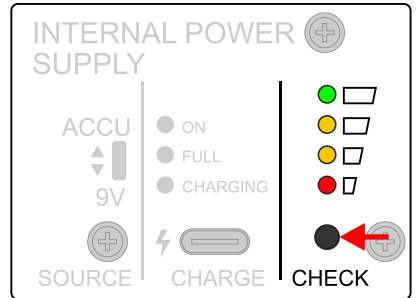
Due to the fact that the entire USB charging module is located on the underside of this plate and the battery is also glued there, please remain extra careful when removing it, not to damage the connecting wires, the connectors, and the components on the plate. The wiring interconnects the elements mounted on the plate, and the remainder of the circuitry, inside the electronics compartment.

POWER SUPPLY UNIT MODULE WITH LITHIUM-POLYMER BATTERY EMBEDDED

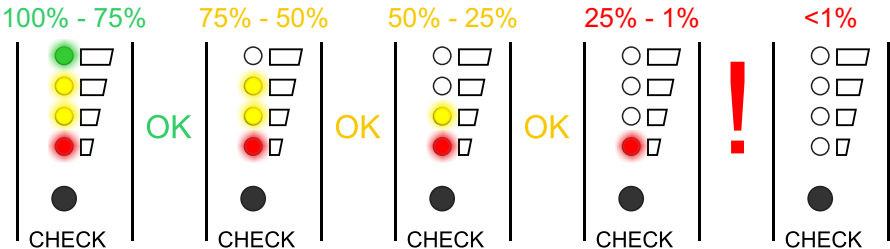
Built-in Battery, Charging Indicators and Battery Meter

The instrument is powered by a Li-Polymer battery of high efficiency and capacity, allowing the user to play the instrument for many hours without any problems, and without worrying about depleting the battery.

The battery charge level can be checked with the use of a **meter** on the backplate. The meter includes four LEDs and a **CHECK** button that allows for momentarily checking the battery charge levels. After pressing that button, depending on the charge level, one, two, three, or all four LEDs would light up. When all four LEDs are on, including the top, the green one, this means that the battery is charged to 75-100%. When after the button is pressed, three LEDs are on (low red, and two mid yellow ones), and the battery charge level is between 50 and 75%. When two lower LEDs are on, that designates a charge level between 25 and 50%. The below 25% charge level is indicated when solely the lower, red LED is on. If the battery charge is very low, no LED would light up. When the meter indicates low battery charge levels (red LED is on), or when no LEDs are active when pressing the button, please charge the onboard battery as soon as possible. That would allow the user to retain the nominal battery capacity.



LED indication, depending on battery charge levels.



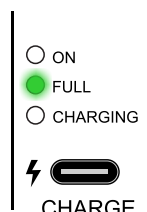
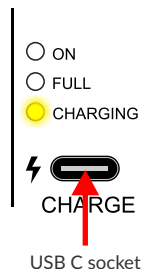


Battery Charging

To charge the internal battery, use the supplied charger that provides optimized charging parameters. The **USB type C** charging port has been placed next to the LED controls on the electronics cover, on the backside of the instrument.

After the charger is plugged into the USB type C charging port and the mains socket, the charging process begins. This is shown by a continuous light that is emitted by the first yellow LED on the right (**CHARGING**). Should you be charging the battery after it has been depleted completely, the charging time would last **around 3 hours**.

When the battery is fully charged, the yellow charging LED switches off and the other green LED (labeled **FULL**) lights up. Even though the applied charging module features overcharging protection, it is recommended to unplug the charger when the battery is fully charged for safety reasons. At any moment of the charging process. You may also leave it plugged in. However, this entails a risk of damaging the charger socket and the plug if we forget that the instrument is plugged in.



Note: When charging, and regardless of battery charge levels, all four LEDs would light up. Thus, using the battery charge indicator when charging remains pointless. If a need emerges to check the battery level during charging, one needs to disconnect the charger and wait several minutes, for the readout to be as credible as possible.

The instrument comes together with a universal EURO plug charger that may be powered by voltages ranging from 110 to 240V @ 50 - 60 Hz. Should you use the charger in areas where no socket compatible with the Euro plug is available, a proper adapter should be applied (one should purchase an adapter as such separately).

Due to its small dimensions and the delicate nature of the USB type C port and the charger plug, one should be very cautious when plugging the charger in and during the charging process. In no circumstances use excessive force when plugging the charger in, or when removing its plug. Should any issues occur there, inspect the status of the plug and the charging input carefully. The input should be clear from any objects and dirt. Do not use the charger if the plug, or any other part of the charger, has been damaged. In no case should you use force to remove the cable. You should not remove the plug at an angle as well.

When the battery is being charged, one can use the headphone amp. However, in circumstances as such the charging would take longer. It is recommended that the battery is charged with the headphone amp turned off.

When, after the charger is plugged in, the yellow charging LED does not light up, nor does the green LED become active, this may mean that your charger, charging cable, or charging port has been damaged, or that the cable is plugged in improperly, or that the battery is unplugged. In the worst-case scenario, the above symptoms may mean that the headphone amp has been damaged. In a situation as such, try unplugging and plugging in the charging cable. Alternatively, you could also use another compatible charger.

Note:

It is not recommended to plug the instrument into the PC USB port, as most of these ports do not provide a current that has proper charging parameters for the battery applied. If one does this, that may extend the charging time significantly.

Tip:

The internal battery may also be charged with the use of an external power-bank providing 5V/1A charging power. To provide a full charge, at least 2500 mAh power bank is required. The power bank could be used as an alternative charging unit in places where no mains access is available. It is also possible to use another charger that has output parameters equivalent to the charger that comes with the instrument (5V, 1A) and has been fitted with a USB type C plug.

Important!

The USB type C port is used solely for charging the battery. It is not used as an audio output.



Battery Operation - Remarks

The instrument utilizes a 3.7V Li-Po (Lithium-Polymer) battery, with a capacity of 1,400 mA. The battery features PCM safeguards, protecting from excessive depletion and overcharging, which guarantees optimal lifetime for the battery.

The battery would retain its baseline performance over ca. 500 charge-discharge cycles.

Should a noticeable performance and capacity drop occur, the battery should be replaced by a specialized technician or service, or the user should get in touch with Mayones.

Note: *The electronics in the instrument may only be powered by the 3.7V battery which is the same as the original. Using any other cell may damage the circuitry, or even lead to an explosion of the battery which may consequently cause fire and/or injury.*

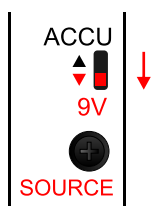
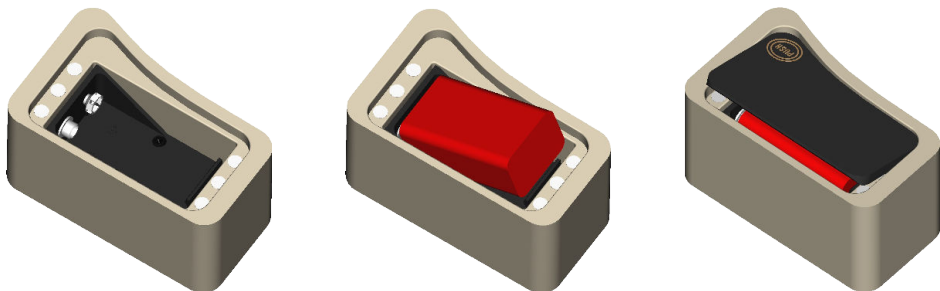
Note: *For safety reasons, the replacement of an old battery should only be done by a qualified guitar tech, business, or professional. Carelessly handling the lithium-polymer battery may create a risk of the battery being damaged which may lead to a fire and/or serious injuries.*



Alternative Power Source - 9V Battery

The Musashi preamp may also be powered by a typical 9V alkaline battery (6LR61 or 6F22) which is also a functionality enhancement for your instrument. This feature may be life-saving if one forgets to fully charge the battery, before performing on stage. One should emphasize the fact that solely **the preamp can be powered with the use of a 9V battery. In such a case, there is no option of using the headphone amp.**

The 9V battery compartment is located in the back, next to the electronics cover. To make it easier to install the battery, the cover is attached magnetically. No tools are required to remove it. It is enough to delicately press it with a finger, where the **PUSH** sign is visible. This will lift the cover on the other side, allowing the user to fully remove it. The battery compartment features a battery holder that makes it easier to install the battery and keeps it steady, so that no unwanted sounds appear if the battery was to potentially stay loose inside, and hit the compartment walls when the instrument moves.



When a 9V battery is used to power the instrument's electronics, the power source should be switched manually. For that purpose, a mini slide switch is used - placed on the electronics cover, designated **SOURCE**. The toggle has two positions, an upper one (**ACCU**), and a lower one (**9V**). When the slide switch is in the upper position, the electronics use the onboard Lithium-Polymer battery. When the slide switch is set to the lower position, the 9V battery is used instead. The mini switch slider does not protrude over

the plate - a sharp tool is best used to change its setting, such as a small Allen wrench in the instrument kit, a mini-screwdriver, a toothpick, or even a string core tip. The switch position change should be done very carefully, not to damage this delicate element.

If one decides to use the 9V battery, alkaline or lithium batteries are recommended, offering far greater capacity and stable voltage. Optionally, a 9V rechargeable battery can also be used.



Important Usage Information on the Li-Poly / Li-Ion Battery



The product uses a lithium polymer cell. This type of battery is safer than its Li-Ion counterparts since the risk of electrolyte spilling has been eliminated.

- The cells may explode or release toxic substances into the environment. There is a risk of fire or burns. Do not open, crush, modify, dismantle, burn or heat the batteries above 60°C (140°F).
- Never charge the conventional non-rechargeable batteries. The batteries can explode or the electrolyte may leak out causing fires, damage, or injury.
- When installing the battery, take close notice of the polarity (plus/minus [+/-]) and install it accordingly in its compartment. Reversed position of the battery may lead to an explosion or leak of the electrolyte, causing fire, damage or stains around the battery.
- When storing or disposing of the batteries, secure the battery terminals with electrical tape or similar means of protection, to make short-circuit impossible (involving other cells or metal objects).
- When disposing of cells that have been worn out, follow the recommendations on them, general recommendations, and the general law regulations in force.
- Do not use any other cells than the one specified in the present manual. In any other case, there is a risk of fire or electrolyte leakage. This may lead to a fire, damage, injury, or emergence of stains around the battery.
- Do not store the batteries together with small metal objects. These objects may cause a short-circuit, thus creating electrolyte leak, explosion, or other issues.
- Do not heat up or dismantle the battery cells. One should not throw the cells into the fire or water. This could potentially lead to leakages, explosion, cause fire or cause injuries or damage, or stains around the batteries.
- If electrolyte leak occurs, carefully remove the battery cell from the compartment, before inserting a new one. If the electrolyte enters your eyes, it may cause sight loss. In cases as such, you should immediately rinse your eyes with a major quantity of clean water, without rubbing the eyes, and then you must contact a doctor immediately. If the electrolyte gets in contact with skin or clothes it may cause skin damage or burns. Should this happen, wash the irritated area of the skin with a large quantity of clean water, then consult your doctor.
- When inserting or replacing the battery, unplug the instrument from any other device.
- If you plan not to use the instrument over a longer period, please remove the battery cell. In extreme cases it may explode, the electrolyte may leak out, fire or damage may occur, or stains may be formed by the leak.



Battery Disposal

The battery in the instrument is recyclable. The battery must be disposed of separately from household waste. Please treat it as hazardous waste and return it to the seller or the battery recycling point. You should only dispose of batteries that are discharged and completely depleted. This will help in conserving resources, and in protecting human health and the environment.



IMPORTANT SAFETY NOTICE

**LISTENING TO THE SOUND AT LOUD VOLUMES MAY LEAD TO
A PERMANENT HEARING DAMAGE.
THE VOLUME SHOULD ALWAYS BE SET TO THE LOWEST USABLE LEVEL.**

Exposure to loud sounds over a long period may lead to hearing damage and permanent hearing impairment. According to the general recommendations, we'd like to ask you to follow the values listed below, when it comes to maximum time one may spend in locations with a specific sound level. Following those recommendations is not expected to result in hearing damage.

- 90 dB SPL - Up to 8 hours
- 95 dB SPL - Up to 4 hours
- 100 dB SPL - Up to 2 hours
- 105 dB SPL - Up to 1 hour
- 110 dB SPL - Up to 30 minutes
- 115 dB SPL - Up to 15 minutes
- **120 dB SPL – avoid levels so high, risk of loss of hearing occurs**

IMPORTANT!

Be especially careful when using earphones or headphones plugged into the instrument, as sounds of very high volume may appear and these could lead to permanent hearing damage.

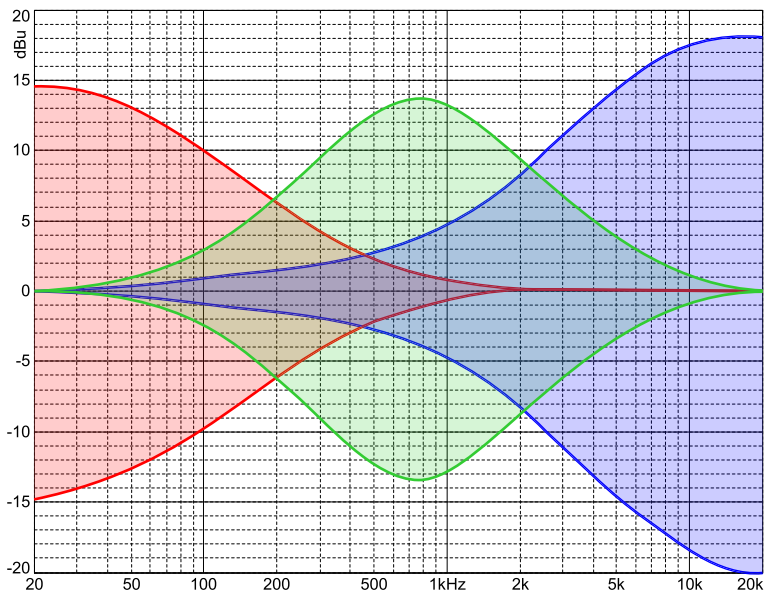


Specification of the Musashi Preamp

Frequency response:	10 Hz – 25 kHz
Input Impedance	1 MOhm
Output Impedance	1.8 kOhm
High EQ	+/- 20 dB (@ 18 kHz)
Middle EQ	+/- 13 dB (@ 730 Hz default setting)
Low EQ	+/- 14 dB (@ 22 Hz)
Input voltage	9-18 V @ 5mA
Operating time	ca. 100 hours (fully charged onboard Li-Pol battery, with the headphone amplifier turned off)



3-band EQ Curve Charts



- Bass adjustment frequency curve
- Mids adjustment frequency curve
- Treble adjustment frequency curve



Specification of the Headphone Amp

Frequency response:	20 Hz – 20 kHz
Output Power (each channel):	90 mW @ 32 Ω (THD ≤ 0.1%, f = 1 kHz)
Total Harmonic Distortion + Noise (THD+N)	2% (PO = 20 mW, 20 Hz – 20 kHz)
Channel/channel output separation	98 dB (PO = 65 mW, f = 1 kHz)
Signal-to-Noise Ratio	104 dB (PO = 90 mW, AV = 1)
Vn Noise output voltage	11.7 μV(rms) (AV = 1)
Output jack:	1/8" (3.5 mm) TRS
Aux Input Impedance	10 kOhm
Recommended headphones impedance:	32 ÷ 64 Ohms (16 ohms is an allowed option)
Operating time:	ca. 26 hours @ 32 Ohm (with preamp turned on)



Other technical data - power supply

LED operation/charge status indicators:	(3) on the electronics cover on the back-side of the instrument:
<ul style="list-style-type: none"> ● ON ● FULL ● CHARGING 	<ul style="list-style-type: none"> 1 – Blue – Preamp / Headphone amp on 2 – Green – battery fully charged 3 – Yellow – battery charging
Internal power supply:	Lithium polymer battery, 3.7 V, 1400 mAh
Battery charging socket:	USB type C
Charging voltage:	5 V
Charging current:	1 A (minimum)
Charging time:	ca. 3 hours (5 V, 1 A)
Battery protection:	overcharging and deep discharging
Alternative power supply:	9 V alkaline battery (preamp only)



Mayones Guitars & Basses

since 1982



mayones.com/musashi

Find more information on guitar operation and maintenance and solving basic problems on our website
www.mayones.com.

Mayones Guitars and Basses care constantly about the quality of their instruments and release their newer and upgraded versions, as well as search for the best possible building materials.

All parts of the instruments are RoHS compliant.

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