SPECIFICATIONS

USB	High speed USB 2.0 24-bit @192KHz USB Audio Class 1 and Class 2 Support for Apple® OSX 10.6.4 and above Microsoft Windows® 7 and Windows 8
Amplifier	110W mono 103dB signal to noise ratio, A-weighted 103dB dynamic range, A-weighted Mission EmPower™ active crossover with variable EQ 110-240VAC power supply
I/O	Input 1 - Combo XLR-1/4" TRS jack line input (mono or stereo) Input 2 - 1/4" TS jack instrument input Input 3 - USB Type B Output 1 - Outputs to second GM-2 for stereo configuration
Controls	Empower variable frequency response control Variable output level control
Drivers	12" Mission low frequency driver 1" high frequency compression driver Titanium HF diaphragm Co-axial configuration
Cabinet	¾"void-free Baltic birch Black Tolex covering Basket weave acoustic speaker cloth Chrome hardware
Dimensions	Width: 28" (711mm) Height: 20" (508mm) Depth: 12" (305mm) Weight: 63lbs (28.5kg)
Power	Input Voltage: 110/115V AC - 220/240V AC 50/60Hz Max current: 9.5 Amp Protection: Dual 10A Fuses. Internal overcurrent and over voltage protection.

MISSION ENGINEERING INC.
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SAFETY INSTRUCTIONS

- Read, Keep & Follow these instructions
- Heed all warnings
- Clean only with dry cloth
- Do not use this apparatus near water
- Do not expose the apparatus to dripping or splashing and ensure that no objects filled with liquids, shall be placed on the apparatus
- WARNING: To reduce the risk of fire or electric shock do not expose this apparatus to rain or moisture
- Unplug this apparatus during lightning storms or when unused for long periods of time
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions
- Only use attachments/accessories specified by the manufacturer
- Prolonged listening at high volume levels may cause irreparable hearing loss and/or damage. Always be sure to practice "safe listening."
- Refer all servicing to qualified service personnel. Service is required when the apparatus has been damaged in any way, such as:
  - power-supply cord or plug is damaged
  - liquid has been spilled or objects have fallen into the apparatus
  - the unit has been exposed to rain or moisture.
  - the unit is dropped or the enclosure is damaged
  - the unit does not operate normally or changes in performance in a significant way
- Dismantling, rewiring, removing components or otherwise altering the function of the unit may cause unexpected behavior and will invalidate the warranty.

MISSION ENGINEERING

GEMINI 2

HARDWARE USER GUIDE

INTRODUCTION

Congratulations on your purchase of the Mission Gemini 2™ (GM-2) stereo amplified guitar speaker. This product is designed to be intuitive to setup and operate, and to provide many years of trouble free service. However, we recommend that you take a few moments to read through this Hardware User Guide in order to get the best possible experience with your new speaker.

BACKGROUND

The GM-2 is a professional quality, stereo amplified speaker cabinet specifically designed for use with software based music systems such as guitar modeling amplifiers, cabinet simulators, and digital audio workstations.

A traditional guitar speaker cabinet is typically designed to work best in conjunction with a guitar amplifier. The speaker works within a limited frequency range, and the cabinet and speaker themselves contribute to the overall tone. While this works perfectly with an analog guitar rig, it is not always an ideal solution for digital systems.

Software based modelers usually implement guitar cabinet simulators designed to emulate specific speaker cabinets in software. If the signal subsequently passes through a physical speaker cabinet with its own tonal characteristics, it colors the eventual tone, making the modeling less accurate. Additionally, guitar speaker cabinets do not often work well with signals other than guitar such as keyboards, vocals, and playing back recorded music. The Mission Gemini amplifiers and cabinets resolve these problems as they are specifically designed to work with software based music systems.

SPEAKERS

The GM-2 is an active speaker cabinet with an internal power amplifier designed to faithfully reproduce a modeled signal chain. The cabinet is fitted with 2 x 12" low frequency driver, and 2 x 1" high frequency compression drivers in a co-axial configuration: The high frequency driver is mounted in the center of the low frequency driver.

The Coaxial driver configuration has been used for over sixty years in professional audio monitoring and high-end audiophile applications. The benefits include a wider field of dispersion that's more uniform across the frequency spectrum. This means listeners do not have to be positioned directly in front of the speaker to get the best experience. The full frequency range also appears to the listener to originate from a single source, without any apparent physical separation between low and high frequencies. Since the high frequency driver is located at the center of the driver, the cabinet can be used with a microphone, with the high frequencies accentuated as the microphone is positioned towards the center of the speaker, replicating the on/off axis positioning of a traditional guitar cab. These features make the GM-2 ideal for live, recording, and monitoring use.

AMPLIFIER

The GM-2 includes a 4-channel internal class D amplifier generating 220W into 8ohms. The amplifier is carefully matched to the speaker drivers to provide optimum efficiency and sound pressure levels. The GM-2 operates in stereo mode using the left and right speakers, or can be bridged into mono mode.

CONNECTIONS

There are three inputs and one output on the rear panel of the GM-2 as follows:

Input 1 – The combo connector supports XLR, ¼" TS or ¼" TRS jacks. Use a ¼" TRS cable to connect the output from a line level device such as a modeling amp, preamp, or multi effects device to Input 1. The right channel is on the tip and the left channel is on the ring. If your input device outputs left and right signals on separate jacks, you will need a TRS insert cable to connect the two output jacks to the single TRS input jack on the GM-2.

Use an XLR or TS cable to connect a mono signal to Input 1. When using a mono input, use the stereo/mono toggle switch to control how the signal is routed to the drivers. In stereo mode, the signal will use one of the internal drivers. In mono mode, the mono signal will be bridged to the two sets of speaker drivers.

Stereo Out – This connector supports ¼" TS cables. If using two GM-2 systems in a stereo configuration, use a ¼" TRS (stereo) cable to connect a line level stereo output to Input 1 and a TS (mono) cable to connect the stereo out to the second GM-2. Switch both systems to mono mode via the toggle switch. The right stereo channel will be routed to the second GM-2 system.

When using mono mode, high level input signals may cause clipping. If this occurs, either reduce the input signal level, or switch to stereo mode.

Input 2 - This connector supports ¼" TS cables. When using the USB audio interface on the GM-2, connect your guitar or other instrument to Input 2. This will allow you to use your instrument with an audio workstation application such as Avid® Pro Tools or Apple® Logic ProX, or a software based modeler such as Scuffham S-Gear. The Gemini audio interface supports multiple simultaneous streams, so you can, for example, play along with recorded music on your computer, or practice with online tutorial

USB – The GM-2 can be connected to a computer using the USB cable provided. The GM-2 will appear as an audio interface, and can be used with software based modelers, and digital audio workstations, as well as to stream audio from a web browser, audio player etc. Please read the Mission Gemini Software User Guide for more information

CONTROLS

Level – This controls the output level from the power amplifier to the speaker drivers. Turn clockwise to increase output level and counter clockwise to reduce level.

EmPOWER™ – This control allows you to blend the GM-2's frequency response between 'flat' and 'cab' bias. In the flat position, the cabinet behaves like a studio monitor or Hi-Fi speaker. This setting is useful when used with cab simulators, and when using the GM-2 as a monitor for listening to recorded music or rehearsing with a backing track.

Traditional guitar tube amps and cabs do not typically have flat frequency response. As a result some people may find a flat frequency response to be harsh or clinical sounding compared to a tube amp. Turning the EmPOWER control counter clockwise modifies the EQ curve for a more typical guitar cab's present mids and rolled off highs.

POWER

The GM-2 requires AC wall power to operate. Power is supplied via an IEC cable to the power connected on the rear of the unit. The power supply supports 110 – 240 AC 50/60Hz, and so can be used with AC wall supplies in most countries. Your GM-2 will have been supplied with a power cable specific for use in your country. Additional international power cables can be purchased from missionengineering.com.

Depending on country, the power connector maybe fitted with the V-Lock feature. V-Lock ensures that the power cable is correctly inserted, and cannot be accidentally removed. V-Lock cables can be identified by the yellow lock on the plug. To insert the cable, ensure the power switch is in the off position and push the plug into the power inlet until the lock clicks into place. To remove the cable, ensure the power is switch is in the off position and depress the yellow lock button. Gently pull the cable from the inlet while holding down the yellow lock button. In the event a V-Lock cable is not available, a standard IEC cable can be used. When using standard cables, the plug will not lock. Replacement V-Lock cables can be purchased from missionengineering.com.

For safety, the power inlet is fitted with dual fuses. Replace with 5mm x 20mm 10A fuses. Do not attempt to bypass or use incorrect fuses. Replacement fuses are available from missionengineering.com