Galileo GALAXY 408
Galileo GALAXY 816
Galileo GALAXY 816-AES3
**SAFETY INSTRUCTIONS FOR LOUDSPEAKERS/ELECTRONICS**

**SYMBOLS USED**

These symbols indicate important safety or operating features in this booklet and on the chassis:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>French Translation</th>
<th>German Translation</th>
<th>Spanish Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶️</td>
<td>Dangerous voltages: risk of electric shock</td>
<td>Pour indiquer les risques résultant de tensions dangereuses</td>
<td>Zu die gefahren von gefährliche spanning zeigen</td>
<td>Para indicar voltajes peligrosos</td>
</tr>
<tr>
<td>!</td>
<td>Important operating instructions</td>
<td>Pour indequer important instructions</td>
<td>Zu wichtige betriebsanweisung und unterhaltsanweisung zeigen</td>
<td>Instrucciones importantes de funcionamiento y/o manteniento</td>
</tr>
<tr>
<td>⬛️</td>
<td>Frame or chassis</td>
<td>Masse, châssis</td>
<td>Rahmen oder chassis</td>
<td>Armadura o chassis</td>
</tr>
<tr>
<td>⬜️</td>
<td>Protective earth ground</td>
<td>Terre de protection</td>
<td>Die schutzerde</td>
<td>Tierra proteccionista</td>
</tr>
</tbody>
</table>
SAFETY INSTRUCTIONS FOR LOUDSPEAKERS/ELECTRONICS

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 dry cloth.
7. Do not block any ventilation openings. Install in accordance with Meyer Sound's installation 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 grounding-type plug. A grounding-type plug has two blades and a third grounding prong. The 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 they exit from the apparatus. The AC mains plug or appliance coupler shall remain readily accessible for operation.
12. Use only with the caster rails or rigging specified by Meyer Sound, or sold with the apparatus. Handles are for carrying only.

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 has been damaged; liquid has been spilled or objects have fallen into the apparatus; rain or moisture has entered the apparatus; the apparatus has been dropped; or when for undetermined reasons the apparatus does not operate normally.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Do not install the apparatus in wet or humid locations without using weather protection equipment from Meyer Sound.

**POWERCON USE CAUTION**

Disconnect the mains plug before disconnecting the power cord from the device.
SAFETY INSTRUCTIONS FOR LOUDSPEAKERS/ELECTRONICS

ENGLISH

■ To reduce the risk of electric shock, disconnect the apparatus from the AC mains before installing audio cable. Reconnect the power cord only after making all signal connections.

■ Connect the apparatus to a two-pole, three-wire grounding mains receptacle. The receptacle must be connected to a fuse or circuit breaker. Connection to any other type of receptacle poses a shock hazard and may violate local electrical codes.

■ Do not install the apparatus in wet or humid locations without using weather protection equipment from Meyer Sound.

■ Do not allow water or any foreign object to get inside the apparatus. Do not put objects containing liquid on or near the unit.

■ To reduce the risk of overheating the apparatus, avoid exposing it to direct sunlight. Do not install the unit near heat-emitting appliances, such as a room heater or stove.

■ This apparatus contains potentially hazardous voltages. Do not attempt to disassemble the unit. The unit contains no user-serviceable parts. Repairs should be performed only by factory-trained service personnel.

FRANÇAIS

■ Pour réduire le risque d’électrocution, débrancher la prise principale de l’haut-parleur, avant d’installer le câble d’interface

■ allant à l’audio. Ne rebrancher le bloc d’alimentation qu’après avoir effectué toutes les connections.

■ Branchez l’haut-parleur dans une prise de courant à 3 dérivations (deux pôles et la terre). Cette prise doit être munie d’une protection adéquate (fusible ou coupe-circuit). Le branchement dans tout autre genre de prise pourrait entraîner un risque d’électrocution et peut constituer une infraction à la réglementation locale concernant les installations électriques.

■ Ne pas installer l’haut-parleur dans un endroit où il y a de l’eau ou une humidité excessive.

■ Ne pas laisser de l’eau ou tout objet pénétrer dans l’haut-parleur. Ne pas placer de récipients contenant un liquide sur cet appareil, ni à proximité de celui-ci.

■ Pour éviter une surchauffe de l’haut-parleur, conserver-la à l’abri du soleil. Ne pas installer à proximité d’appareils dégageant de la chaleur tels que radiateurs ou appareils de chauffage.

■ Ce haut-parleur contient des circuits haute tension présentant un danger. Ne jamais essayer de le démonter. Il n’y a aucun composant qui puisse être réparé par l’utilisateur. Toutes les réparations doivent être effectuées par du personnel qualifié et agréé par le constructeur.
DEUTSCH

- Um die Gefahr eines elektrischen Schlages auf ein Minimum zu reduzieren, das Gerät vom Stromnetz trennen, bevor ein Audio- oder Netzwerkkabel angeschlossen wird. Das Netzkabel erst nach Herstellung aller Signalverbindungen wieder einstecken.

- Das Gerät an eine geerdete zweipolige Dreiphasen-Netzsteckdose anschließen. Die Steckdose muß mit einem geeigneten Abzweigschutz (Sicherung oder Leistungsschalter) verbunden sein. Der Anschluß der unterbrechungsfreien Stromversorgung an einen anderen Steckdosentyp kann zu Stromschlägen führen und gegen die örtlichen Vorschriften verstoßen.

- Das Gerät nicht an einem Ort aufstellen, an dem es mit Wasser oder übermäßig hoher Luftfeuchtigkeit in Berührung kommen könnte.

- Darauf achten, daß weder Wasser noch Fremdkörper in das Innere des Geräts eindringen. Keine Objekte, die Flüssigkeit enthalten, auf oder neben die unterbrechungsfreie Stromversorgung stellen.

- Um ein Überhitzen des Geräts zu verhindern, das Gerät vor direkter Sonneneinstrahlung fernhalten und nicht in der Nähe von wärmeabstrahlenden Haushaltsgeräten (z.B. Heizgerät oder Herd) aufstellen.


ESPAÑOL

- Para reducir el riesgo de descarga eléctrica, desconecte de la red de voltaje el altavoz antes de instalar el cable de señal de audio. Vuelva a conectar la alimentación de voltaje una vez efectuadas todas las interconexiones de señalización de audio.

- Conecte el altavoz a un tomacorriente bipolar y trifilar con neutro de puesta a tierra. El tomacorriente debe estar conectado a la protección de derivación apropiada (ya sea un fusible o un disyuntor). La conexión a cualquier otro tipo de tomacorriente puede constituir peligro de descarga eléctrica y violar los códigos eléctricos locales.

- No instale el altavoz en lugares donde haya agua o humedad excesiva.

- No deje que en el altavoz entre agua ni ningún objeto extraño. No ponga objetos con líquidos encima de la unidad ni cerca de ella.

- Para reducir el riesgo de sobrecalentamiento, no exponga la unidad a los rayos directos del sol ni la instale cerca de artefactos que emiten calor, como estufas o cocinas.

- Este altavoz contiene niveles de voltaje peligrosos en potencia. No intente desarmar la unidad, pues no contiene piezas que puedan ser reparadas por el usuario. Las reparaciones deben efectuarse únicamente por parte del personal de mantenimiento capacitado en la fábrica.
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CHAPTER 1: INTRODUCTION

HOW TO USE THIS MANUAL

Make sure to read these operating instructions in their entirety before using the Galileo® GALAXY loudspeaker management system. In particular, pay close attention to material related to safety issues.

As you read these operating instructions, you will encounter the following icons for notes, tips, and cautions:

NOTE: A note identifies an important or useful piece of information relating to the topic under discussion.

TIP: A tip offers a helpful tip relevant to the topic at hand.

CAUTION: A caution gives notice that an action may have serious consequences and could cause harm to equipment or personnel, or could cause delays or other problems.

Information and specifications are subject to change. Updates and supplementary information are available at www.meyersound.com.

MEYER SOUND TECHNICAL SUPPORT

Meyer Sound Technical Support is available at:

- Tel: +1 510 486.1166
- Tel: +1 510 486.0657 (after hours support)
- Web: www.meyersound.com/support
- Email: techsupport@meyersound.com
**GALILEO GALAXY**

The Galileo GALAXY Network Platform is an elegant hardware and software solution for driving and aligning Meyer Sound arrays.

The GALAXY 816 is a 2-RU device that includes:

- 8 analog/AES3/AVB inputs
- 24 additional unprocessed AVB inputs (see page 37)
- 16 AVB/analog outputs
- Digital matrix processor

![Galileo GALAXY 816 front and rear panels](image)
The GALAXY 408 is a 1RU device that includes:

■ 4 analog/AES3 and 8 AVB inputs
■ 24 additional unprocessed AVB inputs (see page 37)
■ 8 analog and 16 AVB outputs
■ Digital matrix processor

Designed as the perfect complement to Meyer Sound’s M Series™ and LEO Family arrays, the Galileo GALAXY includes the following features:

■ AVB I/O controller
■ Expanded delay integration for aligning Meyer Sound loudspeaker products
■ Delay matrix
■ Atmospheric correction filters
■ Simultaneous low- and high-pass filters

The Galileo GALAXY offers an extensive equalization architecture:

■ U-Shaping EQ (inputs and outputs): 5 bands with adjustable slopes, widths, and gain.
■ 5-band complementary phase parametric filtering on inputs
■ 10-band complementary phase parametric filtering on outputs
The Galileo GALAXY features full digital operation with fixed latency across all output channels, regardless of applied processing. To provide the highest level of audio precision and dynamic range while minimizing latency, audio processing in the GALAXY utilizes high precision variable length integers with 64-bit resolution.

**GALILEO GALAXY 816-AES3**

The GALAXY 816-AES3 model provides 16 matrix outputs on eight AES3 digital outputs. It can be used to drive the standard GALAXY 408 and 816’s digital inputs or any other device that accepts 96 kHz AES digital audio signals. For more information on the GALAXY 816-AES3 and its differences from the standard GALAXY 816, see Appendix A, “Galileo GALAXY 816-AES3.”
COMPASS CONTROL SOFTWARE

The Compass control software provides comprehensive control of the Galileo GALAXY from an intuitive graphical user interface on a Mac® or Windows®-based computer. Compass software lets you control all features on multiple units.

EQ Plots in the Compass Control software

The Overview tab displays a summary of all GALAXY channels with signal flow. Inputs and outputs can be labeled and conveniently grouped for simultaneous editing. The Input Processing and Output Processing tabs provide access to all DSP settings. Equalization parameters can be edited with numeric entry or by dragging frequency bands. Multiple EQ layers can be viewed as a composite plot of equalization curves.

SIM 3 SUPPORT

The GALAXY can be connected directly to the SIM® 3 audio analyzer, providing complete audio measurement capabilities for complex audio systems (see page 43).
CHAPTER 2: FEATURES AND FUNCTIONS

GALAXY PROJECTS AND SETTINGs

GALAXY project files are saved by the Compass control software to the host computer. Project files contain the full configuration of parameters, system settings, and snapshots stored in the GALAXY. When a GALAXY is connected to the host computer, the Compass control software reads and displays the configuration currently residing in the GALAXY.

The Compass control software does not have its own memory for system settings and parameters; it just reads what it is connected to. When Compass is connected to a GALAXY, it reads and displays the parameters and settings of a project file and the current active snapshot and snapshot library contained in the unit’s memory. However, loading another project file (stored on the computer) into the Compass control software when it is connected to a GALAXY replaces the current snapshot and, if selected, the device settings currently loaded in the GALAXY.

**CAUTION:** Opening a project file in the Compass control software when the computer is connected to a GALAXY overwrites all stored snapshots and current device settings residing in the GALAXY (if Load Device Settings is selected when opening the project). To merge snapshots from another project file into the current library of snapshots in a GALAXY, use the Merge Project option from the Project tab (click the More>> button for this option to appear).

**TIP:** You can use the Compass control software to capture GALAXY settings. The settings are saved as project files or as individual settings files on the host computer and can be later restored back into the GALAXY.

Contact Meyer Sound Technical Support for more information or help with the Compass Control Software (see page 11).
DELAY INTEGRATION
Systems comprising multiple loudspeaker types with different phase responses placed in close proximity to one another can result in undesired summation or cancellation in the low-mid frequencies. As Meyer Sound improves the native phase response of its loudspeakers, the Delay integration feature quickly matches the phase responses of mixed loudspeaker products used in a given system.

Delay Integration is available on every GALAXY output.

Opening the Delay Integration browser
To use Delay Integration:

1. Click the product button from the Output Processing or Overview tab.
   The Delay Integration browser opens.

2. Select the Meyer Sound loudspeaker model that corresponds to that GALAXY output.

3. Choose the lowest phase curve common to all products in a given system.
   Each GALAXY output channel can be set to one of three phase curve frequencies: pc55-70, pc100, or pc125.

   **NOTE:** Not all products will have all three options available.
The native phase curves exhibited by Meyer Sound products can be differentiated by the lowest frequency at which each product deviates by 180° of relative phase. Delay integration uses the concept of phase curve families shared by different products: For example, the LYON and LEOPARD’s low-mid phase response is 180° at 55 Hz (pc55-70); the LEO-M and UPQ’s low-mid phase response is 180° at 100 Hz (pc100).

**LEOPARD** free-field phase response showing the first frequency with a relative phase deviation of 180° at 55 Hz

**UPQ-1P** free-field phase response showing the first frequency with a relative phase deviation of 180° at 100 Hz
Delay Integration Example

Delay integration is especially appropriate when applied to loudspeakers that are not in the same phase curve family.

To accomplish Delay Integration for LEOPARD with UPQ-1P:

1. Enable Delay Integration on both the LEOPARD and UPQ-1P outputs.
2. Select `pc100` for both outputs.
3. Use pure delay to time align the two loudspeakers where they are equal in level.
4. Select the Overview tab to verify all loudspeaker system outputs are set to the same `pc` value.

Technical Notes

- If your system contains just one type of loudspeaker, do not use Delay Integration.
- For best results, apply the lowest common phase curve value to different loudspeaker models that are in close physical proximity to each other.
- For UltraSeries models, `pc100` is the lowest common value.
- Although the M Series phase response is 180° at 350 Hz, it can be improved by using `pc125` when used in close proximity to other Meyer loudspeakers.
- When Delay Integration is applied to subwoofer outputs, the phase slope is optimized to align with the mid-high loudspeakers using the same `pc` setting.
- The changes in phase response caused by Delay Integration are not displayed in the Compass software, but they can be measured using the transfer function in SIM.
- If you enable a `pc` frequency for a Meyer Sound loudspeaker that natively exhibits that `pc` frequency, nothing will change for that output. For example: LEO-M is natively `pc100`. If Delay Integration is enabled for that output and set to `pc100`, no measurable change would occur.
CHAPTER 2: FEATURES AND FUNCTIONS

GALAXY FRONT PANEL

GALAXY front panels

The GALAXY front panel provides basic information and mute control of the loudspeaker management system. It shows input level metering for all inputs, and status and control for all outputs.

The GALAXY front panel is divided into three sections:

- Inputs
- Outputs
- Status Display
Front Panel Input Section

- **Input Level Meters:** Four-segment LED ladders represent the level for each input channel. The green LED range begins at approximately -80 dB below clipping. The yellow LED range lights a few dB below clipping. The top LED turns red as the input signal level reaches full scale digital (0 dBFS). In the Compass software (Settings > Input and Output), you can set the Voltage Range for all input and output channels to either +26 dBu (15.5 V rms) or +16 dBu (7.75 V rms), which determines the clipping levels.

  **NOTE:** The default Input Voltage Range is +26 dBu.

- **Input Mute Buttons:** Each input channel has a mute button. Toggling an input mute button in the Compass software also toggles this mute button.
CHAPTER 2: FEATURES AND FUNCTIONS

Front Panel Output Section

GALAXY front panel output section

- **Signal / Clip LEDs:** Output level is indicated by one multi-color LED for each output channel. The LED turns green to indicate output levels from -85 dB to -5 dB below clipping. The LED glows brighter as the signal level increases. The LED turns amber to indicate levels from -5 dB to just below the clipping level. The LED turns red as the output signal level reaches full scale digital (0 dBFS). In the Compass software (Settings > Input and Output), you can set the Voltage Range for all input and output channels to either +26 dBu (15.5 V rms) or +16 dBu (7.75 V rms), which determines the clipping levels.

  **NOTE:** The default Output Voltage Range is +26 dBu.

- **Output Mute Buttons:** Each output channel has a mute button. Toggling an output mute button in the Compass software also toggles this mute button.
Front Panel Display Information

- **Front Panel Display**: The front panel display provides device name, current snapshot, device identity indicator, and other critical device notifications available on the GALAXY. Use the Front Panel Display Control from the Compass controller software to adjust the brightness and color.

- **Controller LED**: Indicates activity when the GALAXY is connected to a computer running the Compass control software.

- **SIM 3 LED**: Indicates the GALAXY is connected to a SIM 3 audio analyzer.

  **NOTE**: The GALAXY SIM 3 Address must be set to a number in the range 0–14 (default is 10) in the SIM 3 tab in the Compass software. It will then be available in the Switcher section of SIM 3 under tabs 0–14, and can be configured to perform audio measurements. The SIM 3 user interface shows *Galileo 616*.

- **Power LED**: Lights to indicate the GALAXY DC power rail is good.

- **AVB Sync LED**: Lights to indicate the GALAXY AVB Media Clock is locked.

- **Audio Clock LED**: Lights to indicate the status of the selected media Clock (AVB, AES, or Internal) is good.
CHAPTER 2: FEATURES AND FUNCTIONS

The GALAXY rear panel provides the following connectors:

- **PowerCon AC Power Connector**: This locking connector mates with the provided AC power cable.

  **CAUTION**: Make sure the AC power cable has the appropriate power plug on the other end for the area in which you will operate the GALAXY.

  **NOTE**: The GALAXY incorporates Meyer Sound's *Intelligent AC* power supply, which automatically adjusts to any line voltage worldwide, and provides *soft turn-on* and *transient protection*.

- **Ethernet Connector**: The two RJ-45 connectors let you attach the GALAXY to an AVB network to send audio signals through time-sensitive networks, and be controlled by the Compass and/or Compass Go software. Use a Giga-bit Ethernet network cable (CAT5e or better).

- **Analog / AES3 Input Connectors (A, C, E, G)**: Four XLR-3F input connectors accept either a standard line-level analog signal or an AES two-channel digital signal. In the Compass software (*Settings > Input and Output*), you can set these inputs to *Analog* or *AES3 Left* or *AES3 Right*. Input Connectors B, D, F, H can only be used as analog inputs.
- **Analog Input Connectors (B, D, F, H):** Four XLR-3F input connectors accept standard line-level audio only. These inputs are typically paired with their corresponding input pairs (A, C, E, G) to receive two-channel audio signals. The analog-only inputs are disabled when their input pair is set to AES mode (i.e., when input A is set to AES mode, input B is disabled).

- **Analog Output Connectors (1–16):** Sixteen XLR-3M connectors route audio to Meyer Sound self-powered loudspeakers, or to amplifier channels driving passive systems. All signal routing and processing stored in the GALAXY device settings and saved Project file is applied to these outputs.

  **NOTE:** The GALAXY 816-AES3 provides 16 matrix outputs on eight AES3 digital outputs. For more information, see Appendix A, “Galileo GALAXY 816-AES3.”

- **SIM 3 Bus Connectors:** Connects to the SIM 3 audio analyzer so the GALAXY’s inputs and outputs can be used as measurement points. A second SIM 3 bus port is provided to loop an additional GALAXY or to a SIM-3088 line-level switcher.

- **Identify Button:** Winks when the Compass control software connects to the GALAXY device.
DIGITAL LATENCY

The GALAXY features fixed latency across all output channels, regardless of the processing applied. GALAXY AES3 inputs have sample rate converters which support a wide range of sample rates. See Table 1 below for latency based on sample rate. To provide the highest level of audio precision and dynamic range with the lowest latency, GALAXY audio processing utilizes variable length integers with up to 64 bits of resolution.

The analog latency for GALAXY (AD/DA) is fixed at 596.8 microseconds.

Table 1: Digital Audio Latency (AES3 to analog outputs)

<table>
<thead>
<tr>
<th>Sample Rate Input (kHz)</th>
<th>Measured Latency (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.0</td>
<td>3.184</td>
</tr>
<tr>
<td>32.0</td>
<td>2.311</td>
</tr>
<tr>
<td>44.1</td>
<td>1.912</td>
</tr>
<tr>
<td>48.0</td>
<td>1.826</td>
</tr>
<tr>
<td>96.0</td>
<td>1.342</td>
</tr>
<tr>
<td>192.0</td>
<td>1.099</td>
</tr>
<tr>
<td>216.0</td>
<td>1.072</td>
</tr>
</tbody>
</table>

*Test conditions were factory default settings: All input and output EQ filters enabled but set to flat response, no other filtering enabled.*
INPUT SAMPLE RATES

The GALAXY accepts a wide range of sample rates for both AVB and AES inputs. (see Table 2). To use AVB inputs, you must set the System Clock to AVB.

Table 2: Accepted Input sample rates and bit depth based on format

<table>
<thead>
<tr>
<th>Format</th>
<th>Input Sample Rates Accepted (kHz)</th>
<th>Bit Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES3</td>
<td>20 – 216</td>
<td>up to 24 bit</td>
</tr>
<tr>
<td>AVB</td>
<td>48 or 96</td>
<td>24 bit</td>
</tr>
</tbody>
</table>

If an AES3 or Word Clock input is selected as the AES output clock source (GALAXY 816-AES3 unit only), then the following sample rates may be used:

- 44.1 kHz
- 48.0 kHz
- 88.2 kHz
- 96.0 kHz
- 176.4 kHz
- 192.0 kHz
CHAPTER 3: CONNECTING THE GALAXY

POWER CONNECTOR
The GALAXY uses a locking PowerCon® connector to provide AC voltage to the unit. Its internal switching power supply has a safety-agency-rated operating range of 100–264 V AC, 50/60 Hz.

Electrical Safety Issues!
Pay close attention to these important electrical and safety issues:

⚠️ **CAUTION:** The PowerCon 20 connector should not be engaged or disengaged when under load or live.

⚠️ **CAUTION:** GALAXY requires a grounded outlet. Always use a grounded outlet and plug.
REMOTE COMPUTER CONNECTION

The GALAXY’s RJ-45 port connects to a standard computer Ethernet port with Gigabit-capable network cables. A Mac or Windows-based computer running the Compass software uses the Ethernet connection to control the unit remotely. Bi-directional communication between the GALAXY device and the Compass software allows the user to change settings on either device and stay in sync.

**NOTE:** Please visit meyersound.com or contact Technical Support (see page 11) for more information regarding network connections for control and/or audio.
INPUT CONNECTORS

Analog Inputs

Analog source signals, including those from analog mixing consoles, are connected to the XLR-3F connectors (labeled A – H) on the left side of the GALAXY rear panel. These eight balanced analog inputs feed state-of-the-art A/D converters (24-bit, 96 kHz sample rate). The Input Voltage Range can be set in the Compass software (Settings > Input and Output) to either +26 dBu (15.5 V rms) or +16 dBu (7.75 V rms). These output level settings determine the clipping levels and provide the flexibility to drive all Meyer Sound self-powered products.

In addition, inputs A, C, E, and H can be configured as Analog or AES. The GALAXY front panel input meters indicate analog and digital signal levels.

NOTE: The +16 dBu output setting lowers the overall noise floor by nearly 10 dB.
Digital Inputs: AES3

AES3 digital source signals can be connected to the XLR-3F connectors labeled A, C, E, and H on the GALAXY rear panel. Standard AES3 digital audio signals at sample rates from 20–216 kHz are supported. The input meters on the GALAXY front panel indicate levels for both analog and digital signals.

NOTE: The Input Channel Types can be set to Analog or AES in the Compass software (Settings > Input and Output). Because AES signals carry two digital audio channels, the second connector in the pair is disabled when AES is selected. AES L or AES R can be assigned to a single channel of processing.

Both analog and digital input sources can be used simultaneously with GALAXY:

- AES signals can feed inputs A and C (inputs B and D are disabled).
- Analog signals can feed inputs E and F.
- AVB signals feed inputs G and H.
Digital Inputs: AVB - Internal Controller Mode

Network digital source signals can be connected to the AVB/Network port connectors (labeled 1 and 2) on the GALAXY rear panel. Standard AM824 eight-channel AVB streams are supported (24 bit, 48/96 kHz). There are two modes: Internal and External. Internal Mode is specific to Meyer Sound GALAXY devices.

**NOTE:** The Compass software can set the Input Channel Type to one input type (Settings > Input and Output). To see talker streams and stream channels from a group of GALAXY devices, those GALAXY devices must be in the same Device Group.

Outputs from available GALAXY devices will populate the AVB Browser when that device is selected from the available Devices List. The Group can be selected from the **Group** selection menu. You can connect and disconnect configurations.
Digital Inputs: AVB - External Controller Mode

External Controller Mode is specific to third party AVB controllers. The AVB Browser shows the available Streams and Channels only. When selected, there is clear indication of where they are used.

**NOTE:** External Controller Mode does not show GALAXY Device Groups.

Available channels from selected GALAXY streams will populate the AVB Browser when appropriate sink is selected from the Streams list. The selected channels and streams will indicate their assignments when selections are completed.
AVB STREAMS AND CONTROLLERS

An AVB Stream functions much like an analog multi-cable. Each stream can vary in number of channels and format, similar to AES3 and standard analog multi-cables. The difference is that many audio streams can flow down a single Ethernet cable.

Unlike traditional multi-cables, AVB streams do not stay connected when the audio devices are turned off. An AVB software controller creates and maintains these connections running on a computer attached to the network or inside one of the audio devices being controlled. An AVB controller in the audio device will maintain persistent connections and remake connections after power cycle or other interruptions like unplugging an Ethernet link.

Each GALAXY has a built-in AVB controller. If GALAXY B’s inputs are subscribed to GALAXY A’s outputs for the first time using Compass software, GALAXY B’s AVB controller will attempt to remake that connection in case of any interruption.

GALAXY AVB streams are 24-bit/96 kHz 8-channel AM824 packet format. AM824 supports the transport of multi-channel 24-bit linear audio. Since GALAXY inputs can choose up to eight individual AVB channels from up to eight different streams, it is possible to send up to 8 eight-channel streams (64 channels) into the unit. However, only eight of them are available for input processing. There are 24 additional AVB inputs available into the Gain, Delay, and Summing matrices without input processing (see figure below).
CHAPTER 3: CONNECTING THE GALAXY

GALAXY outputs use two AM824 formatted streams: Outputs 1–8 are available in the first 8-channel stream, outputs 9–16 are available in the second 8-channel stream. If no units have subscribed to these streams, the GALAXY will stop transmitting altogether. The analog outputs are always active.

The following shows the number of streams/audio channels possible on different kinds of Ethernet links (see note below):

- 23 eight-channel GALAXY formatted streams can be safely transmitted using a 1 Gb/s link at 75% Bandwidth Usage (184 channels)
- 238 eight-channel GALAXY formatted streams can be safely transmitted using a 10 Gb/s link at 75% Bandwidth Usage (1904 channels)
- 954 eight-channel GALAXY formatted streams can be safely transmitted using a 40 Gb/s link at 75% Bandwidth Usage (7632 channels)

Expanded Summing Matrix Inputs in Compass Desktop
NOTE: An Ethernet link is the either a CAT5e or better 8P8C (RJ45), or a fiber cable with the hardware ports either cable type is attached to. There are three common link varieties: 1, 10, and 40 Gb/s. A 1 GB/s or better Ethernet link will work for AVB transmission using properly configured hardware: Copper, multi-mode fiber, single-mode fiber, etc. Fiber transceiver format must match the cable being used. Meyer Sound recommends AVB-compliant (Avnu-certified) network switches.
AVB Connections Between Devices

The GALAXY includes two network ports for both AVB and control connections. Either port can be used to make single connections to the network as shown in the figure above. These ports take advantage of multiple industry-standard networking protocols to offer an automatic fail-over procedure:

1. GALAXY uses one of its two available ports during normal operation. When connectivity is lost on the active port, GALAXY performs a network connection verification process before switching to the other port.
2. Once on the other port, GALAXY relies on internal switching protocols to reroute control and AVB to the now active fail-over port.
3. GALAXY will lose audio for up to 45 seconds while it renegotiates its AVB connections. Control is restored when the new connection is established.
AVB Redundant Connections Between Devices

This figure above shows a network taking full advantage of the AVB switch spanning tree protocol along with GALAXY fail-over capability. Any single link in the system could be compromised or unplugged and the audio will take an alternate route and remake the connections to continue from device to device.

This style of fail-over does not happen instantaneously. It depends on the network setup and whether the network fault occurs at the switch or at the GALAXY device. Since a different series of events can occur in each case, it could take up to 45 seconds to restore the connections (including clock synchronization).

NOTE: Please consider using analog signal transmission lines as a failsafe for digital audio network connections.
OUTPUT CONNECTORS (TO LOUDSPEAKERS/ARRAYS)

The GALAXY includes 16 XLR-3M output connectors with 24-bit/96 kHz D/A converters. The GALAXY can easily drive Meyer Sound self-powered loudspeakers to full output at all frequencies, even over lengthy cable runs.

NOTE: The adjustable output range provides two level output settings to drive Meyer Sound self-powered products. In the Compass software (Settings>Input and Output), you can set the Voltage Range for all inputs and outputs to either +26 dBu (15.5 V rms) or +16 dBu (7.75 V rms), which determines the clipping levels. The +16 dBu output setting lowers the overall noise floor by nearly 10 dB.

NOTE: The GALAXY 816-AES3 provides 16 matrix outputs on eight AES3 digital outputs. For more information, see Appendix A, “Galileo GALAXY 816-AES3.”
CONNECTING THE SIM 3 AUDIO ANALYZER

SIM3 Connectors

The GALAXY rear panel includes a bus for direct connection to the SIM 3 audio analyzer. The GALAXY can then act as a line switcher for the analyzer, and measure across any selection of inputs and outputs without additional patching.

The default bus address for the GALAXY is 10 and the available range is 0–14. The SIM 3 is auto-detected when connected. Its presence is indicated with the SIM 3 LED on the GALAXY front panel. The SIM 3 also appears in the Compass software (Settings > SIM 3).

A second SIM 3 (looping) connector (labeled CONNECT TO SIM3 BUS in figure above) is included on the GALAXY rear panel. It can be used to connect to an additional GALAXY or to a SIM-3088 line-level switcher.

NOTE: The GALAXY 408 does not have the second SIM 3 looping connector.

CAUTION: If a SIM-3088 switcher is connected to the SIM 3 looping connector, you must use a SIM-3004 remote power supply. Make sure the power supply connector is marked Connect to 3022 Analyzer Only before making this connection.
AVB Network
The AVB network can also be used to connect SIM3 to the GALAXY.

Technical Support for SIM3 Interface
For more information on how to interface with SIM 3, please contact Meyer Sound Technical Support (see page 11).
APPENDIX A: GALILEO GALAXY 816-AES3

The GALAXY 816-AES3 provides 16 matrix outputs on eight AES3 digital outputs. It can be used to drive the standard GALAXY’s AES3 digital inputs, or any device that accepts 96 kHz AES digital audio. This appendix documents the differences between the GALAXY 816-AES3 and the standard GALAXY. The GALAXY 816-AES3 also provides a BNC connector for word clock input.

GALAXY-AES3 driving three GALAXY devices
Inputs
The GALAXY 816-AES3 has the same eight analog/digital audio inputs (A–H) as the standard GALAXY. The inputs can be switched between analog and digital in the same manner as the standard GALAXY.

Outputs
The top row of eight XLR audio outputs for the GALAXY 816-AES3 provides 16 channels of AES3 digital outputs (two channels per output: 1–2, 3–4, etc.). Use only cables rated for AES signals to connect these outputs to the inputs of AES3 devices. The bottom row has eight analog XLR audio outputs (9–16). Any output processing applied to outputs 9–16 are mirrored in digital format on the appropriate AES3 output and on the corresponding analog output.
**Processing**

The GALAXY 816-AES3 offers the same processing on inputs and outputs as the standard GALAXY. The GALAXY 816-AES3 includes an additional BNC connection for external word clock input.

<table>
<thead>
<tr>
<th>Processing</th>
<th>GALAXY 816-AES3</th>
<th>GALAXY 816 (Standard)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>500-ms Delay</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>U-Shaping EQ</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Parametric EQ</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Network</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Word Clock Input</td>
<td>✓</td>
<td>none</td>
</tr>
<tr>
<td>AVB I/O</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Outputs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-Shaping EQ</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Parametric EQ</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Polarity Reversal</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2-sec Delay</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Atmospheric Correction</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Delay Integration</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>High- / Low-Pass Filters</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Gain</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
GALAXY 816-AES3 Clock

The GALAXY 816-AES3 offers different clock options for the system clock and AES output clock. The GALAXY 816-AES3 can be synchronized to an external source depending on the digital input selection: AES offers 20–216 kHz; Word Clock offers 48 or 96 kHz.

**GALAXY 816-AES3 clocking scheme**
## APPENDIX B: GALAXY SPECIFICATIONS

<table>
<thead>
<tr>
<th>INPUTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input Section</strong></td>
<td>8 AVB inputs via network ports</td>
</tr>
<tr>
<td></td>
<td>GALAXY 408</td>
</tr>
<tr>
<td></td>
<td>4 analog inputs</td>
</tr>
<tr>
<td></td>
<td>4 AES3 inputs</td>
</tr>
<tr>
<td></td>
<td>GALAXY 816/AES3</td>
</tr>
<tr>
<td></td>
<td>8 analog inputs</td>
</tr>
<tr>
<td></td>
<td>8 AES3 inputs</td>
</tr>
<tr>
<td><strong>Connectors</strong></td>
<td>Gold-plated XLR-female</td>
</tr>
<tr>
<td></td>
<td>Analog and AES3</td>
</tr>
<tr>
<td><strong>Maximum Peak SPL</strong></td>
<td>+26 dB (maximum range selected, 0 dB input gain)</td>
</tr>
<tr>
<td><strong>Metering</strong></td>
<td>4-segment LED ladder meters on each input</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTPUTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output Section</strong></td>
<td>16 AVB outputs via network ports</td>
</tr>
<tr>
<td></td>
<td>GALAXY 408</td>
</tr>
<tr>
<td></td>
<td>8 analog outputs</td>
</tr>
<tr>
<td></td>
<td>GALAXY 816</td>
</tr>
<tr>
<td></td>
<td>16 analog outputs</td>
</tr>
<tr>
<td></td>
<td>GALAXY 816-AES3</td>
</tr>
<tr>
<td></td>
<td>16 AES3 outputs</td>
</tr>
<tr>
<td></td>
<td>8 mirrored analog outputs</td>
</tr>
<tr>
<td><strong>Connectors</strong></td>
<td>Gold-plated XLR-male</td>
</tr>
<tr>
<td><strong>Maximum Input Level</strong></td>
<td>+26 dB into 10 kΩ</td>
</tr>
<tr>
<td><strong>Maximum Output Level</strong></td>
<td>+26 dB into 50 Ω</td>
</tr>
<tr>
<td><strong>Metering</strong></td>
<td>Variable intensity, bi-color signal presence/clip LED on each output</td>
</tr>
</tbody>
</table>
### MATRIX

| Summing Matrix          | Dense 8 x 16 summing matrix  
|                        | Any input can be summed with any input and routed to any output |
| Delay Matrix            | Sparse 8 x 16 tap Delay Matrix  
|                        | 500 ms total delay at each cross point (non-fading) |

### PROCESSING

| Digital Conversion      | 24-bit resolution, 96 kHz sample rate |
| Internal Processing     | Up to 64-bit, 96 kHz |
| Processor               | FPGA based Audio Processing |
| Input Processing        | Gain, delay, parametric EQ, U-Shaping equalization |
| Output Processing       | Gain, delay, polarity reversal, U-Shaping equalization, 10-band parametric filtering, delay integration, atmospheric correction and gain factor, simultaneous low- and high-pass filters |

### NETWORK/CONTROL

| Network Control         | Two RJ-45 ports for networked audio and client control connection from a Mac or Windows-based computer |
| Network Audio AVB       | 8 AVB Processor Inputs, 16 AVB Processor Outputs  
|                        | AM824 Format, Avnu Pro-A Certified  
|                        | GALAXY 408, 816, 816 AES-3 |
| Software                | Full bidirectional communication with Meyer Sound's Compass control software within a client-server architecture |
| SIM                     | Two SIM bus ports to link 816 GALAXY units  
|                        | One SIM bus port to link the GALAXY 408 to the SIM 3 audio analyzer |
### AC POWER

<table>
<thead>
<tr>
<th>Connector</th>
<th>PowerCon 20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Voltage Range</strong></td>
<td>100–240 VAC, 50/60 Hz</td>
</tr>
<tr>
<td><strong>Current Draw</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>115 VAC</th>
<th>230 VAC</th>
<th>100 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>GALAXY 408</td>
<td>0.35 A rms</td>
<td>0.17 A rms</td>
<td>0.40 A rms</td>
</tr>
<tr>
<td>GALAXY 816</td>
<td>0.48 A rms</td>
<td>0.24 A rms</td>
<td>0.56 A rms</td>
</tr>
<tr>
<td>GALAXY 816-AES3</td>
<td>0.43 A rms</td>
<td>0.22 A rms</td>
<td>0.50 A rms</td>
</tr>
</tbody>
</table>

### PHYSICAL

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>GALAXY 816 and GALAXY 816-AES3 (2-RU rack mount)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>W</strong> 19.00 in x <strong>H</strong> 3.48 in x <strong>D</strong> 16.14 in (483 mm x 88 mm x 410 mm)</td>
</tr>
<tr>
<td></td>
<td>GALAXY 408 (1-RU rack mount)</td>
</tr>
<tr>
<td></td>
<td><strong>W</strong> 19.00 in x <strong>H</strong> 1.74 in x <strong>D</strong> 16.14 in (483 mm x 44 mm x 410 mm)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>GALAXY 408 13.2 lb (6.0 kg)</td>
</tr>
<tr>
<td></td>
<td>GALAXY 816 16.8 lb (7.6 kg)</td>
</tr>
<tr>
<td></td>
<td>GALAXY 816-AES3 16.8 lb (7.6 kg)</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL

| **Operating Temperature** | 0° C to +45° C |
| **Non-Operating Temperature** | < −40° C or > +75° C |
| **Humidity** | to 95% at 35° C non-condensing |
| **Operating Altitude** | to 2000 m (6560 ft) |

**NOTE:** For specifications unique to the GALAXY 816-AES3, see Appendix A, “Galileo GALAXY 816-AES3.”
## GALAXY Parts and Accessories

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>GALILEO GALAXY 816 REAR RACK BRKT 18–20&quot;</td>
<td>40.230.035.01</td>
</tr>
<tr>
<td>GALILEO GALAXY 816 REAR RACK BRKT 20–22&quot;</td>
<td>40.230.035.02</td>
</tr>
<tr>
<td>GALILEO GALAXY 816 REAR RACK BRKT 22–24&quot;</td>
<td>40.230.035.03</td>
</tr>
</tbody>
</table>

### GALAXY 408, 816, and 816-AES3 dimensions

![Galaxy Dimensions Diagram](Image)
APPENDIX C: GALAXY MESSAGE CODE GLOSSARY

Message codes appear on the GALAXY front panel and are also stored in the Compass log. The front panel displays a summary of the GALAXY message with its numeric code. The Compass log contains the full description of the GALAXY message and numeric code, which can be useful for Meyer Sound Technical Support (see page 11).

GALAXY messages occur in one of three categories:

■ **Info**: A parameter or connection changed, but there is no error in operation.

■ **Warn**: A brown-colored message warns that a parameter is out of its normal operating range, but the device continues to function.

■ **Critical**: A red-colored message states a critical error, and the device stops functioning.

![CAUTION:](image)

**CAUTION**: If a critical error causes the front panel text to appear degraded or hazy, call Meyer Sound Technical Support (see page 11) and stop using the device, even if it continues to function.

Hardware Control Error codes start with “3” and are followed by a second number that defines a specific condition code:

■ **Message Code 3/4**: Device temperature is above or below normal operating range.

■ **Message Code 3/5**: Monitored voltage is above or below normal operating range.

■ **Message Code 3/6**: Fan Speed (tachometer) is above or below normal operating range.

■ **Message Code 3/7**: Fan controller has failed.
APPENDIX D: ARCHITECTURAL SPECIFICATIONS

GALAXY 816

The network processor shall include 96 kHz audio processing and utilizes variable length integers with up to 64 bits of resolution for up to eight input channels (AVB, analog or AES3) and 16 AVB and analog output channels. Input channels shall include dedicated processing for mute, gain, delay, U-Shaping, and 5-band parametric equalization; output channels shall include mute, gain, delay, polarity reversal, U-Shaping equalization, 10-band parametric equalization, delay integration, as well as high- and low-pass filters, atmospheric correction filters, and subwoofer integration.

Analog and AES3 input connectors and analog output connectors shall be balanced, gold-plated XLR connectors with high-current line drivers capable of output voltages up to +26 dBu, without clipping, into loads of 600 Ohms or higher. The system’s sophisticated digital matrix processor shall allow routing and gain delays from any input, or combination of mixed inputs, to any combination of outputs with cross-point delays and an analog latency for GALAXY (AD/DA) is fixed at 596.8 microseconds regardless of the processing applied to the signals.

The front panel shall include a two-line LCD display for device, current snapshot, and firmware information as well as LED indicators for audio signal metering, AVB Sync, Audio Clock, Power, Controller, and SIM3 connections, and illuminated mute switches and signal/clip indicators for output channels.

Password protection shall be available to avoid unwanted parameter changes. The unit shall be controlled remotely from a Mac or Windows-based computer via Ethernet; the client server control software shall have bidirectional communication to ensure that parameters are in sync.

The loudspeaker management system shall include direct connectivity to Meyer Sound’s SIM 3 audio analyzer so that measurements can be taken directly from the unit.

The unit shall be housed in a two-space, 19-in rack-mount cabinet, measuring 15.9 in (404 mm) in depth, and weighing just 16.8 lb (7.6 kg). Its AC inlet shall be a powerCON 20 A locking connector to prevent unwanted power disconnections. Its two network inlets shall be EtherCON RJ45 connectors. The network processor shall be Avnu Pro-A certified. The network processor shall be the Meyer Sound Galileo GALAXY 816 and its software shall be the Compass control software.
GALAXY 408

The network processor shall include 96 kHz audio processing and utilizes variable length integers with up to 64 bits of resolution for up to eight AVB, four analog or AES3 input channels and 16 AVB and 8 analog output channels. Input channels shall include dedicated processing for mute, gain, delay, U-Shaping, and 5-band parametric equalization; output channels shall include mute, gain, delay, polarity reversal, U-Shaping equalization, 10-band parametric equalization, delay integration, as well as high- and low-pass filters, atmospheric correction filters, and subwoofer integration.

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GALILEO GALAXY USER GUIDE

GALAXY 816-AES3

The network processor shall include 96 kHz audio processing and utilizes variable length integers with up to 64 bits of resolution for up to eight AVB, four analog or AES3 input channels, one BNC-female (50 Ohm) Word clock input and 16 AVB, AES3, and 8 mirrored analog output channels (9–16). Input channels shall include dedicated processing for mute, gain, delay, U-Shaping, and 5-band parametric equalization; output channels shall include mute, gain, delay, polarity reversal, U-Shaping equalization, 10-band parametric equalization, delay integration, as well as high- and low-pass filters, atmospheric correction filters, and subwoofer integration.

Analog and AES3 input and output connectors shall be balanced, gold-plated XLR connectors with high-current line drivers capable of output voltages up to +26 dBu, without clipping, into loads of 600 Ohms or higher. The system’s sophisticated digital matrix processor shall allow routing and gain delays from any input, or combination of mixed inputs, to any combination of outputs with cross-point delays and an analog latency for GALAXY (AD/DA) is fixed at 596.8 microseconds, regardless of the processing applied to the signals.

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The loudspeaker management system shall include direct connectivity to Meyer Sound’s SIM 3 audio analyzer so that measurements can be taken directly from the unit.

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APPENDIX E: COMPLIANCE

DECLARATIONS OF CONFORMITY

DECLARATION OF CONFORMITY according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name: Meyer Sound Laboratories Inc.
Manufacturer's Address: 2832 San Pablo Avenue
Berkeley, California 94702 USA
Declarates that the product

Product Type: Loudspeaker Management System
Product Names: Galileo Galaxy 816
Product Options: All

Conforms to the following standards:

Safety:
- IEC 60065(ed.7), IEC 60065(ed.7);am1, IEC 60065(ed.7);am2
- UL 60065 Edition 7 - Revision Date 2013/07/24
- CSA C22.2 NO. 60065-03 (INCLUDES AMENDMENTS 1 & 2)

EMC:
- Immunity: EN 55103-2:2009

Environmental:
- EN 50581:2012

This product complies with the requirements of the European Union Directives listed below:

- 2014/35/EU Low Voltage Directive
- 2014/30/EU EMC Directive
- 2012/19/EC Waste Electrical and Electronic Equipment (WEEE) Directive
- 2011/65/EU Restriction of Hazardous Substances (RoHS) Directive

Supplementary Information:
This equipment complies with all the requirements for the CE Mark.

Signature: _____________________________________
Date of issue: August 18, 2016
Mr. Alan Hutchinson
Regulatory Compliance Engineering Manager
Meyer Sound Laboratories Inc.
Berkeley, California 94702 USA

European Contact:

Your local Meyer Sound dealer, or
Meyer Sound Germany, GmbH
Horresser Berg 4A, 56410 Montabaur, Germany
FCC DECLARATION OF CONFORMITY

Trade Name: Meyer Sound Laboratories
Product Name: Loudspeaker Management System
Product Model Numbers: Galileo Galaxy 408

These devices comply with Part 15 of the FCC Rules
Operation is subject to the following conditions:
The devices may not cause harmful interference, and
The devices must accept any interference received, including
interference that may cause undesired operation

RESPONSIBLE PARTY

Responsible Party's Name: Meyer Sound Laboratories
Address: 2832 San Pablo Ave, Berkeley CA. 94702, USA
Telephone: 510-486-1166
Signature: ________________________________________
Date: 26 August 2016
Printed Name: Mr. Alan Hutchinson, Regulatory Compliance Engineering Manager

FCC Class B Notice

Note: This equipment has been tested and found to comply with the limits for a Class B digital device,
pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against
harmful interference in a residential installation. This equipment generates, uses and can radiate radio
frequency energy and, if not installed and used in accordance with the instructions, may cause harmful
interference to radio communications. However, there is no guarantee that interference will not occur in a
particular installation. If this equipment does cause harmful interference to radio or television reception,
which can be determined by turning the equipment off and on, the user is encouraged to try to correct the
interference by one or more of the following measures:

Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/television technician for help.

Modifications not expressly approved by the manufacturer could void the user’s authority to operate the
equipment under FCC rules.

ICES-003 Class B Notice - Avis NMB-003, Classe B

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.
DECLARATION OF CONFORMITY according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name: Meyer Sound Laboratories Inc.
Manufacturer's Address: 2832 San Pablo Avenue
Berkeley, California 94702 USA
Declares that the product

Product Type: Loudspeaker Management System
Product Names: Galileo Galaxy 408
Product Options: All

Conforms to the following standards:

Safety:
IEC 60065(ed.7), IEC 60065(ed.7);am1, IEC 60065(ed.7);am2
UL 60065 Edition 7 - Revision Date 2013/07/24
CSA C22.2 NO. 60065-03 (INCLUDES AMENDMENTS 1 & 2)

EMC:
Emissions: EN 55032: 2012 (Class B); CISPR 32: 2012
Immunity: EN 55103-2:2009
EN 61000-4-5:2006, EN 61000-4-6:2009, EN 61000-4-11:2004

Environmental:
EN 50581:2012

This product complies with the requirements of the European Union Directives listed below:

2014/35/EU Low Voltage Directive
2014/30/EU EMC Directive
2012/19/EC Waste Electrical and Electronic Equipment (WEEE) Directive
2011/65/EU Restriction of Hazardous Substances (RoHS) Directive

Supplementary Information:
This equipment complies with all the requirements for the CE Mark.

Signature:

Date of issue: August 26, 2016

Mr. Alan Hutchinson
Regulatory Compliance Engineering Manager
Meyer Sound Laboratories Inc.
Berkeley, California 94702 USA

European Contact:
Your local Meyer Sound dealer, or
Meyer Sound Germany, GmbH.
Horresser Berg 4A, 56410 Montabaur, Germany
APPENDIX E: COMPLIANCE

FCC DECLARATION OF CONFORMITY

Trade Name: Meyer Sound Laboratories

Product Name: Loudspeaker Management System

Product Model Numbers: Galileo Galaxy 816

These devices comply with Part 15 of the FCC Rules.
Operation is subject to the following conditions:
The devices may not cause harmful interference, and
The devices must accept any interference received, including
interference that may cause undesired operation.

RESPONSIBLE PARTY

Responsible Party's Name: Meyer Sound Laboratories
Address: 2832 San Pablo Ave, Berkeley CA. 94702, USA
Telephone: 510-486-1166

Signature:

Date: 18 August 2016
Printed Name: Mr. Alan Hutchinsen, Regulatory Compliance Engineering Manager

FCC Class B Notice

Note: This equipment has been tested and found to comply with the limits for a Class B digital device,
pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against
harmful interference in a residential installation. This equipment generates, uses and can radiate radio
frequency energy and, if not installed and used in accordance with the instructions, may cause harmful
interference to radio communications. However, there is no guarantee that interference will not occur in a
particular installation. If this equipment does cause harmful interference to radio or television reception,
which can be determined by turning the equipment off and on, the user is encouraged to try to correct the
interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the
equipment under FCC rules.

ICES-003 Class B Notice - Avis NMB-003, Classe B

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.
Avnu Certified products are member products which have completed the requirements outlined by the Avnu Certified Logo Program. Additional information can be found in the Members Area of the website or can be requested from Avnu Alliance Administration.

Meyer Sound’s product listed below has completed the requirements identified by the Avnu program and is considered an Avnu Certified Product.

<table>
<thead>
<tr>
<th>Company Name: Meyer Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name/Model Number(s) / Version #:</td>
</tr>
<tr>
<td><strong>Galileo GALAXY 816</strong></td>
</tr>
<tr>
<td>Certification Category: Pro A</td>
</tr>
<tr>
<td>Derivative product(s):</td>
</tr>
<tr>
<td><strong>Galileo GALAXY 408</strong></td>
</tr>
<tr>
<td><strong>Galileo GALAXY 816-AES3</strong></td>
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