Glensound
Keeps Working

GS-PM4

Dante Network Paging Microphone

PRODUCT DETAILS

Dante™

THE DESIGN BUILDINGS, 6 BROOKS PLACE, MAIDSTONE, KENT, ME14 1HE. ENGLAND.
TEL: +44 (0) 1622 753662
Visit our Website at www.glensound.com

Glensound Electronics Ltd

Thank you for choosing a new Glensound product.

All rights reserved.

Information contained in this manual is subject to change without notice, if in doubt please contact us for the latest product information.

If you need any help with the product then we can be contacted at:

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Maidstone
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EMAIL ADDRESSES

General enquires: sales@glensound.com

Technical enquires: techinfo@glensound.com

Sales enquires: sales@glensound.com

IMPORTANT SAFETY INSTRUCTIONS

Read this safety sheet prior to installation or initial use. This generic safety sheet covers multiple product configurations across our range. The full operating & installation manual and model-specific technical specifications are available online at: www.glensound.com

DANGEROUS VOLTAGE: This symbol is intended to warn that dangerous voltages within the product are present and constitute a risk of electric shock.	IMPORTANT INSTRUCTIONS: This symbol is intended to highlight that there are important operating, installation, and maintenance instructions in the literature accompanying this unit.
THIS UNIT MUST BE EARTHED (Class I Mains Models): English: This symbol highlights that the equipment must have a valid earth connection with the protective earthing conductor. Danish: *Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.* Finnish: *Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.* Norwegian: *Apparatet må tilkoples jordet stikkontakt.* Swedish: *Apparaten skall anslutas till jordat uttag.*	**CAUTION – SHOCK HAZARD: DISCONNECT ALL POWER SOURCES:** This symbol warns that the product can be energised simultaneously from more than one power source (e.g., dual AC mains supplies, external DC power, and/or PoE). Care must be taken if accessing internal components. Ensure that ALL connected power supplies are fully disconnected.

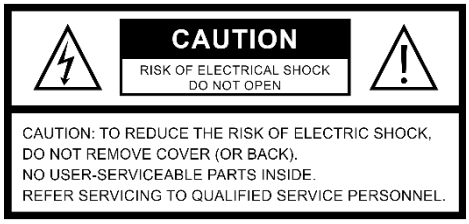
1. Read & Keep Instructions: Read these instructions, keep these instructions, heed all warnings, and follow all instructions.

2. Indoor Use & Moisture: Unless otherwise specified in the model-specific manual, this product is intended for indoor use only. Do not use this apparatus near water, and do not expose this product to rain or moisture.

3. Ambient Temperature: The intended ambient operating temperature of this product is 0°C to 40°C (or 0°C to 50°C where specified in the model-specific technical specifications in the online user manual).

4. Cleaning & Heat Sources: Clean only with a dry cloth. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

5. Cable & Cord Protection: Protect all power cords and network cables from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.



WARNING:

To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

6. Attachments & Lightning: Only use attachments/accessories specified or supplied by the manufacturer. Unplug this apparatus during lightning storms or when unused for long periods of time.

7. Servicing & No User-Serviceable Parts: The product contains no user-serviceable parts and must not be disassembled or modified in any way. Doing so could result in personal injury and/or product failure. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when a power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

8. Professional Environment: This equipment is not suitable for use in locations where children are likely to be present.

POWER SUPPLY & DISCONNECT INSTRUCTIONS (APPLICABLE BY MODEL CONFIGURATION)

9. Simultaneous / Redundant Power Sources (Mains, DC & PoE): Depending on the model, this product may be powered by a single source or simultaneously by multiple redundant power sources (dual AC mains inlets, an AC mains inlet, an external DC power input, and/or Power over Ethernet [PoE]). Disconnecting a single power lead will NOT isolate the unit if another power source remains connected. To completely de-energize the equipment, unplug ALL connected AC mains cords, DC barrel jack/external DC connectors, and PoE RJ45/etherCON network cables.

10. AC Mains Disconnect Devices (Single or Dual IEC Inlets): Where AC mains inlets are fitted, the mains plug(s) and rear-panel IEC appliance coupler(s) serve as the disconnect device(s). On dual-mains models, both mains' cords must be unplugged to isolate the unit from AC mains power. The socket-outlet(s) used for mains power must be installed near the equipment and be easily accessible.

11. Plug Grounding & Polarization (AC Mains Models): Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has 2 blades with one wider than the other. A grounding-type plug has 2 blades and a third grounding prong provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

12. Approved Detachable Earthed Mains Cords (Class I AC Mains Models): Use only approved detachable 3-core earthed mains cords (minimum H05VV-F 3G0.75 mm² with IEC 60320-1 C13 connector) rated for the country of installation: • United Kingdom: Use a BS 1363-1 approved molded plug fitted with a 5 A ASTA-approved BS 1362 fuse. • European Union: Use a CEE 7/7 (Schuko/French) earthed plug. • Denmark: When connecting to wall socket-outlets in Denmark, use an approved 3-pin earthed plug complying with DS 60884-2-D1 (Standard Sheet DK 2-1a) to ensure protective earthing is maintained. • USA/Canada: Use a UL-listed / CSA-certified 3-conductor grounding power cord [minimum 18 AWG, SVT/SJT] with a NEMA 5-15P plug. • All other regions: Use a nationally safety-approved 3-core earthed mains cord rated for the country of installation.

13. Internal Primary Fusing & Neutral Fusing Warning (AC Mains Models – Service Personnel Only): Internal primary fuse(s) are located between the Live terminal of the IEC inlet and the Live input of the power supply and should only be changed by a qualified service engineer using a correctly rated replacement as specified in the product handbook. WARNING – Neutral Fusing: Because the AC mains plug may be reversible in some electrical distribution systems, the internal primary fuse may be located in the neutral conductor. Always

disconnect all AC mains power cords completely from the IEC inlet(s) to de-energize all phase conductors before opening the enclosure or servicing the unit.

14. Power over Ethernet (PoE) Models: Unplugging the RJ45 / etherCON network cable disconnects PoE power from the unit. The Ethernet cable intended to be connected to the unit is for indoor building routing only and must not exit the building structure without appropriate primary surge protection.

15. External DC / USB Power Input Models: Connect only the manufacturer-supplied AC/DC power adaptor (where provided), or a safety-approved external DC or USB power supply complying with BS EN IEC 62368-1 (classified as ES1 and PS2/Limited Power Source [LPS]) that matches the voltage, minimum current rating, and pin polarity marked adjacent to the DC/USB input connector or specified in the product manual. The external power adaptor plug and the DC/USB input connector serve as the DC disconnect devices and must remain readily accessible; unplugging the DC/USB connector disconnects external DC power only and will not isolate the unit if AC mains or PoE remains connected.

INSTALLATION, THERMAL, MECHANICAL & OPTICAL SAFETY (APPLICABLE BY MODEL CONFIGURATION)

16. Ventilation & Sealed Heatsink Enclosures: Do not block any ventilation openings; install in accordance with the manufacturer's instructions. On models where the aluminum enclosure acts as the units heatsink, do not cover the unit or speaker grille with soft furnishings, cloths, or curtains, and allow free airflow around the housing.



17. 19-Inch Equipment Rack Installation (Rack-Mount Models): Rack-mounted models are designed for stationary installation in a standard 19-inch equipment rack. Secure the unit to the front rack rails using all four mounting holes on the integral rack ears with appropriate rack screws (e.g., M6 screws and cage nuts). Ensure that ventilation openings on the chassis are not obstructed by rack walls or cabling.

18. Carts, Stands, Brackets & Tip-Over Hazard: Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

19. Optical SFP Transceiver Modules (Where fitted): Any optical SFP transceiver modules installed in this product must be certified Class 1 Laser Products in accordance with IEC/EN 60825-1. Do not look directly into open optical ports or fiber-optic cable ends while the equipment is energized.



Disposal (WEEE): the crossed-out wheeled bin symbol means this product must not be disposed of with household waste. Take it to an approved electrical and electronic equipment recycling point, or contact Glensound for advice.
Declaration of conformity: Glensound declares that this product complies with the applicable UK and EU legislation. The full declaration of conformity is available at www.glensound.com.
Manufacturer: Glensound Electronics Ltd, The Design Buildings, 6 Brooks Place, Maidstone, Kent, ME14 1HE, UK · Tel: +44 (0)1622 753662 · Email: sales@glensound.com · www.glensound.com

PRODUCT WARRANTY

All equipment is fully tested before dispatch and carefully designed to provide you with trouble free use for many years.

We have a policy of supporting products for as long as possible and guarantee to be able to support your product for a minimum of 10 years.

For a period of one year after the goods have been despatched the Company will guarantee the goods against any defect developing after proper use providing such defects arise solely from faulty materials or workmanship and that the Customer shall return the goods to the Company’s works or their local dealer.

All non-wear parts are guaranteed for 2 years after despatch and any defect developing after proper use from faulty materials or workmanship will be repaired under this warranty providing the Customer returns the goods to the Company's works or their local dealer.

CE

EU DECLARATION OF CONFORMITY

GS-PM4

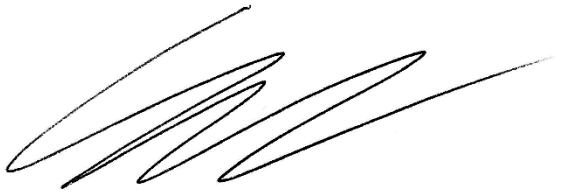
Visual indicator Dante intercom

This declaration of conformity is issued under the sole responsibility of the manufacturer.

This equipment is manufactured by Glensound Electronics Ltd of Brooks Place Maidstone Kent ME14 1HE is CE marked and conforms to the following Union harmonisation legislation:

Emissions:	BS EN55032:2015
Immunity:	BS EN55035:2017

Signed for and on behalf of Glensound Electronics Ltd.



Gavin Davis, Managing Director
Maidstone, Kent, England

Date: 15/02/2022

RoHS DIRECTIVE

RoHS 2 Directive 2011/65/EU restricts the use of the hazardous substances listed below in electrical and electronic equipment.

This product conforms to the above directive and for these purposes, the maximum concentration values of the restricted substances by weight in homogenous materials are:

Lead	0.1%
Mercury	0.1%
Hexavalent Chromium	0.1%
Polybrominated Biphenyls	0.1%
Polybrominated Diphenyl Ethers	0.1%
Cadmium	0.01%

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT REGULATIONS 2006 (WEEE)

Glensound Electronics Ltd is registered for business to business sales of WEEE in the UK our registration number is:

WEE/JJ0074UR

GLENSOUND PM4
HANDBOOK CONTENTS

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OVERVIEW

Our GS-PM4 utilises the reliable and proven Dante™ network audio transmission protocol to allow real time distribution of uncompressed audio across standard networks. As such the GS-PM4 is fully compatible with other manufacturers' equipment using the Dante protocol.

All units in the system are designed to be very easy to use for the operator and simple to setup for the technician. They include all the basic functionality required for small intercom systems and none of the overly complex installation requirements normally associated with large systems.

GS-PM4 FRONT PANEL LAYOUT



1. **Microphone Input**
   3-Pin XLR Connector. Support condenser and dynamic microphones

2. **Zone Talk Buttons**
   Used to talk out throw the PM4, illuminated buttons indicate when a Zone is Open/Live

3. **Power LED**
   This LED indicated the power status of the device. This LED also doubles to indicate the status of the configuration mode.

4. **Scribble Strips**
   Give the user a place to write down zone allocations

GS-PM4 REAR PANEL LAYOUT



1. **USB update Port**

   This USB connector is used only for device firmware updates. Please refer to the firmware update section of the manual for a firmware update guide

2. **Setup Button**

   Is used to put the unit in to Setup Mode or Update mode

3. **GPIO Port**

   This port allows external control of the 4 Zone buttons and Indicators, The GPIO port uses a Female DB9 connector and has **Open Drain** Inputs.

4. **RJ45/Ethercon Network interface & Activity LED**

   This is a standard 100Mbps Ethernet IP interface. The amber LED indicates network activity. The PoE source used to power the device can be a mid-span adapter or a network switch with PoE.

NORMAL OPERATION

During normal device operation the Power LED will be illuminated and Not Flashing

1. If any of the Zone Take Buttons are pressed that button will start Flashing Blue to indicate that the unit is opening that channel, once the selected zone button goes a solid blue you are free to speak.

2. During normal operation, the GS-PM4 will pass through the audio feeds from the 4 Dante inputs to their corresponding outputs. If a Zone Take Button is selected the GS-PM4 will mute the pass-through feed to that channel to allow you to speak and will resume the feed once the user has released the Zone Take Button.

Setup Mode

To enter Setup mode Press and Holed the Blue Setup button on the Back of the unit until all 4 zone buttons have turned blue, at this point release the setup button. When in Setup mode the Power LED will be Flashing.

In Setup mode you have 4 settings that can be changed each button handles one setting, some settings may have multiple options simply press the buttons to scroll through the options.

Button 1 – Keypad Operation
Momentary (Button Not illuminated) **Default**
Latching (Button illuminated)
Intelligent (Button Flashing)

Button 2 – Chime
Chime **Off** (Button Not illuminated) **Default**
Chime **On** (Button illuminated)

Button 3 – Frequency Shifter
Frequency Shifter **Off** (Button Not illuminated) **Default**
Frequency Shifter **On** (Button illuminated)

Button 4 – Low Cut Filter
100Hz Cut (Button Not illuminated) **Default**
300Hz Cut (Button illuminated)

To Save and Exit Press simply Press the blue Setup Button on the back of the unit and it will return to normal Operation indicated by the power LED illuminating solid blue.

Keypad Operation

Mode: Momentary
Press and hold any combination of the 4 Zone buttons to bring up the Lines. If the chime function is Enabled the selected Zone buttons will start Flashing blue, please wait for the selected Zone buttons to go Steady blue before speaking. To Stop speaking Simply release the selected Zone buttons.

Additional Info: Any Zone buttons pressed after the initial selected zone buttons have gone a Steady blue will have the chime only played in the newly selected Zone. In this scenario it is advised to wait for the newly selected Zone buttons to go Steady blue before speaking.

Mode: Latching
Press any combination of the 4 Zone buttons to bring up the Lines, If the chime function is Enabled the selected Zone buttons will start Flashing blue, please wait for the selected Zone buttons to go Steady blue before speaking. To Stop speaking Simply press the selected Zone buttons indicated by their steady blue status.

Additional Info: Any Zone buttons pressed after the initial selected zone buttons have gone a Steady blue will have the chime only played in the newly selected Zone. In this scenario it is advised to wait for the newly selected Zone buttons to go Steady blue before speaking.

Mode: Intelligent

Tap- Tap any combination of the 4 Zone buttons to bring up the Lines, If the chime function is Enabled the selected Zone buttons will start Flashing blue, please wait for the selected Zone buttons to go Steady blue before speaking. To Stop speaking Simply tap the selected Zone buttons indicated by their Steady blue status.

Additional Info: Any Zone buttons Taped after the initial selected zone buttons have gone a Steady blue will have the chime only played in the newly selected Zone. In this scenario it is advised to wait for the newly selected Zone buttons to go Steady blue before speaking.

Press and Hold- Press and hold any combination of the 4 Zone buttons to bring up the Lines, If the chime function is Enabled the selected Zone buttons will start Flashing blue, please wait for the selected Zone buttons to go Steady blue before speaking. To Stop speaking Simply release the selected Zone buttons.

Additional Info: Any Zone buttons pressed after the initial selected zone buttons have gone a Steady blue will have the chime only played in the newly selected Zone. In this scenario it is advised to wait for the newly selected Zone buttons to go Steady blue before speaking.

Tap and Hold- Tap any combination of the 4 Zone buttons you would like to bring up, once you have made your selection Hold down any one of the selected Zone buttons indicated by their Flashing blue status to bring up the Lines. If the chime function is Enabled the selected Zone buttons will remain Flashing blue. Please wait for the selected Zone buttons to go Steady blue before speaking. To Stop speaking Simply release the chosen Zone button.

Specifications

Power Consumption: < 3W
POE Stranded: IEEE 802.3af-2003
Network Port type: RJ45/Ethercon
Network Port Speed: 100Mbs
Input:
3Pin Balanced XLR
EIN 150R 20-22k Dynamic mic, max gain. -124dBu
FRQ Response:
LCF OFF: 100Hz-20KHz +/-1dB
LCF ON : 300Hz-20KHz +/-1dB
GPIO:
Inputs Max Voltage : 3.3V
Output Max Voltage: 5V Open Collector
Output Max Current: 250ma

GPIO Pinout

1. Ground
2. Input 1
3. Input 2
4. Input 3
5. Input 4
6. Output 1
7. Output 2
8. Output 3
9. Output 4

XLR Pinout

1. Ground/Shield
2. Positive/Hot
3. Negative/Cold

CONNECTING THE GS-PM4 UNIT TO A DANTE NETWORK

The GS-PM4 are network audio devices utilizing the reliable and versatile Dante audio over IP protocol. Dante is a proprietary system (although very widely used) the originators of which are Audinate.

The information below is only meant as a very basic guide. Full details of the power of Dante network audio and instructions for using it can be found at www.audinate.com

Getting Dante Controller

If you are connecting the GS-PM4 to a new Dante network the first thing you will need to do is to get the free Dante controller software from Audinate.
This can be downloaded by visiting Audinate's web site at www.audinate.com

Connecting GS-PM4 device to the network

The GS-PM4 can be connected to the network that you are going to use for your audio distribution simply by plugging in to the RJ45 network connections on the rear. Once connected to the network it will be possible to see the GS-PM4 from within the Dante controller and route its' audio circuits.

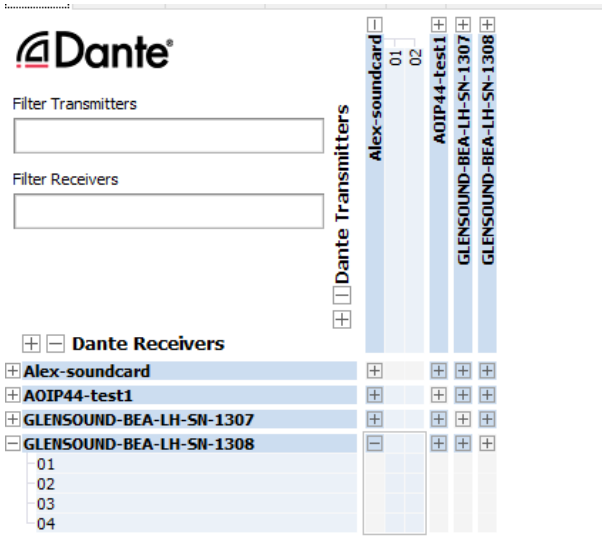
Audio Over IP Network

We strongly recommend that you consider your network topology carefully and would not recommend sharing broadcast audio and general data on the same network.

For more details of audio over IP network structure please visit www.audinate.com

Running Dante Controller

At the time of writing this manual the Dante Controller looks as per the screenshot below:



The GS-PM4 will have been named at the factory during test to allow them to be identified by the Dante controller.

The format used for the factory name is:

‘GLENSOUND-GS-PM4-SN-XXXX’

Where ‘GS-PM4’ refers to the Glensound product i.e., GS-PM4

The ‘SN-XXXX’ refers to the serial number of the GS-PM4 which can be found printed on the rear or side of the unit.

The unit may be renamed in Dante controller by opening the ‘Device view’ window and selecting GS-PM4 in the drop-down menu. Go to the ‘Device Config’ tab and change the name with the Rename Device box.

Note if you upload a new DNT file or clear the devices config then the name will change to ‘GS-PM4-xxXxXx’ whereby the ‘X’s refer to the devices MAC address.

Dante Controller TIP

If you have never run Dante controller before then make sure that on the bottom left of the Dante controllers’ screen ‘P’ or ‘S’ is next to a green square as this indicates that it is connected to a network. By clicking ‘P’ or ‘S’ a pop-up box opens to allow you to set what network interface the controller is using.

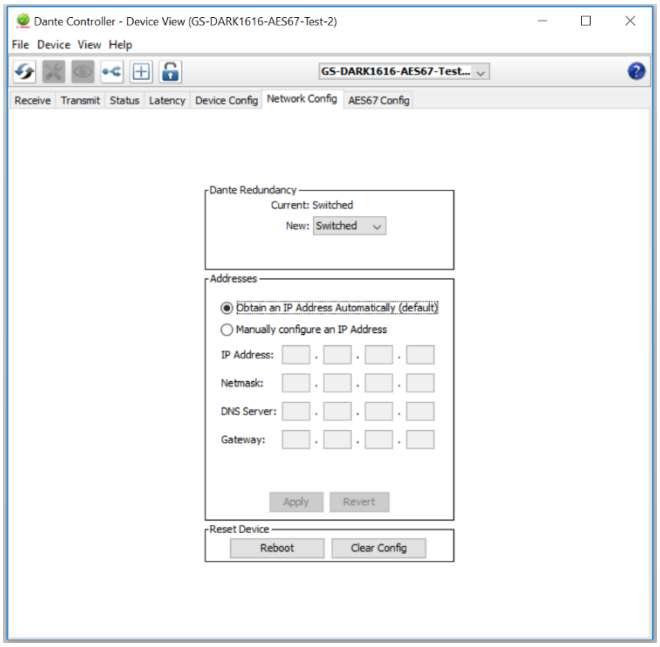
Device not showing up in Dante Controller

If your Dante device does not show up in Dante Controller then the most likely issue is that the device's IP Address is not appropriate for your network.

A) It maybe that the device is set to obtain an IP address automatically using DHCP (this is the default configuration) and your network is setup for fixed IP addresses only and does not have a DHCP server.
B) It maybe that the device has had a fixed IP address assigned but that this address is not suitable for your network.

The solution to both scenarios is basically the same.

1) You must connect your Dante device directly to the Ethernet port of your computer using an Ethernet cable.
2) Make sure that your computer is set to 'Obtain an IP address automatically'
3) After a few minutes the Dante device should now appear in Dante Controller.
4) Double click the device name to open up device view.
5) Open up the 'Network Config' tab
6) Either turn on 'Obtain an IP Address Automatically' or correctly configure the 'Manually configure an IP Address' options for your network.
7) Click on 'Apply' to confirm the new settings, then disconnect the computer and reconnect the Dante device to your network.



UPDATING FIRMWARE

Equipment needed

- A windows-based PC
- USB cable
- A copy of 'DfuSe Demo' software
- A GS-PM4 and a PoE source

Instructions

1. Download and install DfuSE Demo

   'DfuSE Demo' is a firmware updating tool that is required for loading new firmware on to the STM32 Device.

   It can be downloaded from the STMicroelectronics website found here: https://goo.gl/AbzhsA. It is the file named "STSW-STM32080".

   Once you have downloaded this file you will need to extract the .exe "DfuSe_Demo_V3.0.5_Setup.exe", then run and install it.

2. Download firmware

   Once you have downloaded the file, place it in a folder or location of your choice.

3. Connect To A PC

   Connect the GS-PM4 to the PC via the USB cable. TheUSB connector is located on the rear panel of the GS-PM4.

4. Firmware update preparation

   To prepare the GS-PM4 for a firmware update;

   1. Make sure the device is connected with USB
   2. Press and hold down the UPDATE button
   3. Power on the unit
   4. Release the UPDATE button after a few seconds

   Your PC should make an audible sound when this process is successful as windows is detecting a new USB device.

1. Loading the firmware

   Now open DfuSe Demo.

   If the GS-PM4 successfully entered DFU mode then it will appear as ‘STM Device in DFU Mode’ under the ‘Available DFU Devices tab’.

   Now the .dfu file needs to be selected so that DfuSe Demo knows the correct firmware to put on to the GS-PM4

   Click choose and then select the .dfu file that you downloaded from the Glensound website. This will be located in your downloads folder by default.

   If the file loads successfully then it will read along the bottom ‘File correctly loaded’.

2. Upgrading the GS-PM4 firmware

   The firmware is now ready to be put on to the GS-PM4, Tick the ‘Verify after download’ box first and then click ‘Upgrade’.

   Click yes to proceed.

   The progress bar along the bottom will show the status of the operation.

   If the operation was successful, DfuSe Demo will report that “Targery 00: Verify Successful!”.
   You may also see that it will report how much data was successfully transferred.

3. Final steps

   Now click “Leave DFU mode” to finish the procedure.

   You may now disconnect the USB cable and continue to use the GS-PM4 with the freshly updated firmware!

UPDATING THE ULTIMO CHIPSET

The Ultimo Chipset is a device supplied by Audinate that does most of the processing for the actual Dante/ AES67 network audio streams. There is one Ultimo Chipset in each Beatrice. We supply special code (a .dnt file) that sets up/ initiates the Ultimo Chipset and makes it work in particular way that is compatible to the Beatrice.

Finding Out Current Installed Version

Using Dante® controller double click on the GS-PM4 device name in the routing tab to open the Device View box.
Ion the Device View box open the Status Tab.

The 'Product Version:' shows the currently installed version of Ultimo Chipset dnt code.

Finding Out What The Latest Available Version Is

Please Contact Glensound to get the latest available version. sales@glensound.com

Updating the device

The firmware that runs in the Ultimo Chipset is updated using Audinate's Firmware updating tool. The updating tool and a user guide can be downloaded from Audinate's website:

https://www.audinate.com/products/firmware-update-manager

NOTE:

Please note we strongly advise that when you do the update that only your PC and the Dante device that you want to update are on the network to save accidental updating the wrong Dante device.