Vita Mini

DANTE®/ AES67 COMPLIANT NETWORK AUDIO SINGLE USER COMMENTARY BELTPACK

PRODUCT DETAILS

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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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 FOR:

VITA MINI
Beltpack Style Commentator's Unit

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:

Low Voltage Directive:	EN60065 and EN62368-1:2014
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: 07/08/2019

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 VITA MINI

Handbook Contents

Issue 1

Description   Page No.

Contents

OVERVIEW

The Glensound Vita Mini is a single user commentary box designed to connect to a Dante® audio network. The Vita Mini provides a single user headphone and microphone interface with a single talkback circuit, in a compact belt pack format. A very high quality microphone amplifier and compressor/limiter circuit are used in the Vita Mini, designed specifically for the specialist requirements of commentators' equipment.

The audio inputs and outputs of the Vita Mini are Dante® network audio circuits. Dante® network audio is a common protocol for distributing high quality linear audio over standard IP networks and it is widely used by many audio equipment manufacturers. The Glensound Vita Mini's Dante® audio interface will be compatible with any other manufacturers' Dante® audio interface.

Vita Mini utilises the Ultimo chipset from audinate for its network audio interface. This means tha the Vita Mini is also AES67 compliant.

Network audio routing is managed by the Dante® Controller software. Further details of Dante® network audio, and the Dante® Controller software can be found at www.audinate.com

Being designed for live on-air broadcast applications, the Glensound Vita Mini has been designed with backup power capabilities. It can be powered via the CAT5 connection with PoE or via a local external DC connection.

PANEL LAYOUT & FUNCTIONS

PLEASE NOTE AS THE UNIT IS CONFIGURABLE IT IS POSIBLE TO CHANGE THE OPERATION OF SOME OF THE CONTROLS SHOWN HERE. THEREFORE THE FOLLOWING IS MEANT AS A GUIDE ONLY.

Front Panel

1. Power on LED   2. Input Routing   3. Source Level

4. PPM   5. Program/Talk Switches   6. Sidetone Control

1. Power LED

A single blue LED indicates that the Vita is receiving power.

2. Input Routing Controls

Left-Both-Right headphone routing. This control routes the associated headphone source to either the left only, right only or both (centre) of the commentator's headphones.

3. Source Level Controls

These two potentiometers adjust the headphone volume of the two input circuits being received from the Dante® network.

4. Peak Programme Meter (PPM)

A 4 LED PPM indicating the output level of the main program circuit. The -12 to +6 scale shows the output level in dBs. Each LED covers a 6dB range.

5. Program/Talkback Switches

The 2 round talkback switches route the commentator's mic to the output of the Vita i.e. channels 1 or 2 of the Dante network.
The operation of these talkback switches (momentary, latching, intelligent, etc) can be set using Vita Controller software (see page 11).

6. Sidetone Level Control

The feedback pot and talkback switch are also used to adjust the audio level of the commentators' microphone in their own headphones. It has no effect on the outgoing audio level and is used just for confidence monitoring.

To adjust the sidetone level, hold down the talkback button, whilst adjusting the feedback pot to the desired level.

Rear Panel

7. Network RJ45   8. Headphone Socket   9. Input Connector

10. Input Selector Switch   11. Gain Control

7. CAT5 Network Port

An EtherCON RJ45 socket allows the audio connection to the Dante® network. The Vita Mini has 2 audio inputs and 2 audio outputs on this connection. If the device the VITA Mini is connected to provides PoE, it will also power the Vita on this connection. A LED indicates the network connection status.

8. Headphone Socket

A 6.35mm jack socket is available for a headphone connection, with a recommended impedance range of 32-1000 ohms.

Stereo & mono headphones can be used, or single earpieces.

A sophisticated headphone amplifier design maintains the same output level, regardless of the impedance of the earpiece or headphones used.

9. Input Connector

A 3 pin Neutrik XLRF is for connecting the mic or line input to the Vita.
The input circuit is electronically balanced.

10. <u>Input Selector Switch</u>

A 3 position switch selects the gain of the input amp, depending on the type of input connected. With the input gain control in the centre position the following gains are applied:

INPUT SELECTED	GAIN OF MIC AMP	OUTPUT LEVEL
MIC	58dB	0dB
MIC + PH PWR	40dB	0dB
LINE	0dB	0dB

When the selector switch is in the MIC + PH PWR position then 48 Volt phantom power is applied to the input.

11. <u>Input Gain Control</u>

A small pot adjusts the gain of the input amplifier

Side Panel

12. DC Socket   13. Mini USB & Recessed Button

12. DC Input Socket

A 2.5mm barrel connector (centre positive), is for connection of an external 10-15VDC power supply.

13. Mini USB Socket & Update/Reset Buttons

A mini USB socket and the recessed push buttons allow PC connections for future firmware upgrades.

VITA CONTROLLER WINDOWS 10 APPLICATION

Vita Controller enables remote control of key functions of the Vita Mini, and configuration of a single or multiple Vita Mini's connected to the network. It is PC software that runs on Window 10 machines.

Downloading
The Vita controller application must be downloaded. It is a zipped file, which contains 32 & 64 bit Windows versions of the app, a security certificate for Windows and installation instructions. To download the file please use the following address:

www.glensound.co.uk/Software/Dante/Vitacontroller.zip

1) Check whether you have a 32 bit or 64 bit installation of Windows.
2) Run File Explorer.
3) Select 'This PC' from the left hand column.
4) Right click and select 'properties.
5) 'System type' will show a 32 bit or 64 bit system installed.
6) Download the Vita Controller software for your operating system onto your local machine.

Installation
Make sure the correct Vita Controller download files are in a folder on your local machine.

Installation of Vita Controller is a two stage process as all Windows 10 applications must have a digital certificate. If this is the first time you have installed Glensound applications, then you must first load the Glensound App Certificate. This will allow you to install Vita Controller and any further Glensound Windows 10 applications. If you already have the Glensound digital certificate you can go straight to Stage 2.

Stage 1 – Installing the Glensound App Certificate

1) Make sure that you have adminstrator rights on your system. If not, please contact your system administrator.

2) Windows 10 must allow 'sideloading' applications.

   To do this, open the Settings app and select the 'Update & security icon'. Then go to the 'For developers' tab. Select 'Sideload apps'. NB Sideload apps will also work if 'Developer mode' is selected but this is not recommended.

3) From the files downloaded from the Glensound website, double-click on 'GlensoundApp.cer'.

   a. Click Install Certificate.
   b. Select 'Local Machine' and click 'Next'.
   c. Select the option "Place all certificates in the following store" and then click Browse.
   d. Select the "Trusted Root Certification Authorities" store and click OK then Next.
   e. Click 'Finish'.
   f. You will get a Security Warning asking if you want to install the certificate. Click 'Yes'.
   g. Click 'OK'.

The Glensound App Certificate will now be installed. Certificates for the current user can be managed by starting 'certlm.msc'.

Stage 2 – Installing The Vita Controller Application

1) From the files downloaded from the Glensound web site, unzip the files to a local folder.
2) Select the 32 bit or 64 bit folder that is appropriate for your operating system.
3) Right-click on the 'Vita Controller Setup.ps1' file and select 'Run with PowerShell'.
   a. If you do not have permissions to run scripts on your machine, you may get an error at this point, even though this file is digitally signed. If so, please contact your System Administrator to change the Execution Policy to a less restrictive one to allow Vita Controller to be installed. This can be changed back after installation.
4) If you get an 'Execution Policy Change' warning, press 'Y' and then 'enter' to accept. This should only happen on the first application installation after installing the Glensound App Certificate.
5) The installation folder can now be deleted.
6) To run Vita Controller, click the Windows icon in the bottom left corner of the screen, and find it in the 'All apps' list and double click.

Uninstalling Vita Controller
Find the app in the 'All apps' list then right-click and select 'Uninstall'.

VITA CONTROLLER OPERATION OVERVIEW

When Vita Controller is run, it will scan the network looking for any connected Vita's. These will show up on the left hand side and each can be selected by clicking down the tabs.
Names of each device can be changed for something appropriate within Audinates Dante controller software – the operators name, for example.

The operation of Vita Controller is real time and any changes made will be instantly applied. Simply click on the graphic to make real time changes to the function selected.
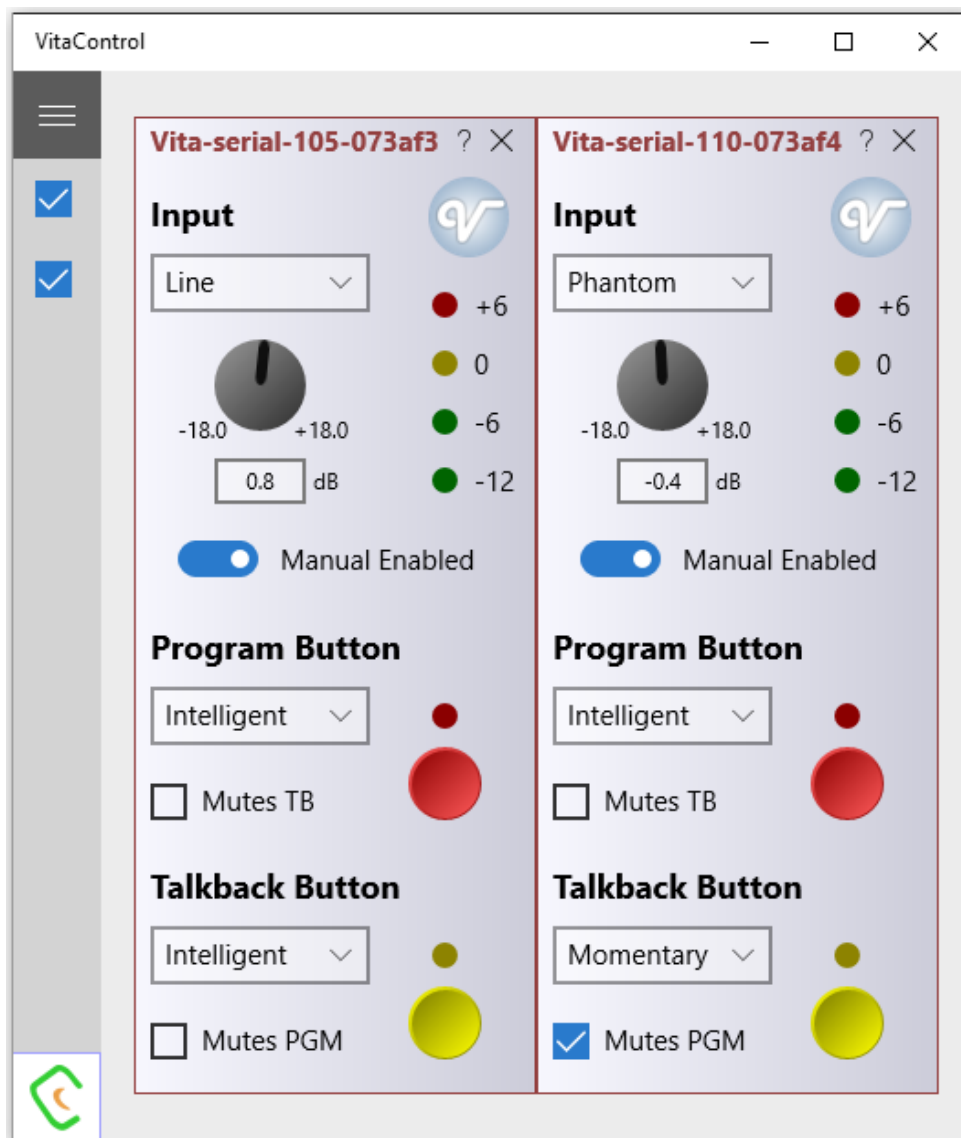
Key Vita Controller Features

- Change input type to mic/mic+48v/phantom
- Adjust mic input gain
- Turn the mic or talkback on/off
    - Pressing the red or yellow buttons on Vita Controller has exactly the same effect as pressing the buttons on the unit does.
- Set the mode of the Program and Talkback buttons
    - Latching
    - Momentary push to talk
    - Intelligent
        - Quick push is a latch, a longer push is momentary
    - Always on and mutes when pressed (cough button)
    - Pressing one of the buttons mutes the other
        - This is when you use the talkback circuit and want your on air mic muted when you press the talkback button
- Lock all the local controls on the Vita so Vita Controller has exclusive control.
- PPM meter

CONNECTING THE VITA MINI TO A DANTE® NETWORK

The Vita Mini is a network audio device 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 Vita Mini 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 Vita's To A Network

Vita Minis can be connected to the network that you are going to use for your audio distribution simply by plugging in the network connection on the rear. Once connected to the network it will be possible to see the Vita Mini from within the Dante® controller and route the 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, Dante® Controller looks as per the screenshot below:
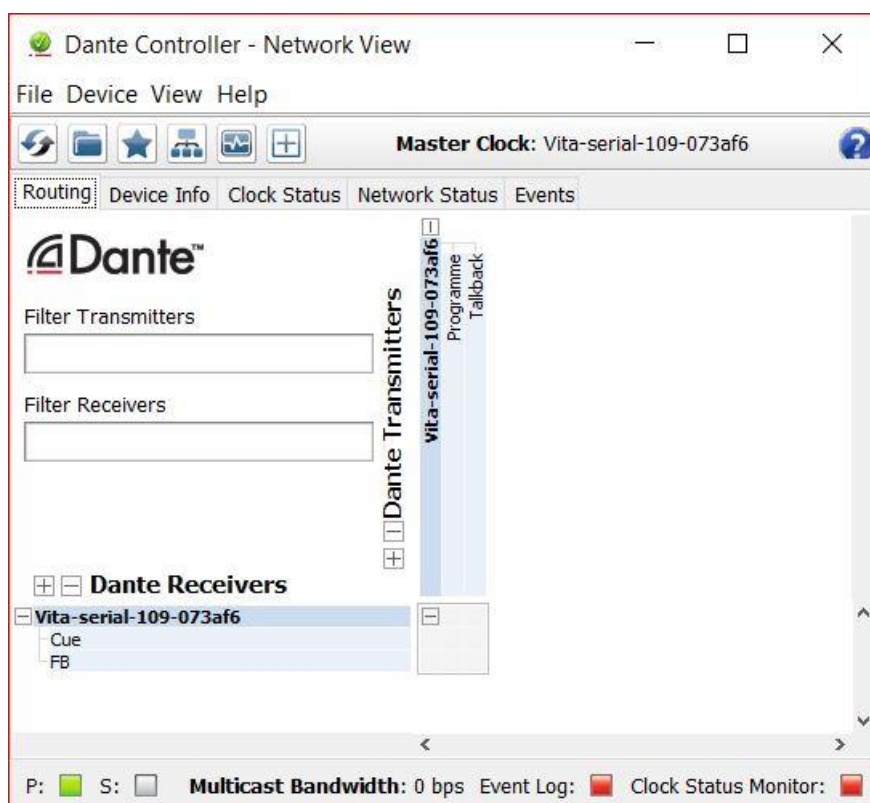
The Vita Mini will have been named at the factory during test to allow them to be identified by the Dante controller.

The format used for the factory name is:

'Vita Mini-serial-XXX-YYY'. 'XXX' will be the units 3 digit serial number, and 'YYY' will be the Vita's 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.
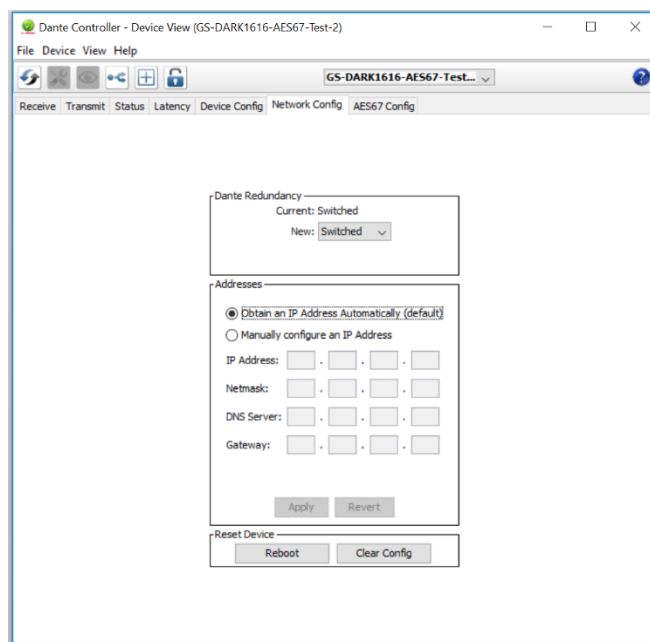
AES67 MODE

The Beatrice uses a chipset from Audinate called the Ultimo for its network audio interface. Audinate are the company behind Dante™ and as such the primary network audio protocol is Dante, however Audinate have enabled their chip to comply with AES67 and therefore the Beatrice can be set to AES67 mode for interaction with other AES67 devices.

Please note however that Glensound are relying on Audinate's AES67 interface and are unfortunately not able to provide full AES67 support for the unit. AES67 support should be sought directly from Audinate.

Turning On AES67 Mode

If you want to use your Beatrice on an AES67 network and it has not been set to AES67 mode then this can be set in Dante controller by double clicking the Beatrice to open the Device View window where you will find an AES67 tab to enable AES67 support.
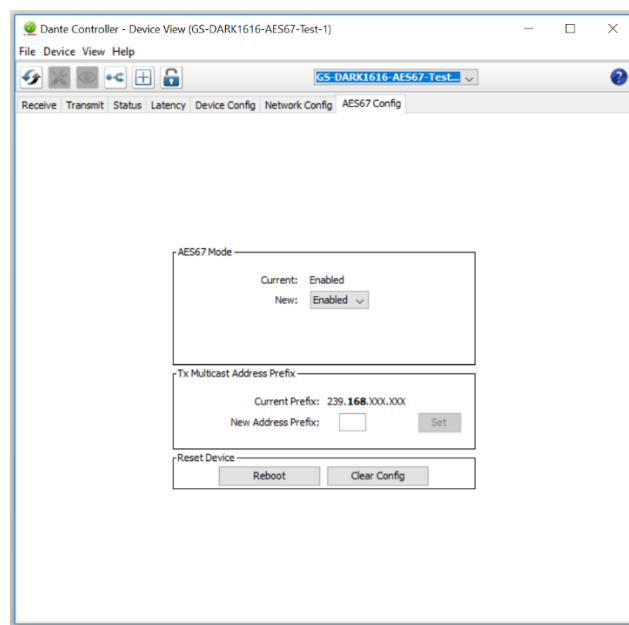

Once the AES67 drop down box has been enabled you'll have to reboot the Beatrice for the change to take effect. After the reboot go back to the AES67 tab and set the multicast prefix address to one that is suitable for your newtork.
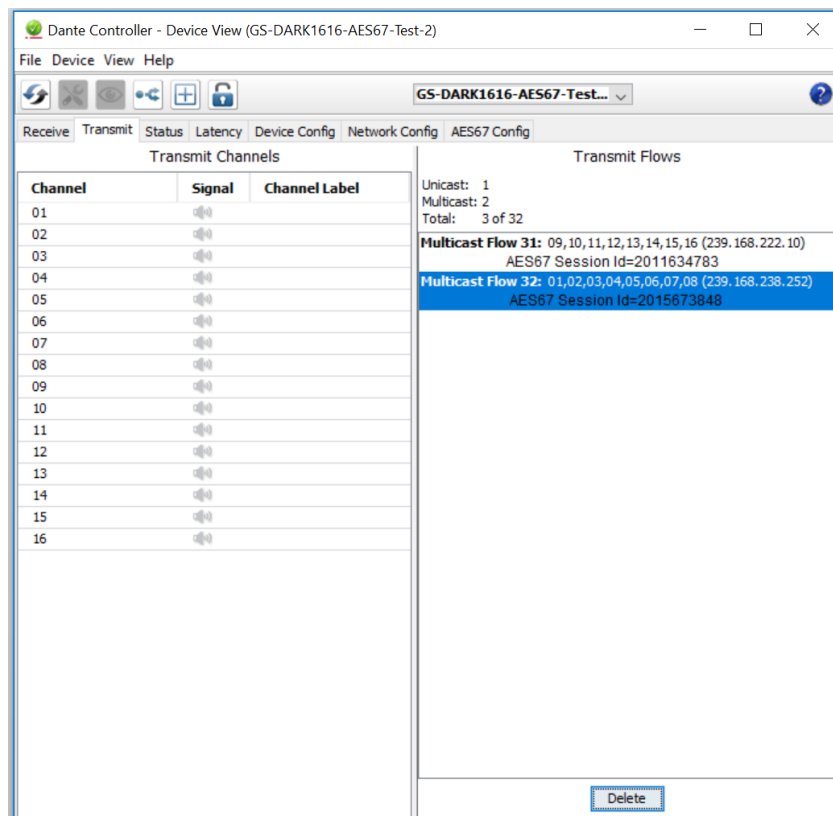
Sending AES67 Audio

To transmit AES67 audio to the network a multicast flow must first be setup.

This is done by selecting the 'Create New Multicast Flow' Icon in the Device View.
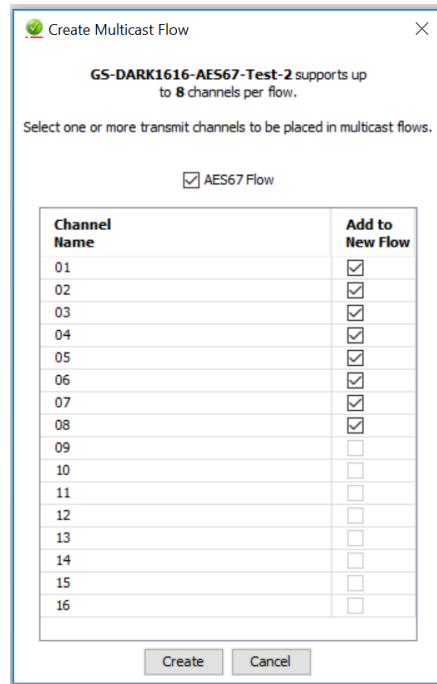
Tick the AES67 Flow check box, then select up to 8 channels to be included in the flow then click 'Create'

Once set the flows can be seen in the transmit tab of the device view.

Receiving AES67 Audio

Once a compatible AES67 stream is detected on the network by Dante Controller the AES67 flows will appear in the Dante Transmitters section in the Routing tab.

AES67 Restrictions

AES67 flows can only be generated with the following constraints:

- Multicast Only
- Non-redundant
- Destination address in range 239.nnn.0.0 to 239.nnn.255.255 (239.nnn/16), port 5004
- 48kHz sampling rate
- 24 bit linear (L24) encoding
- 1 msec packet time
- Up to 8 channels per stream

Received AES67 flows have the following constraints:

- Multicast Only
- Non-redundant
- Destination address in range 239.nnn.0.0 to 239.nnn.255.255 (239.nnn/16), port 5004. Must match destinatio address range.
- 48kHz sampling rate
- L16 or L24 encoding
- 125usec, 250usec, 333usec, 1 msec packet time
- Up to 8 channels per stream

UPDATING FIRMWARE

A. Finding Out Current Installed Version

Run the Vita remote control App and select the Vita Mini that you want to know this information for.

In the device view screen press the ? next to the X. The devices information will then be shown as detailed below.

B. Finding Out What The Latest Available Version Is

Go the Vita's web page at http://www.glensound.co.uk/product-details/vita/ and open the 'Firmware Latest Version' Tab.

Note..The Vita Mini shares the same firmware as the original Vita.

This will give both the latest version numbers/ file names and also the location to download the file from.

Equipment needed

- A windows based PC
- USB Type A to Micro B cable
- A copy of 'DfuSe Demo' software
- The latest firmware from Glensound
- The device to be updated and a power source

Update 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

   The latest firmware for the Vita Mini can be found on the Glensound website, under the Vita product page. Once you have downloaded the file, place it in a folder or location of your choice.

| BeatriceB1B2_v1.6.dfu | 21/11/2018 10:46 | DFU File | 65 KB |

Figure 1 Example filename

3. Connect To A PC

   Connect the Vita Mini to the PC via the USB cable. The micro USB connector is located on the side panel of the unit.

Figure 2 USB connector

4. Firmware update preperation

   To prepare the Vita Mini 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 UDPATE 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.

5. Loading the firmware

   Now open DfuSe Demo.

   If the Vita Mini successfully entered DFU mode then it will appear as 'STM Device in DFU Mode' under the 'Available DFU Devices tab'.
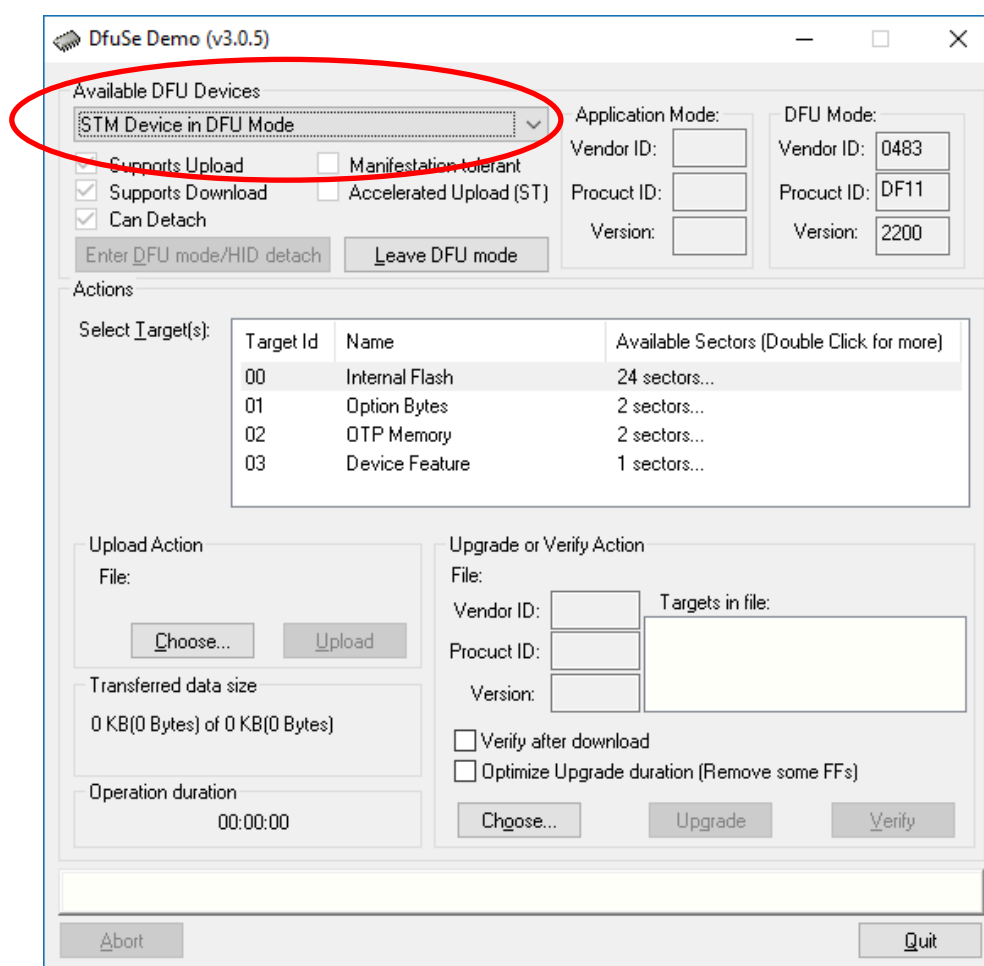
Figure 3 Device successfully recognised

Now the .dfu file needs to be selected so that DfuSe Demo knows the correct firmware to put on to the Vita Mini.
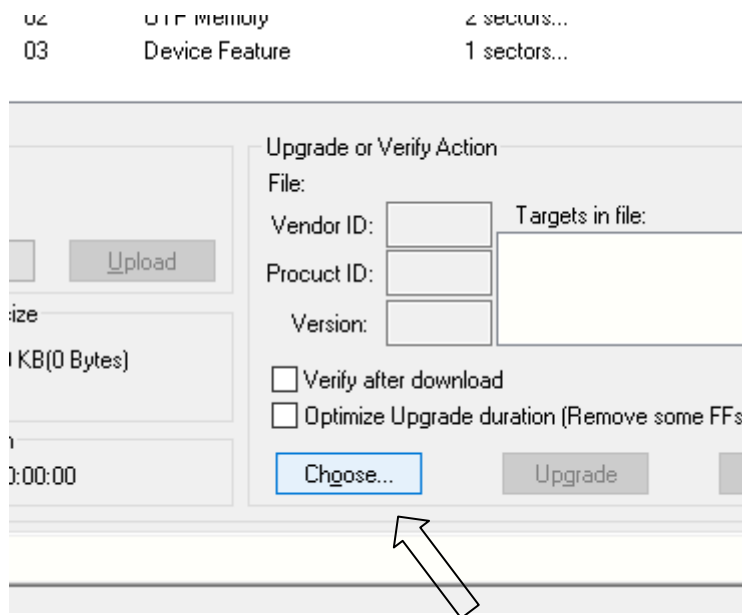
Figure 4 Choose .dfu file

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'.
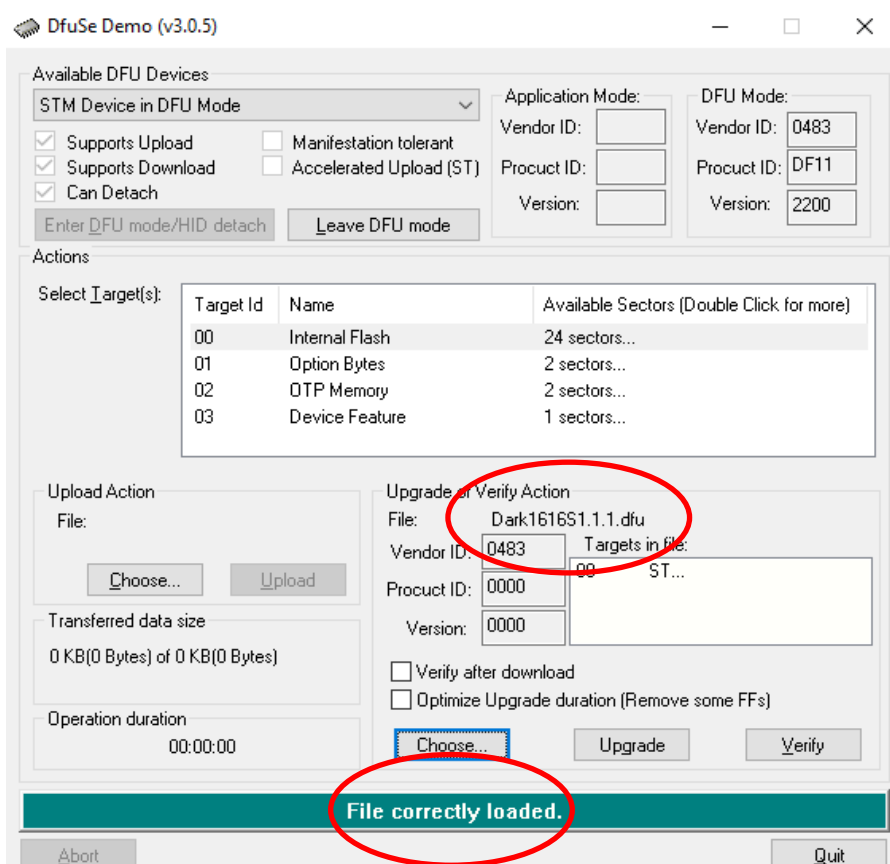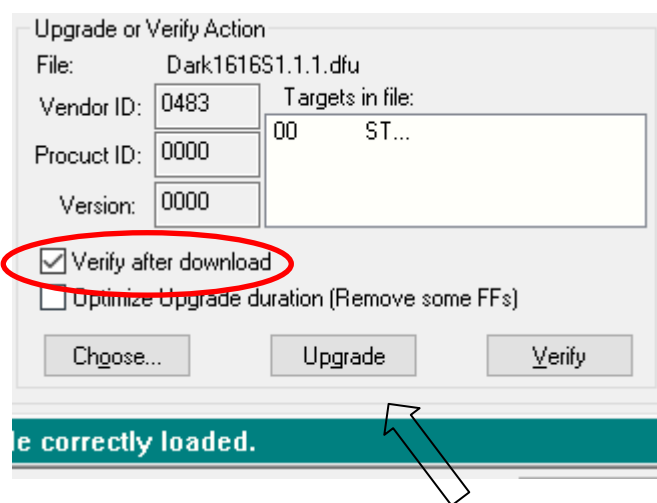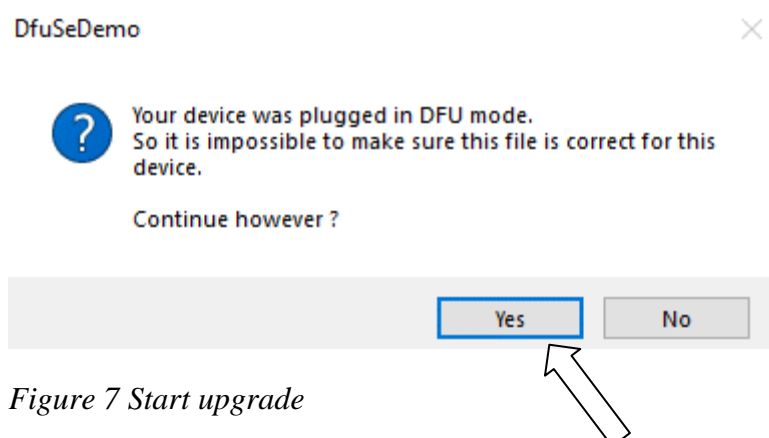

Figure 5 .dfu successfully loaded

6. Upgrading the Vita Mini firmware

    The firmware is now ready to be put on to the Vita Mini. Tick the 'Verify after download' box first and then click 'Upgrade'.
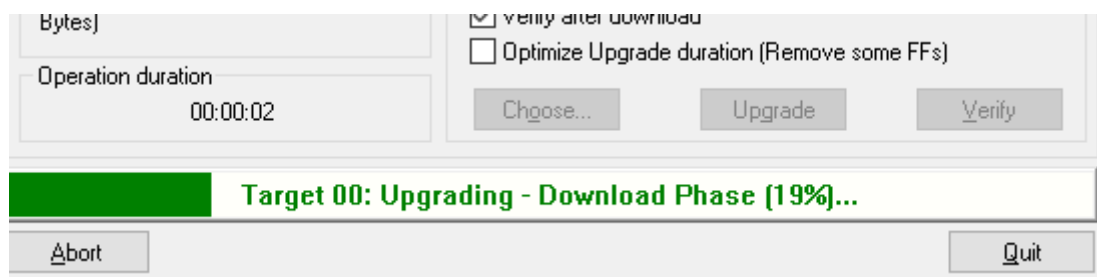

Figure 6 Upgrade

Click yes to proceed.

Figure 7 Start upgrade

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

Figure 8 Upgrade status

If the operation was successful, DfuSe Demo will report that "Target 00: Verify Successful!".

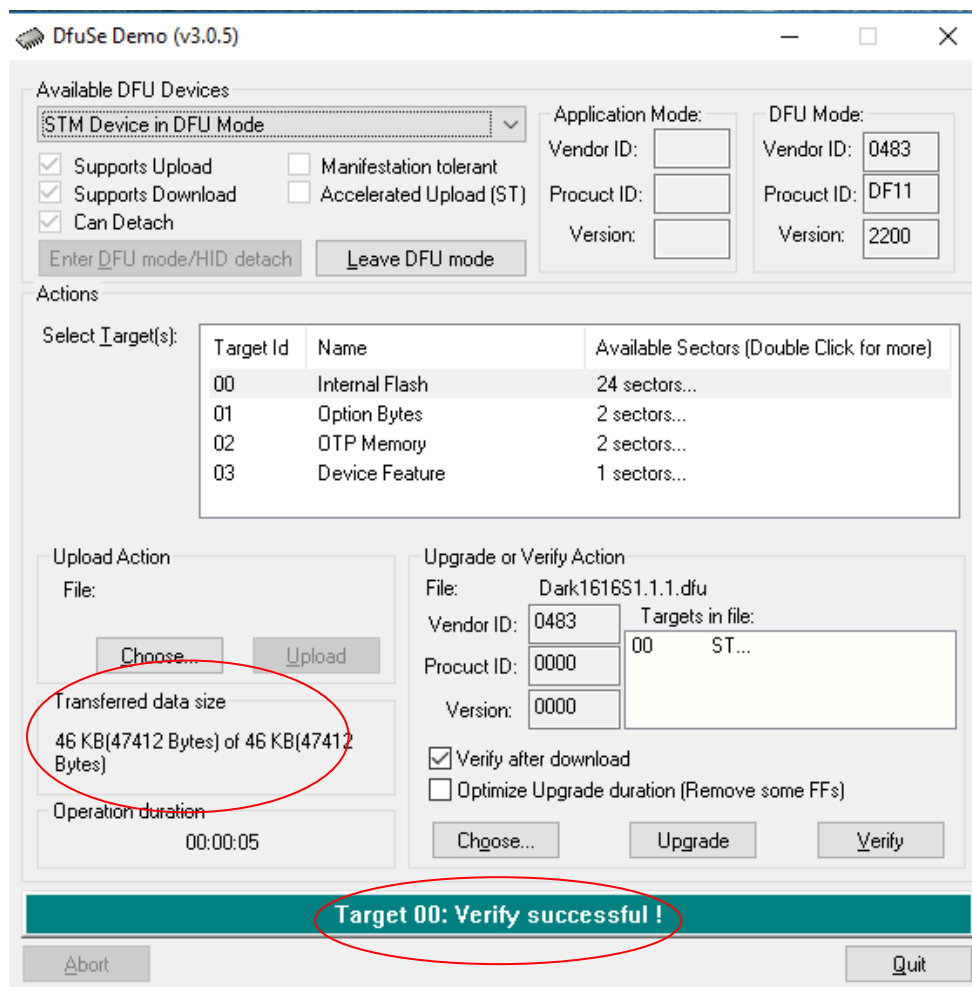You may also see that it will report how much data was successfully transferred.

Figure 9 Successful upgrade!

7. Final steps
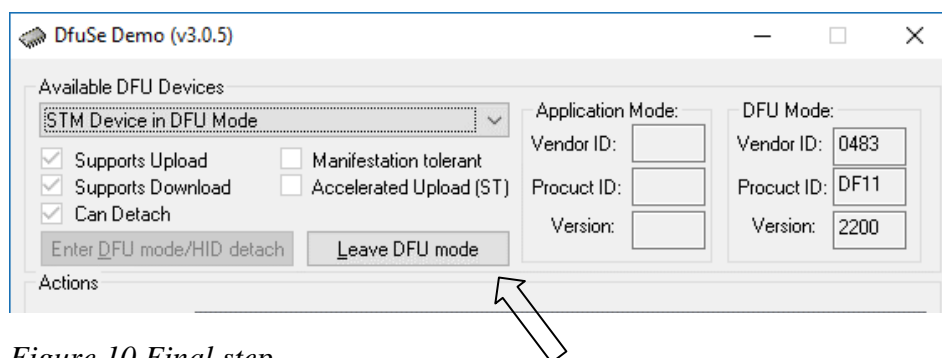
Now click "Leave DFU mode" to finish the procedure.

Figure 10 Final step

You may now disconnect the USB cable and continue to use the Vita Mini 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 Vita Mini device name in the routing tab to open the Device View box.

In 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

Go the Vita's web page at Glensound.com and open the 'Firmware Latest Version' Tab.

This will give both the latest version numbers/ file names and also the location to download the file from.

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 accidently updating the wrong Dante device.
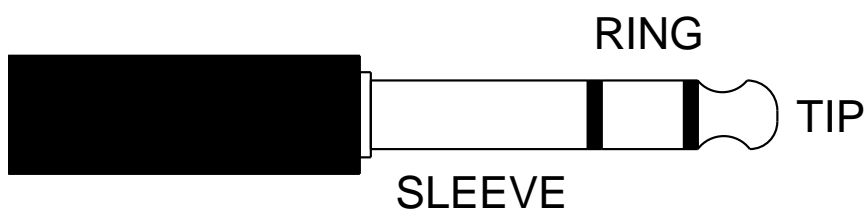
WIRING INFORMATION
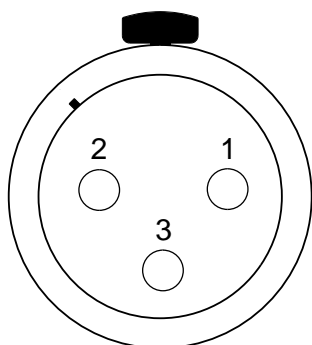
XLR SOCKET (FEMALE)

STANDARD XLR AUDIO PINOUTS:

1: Ground/ Earth

2: INPHASE/ POSITIVE/ MIC +

3: MATE/ NEGATIVE/ MIC -

RING

TIP

SLEEVE

STANDARD HEADPHONE WIRING:

TIP: A/ LEFT Ear

RING: B/ RIGHT Ear

SLEEVE: Common/ Earth

Vita Mini External DC power input: 2.5mm Barrel, Centre +Ve, 9 to 15 Volts, 500 mA