

# AoIP22 MKI

# DANTE<sup>®</sup>/ AES67 NETWORK AUDIO 2 INPUT 2 OUTPUT LINE LEVEL ANALOGUE INTERFACE

# **PRODUCT DETAILS**

6 BROOKS PLACE, MAIDSTONE, KENT, ME14 1HE. ENGLAND. Visit our Website at www.glensound.com

TEL: +44 (0) 1622 753662 FAX: +44 (0) 1622 762330



# Glensound Electronics Ltd

Thank you for choosing a new Glensound product.

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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:

Glensound Electronics Ltd The Design Buildings 1 – 6 Brooks Place Maidstone Kent ME14 1HE United Kingdom

Telephone: +44 (0) 1622 753662

#### EMAIL ADDRESSES

General enquires: sales@glensound.com

Technical enquires: techinfo@glensound.com

Sales enquires: sales@glensound.com

#### **IMPORTANT SAFETY INSTRUCTIONS**



This symbol is intended to warn that dangerous voltages within the product are present and constitute a risk of electric shock.



This symbol is intended to highlight that there are important operating & maintenance instructions in the literature accompanying this unit.

- 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 a dry cloth
- 7) Do not block any ventilation openings. Install in accordance with manufacturer's instructions
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- 9) 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 third grounding prong. The wider blade or the 3<sup>rd</sup> prong are 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
- 11) Only use attachments/ accessories specified/ supplied by the manufacturer



12)

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

- 13) Unplug tis 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 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
- 15) Do not attempt to modify this product. Doing so could result in personal injury and/ or product failure



#### WARNING:

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

#### **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.



The AIOP22 contains no user serviceable parts and **must not** be dissasembled in any way.

# CE

# **EU DECLARATION OF CONFORMITY FOR:**

# AOIP22

Two channel AoIP, Analogue I/O interface

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  $\mathbf{C} \mathbf{\epsilon}$  marked and conforms to the following Union harmonisation legislation:

Emissions:	BS EN55032:2015
Immunity:	BS EN55035:2017
Safety:	EN62368-1 :2018

Signed for and on behalf of Glensound Electronics Ltd.

Gavin Davis, Managing Director Maidstone, Kent, England Date: 07/006/2018

## **RoHS DIRECTIVE**

EC directive 2002/95/EC restricts the use of the hazardous substances listed below in electrical and electronic equipment.

This product conforms to the above directive and for this 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 AOIP22 MKII**

#### Handbook Contents

Issue 1

**Description** 

Page No.

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SPECIFICATION

#### **OVERVIEW**

The Glensound AOIP22 MKII is an analogue to digital and digital to analogue converter designed to connect line level analogue audio circuits to a Dante<sup>®</sup> audio network.

Dante<sup>®</sup> 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 AOIP22 MKII Dante<sup>®</sup> audio interface is compatible with all Dante<sup>®</sup> audio interfaces across all manufacturers. Further details of Dante<sup>®</sup> network audio can be found at <u>www.audinate.com</u>

Intended for live on-air broadcast applications, the AOIP22 MKII is built into a rugged lightweight aluminium chassis with anaodised and laser etched panels. Holes suitable for temporarily attaching the unit with cable ties to hold it in place are provided for ease of installation.

The AOIP22 MKII



provides 2 analogue line level (0dB) inputs to the Dante<sup>®</sup> network and 2 analogue line level (0dB) outputs from the Dante<sup>®</sup> network. These circuits are electronically balanced on XLRs but can wired unbalanced.

AES67 is supported by the Audinate's Ultimo chipset and can be easily turned on/off via Dante<sup>®</sup> controller.

Sample frequencies from 44.1 to 96kHz are supported by the unit when connected to a Dante<sup>®</sup> network and 48kHz is supported when in AES67 mode.

As per our other Dante<sup>®</sup> equipment 0dBu = -18dBfs

#### **EXAMPLES OF USE**

#### Example 1

#### Interface To Existing Dante Network

Commentary Unit Connection To An Existing Dante Network



#### Example 2

#### Interface To Existing Codec or TBU in Racks Room

Two channel audio interface to existing equipment



#### AOIP22 MKII FRONT PANEL LAYOUT



#### 1. Analogue Audio Outputs

The two balanced analogue XLR outputs provide outputs from the Dante $^{\mbox{\tiny B}}$  / AES67 network.

They are electronically balanced and set to a line up level whereby full scale (0dBFs) on the digital network equates to an analogue output of +18dBu.

#### 2. Analogue Audio Inputs

The two balanced analogue XLR inputs provide inputs to the  $\mathsf{Dante}^{\texttt{®}}$  /  $\mathsf{AES67}$  network.

They are electronically balanced but can be wired unbalanced.

They are set such that an analogue intput of +18dBu equates to full scale (0dBFs) on the digital network.

#### AOIP22 MKII REAR PANEL LAYOUT



#### 3. Reset Button

The recessed reset button's main function is to allow the firmware within the AoIP22 to be updated.....Please see the 'Updating Firmware' section of this handbook for more information.

#### 4. Micro USB Connector

The Micro-USB connector is used for connecting the AoIP22 MKII to a PC when updating its firmware.... Please see the 'Updating Firmware' section of this handbook for more information.

#### SIMPLIFIED BLOCK DIAGRAM



#### **CONNECTING THE AOIP22 MKII TO A DANTE NETWORK**

The AoIP22 MKII is a network audio device utilizing the reliable and versatile Dante® audio over IP protocol. Dante<sup>®</sup> is a widely used proprietary system made by Audinate.

For full details of the power of Dante<sup>®</sup> network audio and instructions for using it, visit <u>www.audinate.com</u>

#### **Getting Dante Controller**

If you are connecting the AoIP22 MKII to a new Dante<sup>®</sup> network the first thing you will need to do is to get the free Dante<sup>®</sup> controller software from Audinate. This can be downloaded by visiting Audinate's web site at <u>www.audinate.com</u>

#### Connecting AoIP22 MKII To the Network

The AoIP22 MKII 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 front panel. Once connected to the network it will be possible to see the AoIP22 MKII from within the Dante<sup>®</sup> 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<sup>®</sup> Controller looks as per the screenshot below:



The AoIP22 MKII will have been named at the factory during test to allow them to be identified by the Dante<sup>®</sup> controller.

The format used for the factory name is:

'AOIP22-sn-105-903ef5'

Where 'AOIP22-sn-105 refers to the Glensound product and its serial number and '903ef5' refers to its MAC address.

#### **Dante Controller TIP**

If you have never run Dante<sup>®</sup> 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.

#### AES67 MODE

The AoIP22 MKII uses a chipset from Audinate called Ultimo for its network audio interface. Audinate are the company behind Dante<sup>®</sup> and as such the chipset's primary network audio protocol is Dante<sup>®</sup>, however Audinate have enabled their chipset to comply with AES67 and therefore the AoIP22 MKII 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.

#### 1. Turning On AES67 Mode

If you want to use your AoIP22 MKII on an AES67 network and it has not been set to AES67 mode then this can be set in Dante <sup>®</sup>controller by double clicking the AoIP22 MKII to open the Device View window where you will find an AES67 tab to enable AES67 support.

Dante Controller - Device File Device View Help	View (GS-DARK1616-AES67-Test-1)	_	×
	GS-DARK1616-AE567-Test V		0
Receive Transmit Status La	tency Device Config Network Config AES67 Config		
	AES67 Mode	]	
	Current: Enabled New: Enabled V		
	Tx Multicast Address Prefix	]	
	Current Prefix: 239.168.XXX.XXX New Address Prefix: Set		
	- Parat Davica		
	Reboot Clear Config		

Once the AES67 drop down box has been enabled you'll have to reboot the AoIP22 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.

#### 2. 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.

GS-DARK1616-AES67-Test-2 supports up to 8 channels per flow. elect one or more transmit channels to be placed in multicast flow							
AES	57 Flow						
Channel Name	Add to New Flow						
01							
02							
03							
04	$\checkmark$						
05	$\checkmark$						
06	$\checkmark$						
07	$\checkmark$						
08	$\checkmark$						
09							
10							
11							
12							
13							
14							
15							
16							

Tick the AES67 Flow check box, then select up to 8 channels to be included in the flow then click 'Create' (The AoIP22 MKII only has 2 channels so no more than that can be created).

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

File Device View Help	🕺 Dante Control	ler - Device View	GS-DARK1616	AES67-Test-2)		-		$\times$
Image: Control of the second	File Device View	Help						
Receive         Transmit         Status         Latency         Device Config         Network Config         AES67 Config           Channel         Signal         Channel Label         Transmit Flows         Unicast: 1 Multicast 2         Unicast: 1 Multicast 3 of 32           02         4         4         10         Transmit Flows         Unicast: 1 Multicast 7 Session Id=201163/1783           04         4         4         Multicast 7         Multicast 7 Session Id=201163/7833           05         4         4         Multicast 7         Multicast 7 Session Id=201163/7833           06         4         4         4         4         4           07         4         4         4         4           07         4         4         4         4           09         4         4         4         4           11         4         4         4         4           15         4         4         4         4           16         4         4         4         4           16         4         4         4         4	<del>9</del> 🗙 💿	•< 🕀 🔓		GS-	DARK1616-AES6	7-Test 🗸		?
Channel         Signal         Channel Label         Unicast:         1           01         4	Receive Transmit	Status Latency	Device Config	Network Config	AES67 Config			
Channel         Signal         Channel Label         Unicast: 1 Multicast: 2 3 of 32           02         04         5         3 of 32           03         04         -         6           04         04         -         6           05         04         -         6           06         04         -         6           07         04         -         6           07         04         -         6           07         04         -         6           08         04         -         -           10         04         -         -           11         04         -         -           12         04         -         -           13         04         -         -           16         04         -         -		Transmit Char	nels			Transmit Flows		
01     44       02     44       04     46       05     44       06     46       07     46       08     46       10     46       11     46       12     46       15     46       16     46	Channel	Signal	Channel Lab	el Unio	ast: 1			
02         44           03         44           04         44           04         44           05         44           06         44           07         44           08         44           09         46           07         44           08         44           09         46           10         46           11         46           12         46           13         46           16         46           16         46	01	a[[4]		Mul	ticast:2 al: 3 of 32			
03     44       04     44       04     44       04     44       05     44       06     44       07     44       08     44       09     44       10     44       11     44       12     44       13     44       14     44       15     44       16     44	02	al[4)		Mu	ticast Flow 31: 0	9, 10, 11, 12, 13, 14, 15, 16 (23	9, 168, 222,	10)
04         04           05         04           06         04           06         04           07         04           08         04           09         04           10         04           12         04           13         04           16         04           06         04	03	a[[4]			AES67	Session Id=2011634783		20)
05     040       06     040       07     040       08     040       09     040       10     040       11     040       13     040       14     040       15     040       16     040	04	লে(ক)		Mu	ticast Flow 32: 0	1,02,03,04,05,06,07,08 (23	9.168.238.	252)
06 09 07 00 08 00 10 00 11 00 12 00 13 00 14 00 15 00 16 00 Delte	05	미(4)			AES67	Session Id=2015673848		
07 00 08 00 09 00 10 00 11 00 12 00 13 00 14 00 15 00 16 00 Delete	06	u[[4]						
US 09 04 10 01 11 04 10 12 04 10 11 14 04 11 15 04 10 11 15 04 10 11 15 04 10 11 16 04 10 11 16 04 10 11 16 04 10 10 10 10 10 10 10 10 10 10 10 10 10	07	0						
10     40       11     40       12     40       13     40       14     40       15     40       16     40	00	alla)						
11     0       12     0       13     0       14     0       15     0       16     0	10	्यान्त्र						
12 dq 13 dq 14 dq 15 dq 16 dq Delete	11	000						
13 de 14 14 de 14 15 de 14 16 de 14 Delete	12	a[]4)						
14 de 15 de 16 de	13	0.0						
15 dia 16 dia Delete	14	a[[4]						
16 de Delete	15	(1)(4)						
Delete	16	ull_4)						
Delete								
Delete								
Delete								
Delete								
Delete								
Delete								
Delete								
Delete								
Delete								
Delete								
						Delete		

#### 3. <u>Receiving AES67 Audio</u>

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

#### 4. 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**

The AoIP22 MKII is a digital audio system comprising of a Micro Controller and ADC and DAC converters. These items run software and may need to be occasionally updated.

#### Equipment needed

- A windows based PC
- USB Type A to Micro B cable
- A copy of 'DfuSe Demo' software
- The latest firmware from Glensound
- An AoIP22 MKII

#### **Instructions**

1. Download and install DfuSE Demo

'DfuSE Demo' is a firmware updating tool that is required for loading new firmware on to the AoIP22 MKII.

It can be downloaded from the STMicroelectronics website found here: <u>https://goo.gl/AbzhsA</u>. 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. Install DFuSE driver

Once DFuSE is installed, navigate to the following location on your machine:

C:\Program Files (x86)\STMicroelectronics\Software\DfuSe v3.0.6\Bin\Driver\Win10

You now need to run the following driver.

- If your machine is 64 bit run 'dpinst\_amd64.exe'
- If your machine is 32 bit run 'dpinst\_x86.exe'

This will install the driver you need.

3. Download firmware

The latest firmware for the AoIP22 MKII can be found on the Glensound website, under the product page for AoIP22 MKII. Once you have downloaded the file, place it in a folder or location of your choice.

Name	Date	Туре	Size	
Dark1616S1.1.1.dfu	21/03/2018 11:18	DFU File	47 KB	

Figure 1 Example filename

#### 4. Connect To A PC

Connect the AoIP22 MKII to the PC via the USB cable. The Micro USB connector is located on the left panel of the AoIP22 MKII.

5. Firmware update preperation

To prepare the AoIP22 MKII for a firmware update;



- 1. Press and hold down the reset button
- 2. Power on the unit (connect to a PoE switch)
- 3. Release the reset button

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

6. Loading the firmware

Now open DfuSe Demo.

If the AoIP22 MKII successfully entered DFU mode then it will appear as 'STM Device in DFU Mode' under the 'Available DFU Devices tab'.

TM Device in DF	U Mode		~	Application	Mode:	DFU Mod	le:	_
Supports Uploa	ed De	Manifestat	ion tolerant	Vendor ID:		Vendor ID:	: 0483	
Supports Down	nload	Accelerate	ed Upload (ST)	Product ID:		Procuct ID	): DF11	
Can Detach				Version:		Version:	2200	
Enter <u>D</u> FU mode/	'HID detach	<u>L</u> eave	DFU mode					
otions								
elect <u>T</u> arget(s):	Target Id	Name		Availa	able Sectors (	Double Click	< for more	9
00 Internal I 01 Option B 02 OTP Me		Internal Fla	ish	24 sec	ctors			
		Option Byte	Option Bytes 2 sectors OTP Memory 2 sectors		2 sectors			
		OTP Memo						
	03	Device Fe	ature	1 sect	tors			
Upload Action			– Upgrade or V	erify Action				
File:			File:	,				
			Vendor ID:		Targets in file	c		
Choose		bload						
			Procuct ID:					
Transferred data	size		Version:					
0 KB(0 Bytes) of I	0 KB(0 Bytes)		Verifu efte	er download				
		Optimize	lingrade dura	tion (Bernovi	e some FFs)			
Operation duratio	n				aon (nomov	s comerraj		_
00:00:00		Choose		Upgrade		Verifu		

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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 AoIP22 MKII.

		югу		ectors
03	Device Fea	ature	1 s	ectors
ize	<u>U</u> pload	Upgrade or V File: Vendor ID: Procuct ID: Version:	/erify Action	Targets in file:
I KB(O Bytes)		Verify aft	ter downloa Upgrade di	d uration (Remove some FFs
):00:00		Ch <u>o</u> ose.		Upgrade
			57	
			$\sim$	

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'.

#### 7. Upgrading the AoIP22 MKII firmware

🔉 DfuSe Demo (v	3.0.5)			-	×
Available DFU Dev	vices		A	DELLA-L.	
STM Device in DF	FU Mode	$\sim$	Application Mode:	DFU Mode:	
Supports Upload         Manifestation tolerant           Supports Download         Accelerated Upload (ST)           Can Detach         Accelerated Upload (ST)		Vendor ID:	Vendor ID: 0483 Procuct ID: DF11 Version: 2200		
Enter <u>D</u> FU mode/	'HID detach Leav	ve DFU mode		2200	
Actions					
Select <u>T</u> arget(s):	Target Id Name		Available Sectors	s (Double Click for more)	
	00 Internal	Flash	24 sectors		
01 Option B 02 OTP Mei		lytes	2 sectors		
		mory	2 sectors		
	U3 Device	reature	I sectors		
Upload Action File: <u>C</u> hoose Transferred data 0 KB(0 Bytes) of	. Upload size O KB(0 Bytes)	Upgrade or V File: Vendor ID: Procuct ID: Version: Version:	arify Action Dark1616S1.1.1.dfu p483 Targets in f 0000 ST 0000 ar download Jograde duration (Remo	)  	
Uperation duratio	n )0:00:00	Choose	Upgrade	⊻erify	
	(	File correctly I	loaded.		Page 21 o
<u>A</u> bort				Quit	

Figure 5 .dfu successfully loaded

The firmware is now ready to be put on to the AoIP22 MKII. Tick the 'Verify after download' box first and then click 'Upgrade'.

Upgrade or V	erify Action	
File:	Dark1616S1.1.1.dfu	
Vendor ID:	0483 Targets in file:	
Product ID:	0000 00 51	
Version:	0000	
Verify aft	er download Upgrade duration (Remove s	ome FFs)
Ch <u>o</u> ose	Upgrade	⊻erify
le correctly	loaded. 🔨	\
		$\checkmark$ —

Figure 6 Upgrade

Click yes to proceed.

DfuSeDen	no	×
?	Your device was plugged in DFU mode. So it is impossible to make sure this file is correct for this device.	
	Continue however ?	
	Yes No	
	Figure 7 Start upgrade	

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!".

Bytesj	✓ venity arter download ☐ Optimize Upgrade duration (Remove some FFs)						
Operation duration 00:00:02	Ch <u>o</u> ose	Upgrade	⊻erify				
Target 00: Upgrading - Download Phase (19%)							
Abort			Quit				

Figure 8 Upgrade status

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

🧼 DfuSe Demo (v3	.0.5)				_		×
Available DFU Devi STM Device in DFI Supports Uploa Supports Down Can Detach Enter <u>D</u> FU mode/I Actions	ces U Mode d load HID detach	Manifestation tolerant Accelerated Upload (ST) Leave DFU mode	Appl Vend Procu Ve	ication Mode: or ID:	DFU Mo Vendor I Procuct Versior	ode: D: 0483 ID: DF11 n: 2200	
Select <u>⊺</u> arget(s):	Target Id 00 01 02 03	Name Internal Flash Option Bytes OTP Memory Device Feature		Available Sectors ( 24 sectors 2 sectors 2 sectors 1 sectors	Double Cli	ck for more	2)
Upload Action File: Upgrade File: Updoad Upgrade File: Vendor Procuct Versit A6 KB(47412 Bytes) of 46 KB(47412 Bytes) Operation duration 00:00:05 Choose		Upgrade or V File: Vendor ID: Procuct ID: Version: Verify aft Optimize Ch <u>o</u> ose.	'erify Ac Dark1( 0483 0000 0000 er down Upgrad	tion 516S1.1.1.dfu Targets in file 00 ST load e duration (Remove	: e some FFs	ɛ) ⊻erify	
Target 00: Verify successful !							
Abort						<u>Q</u> ui	t

Figure 9 Successful upgrade!

#### 8. Final steps

Now click "Leave DFU mode" to finish the procedure.

DfuSe Demo (v3.0.5)   Available DFU Devices   STM Device in DFU Mode   Supports Upload   Manifestation tolerant   Supports Download   Accelerated Upload (S   Can Detach   Enter DFU mode/HID detach   Leave DFU mode	Application Mode: Vendor ID:	- X DFU Mode: Vendor ID: 0483 Procuct ID: DF11 Version: 2200				
Figure 10 Final step						

You may now disconnect the USB cable and continue to use the AoIP22 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 AoIP22 MKII. 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 AoIP22 MKII.

#### 1. Finding Out Current Installed Version

Using Dante<sup>®</sup> controller double click on the AOIP22 MKII 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.

#### 2. Finding Out What The Latest Available Version Is

Go the AoIP22's web 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.

#### 3. Updating the Ultimo Chipset

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 AoIP22 MKII that you want to update are on the network to save accidently updating the wrong Dante device.

#### WIRING INFORMATION

#### 1. Standard Pin Outs



STANDARD XLR AUDIO PINOUTS:

1: Ground/ Earth

2: INPHASE/ POSITIVE/ MIC +

3: MATE/ NEGATIVE/ MIC -

#### 2. <u>Wiring to unbalanced devices</u>

The input & output circuits of our equipment can be connected to unbalanced (domestic style) devices. The wiring diagrams below show a mono jack plug as the unbalanced end of the cable but this of course could easily be a different type of connector such as an RCA Phono or 'D' type connector.



Domestic devices generally work on different audio levels than professional devices such as ours. This may mean that the output of the AoIP22 seems a little high and the input seems a little low when the AoIP22 is interfaced to a domestic device.

#### **SPECIFICATION**

#### AUDIO

**Frequency Response** 20Hz to  $22k \le \pm 0.25$ dB Maximum Input Before Clip +18dBu **Maximum Output Level** +18dBu Input Impedance >20 kΩ Output Impedance 50 Ω Distortion (Analogue in to Dante Out) 0.0013% THD+N @ 1kHz Reference to +18dBu output Distortion (Dante in to Analogue Out) 0.0026% THD+N @ 1kHz Reference to +18dBu output Noise (Analogue In & Out @ 0dBu) -92dBu (Residual) **Dynamic Range** 108dBs Crosstalk (0dBu input to output 1k tone) -135dBu Output Type Electronically balanced (can be wired unbalanced) on Neutrik 3 pin XLR plug Input Type Electronically balanced (can be wired Unbalanced) on Neutrik 3 pin XLR socket **Digital Full Scale** +18dBu = 0dBFs

#### PHYSICAL

Size

153 x 105 x 41mm (WxDxH)

#### Weight

420g **Mechanics** All aluminium construction, anodized and laser etched

#### POWER

PoE 2.6 Watts Source PoE Enabled Switch or Mid-Span PoE Injector

#### NETWORK AUDIO

Compatible Audio Networks Dante® uncompressed, low latency audio. AES67 Network Connection Neutrik RJ45 EtherCON Dante Network Sample Rate 44.1k, 48k, 88.2k, 96k AES67 Network Sample Rate 48k

#### INCLUDED ITEMS

Handbook Paper Copy (Download also available) RJ45 Network Cable 2 metre Cat5 RJ45 plug/ Rj45 plug cable

E & OE