



maxsquare

MSQ-3600D

Bi-directional Dante Digital Audio Box PoE with Lip-Sync Delay



MADE IN TAIWAN

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1. Introduction

The MSQ-3600D is a cost-effective and professional digital audio solution for transmitting audio over IP networks without sacrificing quality. Supporting two audio channels, it delivers stable and clear performance across various applications. It offers flexible connectivity with two unbalanced audio inputs and outputs (left and right) via RCA connectors, or a stereo 3.5mm phone jack, making it easy to integrate with different types of audio equipment.

Compatible with standard IP networks, the MSQ-3600D allows users to encode and send low-latency, uncompressed digital audio signals, or receive and decode Dante audio streams with ease. To help maintain synchronization between audio and video, the unit provides a built-in lip-sync delay of up to 170ms, adjustable in 22ms increments.

Each audio direction features its own dedicated volume control knob, enabling quick and accurate level adjustments. With Power over Ethernet (PoE) support, the device can be powered through a compatible network switch, simplifying installation and making it a practical choice for any Dante-enabled environment.

2. Features

- Supports 2 unbalanced audio (left and right) on RCA Or stereo on 3.5mm phone jack connectors, input & output
- Supports simultaneous bi-directional Dante audio transmission and reception
- Supports sample rates up to 96kHz
- Supports PoE (Power over Ethernet)
- Adjustable Lip-Sync delay audio output
- Dante audio over IP and AES67 RTP transport formats
- Supports to delay audio between 0-170 ms
- Supports independent and bi-directional volume control knobs
- Excellent dynamic range, SNR and THD performance
- Easily adjust delay increments using touch panel

3. Package Contents

- 1x MSQ-3600D
- 1x 5V Power Supply
- 1x User Manual

4. Specifications

Technical	
Sample rates	44.1, 48, 96kHz
Dante device latency	1, 2, or 5ms (configurable using Dante Controller)
Network transport	Dante Audio over IP, AES67 RTP
ESD protection	Human body model — $\pm 15\text{kV}$ [air-gap discharge] & $\pm 8\text{kV}$ [contact discharge]
PCB stack-up	4-layer board [impedance control — differential 100Ω ; single 50Ω]
Input	2x RCA + 1x 3.5mm phone jack
Output	2x RCA + 1x 3.5mm phone jack
I/O	1x RJ-45
3.5mm connector	Stereo
RCA connector	Unbalanced audio (left and right)
RJ-45 connector	WE/SS 8P8C with 2 LED indicators
Mechanical	
Housing	Metal enclosure
Power supply	48V PoE or 5V DC
Power consumption	1.5 Watts [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]

5. Panel Description

Front Panel



1. **Power LED indicator**
2. **F/W LED indicator**
3. **Link LED indicator:**
[Shine] Dante link is on master status
[Blink] Dante link is on slave status
4. **Input audio delay touch panel(IN):** to adjust delay increments
5. **7-segment LED:** to show audio delay and audio sound level
6. **Output audio delay touch panel(OUT):** to adjust delay increments
7. **Dante audio in volume knob:** to adjust the stereo audio in sound level
8. **Dante audio out volume knob:** to adjust the stereo audio out sound level

Rear Panel



9. **+5V power:** Connect to 5V DC power supply
10. **USB-C:** for F/W update / +5V DC
11. **RJ-45:** Dante link port
12. **3.5mm phone jack input:** Stereo in
13. **RCA input:** Unbalanced audio in (left and right)
14. **3.5mm phone jack output:** Stereo out
15. **RCA output:** Unbalanced audio out (left and right)

6. Operation Approach

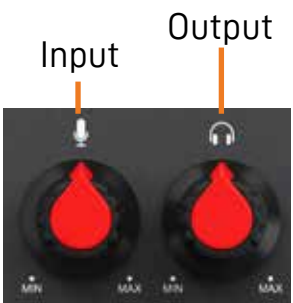
Touch Panel

	Function	Level	LED dot indicator	7-segment LED
	Input audio delay(IN)	0-8	Top left/Bottom right	8
	Output audio delay(OUT)	0-8	N/A	8.

Adjust the audio delay to ensure that the video and audio play out in perfect sync.

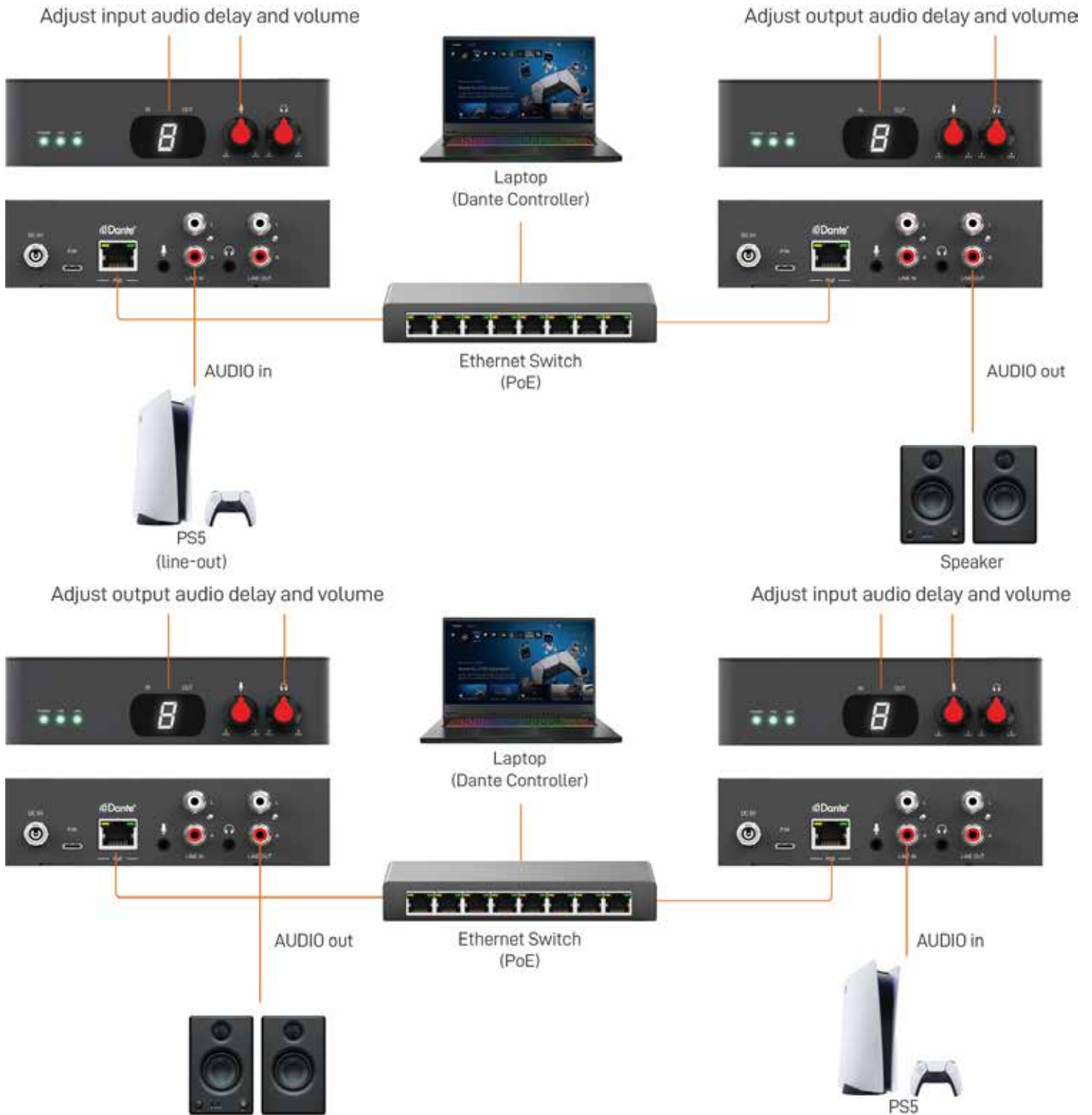
- (1) Touch the panel to select the number of delay level.
- (2) After selecting the number, the LED will blink twice and the setting will be effective.

Knob

	Function	Level	LED dot indicator	7-segment LED
	Input audio volume	1-4	Bottom right	4.
	Output audio volume	1-8	Top left	8

Use the knob to select the number of audio volume.

7. Connection Diagram



8. Choose A Network Switch

Refer to the following page to choose a Network Switch.

<https://www.getdante.com/support/faq/networks-and-switches>

The selected network switch must support the following:

- Gigabit ports for inter-switch connections*
- Quality of Service (QoS) with 4 queues
- Diffserv (DSCP) QoS, with strict priority
- A managed switch is also recommended, to provide detailed information about the operation of each network link: port speed, error counters, bandwidth used, etc.
- IGMP snooping (routing for Dante AV devices)



- * For low channel count (<32) applications, a 100Mbps switch may be used as long as it supports proper QoS, and QoS is active. The use of 100Mbps switches without QoS is not recommended or supported.
- * For higher channel counts, Gigabit switches are essential. QoS is recommended for Gigabit switches on networks that share data with services other than Dante.

Switches incompatible with Dante:

- Switches that support EEE may cause poor synchronization performance and occasional loss.*



- * If you use managed switches, ensure that they allow EEE to be disabled. Make sure that EEE is disabled on all ports used for real-time Dante traffic.
- * If you use unmanaged switches, do not use Ethernet switches that support the EEE function, because you cannot disable EEE operation in these switches.

9. Dante Controller

Dante Controller provides users to configure and route audio around Dante networks. Please use it to make connections between Dante devices on your network.

<If there are any issues about using Dante Controller with our device, please feel free to contact our support team.>

Download the software

Browse the download page of the Dante Controller website and create an account to download the software.

<https://www.audinate.com/products/software/dante-controller>

Device Setup Steps

1. Connect the device to Network.
2. Make sure to set up your PC/ Mac and the device in the same domain.
3. Start to use Dante Controller.

How to use Dante Controller

Refer to the following websites to use the functions of Dante Controller.

[User Guide] <https://www.audinate.com/learning/technical-documentation>

[Video Tutorial] <https://reurl.cc/Y8kvx4>

The screenshot shows the Dante Controller website interface. At the top, there are navigation tabs: Products, Adapters, Software, Dante-Enabled Products, and Solutions for Manufacturers. The main content area features the heading "Dante Audio Networking, Going beyond configuration and routing". Below this, there is a paragraph describing Dante Controller's capabilities: "Dante Controller provides essential device status information and powerful real-time network monitoring, including device-level latency and clock stability stats, multicast bandwidth usage, and customized event logging, enabling you to quickly identify and resolve any potential network issues. You can also quickly and easily backup, restore, move, and reuse Dante network configurations using Presets, and edit Dante routing configurations offline." A red banner states "Dante Controller is available for Windows and macOS." Below this is the heading "Always Up-to-date" and another paragraph: "Beginning with version 4.2, Dante Controller includes Dante Updater. Dante Updater connects to a library of firmware updates from manufacturers of Dante-enabled products and makes it easy to keep your products up-to-date." A final paragraph states: "Devices are automatically discovered and correlated with the proper firmware for error-free deployment of updates. With Dante Updater, you can quickly and safely take advantage of all the latest features and capabilities of Dante as well as the manufacturers' product updates..." On the right side, there is a sidebar with a red border containing the heading "Get Dante Controller" and a red button labeled "Download Dante Controller". Below the button, it says "Dante Controller is free to download and use". The sidebar also contains four links: "Download Software" (with a download icon), "Videos" (with a play icon), "Support" (with a question mark icon), and "User Guide" (with a document icon).

10. Warranty

Maxsquare warrants the MSQ-3600D Bi-directional Dante Digital Audio Box PoE with Lip-Sync Delay for one year from the date of purchase from Maxsquare or an authorized dealer from defects in material and workmanship. If this product fails to function properly within the first year of its warranty, Maxsquare may repair or replace it at its discretion, provided that the device has not been subjected to accident, disaster, abuse, or other unauthorized modifications, including static discharge and power surge. Maxsquare provides this warranty to its BUYER solely in the case of a direct transaction. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. These repairs are warranted by a 90-day warranty from the date of reshipment to the buyer. Customers agree to insure the unit or incur the risk of loss or damage in transit if the unit is delivered by mail. A unit will not be accepted if it does not have a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of purchase may be required to claim the warranty. Customers outside of Taiwan must pay for shipping to and from Maxsquare. Cables and power adapters have a 30-day warranty and must be free of any markings or scratches, as well as neatly coiled.

This manual's material has been carefully reviewed and is believed to be accurate. Maxsquare, on the other hand, takes no responsibility for any inaccuracies or omissions in this manual. Even if advised of the possibility of such losses, Maxsquare will not be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual. Furthermore, the technical information contained in documents on the MSQ-3600D's features and specifications is subject to change without further notice.

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