Dante® Controller Hardware Box, Dual 1G LAN, PoE

Dante® Routing Without a PC on Site - Web GUI, RS-232 and TCP/IP API, Separate Control and Dante® LANs



Puts Dante® routing in the hands of a web browser and the room's control system, so no PC has to stay running on site to change a route. AUD-DTE-CTLBOX is a compact, black metal controller (8.03 x 3.88 x 0.85 in) built on an ARM Cortex-A7 processor running Linux, with Dante® device management integrated through DAPI. It powers from PoE (IEEE 802.3af) on its Dante® LAN port or a local 12V supply, draws 8.4W maximum, and mounts ten units upright in a 6U V2 rack or two side by side in a single 1U space. It is the right choice for any Dante® system where routes are changed from a web browser or a third-party control system where recallable routing and a clean split between control and audio networks matter more than a dedicated routing workstation.

The built-in Web GUI discovers every Dante® and AES67 device on the network and routes left and right channels independently, with device configuration (sample rate, encoding, latency), clock status, an event log and firmware updates for Ultimo and DEP devices in the same interface. Control systems reach it through a control API over RS-232 and TCP/IP, with Telnet, SSH and HTTPS that can each be enabled or disabled, and a 6-pin digital I/O with selectable 5V or 12V levels triggers external devices. The strongest differentiator is the network design: two physically separate 1G ports put the control system and users on a Control LAN that reaches the Dante® devices through the controller while the Dante® audio network stays isolated. It manages Dante® and AES67 devices on the network, such as Dante® wall plates, adapters, converters and amplifiers. Dante® endpoints sold separately.

> **Surge Protection Recommended —** This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, or lightning strikes. Use of surge protection systems is highly recommended.

TABLE OF CONTENTS

1. Features 2
2. Package Contents 2
3. Specifications 2
4. Introduction 4
5. Panel descriptions 4
Front panel 4
Rear panel 4
IR pin definition 5
6. Rack Mounting Instruction 5
6U V2 rack mounting 5
1U V2 rack mounting 5
7. Web GUI Operation Guide 5
Preparation before entering the system 5
Functions and operation 6
Dante 6
Routing 6
Device Info 6
Clock Status 6
Events 6
Update 6
Controller Settings 7
Firmware Update 7
Password 7

continued

8. Connection Diagram 8
9. Troubleshooting 8
10. Installation FAQ 9
11. Integration FAQ 9

1. Features

- ✓ ARM Cortex-A7 1GHz processor running a Linux operating system
- ✓ Built-in Web GUI for Dante® and AES67 device routing, configuration and monitoring
- ✓ Integrated DAPI for Dante® device management and control
- ✓ Two 1G RJ-45 LAN ports keep the control network and the Dante® audio network separate
- ✓ Cable runs up to 328 ft (100 m) over CAT5e/6/6A/7
- ✓ Controls external devices through digital I/O with a selectable 5V or 12V level
- ✓ Control API over RS-232 and TCP/IP
- ✓ Security management
- ✓ Powered by PoE (IEEE 802.3af powered device) or a local 12V power supply
- ✓ ESD and surge protection
- ✓ Reliable system design for stable 24/7 operation
- ✓ RelayAV-ready, for KanexPro's RelayAV control app

2. Package Contents

- ✓ 1x Dante® Controller Hardware Box
- ✓ 1x 20kHz–60kHz 12V IR receiver cable, 4.9 ft (1.5 m)
- ✓ 1x IR blaster cable, 4.9 ft (1.5 m)
- ✓ 2x 3-pin 3.81mm (male)
- ✓ 1x 6-pin 3.81mm (male)
- ✓ 2x mounting ears
- ✓ 4x machine screws (KM3x4)
- ✓ 1x 12V/1A locking power adaptor

3. Specifications

TECHNICAL	
Processor	ARM Cortex-A7 1GHz, Linux OS
Dante® Management	Integrated DAPI
Network Bandwidth	1Gbps
Transmission Distance	328 ft (100 m) over CAT5e/6/6A/7
Control	Web GUI, TCP/IP (Telnet, SSH, API), RS-232, digital I/O
Device Support	Dante® and AES67 devices
Default IP Address	Control LAN: 192.168.6.100 (when no DHCP server is present); Dante® LAN: 169.254.8.100
Web GUI Address	http://controller.local

continued

MANAGED DEVICE SETTINGS	
Sample Rate	44.1kHz, 48kHz, 88.2kHz, 96kHz
Encoding	PCM 16, PCM 24, PCM 32
Latency	2, 3, 4, 5 or 10 ms
Device Firmware Update	Ultimo and DEP devices
CONNECTION	
LAN	2x 1G LAN (RJ-45): Dante® LAN (PoE) and Control LAN
RS-232	3-pin 3.81mm Phoenix connector
Digital I/O	1x 6-pin 3.81mm Phoenix connector: 4 I/O level outputs, 1 ground, 1 VOUT (up to 12V/0.5A); 5V or 12V selected by DIP switch
IR IN	1x 3.5mm jack, 12V level (reserved for future use)
IR OUT	1x 3.5mm jack (reserved for future use)
Update	1x Micro USB, 5-pin female
Indicators / Buttons	POWER LED, STATUS LED, RESET button
POWER	
Power Supply	DC 12V/1A, or PoE (IEEE 802.3af powered device) on the Dante® LAN port
Power Consumption	8.4W (max.)
PHYSICAL	
Dimensions (W x D x H)	8.03 x 3.88 x 0.85 in (204 x 98.5 x 21.5 mm)
Weight	1.15 lbs (521 g)
Housing	Metal enclosure
Color	Black
Mounting	6U V2 rack (up to 10 units) or 1U V2 rack (2 units side by side); racks and 1U panels sold separately
ENVIRONMENTAL	
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	-4°F to 140°F (-20°C to 60°C)
Operating Humidity	20% to 80% RH, non-condensing
Storage Humidity	10% to 90% RH, non-condensing
ESD Protection	IEC 61000-4-2: +/-8kV (air-gap discharge), +/-4kV (contact discharge)

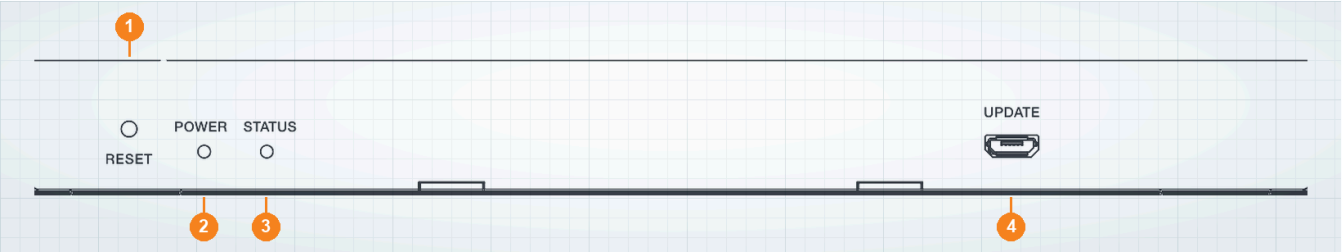
4. Introduction

The AUD-DTE-CTLBOX is a hardware controller for Dante® and AES67 audio devices. It has two 1G network ports, so the control network and the Dante® audio network stay separate. You do not need to search for devices or add them by hand. As soon as the controller discovers a Dante® device, you can pair it.

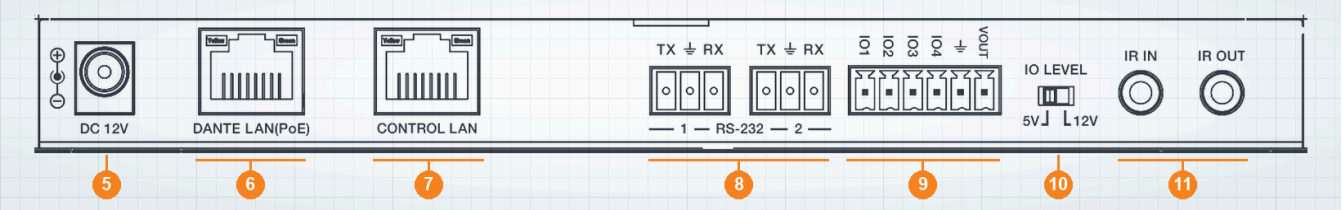
You can control the AUD-DTE-CTLBOX through its Web GUI, over TCP/IP, over RS-232 or through its digital I/O. It can be powered over the network by PoE or by its own 12V power adaptor.

Before you begin: Read these instructions before you connect, operate or adjust the product, and keep them for future reference. The product contains sensitive electronic parts. Electrical spikes, power surges, electric shock and lightning can damage them, so use a surge protection device to protect the controller and extend its life.

5. Panel descriptions



Front Panel



Rear Panel

FRONT PANEL

No.	Name	Description
4	**UPDATE**	Firmware update port. Leave this port unplugged while the controller is in normal use.
3	**STATUS LED**	Flashes yellowish-green once a second while the controller starts up. When start-up is complete and the Control LAN is ready, it stays solid.
1	**RESET Button**	Press and hold for about 10 seconds, until the STATUS LED starts to flash. The controller then resets itself.
2	**POWER LED**	Lights red when the controller has power.

REAR PANEL

No.	Name	Description
1	**DC 12V**	Power input for the 12V/1A power adaptor.
2	**DANTE LAN (PoE)**	1G Dante® LAN port. It accepts PoE, and when PoE powers the controller you do not need the DC 12V adaptor.

continued

No.	Name	Description
3	CONTROL LAN	TCP/IP control network port.
4, 5	3-pin Phoenix Connectors	RS-232 serial connectors (3-pin Phoenix).
6	6-pin Phoenix Connector	Four I/O level outputs, one ground and one power output (VOUT) for external devices, rated up to 12V/0.5A.
7	IO LEVEL DIP Switch	Sets the I/O output level and the VOUT voltage. Set it to the left for 5V I/O outputs and 5V VOUT. Set it to the right for 12V I/O outputs and 12V VOUT.
8	IR OUT	IR signal output. It is reserved for a future function, and the manual describes no current use.
	IR IN	12V IR signal input. It is reserved for a future function, and the manual describes no current use.

IR PIN DEFINITION

The IR receiver cable uses a three-pin 3.5mm plug:

Pin	Function
1	Power, 12V
2	IR signal
3	Ground

The IR blaster cable uses a two-pin plug, with pin 1 and pin 2 marked + and − on the drawing.

6. Rack Mounting Instruction

6U V2 RACK MOUNTING

You can mount the controller in a standard 6U V2 rack, which is sold separately. The rack holds up to ten controllers standing upright.

1. Fix the two mounting ears to the controller with the screws supplied. 2. Slide the controller, with its ears fitted, into the 6U V2 rack. 3. Screw the mounting ears to the rack to finish.

1U V2 RACK MOUNTING

You can also mount the controller in a standard 1U V2 rack. Mount two units side by side.

1. Fix two 1U V2 rack panels to one controller with the screws supplied. Fix two rack panels to a second controller the same way. The 1U V2 rack panels are not in the package. 2. Screw the inner rack panels of the two controllers to each other, so that both controllers fit together in one 1U V2 rack space.

7. Web GUI Operation Guide

You can use the controller's Web GUI to control every Dante® and AES67 device on the network switch.

PREPARATION BEFORE ENTERING THE SYSTEM

1. On your PC, open a web browser. Enter `http://controller.local`, or the controller's default IP address, in the address bar:

- Control LAN port: **192.168.6.100**
- Dante® LAN port: **169.254.8.100**

2. On the login page, sign in with the Admin account and enter its password, then click **Login**. 3. The first time you sign in, the controller opens the password change page. Set a new password of letters and numbers, then sign in again with the new password. The password rules are under **Password** below.

FUNCTIONS AND OPERATION

The main page of the Web GUI has four sections: **Dante**, **Controller Settings**, **Firmware Update** and **Password**. Click a section's icon on the left to open it.

DANTE

ROUTING

The Routing page shows every device in the system. Before you set up Dante® routing, you can narrow the list in two ways: tick the filter items on the left of the page, or type into the **Filter Transmitters** or **Filter Receivers** box. Click **Clear All** to remove every filter.

Click the **+** icon beside a transmitter or receiver to expand it, then set the routing you need. You can route the left and right audio channels separately.

DEVICE INFO

The Device Info page lists each device's ID, name, model name, product version, Dante® version, primary address, primary link speed, secondary address and secondary link speed. Click the drop-down icon to the left of a device's ID to see its details or configure it. The configuration has six tabs:

1. **Receive.** The Receiver Channels area shows each receiver channel and the channel routed to it. Type into the **Available Channels** box to filter the list. 2. **Transmit.** The Transmit Channels area shows the selected transmit channels, and you can rename each one. The Multicast Transmit Flows area shows the current multicast flows. Click **+** to add a flow, or **Delete** to remove one. 3. **Status.** Shows the manufacturer information (model name, manufacturer and product version), the Dante® information (Dante® model and Dante® software version) and the interfaces (IP address and MAC address). 4. **Device Config.** View or set the sample rate, encoding format and device latency, using the options in the table below. You can also reboot the device or clear its configuration. You can rename only third-party Dante® devices, and a device name cannot contain spaces, underscores (_) or apostrophes (').

SETTING	OPTIONS
Sample rate	44.1kHz, 48kHz, 88.2kHz, 96kHz
Encoding	PCM 16, PCM 24, PCM 32
Latency	2, 3, 4, 5 or 10 msec

5. **Network Config.** View or set the device's network configuration. 6. **AES67 Config.** View or set the AES67 configuration of a third-party Dante® device.

CLOCK STATUS

The Clock Status page shows each device's ID, name, sync status, mute status and clock source. It also shows the primary v1, primary v2, secondary v1 and secondary v2 multicast settings, and the preferred leader. When a device's clock is locked to the leader Dante® device, its Sync light is green. When it is not, both the Sync and Mute lights are red and the device outputs no signal.

EVENTS

The Events page lists the events from devices in the system. Each event shows a number, a timestamp, the device name and the event details.

UPDATE

You can update third-party Dante® devices from this page. Only Ultimo and DEP devices can be updated.

1. Choose the Dante® device type from the drop-down menu. 2. Tick the devices you want to update. 3. Click **Upload Dante Firmware** and load the firmware file. 4. Click **Update All** to update every selected device, or **Update** to update a single device.

CONTROLLER SETTINGS

1. **General.** Shows the Controller Version and GUI Version. Here you can also set the RS-232 baud rate, and turn HTTPS, Telnet and SSH on or off. You can change the Telnet port, the SSH port and the domain name. 2. **Control Network.** These are the settings for the port that connects to the router, directly to a PC, or to the network switch the control PC is on. With DHCP **On**, the controller fills in the IP address the router assigns. With DHCP **Off**, enter the IP address, subnet mask and gateway yourself, then click **Apply**. With DHCP **Off** (static IP), the Control LAN and the PC must be on the same network segment. If they are not, you cannot reach the Web GUI until you change the PC's network settings to match. 3. **Dante Network.** These are the settings for the port that connects to the network the Dante® devices are on. DHCP is **On** by default, and the controller fills in the IP address the router assigns. With DHCP **Off**, enter the IP address, subnet mask and gateway yourself, then click **Apply**. 4. **Controller Reset.** Click **Settings Reset** to reset every setting except the network settings. Click **Network Reset** to reset only the network settings. Click **Reset All** to reset every setting, network settings included.

FIRMWARE UPDATE

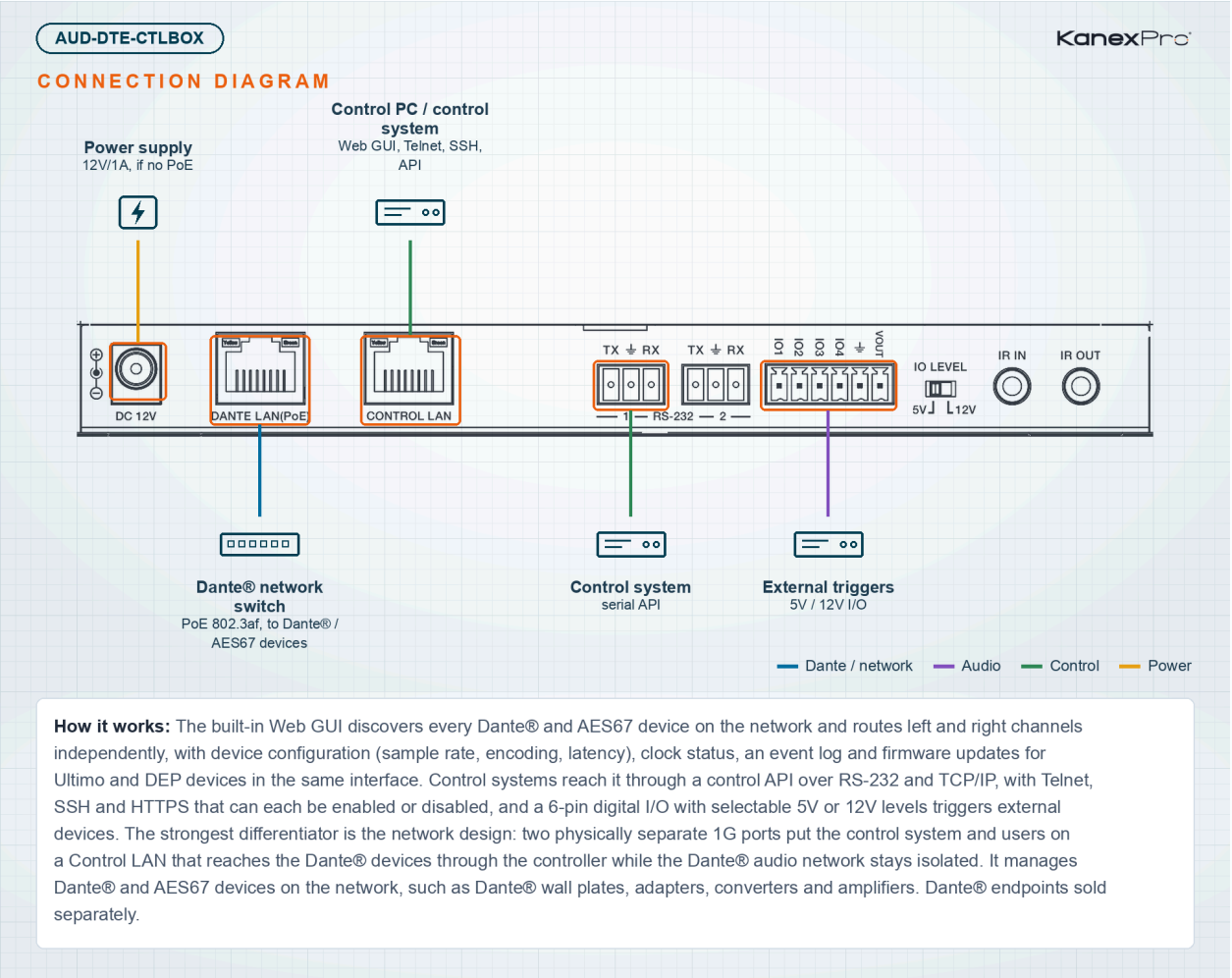
Click the file icon and choose the controller firmware package, then click **Update**. The update is complete when the progress bar reaches 100%.

PASSWORD

To change the password, enter the old password, the new password and the new password again to confirm it. Then click **Apply**.

- The password must be 6 to 8 characters long, and it cannot contain special characters.
- The new password must be different from the old one.
- The new password and the confirmation must match.
- After you change the password, the Web GUI returns to the login page. Sign in again with the new password.
  To sign out at any time, click the logout icon in the upper right corner of any page. The Web GUI returns to the login page.

8. Connection Diagram



How it works: The built-in Web GUI discovers every Dante® and AES67 device on the network and routes left and right channels independently, with device configuration (sample rate, encoding, latency), clock status, an event log and firmware updates for Ultimo and DEP devices in the same interface. Control systems reach it through a control API over RS-232 and TCP/IP, with Telnet, SSH and HTTPS that can each be enabled or disabled, and a 6-pin digital I/O with selectable 5V or 12V levels triggers external devices. The strongest differentiator is the network design: two physically separate 1G ports put the control system and users on a Control LAN that reaches the Dante® devices through the controller while the Dante® audio network stays isolated. It manages Dante® and AES67 devices on the network, such as Dante® wall plates, adapters, converters and amplifiers. Dante® endpoints sold separately.

9. Troubleshooting

Q: The STATUS LED keeps flashing and I cannot reach the controller. What should I check?
A: First confirm the POWER LED is red. If it is not, check the 12V adaptor or the PoE supply on the Dante LAN port. The STATUS LED flashes once a second during start-up and goes solid when the Control LAN is ready, so wait for it to go solid, then confirm the Dante LAN port is connected and not only the Control LAN.

Q: The Web GUI will not open in my browser. What should I try?
A: Try http://controller.local first. If there is no DHCP server on the Control LAN, give your PC a fixed 192.168.6.x address and browse to 192.168.6.100. If the Control LAN was set to a static IP, the PC must be on that same network segment before the page will load.

Q: A Dante device is routed but passes no audio. What should I check?
A: Open the Clock Status page. A device locked to the leader Dante device shows a green Sync light. If both its Sync and Mute lights are red, it is not locked to the clock and outputs no signal, so check its clock source and the preferred leader.

Need help? — For additional support, visit kanexpro.com/support, or scan the QR code below for the product page.

10. Installation FAQ

Q: How should I wire the two LAN ports to my switches?
A: Connect the Dante LAN port and your Dante audio devices to one switch, and the Control LAN port and your control PC to a second switch. Web GUI, Telnet, SSH and API commands from the Control LAN pass through the controller to the Dante devices, and the two networks stay isolated.

Q: What do I need on the network to reach it the first time?
A: A DHCP server such as a router is recommended on the Control LAN, with your PC set to obtain an address automatically. With no DHCP server, give the PC a fixed address in the 192.168.6.x segment and browse to 192.168.6.100 or http://controller.local. At first sign-in you must set a new password of 6 to 8 letters and numbers.

Q: How do I set the digital I/O voltage?
A: The IO LEVEL DIP switch sets both the four I/O outputs and VOUT on the 6-pin Phoenix connector. Set it left for 5V or right for 12V. VOUT is rated up to 12V/0.5A.

11. Integration FAQ

Q: Which control interfaces and settings does it offer to a third-party control system?
A: It accepts API control over TCP/IP (Telnet and SSH) and over two RS-232 ports on 3-pin Phoenix connectors. The Controller Settings page sets the RS-232 baud rate, turns HTTPS, Telnet and SSH on or off, and changes the Telnet port, SSH port and domain name.

Q: Do I have to add Dante devices to it by hand?
A: No. The controller discovers Dante devices on its network, so they can be paired as soon as they appear, without a search or manual entry.

Q: Can it trigger other equipment in the room?
A: Yes. The 6-pin digital I/O provides four level outputs at 5V or 12V and a VOUT supply of up to 12V/0.5A for external devices.