Qtex

USER MANUAL

QAI DBW403

Dante Bluetooth
Wall Panel

1. Introduction

The QAI DBW403 is a professional 4x3 Dante wall panel with Bluetooth. It includes stereo Bluetooth wireless audio input, 3.5mm jack and RCA jack for line inputs and su p port transfer uncompressed audio via standard Ethernet networks with near-zero late n cy. The unit also included 3.5mm jack and RCA jack for line output.

The wall panel is powered by PoE and supports Web-UI and Dante software control.

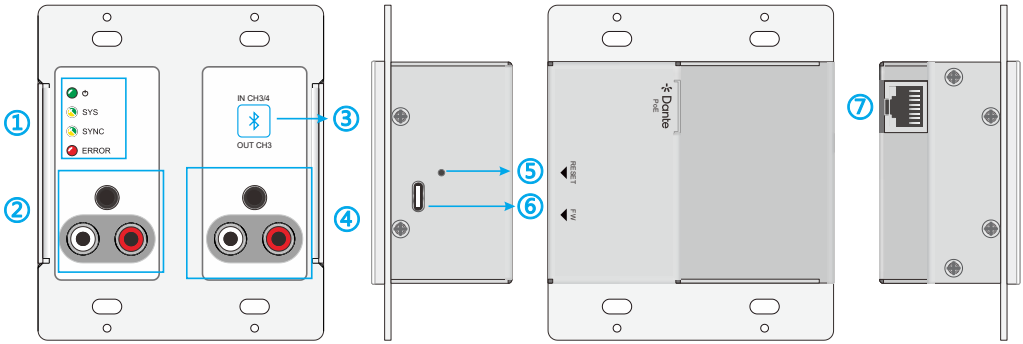
1.1 Features

- CAT5/6 connector to link with Dante network and controlled by Web-UI, Dante Controller or Dante Director software;
- Small size integrated mounting bracket which can be installed in very limited space;
- Simple to pair Bluetooth by pressing a button;
- Supports API for control center for system control usage ;
- Compatible with a variety of mobile phones, tablets, computers and other devices;
- Integrated power supply and audio transmission in one body;
- Convert Bluetooth audio signal to 2 Dante network audio channel;
- Convert aux or 3.5mm jack stereo to 2 Dante network audio channel;

2. Specification

Model	QAI DBW403
Dante Audio Channel	2
Input Interface	Bluetooth 5.3, RCA*2, 3.5mm TRS*1
Output Interface	Bluetooth 5.3, RCA*2, 3.5mm TRS*1
SNR	>90dB@MaxLevel(A-weighted)
Output Noise	<-79dBu @ 0dB gain(A-weighted)
Power Consumption	4.22W(Max)
THD	<0.05% at 0dBu,1kHz,0dB gain(A-weighted)
Sample Rate	44.1kHz or 48kHz
Power Supply	POE
Product Dimensions	104.5x89.0x43.7mm
Net Weight	265g

3. Panel Description



No.	Name	Description
①	**Indicator LED**	● Power LED: Illuminates green when power is applied. ● SYS LED: Illuminates yellow when system starts, and green when system is ready. ● SYNC LED: Illuminates green when the clocks are synchronized between master and slave devices, and yellow when the clocks are out of sync. ● ERROR LED: Illuminates red when the unit has an internal failure.
②	**IN CH1/2**	1x 3.5mm jack and 2x RCAs for analog audio input.
③	**IN CH3/4 & OUT CH3**	1x Bluetooth pairing button with back-lit indication. Press the button to start pairing, the back-lit indication will begin flashing and accept pairings, press and hold the button for 5s to release connection.
④	**OUT CH1/2**	1x 3.5mm jack and 2x RCAs for analog audio output.
⑤	**Reset**	Press and hold 5s to factory reset.
⑥	**FW**	1x USB-C, use for Bluetooth chipset upgrade.
⑦	**Dante**	1x RJ45, Dante® Ethernet interface connector

4. System Connection

4.1 Usage Precaution

- Make sure all components and accessories included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before power on.

4.2 System Diagram

5. Operation of Dante Controller

Dante Controller is a free software application that enables to route audio and configure devices on a Dante network. With automatic device discovery, one-click signal routing and user-editable device and channel labels, setting up a Dante network couldn't be easier. See the overview for more detail on Dante audio networking.

Dante Controller is much more than just a configuration and routing matrix. Dante Controller provides essential device status information and powerful real-time network monitoring, including device-level latency and clock stability status, multicast bandwidth usage, and customized event logging, enabling to quickly identify and resolve any potential network issues. It can also quickly and easily backup, restore, move, and reuse Dante network configurations using Presets, and edit Dante routing configurations offline.

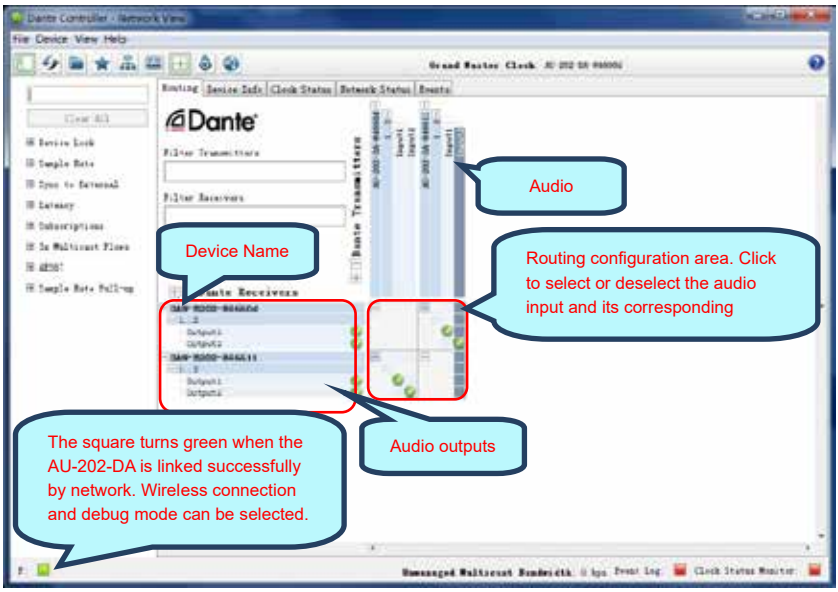
Dante Controller is available both for Windows and Mac OS X. It is open for registered *www.audinate.com* users to download directly from the website.

Dante Controller allows to:

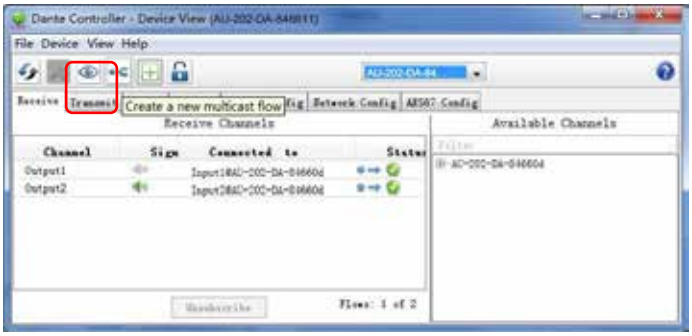
- View all Dante-enabled audio devices and their channels on the network
- View Dante-enabled device clock and network settings
- Route audio on these devices, and view the status of existing audio routes
- Connect to Dante Domain Manager and control enrolled devices
- Lock and unlock Dante devices
- Change the labels of audio channels from numbers to names
- Customize the receive latency (latency before playing out)
- Save audio routing presets
- Apply previous saved presets
- Edit presets offline, and apply as configurations for new network deployments
- View and set per-device configuration options, including:
  - ✓ Change the device name
  - ✓ Change sample rate and clock settings
  - ✓ View detailed network information
  - ✓ Access the device web page to upgrade firmware and license information
- Identify a device for example by flashing LEDs

- View network status information, including:
  - ✓ Multicast bandwidth across the network
  - ✓ Transmit and receive bandwidth for each device
- View device performance information, including latency statistics and packet errors
- View clock status information for each device, including frequency offset history and clock event logs

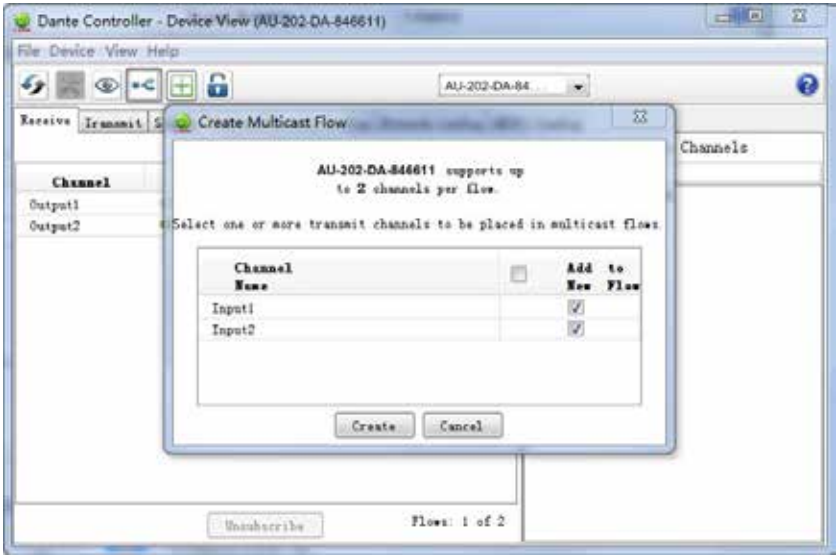
Overview of Dante Controller:



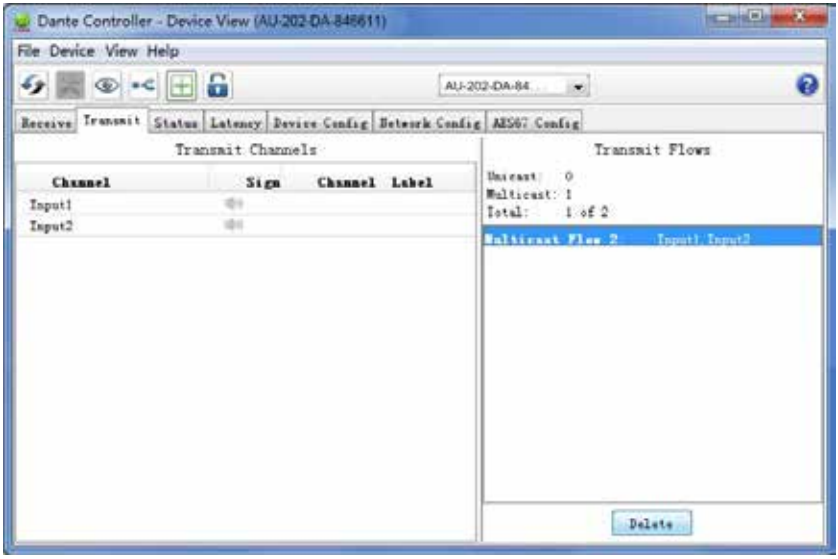
The default setting only supports 2 transmit and 2 receive flows, if more than 2 devices are needed, please click any device to enter **Device View** page.



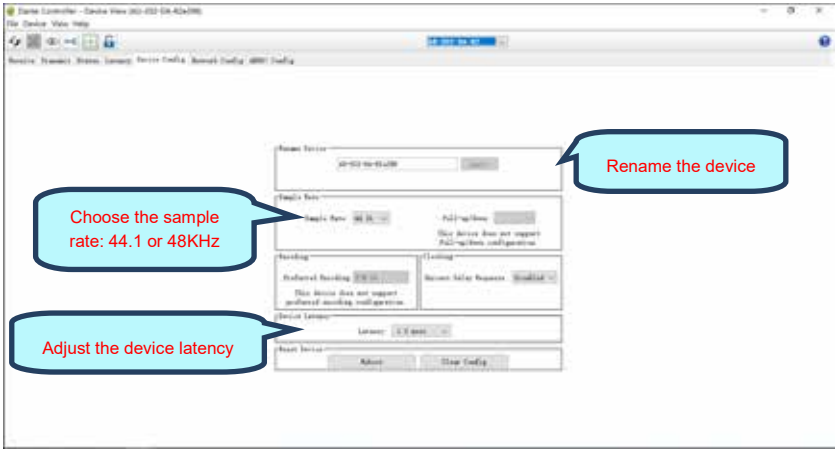
Select the device and tick the input channels.



Click Transmit and delete the transmit flows for disabling multicast mode as the below:



Click the device name, than turn into “Devic Config” page.



Note: *For more details about Dante Controller, please download the user guideline at the Audinate website: www.audinate.com.*

6. Web-UI Control

Dante QAI DBW403 controlled via web-based GUI. It allows users to interact with QAI DBW403 through graphical icons and visual indicators.

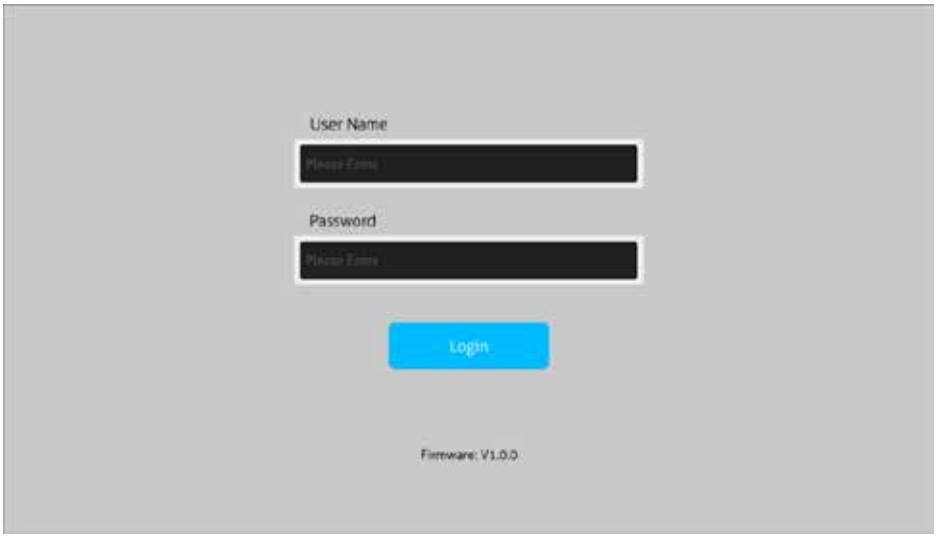
Since the default is DHCP mode，in order to enter the GUI interface, you need to click the Identify device button three times continuously on the Dante controller software to obtain the IP address, and then enter the IP address in the browser to enter the GUI interface.

Another way to get the IP address is to query the router's connection list.

You can also set a fixed IP address by selecting Static IP.

After get the IP address of Web-UI, enter the IP address on the browser

It will enter the log-in interface shown as below:



Username: admin

Password: admin

Type the username and password, and then click **Login** to enter the section for Dante Info.

6.1 Dante Info

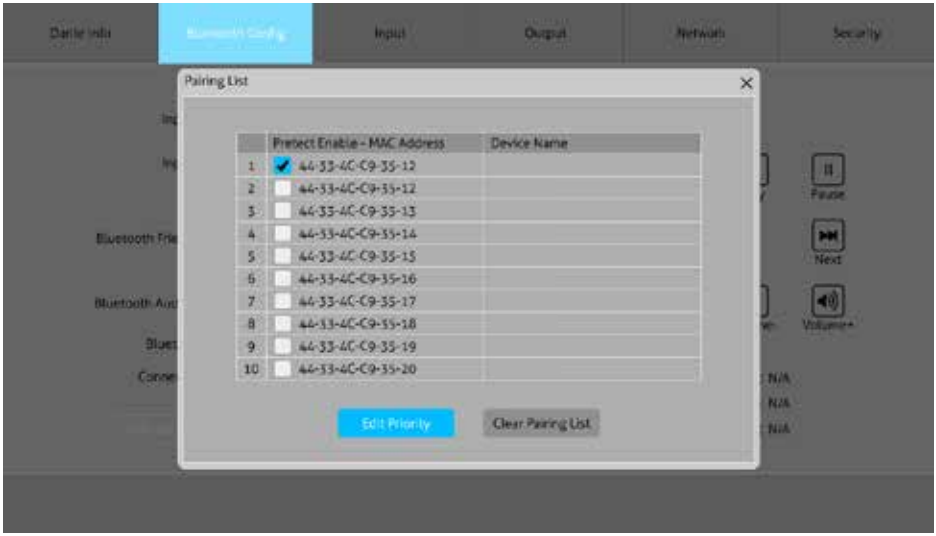
In this page, it shows the model name, device name, IP address and MAC address.

- **Dante Lock:** Reports the status if Dante device is locked in Dante Controller.
- **Parameter Lock:** If the user clicks it, the parameter of the device can't be adjusted like input's gain or output's volume.
- **Identify:** Click the Identify to keep the unit's system LED flash, so that users can find the corresponding unit in a scenario with many devices.
- **Refresh:** Refresh the information in this section.

6.2 Bluetooth Config

- **Input Name:** Reports the Dante transmitter channel name for corresponding analog input and rename the input.
- **Bluetooth Friendly Name:** Set the name of the device when it is recognized by Bluetooth.
- **Bluetooth Audio Bridging:** Select the bridging mode: Call Bridging, Media Bridging, Call & Media Bridging.
- **Activate Pairing**: Activate pairing mode on the device.
- **Close Connection:** Close the active Bluetooth® connection and only active when the Bluetooth® status is "Connected". Once click for close current connection and the pairing button will flash for next connection, click again to turn off pairing status.
- Support **AVRCP** control and show the music information: Artist, Altum, Track.

- **Pairing List:** Click to open the pairing list.



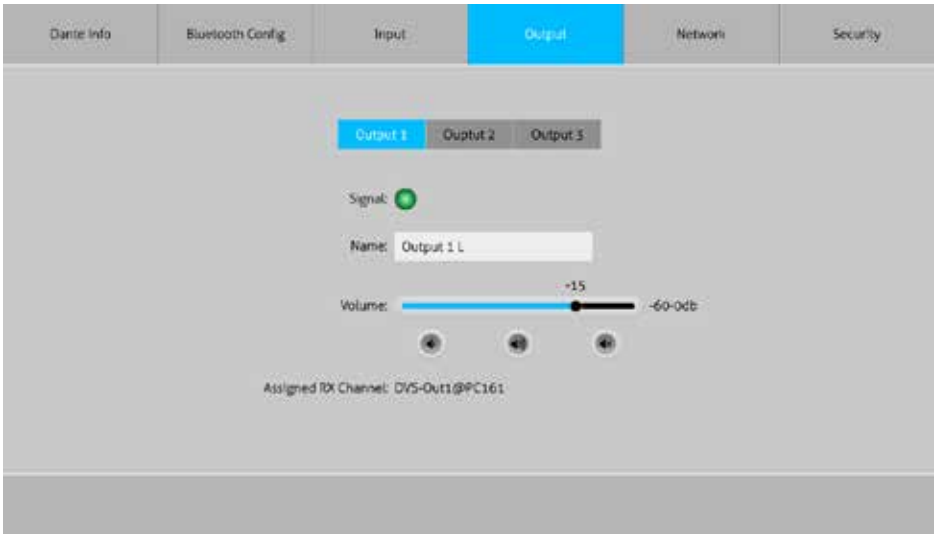
- **Pairing List:** Allow the user to identify devices which have paired to the QAI DBW403 and establish priority devices with the device.

Check the device you want to connect automatically, then drag to arrange the priority, click the edit priority button to save the setting.

6.3 Input

- **Name:** Reports the Dante channel name for corresponding analog input.
- **Gain:** Allows the user to adjust the input's gain from -12db to 18db
- **Selection Control:** Choose the input.

6.4 Output

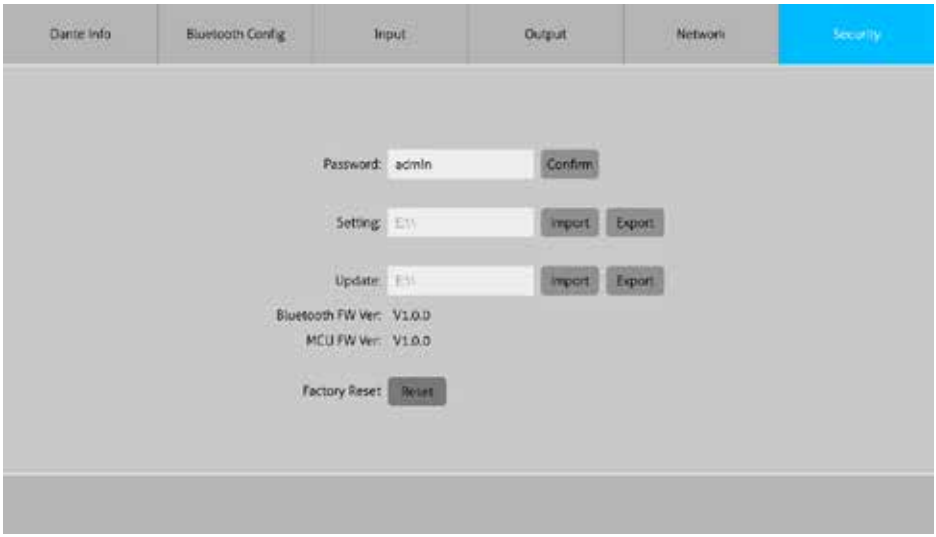


- **Name:** Reports the Dante output channel name for corresponding analog output.
- **Volume:** Allows the user to adjust the output's volume form -60db to 0db.

6.5 Network

- Static IP or Dynamic Host Configuration Protocol (DHCP).
- Modify the static IP Address, Subnet Mask, and Gateway.

6.6 Security

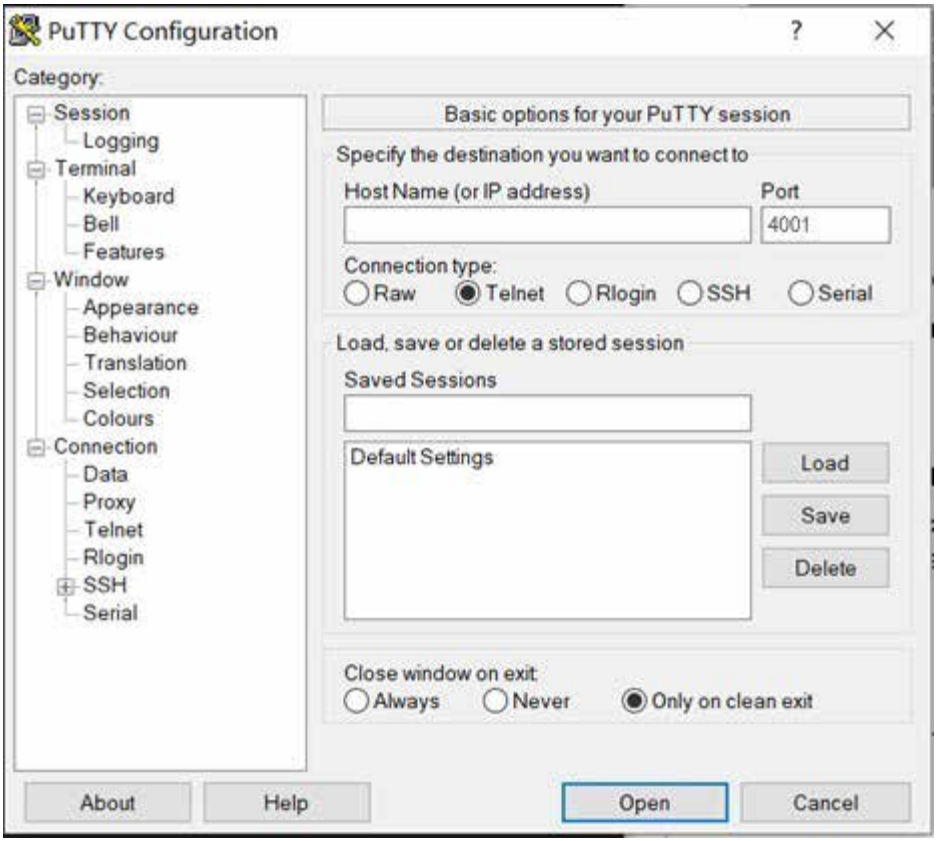


In this page, the user can change the password.

It can also support firmware upgrade, importing or exporting the setting.

7. API Command

The Dante device can be controlled by Telnet. Take Putty here as an example.



Firstly, type in the IP address of GUI in “Host Name” and the port is 4001, chose Telnet connection type, then click the open, and a new window will pop up. Then the user can send commands to control the Dante device.

7.1 API Command List

Command ending: <CR><LF> Error feedback: <Command Error <Out of Range

Command	Function	Example
>Livol,x:z	Set the gain of input x. x=1,2 means input 1 or input 2 z=0 - 5 0 means -12dB, 5 means 18dB. 6dB step.	>Livol,1:2 <Livol,1:2
>GetLivol:x	Query gain of input. x=1,2 means input 1 or input 2	>GetLivol:1 <Livol,1:3
>Lisel,x:z	Select which mode (RCA/Jack) is used for the line level input x. x=1,2 means input 1 or input 2 z=1,2,3 where 1 is jack only, 2 is RCA only and 3 is mix both RCA and Jack.	>Lisel,1:1 <Lisel,1:1
>GetLisel:x	Query which mode the input x is using. x=1,2 means input 1or input 2	>GetLisel:1 <Lisel,1:1
>Lovol,y:z	Set volume of output. y=1…3 means output 1...output 3 z = 0 - 100	>Lovol,2:80 <Lovol,2:80
>GetLovol:y	Query output volume on specified output y y=1...3 means output 1...output 3	>GetLovol:2 <Lovol,2:80
>Mute:y	Mute the output port y. y=1…3 means output 1...output 3	>Mute:1 <Mute:1
>Unmute:y	Unmute the output port y. y=1…3 means output 1...output 3	>Unmute:1 <Unmute:1
>GetMute:y	Query status of mute on output port y. y=1…3 means output 1...output 3	>GetMute:1 <Mute,1
>ParameterlockOn	Lock the parameter.	>ParameterlockOn <ParameterlockOn
>ParameterlockOff	Unlock the parameter.	>ParameterlockOff <ParameterlockOff

Command	Function	Example
>IdentifyOn	Turn on the function to be identified.	>IdentifyOn
		<IdentifyOn
>IdentifyOff	Turn off the function to be identified.	>IdentifyOff
		<IdentifyOff
>Locate	Locate the unit. The LEDs on front panel will twinkle in 10s if the command is triggered.	>Locate
		<Locate
>SavePreset audio:z	Save the current setting(input gain, output volume, mute status) to preset. z=1,2,... 10	>SavePresetaudio:1
		<SavePresetaudio:1
>Loadpreset audio:z	Use the saved preset z.	>LoadPresetaudio:1
		<LoadPresetaudio:1
>Reboot	Reboot the device.	>Reboot
		<Reboot
>Reset	Factory reset the unit.	>Reset
		<Reset
>GetAudioLevels	Query audio volume and mute status.	>GetAudioLevels
		<Livol,3:3 <Livol,4:3 <Lovol,1:80 <Lovol,2:80 <Lovol,3:80 <Mute,1 <Unmute,2 <Unmute,3 <Lisel,3:1 <Lisel,4:2
>GetDanteLock	Query the lock status of the unit.	>GetDanteLock
		<DanteLock:Unlock

Command	Function	Example
>GetSignals	Query the status of the audio. (Invalid signal/Signal clipping/Valid signal /No signal)	>GetSignals
		<Input1:Valid Signal <Input2:Valid Signal <Input3:No Signal <Input4:No Signal <Output1:Valid Signal <Output2:Valid Signal <Output3:No Signal
>GetChannelLabel	Query the label of channel.	>GetChannelLabel
		<OUT 1 Tx1 <OUT 2 Tx2 <Bluetooth OUT 3 Tx3 <Bluetooth OUT 4 Tx4 <IN 1 Rx1 <IN 2 Rx2 <Bluetooth IN Rx3
>BtName:name	set a new bluetooth friendly name, visible to other bluetooth devices when in pairing mode.	>BtName:DAN-W3
		<BtName:DAN-W3
>GetBtName	get bluetooth friendly name.	>GetBtName
		<BtName:DAN-W3
>GetBtConnectedDevice	get connect BT device name.	>GetBtConnectedDevice
		<ConnectedDevice:iphone
>BtButtonLockOn >BtButtonLockOff	Lock/Unlock the front panel button.	>BtButtonLockOn >BtButtonLockOff
		<BtButtonLockOn <BtButtonLockOff
>GetBtButtonLock	Query the lock status of the the front panel button.	>GetBtButtonLock
		<BtButtonLockOn

Command	Function	Example
>BtPlay	AVRCP Play command.	>BtPlay
		<BtPlay
>BtPause	AVRCP Pause command.	>BtPause
		<BtPause
>BtStop	AVRCP Stop command.	>BtStop
		<BtStop
>BtNext	AVRCP Next command.	>BtNext
		<BtNext
>BtPrev	AVRCP Previous command.	>BtPrev
		<BtPrev
>BtVolUp	AVRCP Volume Up command.	>BtVolUp
		<BtVolUp
>BtVolDn	AVRCP Volume Dn command.	>BtVolDn
		<BtVolDn
>BtBridging:z	set bluetooth audio bridging. This command can be set only when Bluetooth is idle. z=0,1,2 0 means Both Call Bridging and Media Audio Bridging enabled 1 means Only Media Audio Bridging enabled 2 means Only Call Bridging enabled	>BtBridging:0
		<BtBridging:0
>GetBtBridging	Query the bridging of bluetooth. 0 means Both Call Bridging and Media Audio Bridging enabled 1 means Only Media Audio Bridging enabled 2 means Only Call Bridging enabled	>GetBtBridging
		<BtBridging:0
>GetBtStatus	Query the status of bluetooth. (Idle/Discoverable/Connected/Connected - AVRCP)	>GetBtStatus
		<BluetoothStatus:Idle

Command	Function	Example
>BtActivatePairing	Activates pairing mode on the device similar to pressing the front panel button.	>BtActivatePairing
		<BtActivatePairing
>BtCloseConnection	Closes the active bluetooth connection when the bluetooth status is "Connected" or "Connected - AVRCP"	>BtCloseConnection
		<BtCloseConnection
>BtClearPairing	Clears the pairing list.	>BtClearPairing
		<BtClearPairing
>GetStatus	Query system status and port status.	>GetStatus
		……
>GetBtSong	Retrieve the track title for the current audio	>GetBtSong
		<BtSong:Still Counting
>GetBtArtist	Retrieve the artist information for the current audio	>GetBtArtist
		<BtArtist:Volbeat
>GetBtAlbum	Retrieve the album information for the current audio	>GetBtAlbum
		<BtAlbum:Guitar Gangsters & Cadillac Blood