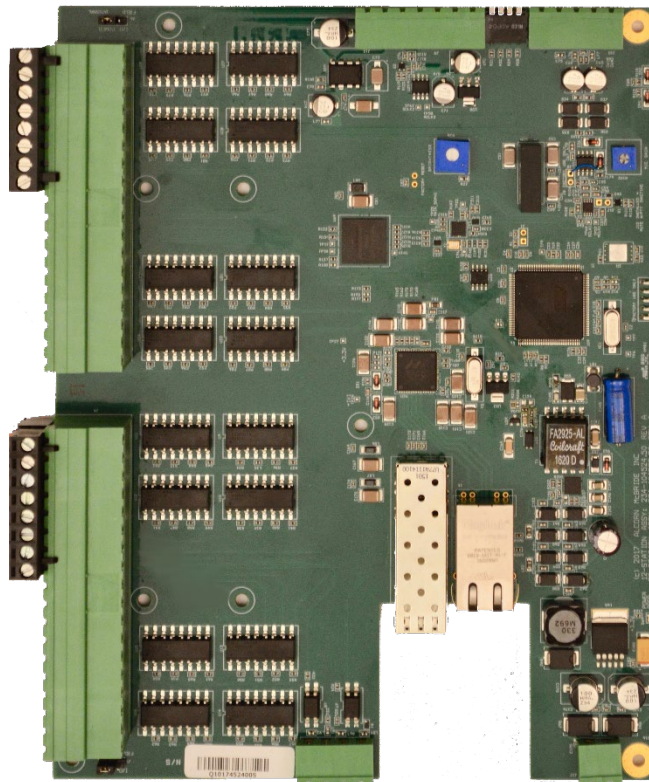




INTELLIGENT 32-ZONE DANTE/AES67 INTERCOM STATION

V-Com VC32K User's Guide



Feb 22, 2019

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WELCOME!

Thank you for purchasing The Alcorn McBride VCom™ Network-enabled intercom station. The VCom provides facility-wide intelligent intercom using Dante™ Audio Networks and the Q-Sys™ DSP.

Configuration of your intercom network including ring zone assignments, button and light behaviors, and zone priorities are completely soft programmable using the Q-Sys Designer and administrator software.

Each VCom station includes illuminated intercom zone buttons, sonalert and handset input.

A single Ethernet (Cat5e or greater) cable carries audio, power, control and monitor data between the VCom station and the Q-Sys system. A facility may incorporate as many VCom stations as the channel count supported by the Q-Sys™ Core by simply connecting them to Power Over Ethernet (PoE) network switches.

SFP connector for an optional transceiver (not included) allows to use fiber cable for data communication.

The VCom Model VC32K station allows you to easily install, configure, and deploy a full intercom solution for your facility. With up to 32 “Ring Zones”, isolated “Party Lines”, and a single network connection, you can create a flexible and rock-solid intercom system for your entire facility!

PRODUCT FEATURES

The VCom offers a wide range of features including:

- Dante and AES67 Audio Network Compatible
- Q-Sys Intercom Router
- Audio, Control and Power on one ethernet cable
- Power-Over-Ethernet (Class 3) with indicator
- Up to 32 Ring Zones
- Phoenix connector to wire up to 32 LED Buttons
- Phoenix connector to wire up to 32 LED Lamps
- Earpiece volume control knob
- Breakaway feature
- Software controlled LED Brightness
- Magnetic sensor for handset
- SFP cage for optional fiber optic cable line

TECHNICAL SUPPORT

Now that we've tantalized you with all of the wonderful things this product can do, I'll bet you're chomping at the bit to flip all the switches and push all the buttons. Not so fast! Before we get to the fun stuff, we just want to take a moment to remind you that we are here to help. Chances are that you're building something really cool and we want you to have access to the resources and support you need to be successful.

To start, you'll find a wealth of information on our website. This includes Application Notes that give you detailed documentation and examples for how this product is used in common types of themed entertainment projects. You'll also find the latest downloads for software, firmware, drawings, 3D models, cutsheets, and other helpful resources on our Support page. The Knowledge Base is especially handy for common questions and helpful troubleshooting tips. And last, but certainly not least, you always have our friendly and mildly entertaining staff available by email or telephone.

Application Notes	http://www.alcorn.com/applications
Support Resources	http://www.alcorn.com/support
Knowledge Base (FAQ)	https://alcornmcbride.zendesk.com/hc/en-us
Email Support	support@alcorn.com
Telephone Support	(407) 296-5800 (Mon-Fri 9am-6pm EST)

GETTING STARTED - VC32K

Alright, time to roll up your sleeves and get to work! This section will guide you through basic concepts that will help you get on your way with VCom.

The VCom station(s) communicates with a Q-Sys Core via network connection using a Plugin. To install the plugin, you need to download the file from the website and copy and paste the component to your design. The plug in can be downloaded from our website at <http://alcorn.com/support/software/>

****You must be running Q-Sys Firmware 7.0.0 or above and VCom firmware 2.08 or above for the Plugin to work. To learn how to do a firmware update please refer to the firmware update section of this manual.***

There are three steps that need to be completed to ensure that VCom and Q-Sys function together properly.

- 1) VCom Hardware Installation
- 2) Linking a VCom and Q-Sys Core together
- 3) Configure the audio routing using Q-Sys and Dante controller

HARDWARE INSTALLATION

- a. Make sure that all the dip switches are in the “Off” Position
- b. Power on VCom by connecting Ethernet port to the Power Over Ethernet (PoE) switch and wait 20 seconds for VCom unit to initialize. If no Power Over Ethernet (PoE) is available, refer to the VC32K Hardware section to learn about using an external power supply.
- c. Be sure to have your VCom units on the same network as the Q-Sys Core

LINKING A NEW VCOM AND Q-SYS CORE TOGETHER

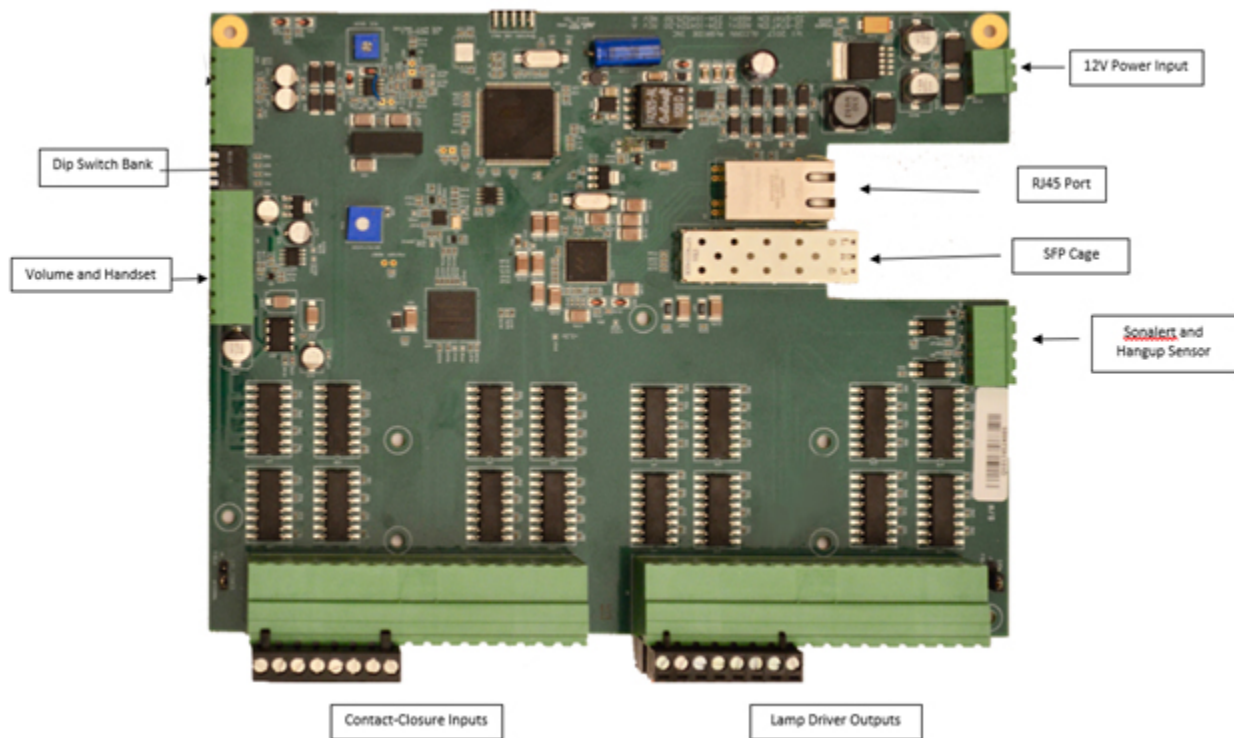
- a. Single click the VCom Plugin block for the station you would like to link and ensure your property settings are configured. (Refer to Plugin Properties section of this manual).
- b. Connect to the Q-Sys Core and then double click to open the plugin.
- c. Set Dip Switch #1 from Off to On and Off again, or press and hold buttons 1,2,&4 for 5 seconds.
- d. On the Q-Sys plugin, on the top right corner click “Link”. Once the station is linked to the Core the station will re-boot. At this time your plugin will be “Online” and the LED will light up. **(Make sure that you have assigned a gateway in the Q-sys core and that your network infrastructure allows for both broadcast and multicast traffic)**

AUDIO CONFIGURATION

- a. Launch Dante Controller.
- b. Click on the “Device Info” tab and double click on the VCom station.
- c. Enable AES67 under AES67 tab. Once the station has been rebooted, it’s time to create an AES67 multi-cast flow. Click on “Add Multicast Flow”.
- d. Check the “AES67 Flow” box. Add your channel into the new flow. Click “Create”.
- e. In Q-Sys Designer, double click your AES67 Receiver Module and pick the new Stream Name.

HARDWARE INFORMATION

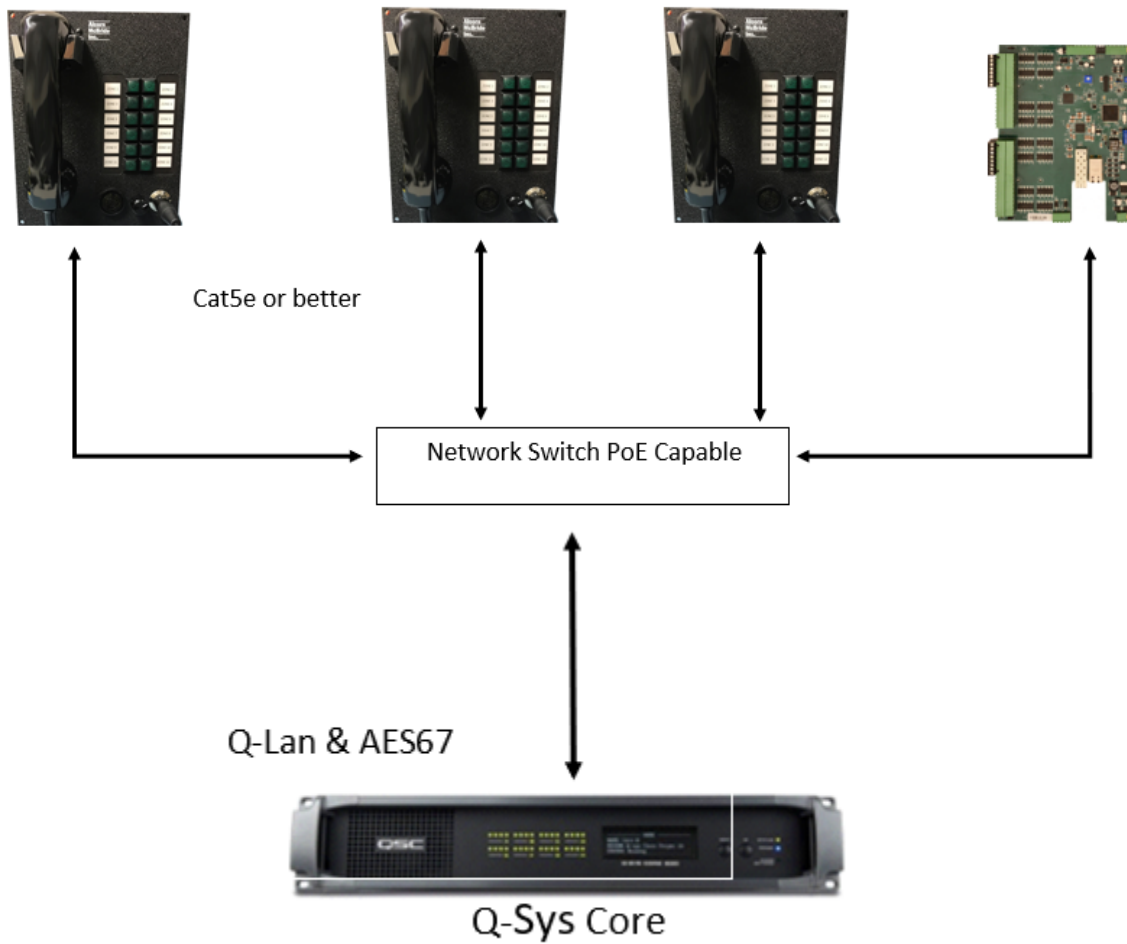
VC32K OVERVIEW



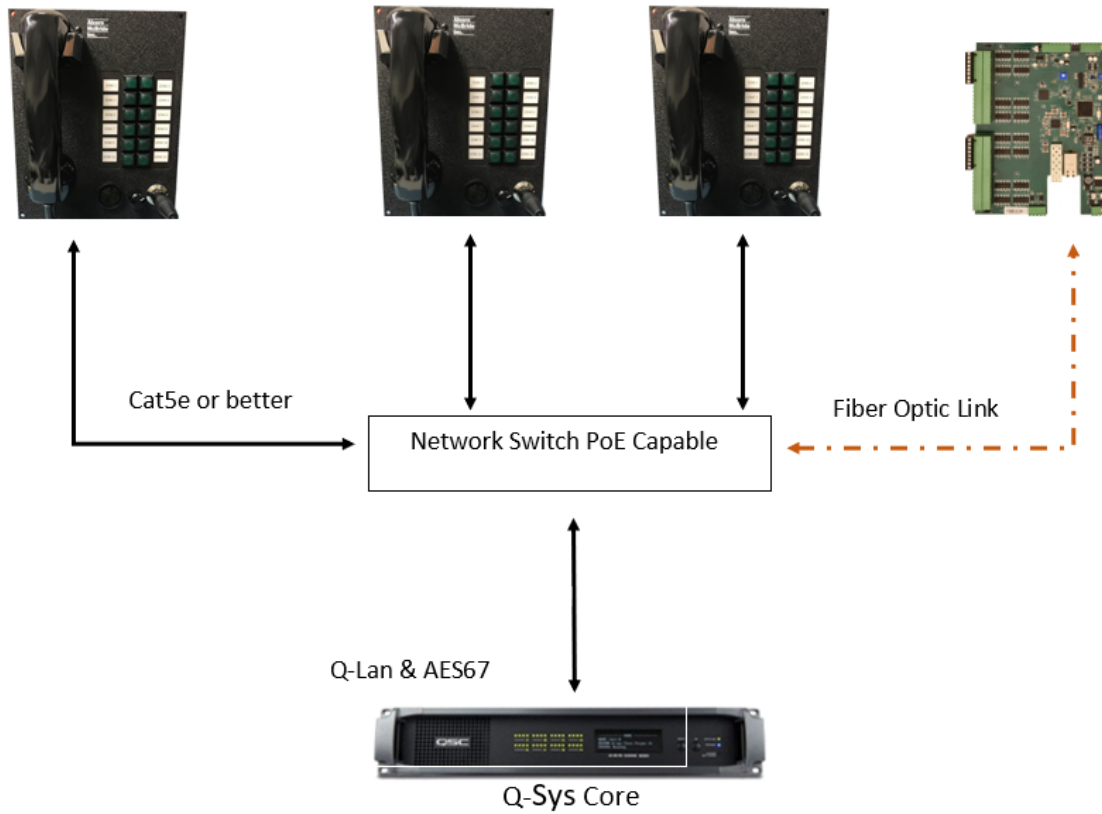
NETWORK DESCRIPTIONS

VCom is part of a system consisting of a Q-Sys Core, Network Router(s)/Switch(s), and the VCom Stations themselves. A single physical connection handles both control and audio transport this connection can either be via Ethernet cables or Fiber Optics if your installation length exceed 328 ft from the switch to the station.

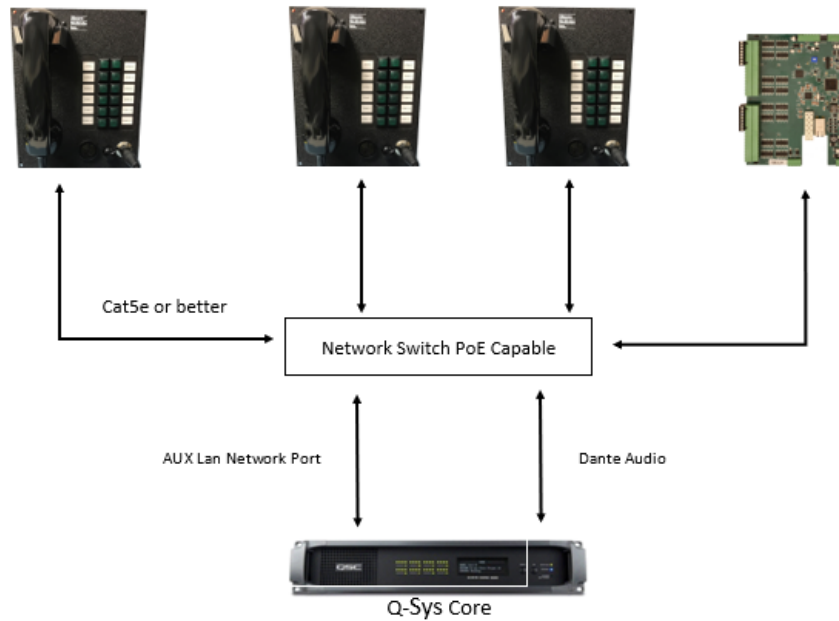
VC16K and VC32K Stations via Ethernet cables and AES67 audio



VC16K and VC32K Stations via mixed cabling and AES67 audio

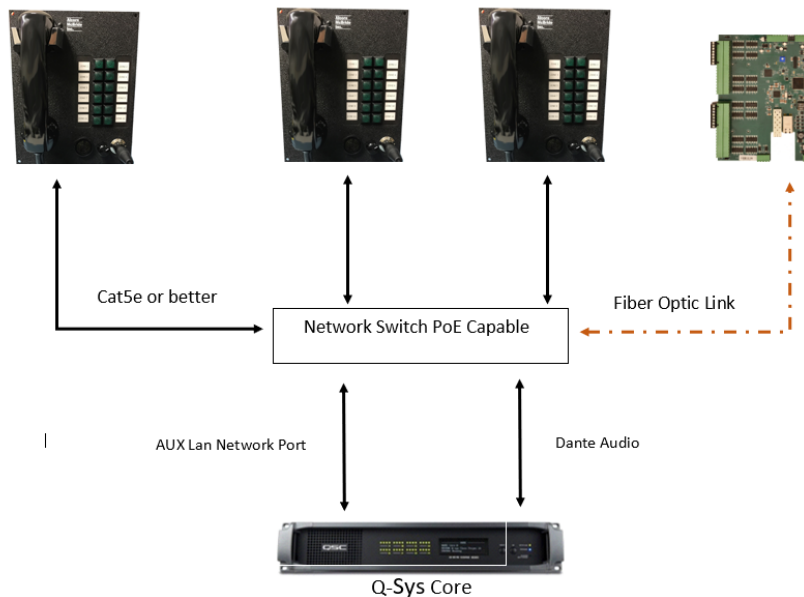


VC16K and VC32K Stations via Ethernet cables and Dante audio



Note: This is the recommended method where Dante Audio and Control are using the same network switch. Q-Lan and Dante requires a different QoS configuration while the LAN Aux Network act as a “generic” ethernet port. Always remember to keep the VCom units control NIC in the same network as your QSC Q-SYS Core.

VC16K and VC32K Stations via mixed cabling and Dante audio



ZONE STATUS LEDS

LED State	Description
On	Ring Zone Available for Selection
Off	No Ring Zone Assigned
Grouped Blinking (1-6, 7-32)	Firmware Update Mode
Blinking	Ring Zone being paged
All Sequential Blinking	Link Mode Active
All Blinking (Slow)	Not Paired or No Q-Sys Core Detected

CONFIGURATION OF DIP SWITCHES

The configuration DIP switches are located on the side of the VCom. Changing the states of these switches alter the behavior of the VCom. DIP switching may perform different functions during power up and during runtime. Default position for all the switches for normal operation is OFF (UP if looking from the side of the unit).

VCom can power up in one of the following modes (based on switches configuration):

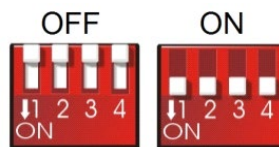
- Normal Mode.
- Factory Test Mode.
- Firmware Update Mode.

During power up, the state of the switch (ON or OFF) determines the action.

During runtime, toggling the DIP switch (OFF => ON => OFF) will perform specified action. See the descriptions below.

NOTE: Not all switches have a power up function associated with it.

NOTE: Not all switches have a runtime function associated with it.



DIP SWITCH 1: LINK MODE

RUNTIME – LINK:

OFF => ON => OFF: Activate/deactivate Link. Toggle once to activate, toggle again to deactivate. Link will also exit on successful completion, any zone press, after 60 seconds (default).

Link can be used in conjunction with Q-Sys to assign Matrix Input, static IP/Port and Q-Sys feedback information to the VCom. In a sense, this pairs the VCom with a specific Q-Sys Core. While Link is active, LEDs sequentially light up, one at a time.

DIP SWITCH 2: FIRMWARE UPDATE MODE / RESET FACTORY DEFAULTS

POWER UP – FIRMWARE UPDATE MODE:

ON: Enter Firmware Update mode. In this mode of operation, VCom disregards all its settings and the rest of the DIP switches and uses a default IP of 192.168.0.254. Web server serves up Firmware Update page. For a detailed explanation on Updating VCom firmware, see the Firmware Update section.

To exit Firmware Update Mode, return the switch to OFF position and perform a power cycle.

OFF: Default state of the switch for normal operation.

NOTE: It's advised to use AMI Terminal to invoke the firmware update. The VCom will enter the firmware update mode on the last known IP instead of fixed 192.168.0.254

RUNTIME – LOAD FACTORY DEFAULTS (IN NORMAL OPERATION MODE ONLY):

OFF => ON => OFF: Perform factory defaults. All LEDs will light up solid RED for a few seconds, then VCom will perform reset to defaults. Any stored settings will be erased from non-volatile memory and restored to their factory defaults. This affects Dante settings as well.

NOTE: Loading Factory Defaults will erase all VCom settings!!

DIP SWITCH 3: FACTORY TEST MODE

POWER UP – FACTORY TEST MODE (FIRMWARE UPDATE DIP SWITCH 2 MUST BE OFF):

ON: Used for Factory Testing purposes only.

OFF: Default state of the switch for normal operation.

NOTE: Factory Test Mode is mainly used for troubleshooting. It is NOT a requirement to program the VCom as all the parameters can be programmed while operating in the normal mode.

NOTE: While in Test Mode, VCom will not fully operate as an intercom station.

DIP SWITCH 4: SPARE (NOT IN USE)

This DIP Switch is currently not in use.

POWER UP/RUNTIME:

ON: Not in use.

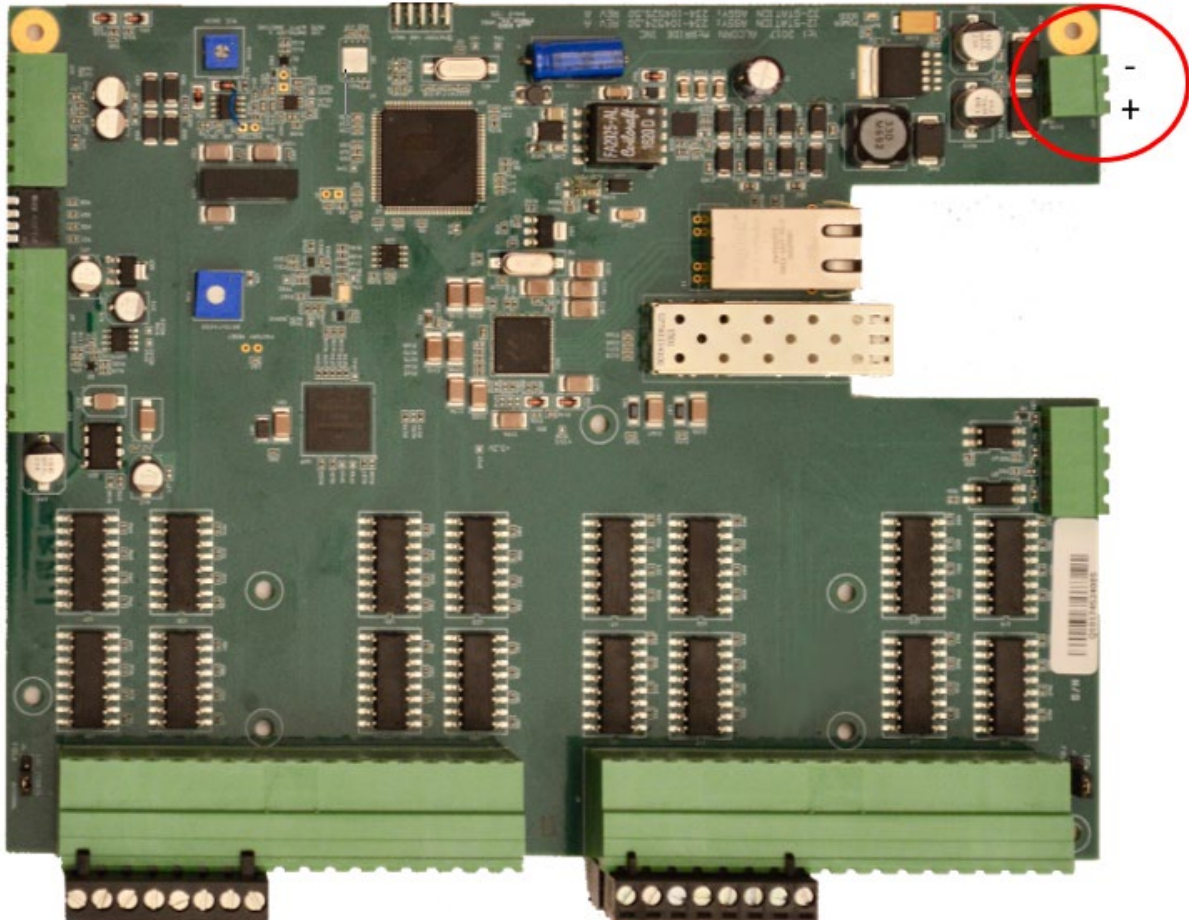
OFF: Default state of the switch for normal operation.

CONNECTORS

POWER INPUT

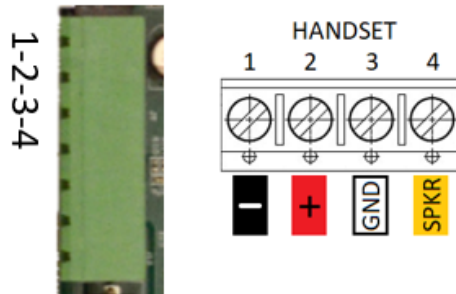
An external power input is provided if you decide not to use the Power-Over-Ethernet (POE) feature. The Power connector pinout is shown circled in red below.

The power input accepts 5VDC to 37VDC at 1A Max.



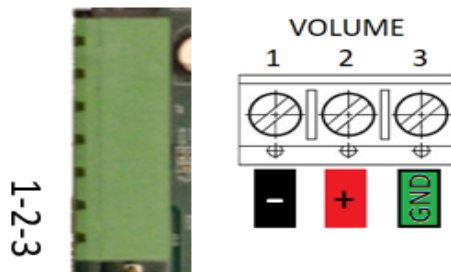
HANDSET INPUT

The Handset connector pinout is shown below. Pin numbers are also printed on the bottom of the PCB. The handset is not used for intercom applications.



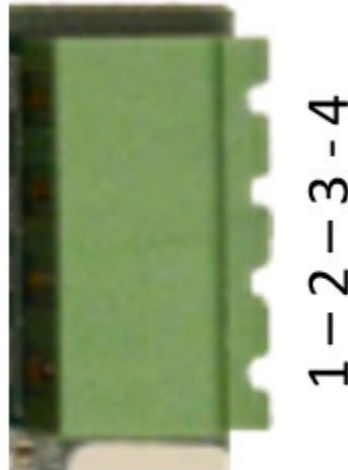
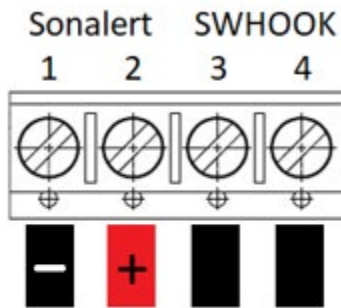
VOLUME CONTROL

The Volume connector pinout is shown below. Pin numbers are also printed on the bottom of the PCB. The volume control is not used for intercom applications.

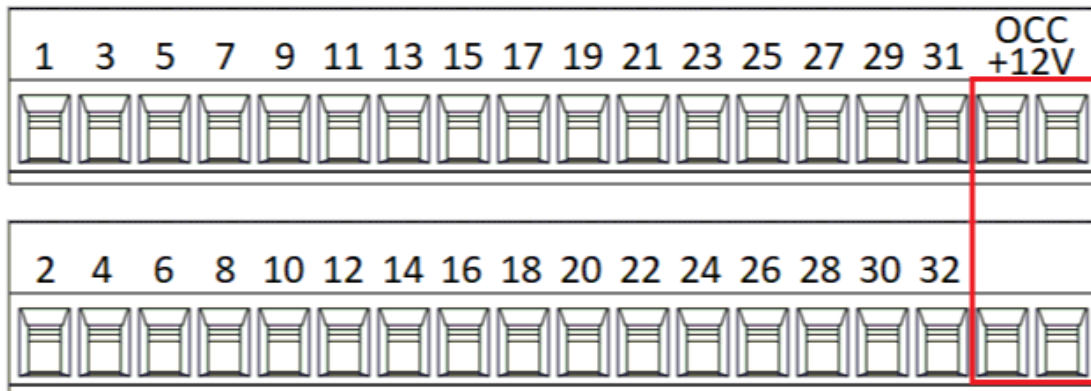


SONALERT & SWHOOK

The Sonalert and SWHook connector pinout is shown below. The input labeled SWHook is where the Hang-up Sensor is connected. Pin numbers are also printed on the bottom of the PCB. These inputs are not used for intercom applications.



LAMPS PINOUT



LAMPS

INPUTS PINOUT

1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	OCC
																GND
2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	

INPUTS

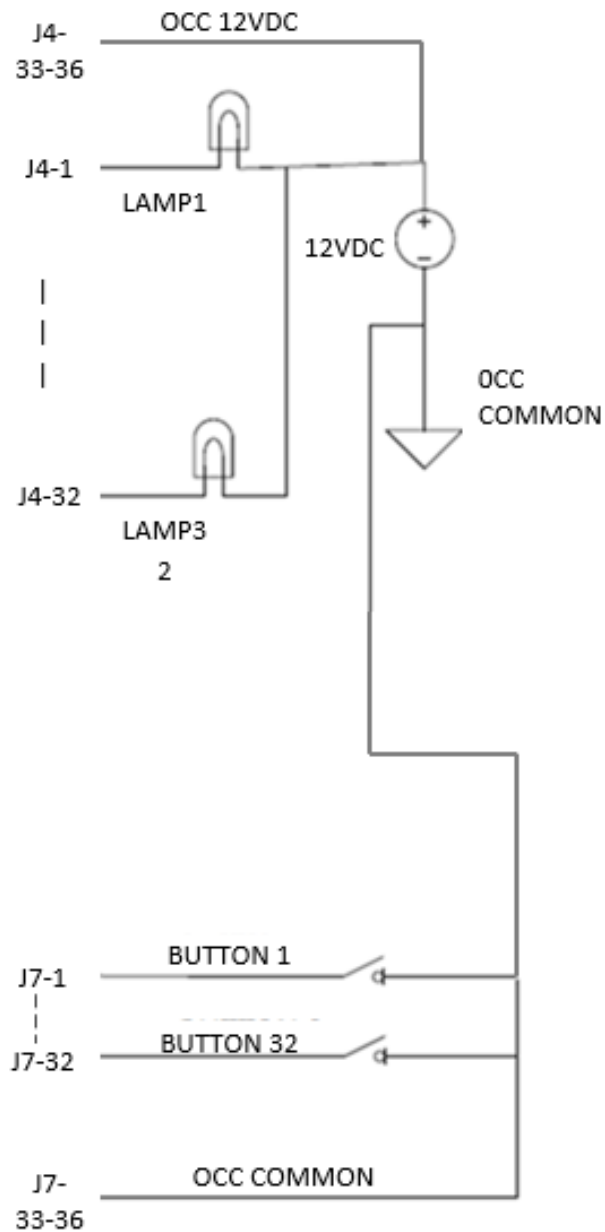
ETHERNET JACK

A standard RJ-45 Ethernet Jack is used for the network connection and Power Over Ethernet (PoE) power.

SFP FOR OPTION FIBER CABLE

A small form factor pluggable transceiver connector for optional network connection can be used in conjunction with RJ45 connection to daisy chain multiple units together. Both Single-Mode and Multi-Mode modules are compatible. Make sure that the same module model is used on both ends.

VC32K EXTERNAL BUTTON AND LAMP CONNECTIONS

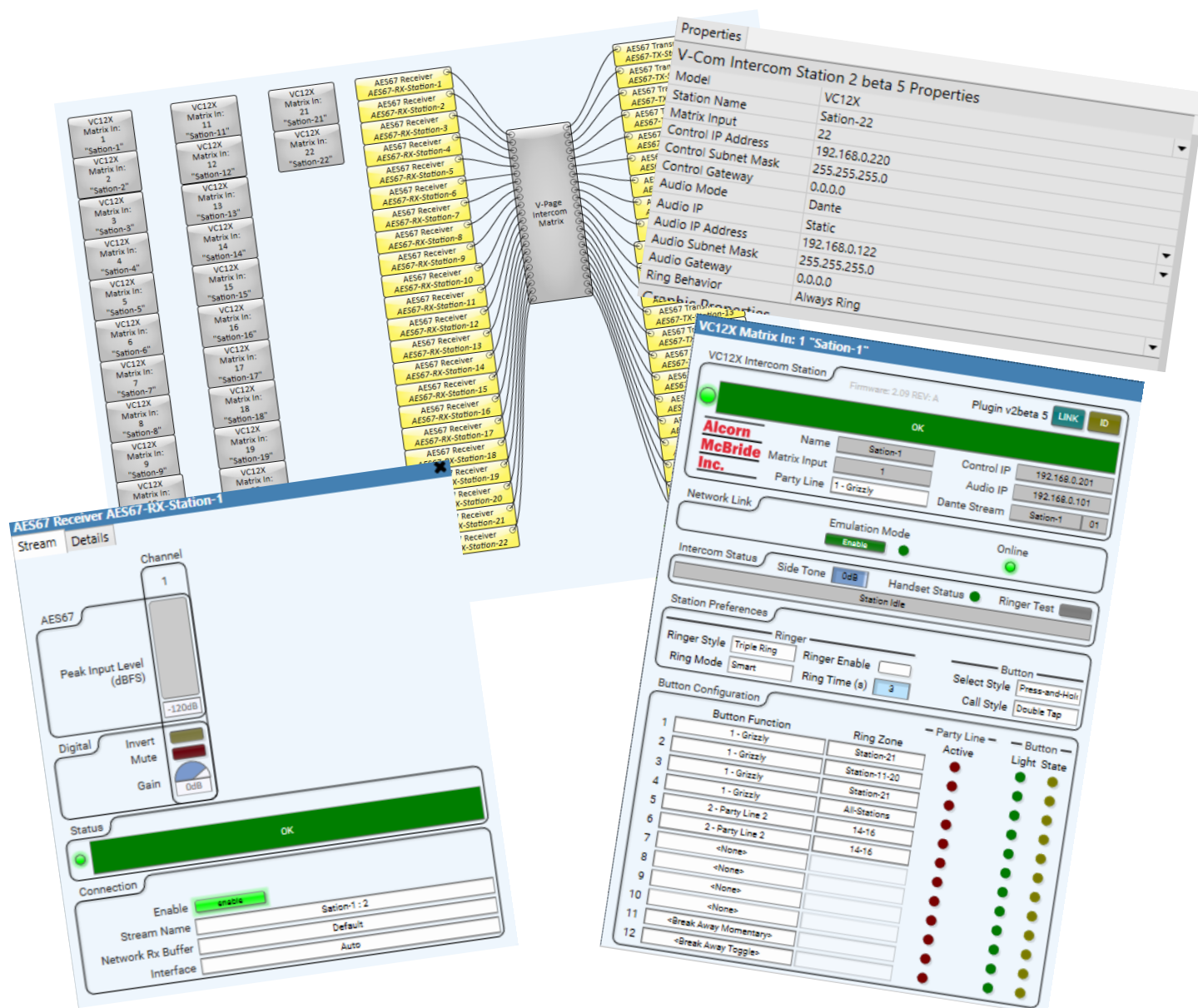


NOTE: FOR INSTALLATIONS THAT DO NOT HAVE AN EXTERNAL OCC POWER SUPPLY
INSTALL JP5 AND JP6 JUMPERS IN 2-3 POSITION TO USE INTERNAL VPAGE32 POWER.
OTHERWISE INSTALL IN 1-2 POSITION.

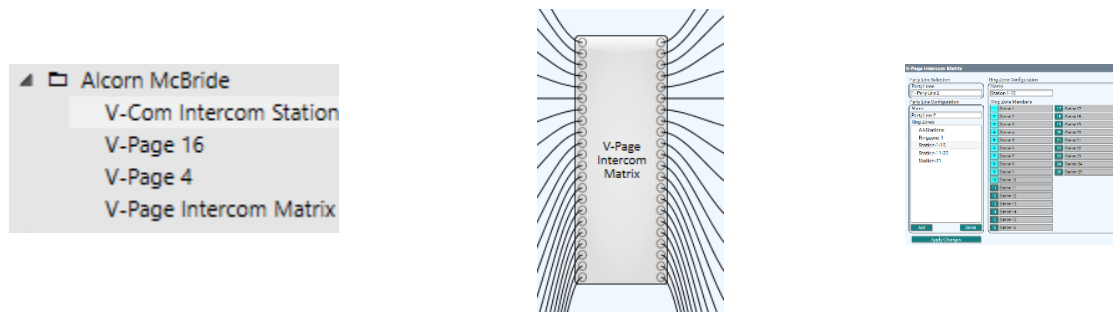
Q-SYS CONFIGURATION AND PLUGIN

The VCom communicates with a Q-Sys system to enable intercom zones and determine zone priority, etc. It utilizes the built in Q-Sys Zone PA Router. The VCom station can also be configured directly from within Q-Sys. We utilize a process called Link that makes the connection of Q-Sys and VCom a very easy process.

We utilize the built-in Q-Sys intercom station capabilities of the station router to handle the PA routing of audio and zone selection. With Q-sys you can assign zones to different outputs Q-sys administrator. For more details on this topic please refer to the help file on the Q-Sys designer software.



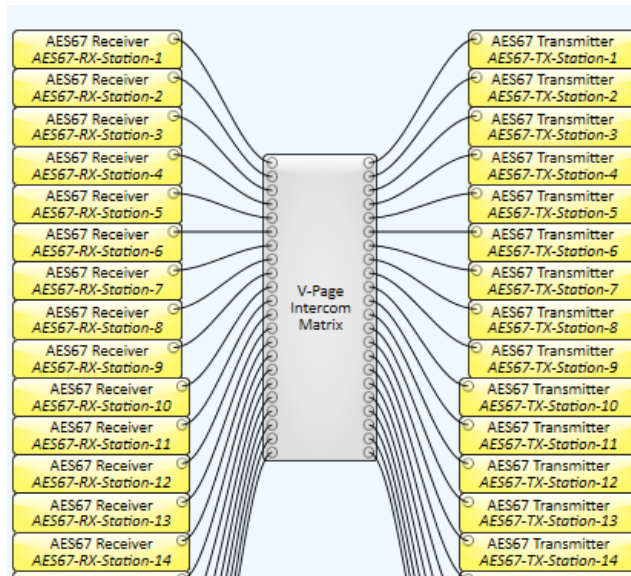
Q-SYS VCOM PLUGIN: INTERCOM MATRIX BLOCK PROPERTIES TAB



- **Party Lines:** The user can select how many party lines the system will have.
- **Stations:** The number of stations that the system will have.
- **PL Isolation:** Defines if the Party Line audio will be only heard on to the selected Party Line by the station or if you will be able to hear any station no matter on what Party Line the station is currently on.

Properties	
V-Page Intercom Matrix v0.9.1 Properties	
Party Lines	3
Stations	25
PL Isolation	Yes

Q-SYS VCOM INTERCOM MATIRX: DETAILED VIEW AND EXPLANATION



V-Page Intercom Matrix

Party Line Selection

Party Lines
1 - Party Line 1

Party Line Configuration

Name
Party Line 1

Ring Zones

All-Stations
Ringzone 1
Station-1-10
Station-11-20
Station-21

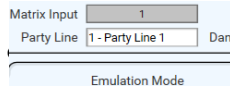
Ring Zone Configuration

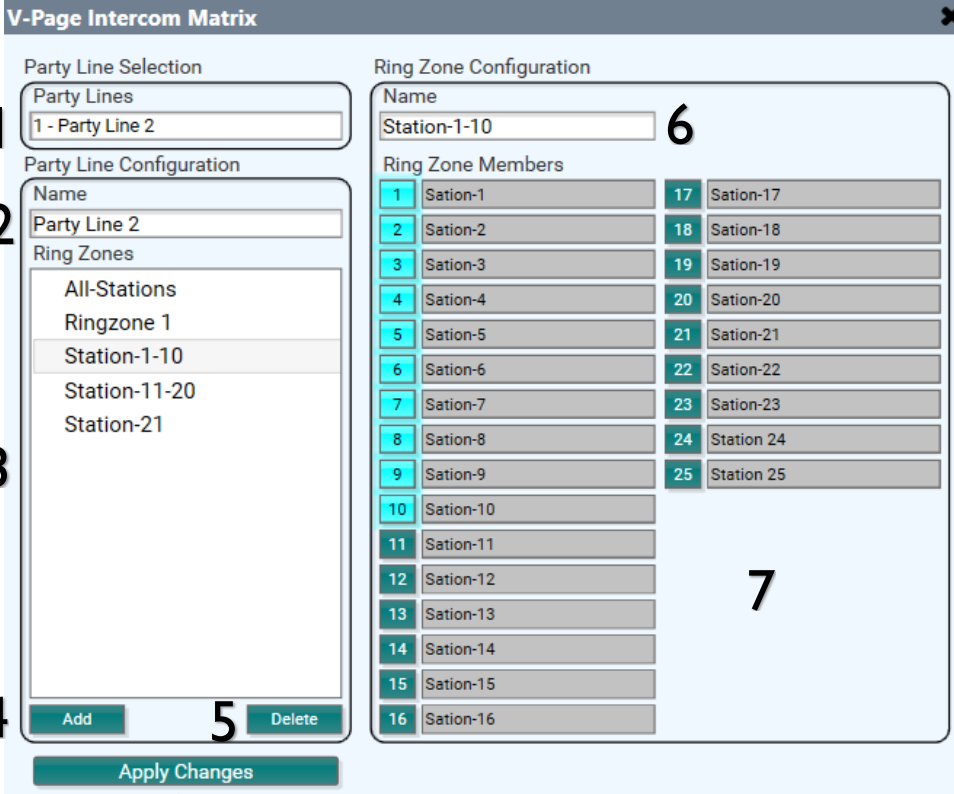
Name
Station-1-10

Ring Zone Members

1	Station-1	17	Station-17
2	Station-2	18	Station-18
3	Station-3	19	Station-19
4	Station-4	20	Station-20
5	Station-5	21	Station-21
6	Station-6	22	Station-22
7	Station-7		
8	Station-8		
9	Station-9		
10	Station-10		
11	Station-11		
12	Station-12		
13	Station-13		
14	Station-14		
15	Station-15		
16	Station-16		

Add Delete

1. **Party Line selection:** Drop-down menu shows available Party Lines. The number of available Party Lines is set in design mode under the Intercom Matrix properties.
2. **Party Line Name:** User defined name for the party line.
3. **Ring Zones:** Shows any Ring Zones created for the selected Party Line.
4. **Add:** Use to create new Ring Zones.
5. **Delete:** Removes the selected Ring Zone.
6. **Ring Zone Name:** User defined name for the selected Ring Zone.
7. **Ring Zone Members:** Assigns the selected stations to the currently selected ring zone. The station(s) that have a number light up will ring when that Ring Zone is called. The list will auto-populate from any station that has been assigned at the station plugin.
8. **Apply Changes:** Must be pressed to save any changes,  will be lost if the block is closed.



V-Page Intercom Matrix

Party Line Selection

Party Lines
1 - Party Line 2

Party Line Configuration

Name
Party Line 2

Ring Zones

- All-Stations
- Ringzone 1
- Station-1-10
- Station-11-20
- Station-21

Add Delete

Ring Zone Configuration

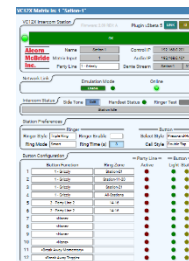
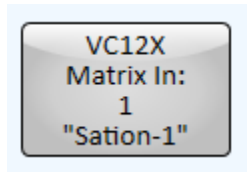
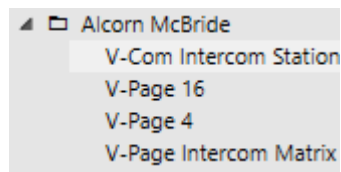
Name
Station-1-10

Ring Zone Members

1	Station-1	17	Station-17
2	Station-2	18	Station-18
3	Station-3	19	Station-19
4	Station-4	20	Station-20
5	Station-5	21	Station-21
6	Station-6	22	Station-22
7	Station-7	23	Station-23
8	Station-8	24	Station 24
9	Station-9	25	Station 25
10	Station-10		
11	Station-11		
12	Station-12		
13	Station-13		
14	Station-14		
15	Station-15		
16	Station-16		

Apply Changes

Q-SYS VCOM PLUGIN: STATION BLOCK PROPERTIES TAB



- **Model:** The user can select the proper model number of each station.
- **Station Name:** User defined name of each station. Allowed Characters: numbers, letters, and dashes. Do not leave blank spaces.
- **Intercom Matrix Input:** The input number to the Intercom Matrix Router.
- **Control IP Address:** The IP address of the network control of the unit entered by the user or fully populated once an IP is being assigned by a switch in DHCP mode.
- **Control Subnet Mask:** The subnet mask of the control network of the unit.
- **Control Gateway:** The gateway settings of the control network.
- **Audio Mode:** User defined setting if hardware allows it. Can either be Dante or AES67.
- **Audio IP:** The IP address of the audio network of the unit entered by the user or fully populated once an IP is being assigned by a switch in DHCP mode.
- **Audio Subnet Mask:** The subnet mask of the audio network of the unit.
- **Audio Gateway:** The gateway settings of the audio network.
- **Ring Behavior:** Defines how when will the station ring based on the Handset state

Properties	
V-Com Intercom Station 2 beta 5 Properties	
Model	VC12X
Station Name	Sation-1
Matrix Input	1
Control IP Address	192.168.0.201
Control Subnet Mask	255.255.255.0
Control Gateway	0.0.0.0
Audio Mode	Dante
Audio IP	Static
Audio IP Address	192.168.0.101
Audio Subnet Mask	255.255.255.0
Audio Gateway	0.0.0.0
Ring Behavior	Always Ring

Q-SYS VCOM PLUGIN: DETAILED VIEW AND EXPLANATION

V-Page VP32K PA Router Input: 2 VP16 2.07 192.168.0.250

VP32K Paging Station Firmware: 2.07 REV: 8 Plugin v2.03 [LINK](#) [ID](#)

OK

Alcorn McBride Inc.

Name: VP16 2.07 Control IP: 192.168.0.250
 Router Input: 2 Audio IP: 192.168.0.249
 Priority: Emergency Pages Dante Stream: VP16-207 01

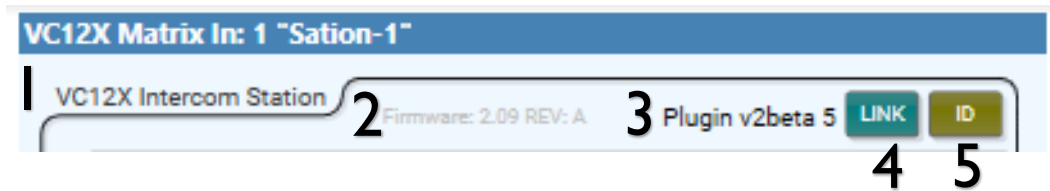
Network Link Emulation Mode: **Enable** Online: **Online**

Paging Status Mic Status: **Idle**

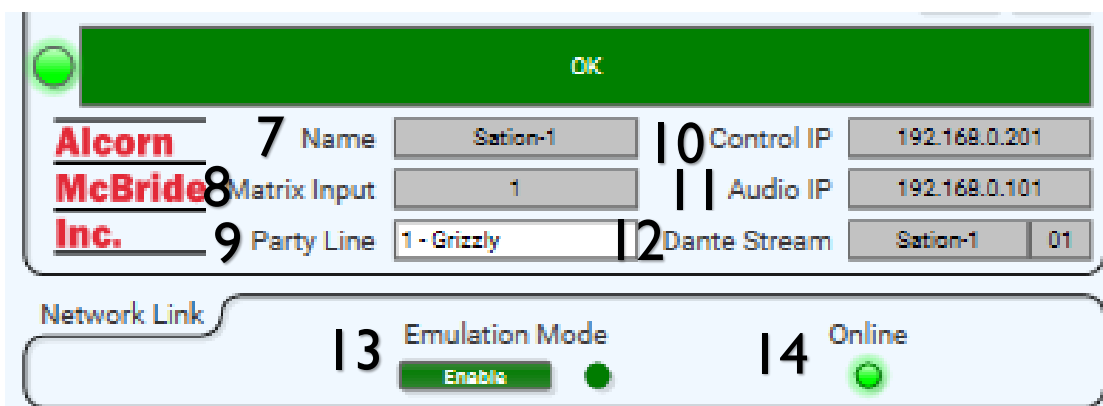
Hardware Configuration

	Button Function	Paging		Button	
		Default	Active	Light	State
1	1-Zone 1				
2	2-Zone 2				
3	3-Zone 3				
4	4-Zone 4				
5	5-Zone 5				
6	6-Zone 6				
7	7-Zone 7				
8	Tag All Zones				
9	<None>				
10	<None>				
11	<None>				
12	<None>				
13	<None>				
14	<Break Away Pulse>				
15	<Break Away Momentary>				
16	<Break Away Toggle>				
17	<None>				
18	<None>				
19	<None>				
20	<None>				
21	<None>				
22	<None>				
23	<None>				
24	<None>				
25	<None>				
26	<None>				
27	<None>				
28	<None>				
29	<None>				
30	<None>				
31	<None>				
32	<None>				

1. **Title Bar:** Basic plugin information. Station type.
2. **Firmware:** Hardware VC32K firmware version.
3. **Plugin:** Plugin version
4. **Link:** Use this button to associate a physical station with the plugin component (refer to “Linking a Station” section on the next page).
5. **ID:** Pressing the Button will make the indicators of the VCom station blink momentarily



6. **Status Bar:** A graphic representation of an active VC32K hardware. (Red: Disconnected. Green: Connected)
7. **Station Name:** You can give the station a unique descriptive name to differentiate from other VCom stations.
8. **Matrix Input:** The Matrix Input, corresponding to the station number on the Intercom Matrix Router.
9. **Party Line:** Assigns the station to a Party Line, also referred as “Home Party Line”
10. **Control IP Address:** The IP Address of the VCom station.
11. **Audio IP Address:** The IP Address of the audio stream.
12. **Audio Stream:** The type of digital audio stream used (Dante or AES67).
13. **Emulation Mode:** Allows the plugin and VCom station to be used without a core for programming purposes.
14. **Online:** LED is on if the VCom station is currently connected to the Core.



15. **Intercom Status Bar:** Indicates whether the station is idle or currently in use.
16. **Side Tone:** Set the audible level of the station's microphone sent back to itself
17. **Handset Status:** On when the handset is off hook, off when the handset is on hook
18. **Ringer Test:** Activates the sonalert ringer in the station. Duration and style is based on selected ringer settings
19. **Ringer Style:** Set the station's ring behavior when called: "Continuous", "Double Ring" or "Triple Ring".
20. **Ring Mode:**
21. **Ringer Enable:** Enables or disables the stations sonalert ringer.
22. **Ring Time:** Sets how long the station will ring for when called, in seconds.
23. **Select Style:** Defines who the button must be pressed in order to switch to a different Party Line
24. **Call Style:** Defines who the button must be pressed in order call (ring) a station or Ring Zone

Intercom Status
15

6
Side Tone
0dB

17
Handset Status
●

18
Ringer Test

15
Station Idle

Station Preferences

Ringer

19
Ringer Style
Triple Ring
21
Ringer Enable
☐

20
Ring Mode
Smart
22
Ring Time (s)
3

23
Select Style
Press-and-Hold

24
Call Style
Double Tap

January 22, 2019

25

25. Button Function:

- a. **None:** No function assigned to the button.
 - b. **Party Line Select:** Select from the drop-down menu which Party Line you want to be on when the station's button is pressed. Party Lines are configured through the Intercom Matrix Plugin.
 - c. **Toggle:** When pressed, the control pin "LED" will toggle states. ON, OFF (01), (10). This can be used to interface to other control pins within Q-sys like mute functions. In this mode, the button LED will represent the state of the 'State LED' control pin.
 - d. **Momentary:** This is like the toggle mode except that the control pin "State LED" will momentarily pulse to a value of 1 and then go back to 0. In this mode, the VCom button LED can be manually controlled using the control pin "Input LED".
26. **Ring Zone:** Select from the drop-down menu what stations will ring when the button is called. Stations are assigned to Ring Zones through the Intercom Matrix Plugin.
27. **Active:** LED will light up when the Party Line is in use.
28. **Light:** Will replicate the current condition of the button. In Breakaway mode, the led is controlled by the "Light Input" Control pin.
29. **State LED:**
- a. **Toggle:** When pressed, the control pin "LED" will toggle states. ON, OFF (01), (10). This can be used to interface to other control pins within Q-sys like mute functions. In this mode, the button LED will represent the state of the 'State LED' control pin.
 - b. **Momentary:** This is like the toggle mode except that the control pin "State LED" will momentarily pulse to a value of 1 and then go back to 0. In this mode, the VCom button LED can be manually controlled using the control pin "Input LED".

25 Button Function		26 Ring Zone	27 Party Line Active	28 Button Light	29 Button State
1	1 - Grizzly	Station-21	●	●	●
2	1 - Grizzly	Station-11-20	●	●	●
3	2 - Party Line 2	14-16	●	●	●
4	<Break Away Toggle>		●	●	●
5	<Break Away Momentary>		●	●	●

LINKING VCOM STATIONS TO QSYS

Your Q-Sys design must contain the minimum elements to make a VCom work: The VCom Plugin, one for each station. One VCom Intercom Matrix, and your Audio receiver and transmitter. A VC32K can transmit and receive a single digital audio signal via Dante and AES67 stream.

Once your design is ready to be tested simply “Save to Core and Run”. With your VCom powered on and the zone buttons blinking, press and hold inputs 1,2, and 4 until a continuous scan sequence start on your VCom unit. If you do not have inputs 1, 2, and 4 wired to buttons, you may instead use the Link DIP switch to get the VC32K into link mode as well. More on this can be read in the DIP SWITCH 1: LINK MODE section of this manual.

Once your VCom is in Link Mode, double click on the plugin block and press LINK.

Remember: When adding additional VCom stations to your system, don’t forget to give the new station a unique ID and IP address.

Congrats! Your VCom control has been set and you should be able to test your control functions.

ADDING PREVIOUSLY PROGRAMMED VCOM STATIONS TO A NEW DESIGN

If you need to reprogram a VCom station, toggle DIP Switch 2 to the “On” then “Off” position. This will reset the station into Factory Default Mode.

DANTE CONTROLLER SOFTWARE

Dante Controller will allow you to see all your Dante devices within the network and enable the use of AES67 audio stream. Q-Sys control and AES67 can travel through the same physical cable; however, if Dante audio stream is preferred a separate Dante I/O card must be installed in your Q-Sys Core system.

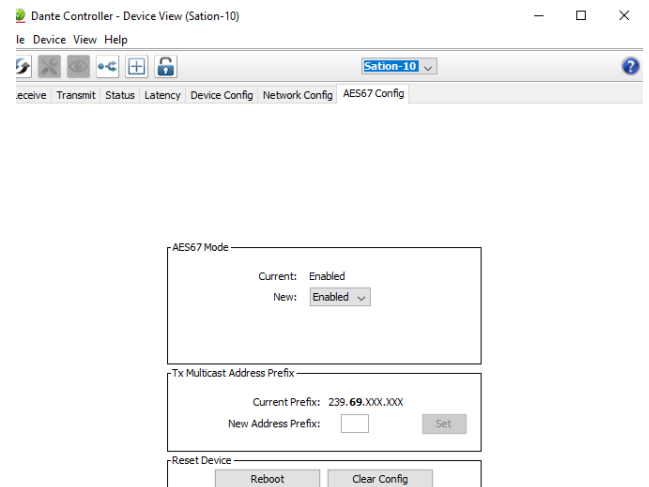
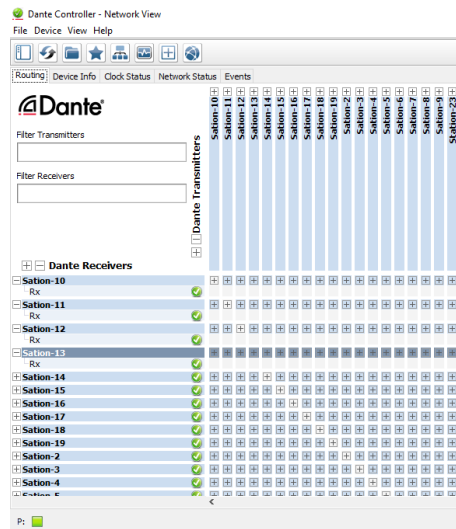
You can download the Dante audio network configuration software, Dante Controller, here:
<https://www.audinate.com/products/software/dante-controller>


This webpage also contains instructions on how to use the application.

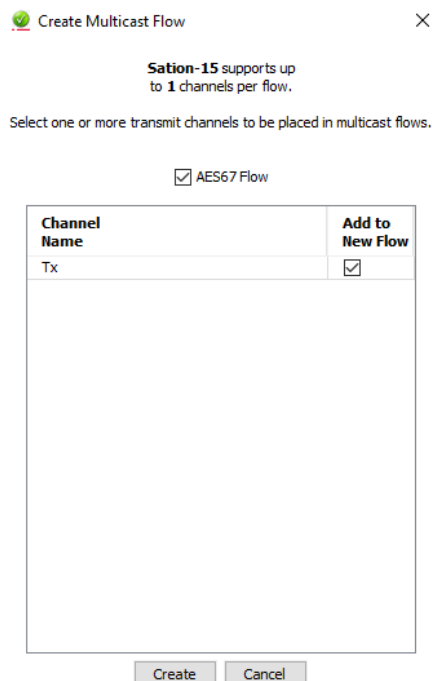
ENABLE AES67 ON USING DANTE CONTROLLER

For the stations to transmit AES67 signal through your network, we must enable the functionality using Dante controller.

1. Open Dante controller and double click on a station from the list
2. Go to the “AES67 Config” tab and select “enabled”, then click reboot.



3. Click on the network flows icon  select “AES67 Flow” and “Add New Flow”. Then click “Create” at the bottom. The station is now AES67 Enabled and will be available in the Q-Sys AES67 Receiver in the “Stream Name” drop-down menu.

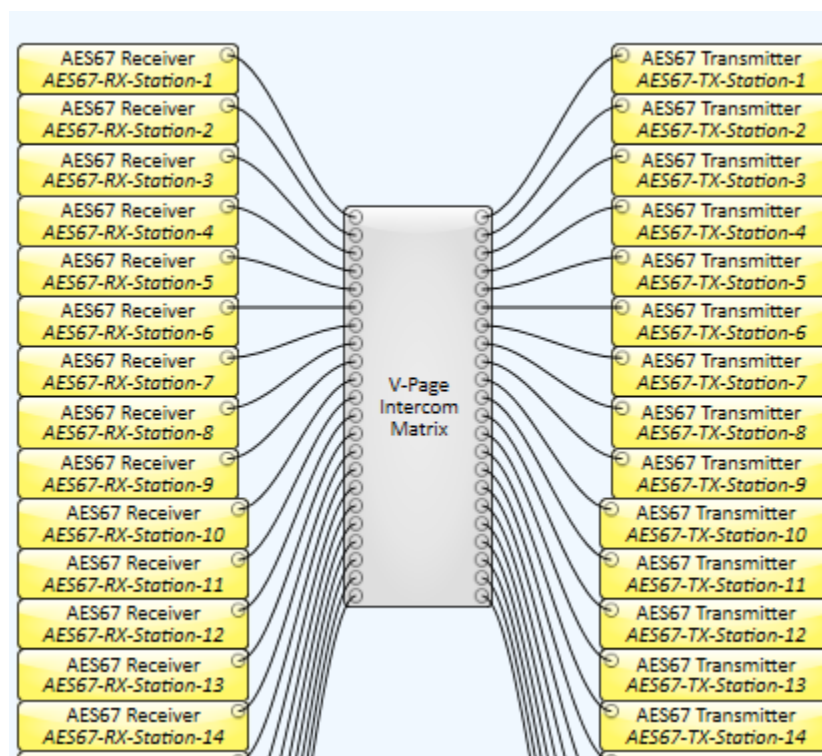


AES67 AUDIO ROUTING CONFIGURATION IN Q-SYS

Your design should contain an AES67 receiver and an AES67 Transmitter in order to run digital audio from the VCom through your design and back to the station.

An AES67 Receiver per station should be previously added into the inventory tab by selecting the + sign and choosing an AES67 Receiver under the Streaming I/O sub menu. Drag and drop into your Q-SYS designer page an AES67 Receiver, connect a wire from Output 1 to Input 1 of the V-Com Intercom Matrix.

An AES67 Transmitter per station should be previously added into the inventory tab by selecting the + sign and choosing an AES67 Receiver under the Streaming I/O sub menu. Drag and drop into your Q-SYS designer page an AES67 Receiver, connect a wire from Output 1 to Input 1 of the V-Com Intercom Matrix.

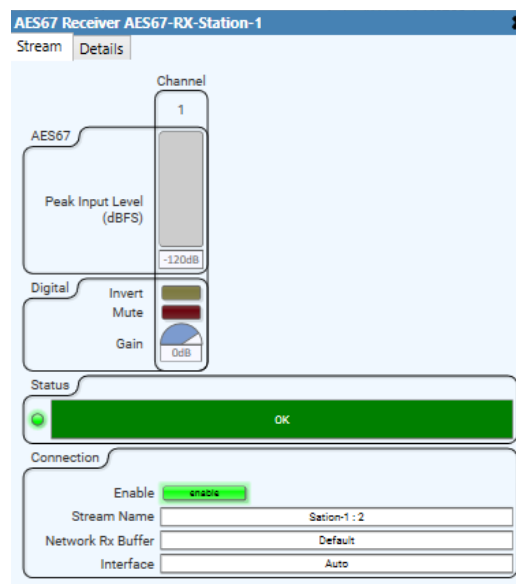


Next, “Save to Core and Run”. Once connected, double click on your recently added AES67 Rx module and choose the stream name, which was set when you linked the station.

Q-SYS AES67 RECEIVER:

In the AES67 Receiver you will need to fill the following settings

1. **Enable:** used to turn the receiver on or off.
2. **Stream Name:** This list will auto populate from the stations in your network that are sending an AES67 Stream. The stream name was set when you linked the station. Select the station's audio that you want to get on that receiver.
3. **Receiver Name:** This setting is done on the properties tab for the component. We recommend using a name that can be easily related to the station that it belongs to.
4. **Interface:** Select which Q-Lan to use: Lan-A, Lan-B or Auto select.



At this point you should be able to see signal from your voice when you talk into the handset while pressing the button in the middle of the handset. Now you have audio going from the station to the Q-sys core, and now we must send the audio out of the core and back to the station. This is how you get the side tone and how you are able to listen to other stations.

Q-SYS AES67 TRANSMITTER:

In the AES67 transmitter you will need to fill the following settings

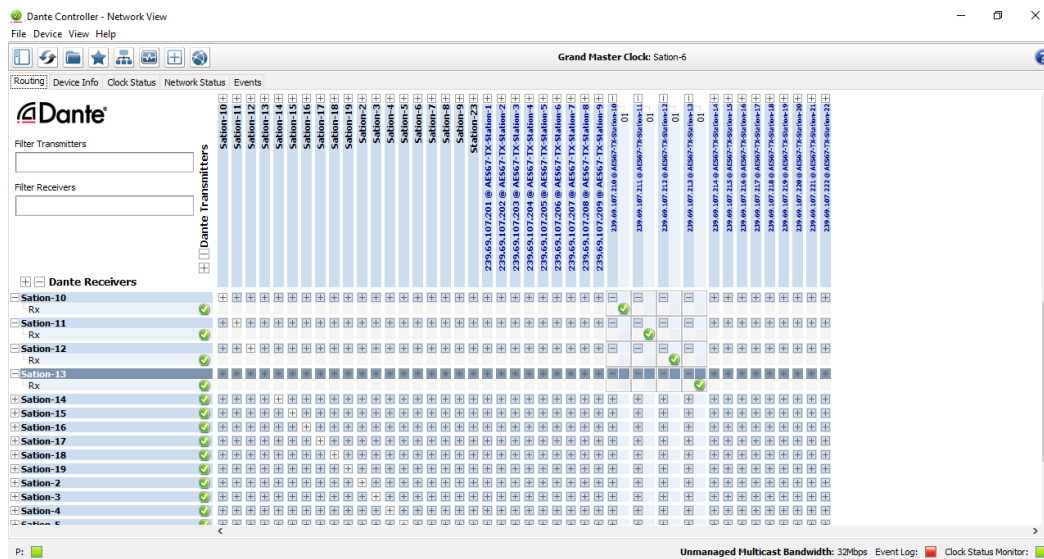
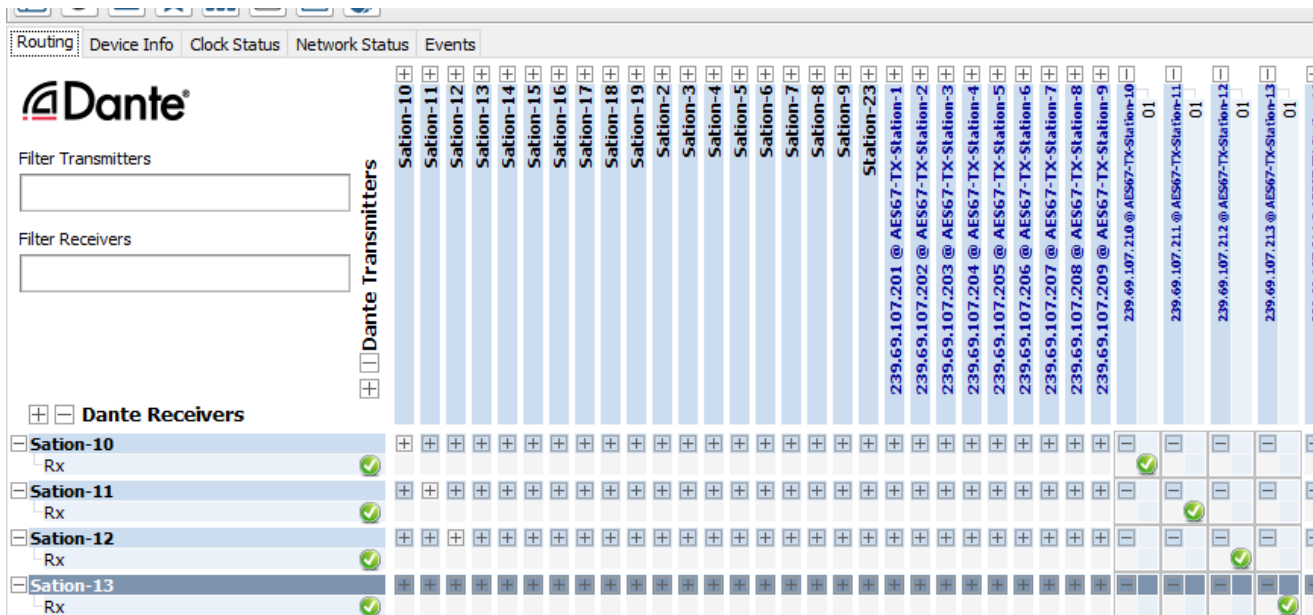
1. **Enable:** used to turn the Transmitter on or off.
2. **Transmitter Name:** This setting is done on the properties tab for the component. We recommend using a name that can be easily related to the station that it belongs to.
3. **Multicast Address:** This is the network Multicast IP that the stream is assigned to. As default, the transmitter will be something like 239.69.xxx.xxx, however, you will want to give the transmitter a static IP otherwise any time the core re-boots or a design is pushed you might loose your routing from core to the station.
4. **Stream Name:** A user defined name for the audio stream. This is the name that will appear on the transmitter list in Dante controller.
5. **Interface:** Select which Q-Lan to use: Lan-A, Lan-B or Auto select.

The screenshot shows the 'AES67 Transmitter AES67-TX-Station-1' configuration window. It has two tabs: 'Stream' and 'Details'. The 'Details' tab is active, showing various controls for the transmitter. On the left, there are two main sections: 'AES67' and 'Digital'. The 'AES67' section includes a 'Peak Output Level (dBFS)' slider set to -120dB. The 'Digital' section includes a 'Clip' indicator (red dot), 'Clip Hold' (grey bar), 'Invert' (olive bar), 'Mute' (red bar), and a 'Gain' knob set to 0dB. Below these is a 'Status' section with a green indicator light and an 'OK' button. At the bottom is a 'Connection' section with fields for 'Multicast Address' (239.69.107.201), 'Enable' (a green button labeled 'enable'), 'Stream Name' (AES67-TX-Station-1), 'Network Tx Buffer' (Default), and 'Interface' (LAN A).

ROUTING AUDIO FROM THE Q-SYS CORE TO THE STATION

Now that you have audio going into the core and leaving the core, you just now need to patch it to the station.

1. Open Dante controller
2. Patch the audio from the AES67 Transmitter to the Dante receiver in the station.
3. Repeat steps 1 & 2 for each station.



FIRMWARE UPDATE

All attempts have been made to retain backwards compatibility.

Firmware Update is not a risk-free process, although all precautions have been taken to avoid catastrophic failures. The update should only be performed if needed. To obtain the latest firmware, please visit our website, www.alcorn.com

FIRMWARE UPDATE PROCEDURE

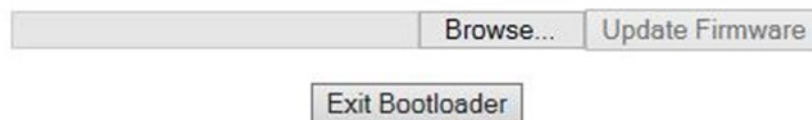
Enter Firmware Update Mode by selecting VCom product in AMI Terminal and clicking “Enter Firmware Update Mode” button under Setup tab. VCom will retain current IP in this mode.

Alternatively, see Failsafe Recovery if unable to enter Firmware Update Mode remotely (see troubleshooting guide at the end of this manual).

Once Firmware Update Mode is activated (grouped blinking 1-6, 7-32) and the unit gets a link light, navigate to the last known IP in your favorite browser to display the Firmware Loader web interface; example: <http://192.168.0.20>

Firmware Loader v1.0.4

VPage Current Firmware v2.04



The screenshot shows a web interface for the Firmware Loader. It features a large empty rectangular box for file selection, followed by a 'Browse...' button. To the right of the file selection area is an 'Update Firmware' button. Below these elements is an 'Exit Bootloader' button.

Press “Browse” to select the OS.NEW file obtained earlier from [alcorn.com](http://www.alcorn.com) and click “Update Firmware” to perform the update.

Update process may take up to a minute to complete. Then, VCom will restart automatically (blinking LEDs until QSYS is detected). Update complete!

TROUBLESHOOTING GUIDE / FAQ

Have you tried turning it off and on again? If you have a question not answered by this manual, take a look at our Knowledge Base at alcorn.com. We're always updating it with new answers and useful information! If your question isn't answered there, please email us at support@alcorn.com

Q: I CAN'T ROUTE AUDIO

One of the most common issue with routing audio is switch/router/firewall blocking/filtering out multicast traffic required for the PTP protocol. Please disable IGMP snooping and disable any multicast blocking/filtering. Consult your switch/router/firewall manual.

Q: I DONT HEAR AUDIO WHEN TALK ON THE HANDSET. WHAT IS CAUSING THIS?

Make sure that you are pressing the button on the handset when talking. Also make sure that the audio is routed properly. Refer to the audio routing section of this manual for more details.

Q: I CAN'T CONNECT TO A VCOM?

The default network state of the unit is DHCP. A set of IP addresses are needed were each address can be assigned via a network switch that will handle IP address automatically or the use of third-party application like BootIP where the user can assign an IP address manually based on the MAC address of the network interface.

Each VCom unit has two MAC addresses one for control and the other for digital audio. Our unique ID start as 00:10:46:XX:XX:XX where Audinate unique ID start as 00:1D:C1:XX:XX:XX

It's important to clarify QSC Q-Sys Core based systems and VCom control IP must be allocated under the same network and subnet.

Q: MY Q-SYS CORE CAN'T FIND MY VCOM. I PRESS A BUTTON/INPUT ON THE VCOM AND NOTHING IS HAPPENING? VCOM COMPONENT IN Q-SYS SHOWS VCOM OFFLINE OR THE ZONES ARE NOT SELECTED WHEN VCOM IS OPERATED?

This answer applies to any issues related to Q-Sys VCom communication. Any of the following could be the case:

- VCom isn't properly configured (Incorrect IP and/or subnet, or incorrect router input set)
- VCom Q-Sys IP reference or remote port doesn't match the network setup.
- There's a firewall preventing broadcast traffic from getting through to the VCom.
- Configured IPs (Q-Sys, VCom) are on a different subnet.

Q: HOW DO I RECOVER MY VCOM UNIT FROM A FIRMWARE FAILURE?

A: You can enter Failsafe Recovery Mode. This mode should only be entered when the VCom is on a test bench and is not wired into the rest of the network.

To enter Failsafe Recovery Mode, set the Dip Switch #2 to ON (down), power cycle the unit, wait 10 seconds and return Dip Switch #2 to OFF (up) position. The VCom is placed on a static IP of 192.168.0.254, regardless of its settings. Once the unit obtains a link light, navigate to 192.168.0.254 and proceed with firmware update as described in Firmware Update Procedure section of this manual.

LOCATING A VCOM ON A NETWORK

The VCom hardware contains 1 physical Ethernet connection but 2 interfaces (VCom control and Dante audio). They are isolated. This means there are 2 MAC addresses assigned to each “physical” VCom unit hence 2 IPs. Furthermore, on any given network there are most likely multiple VCom units.

This guide focuses on simplifying locating process of the physical VCom unit remotely using VCom Matrix Input, VCom MAC/IP (control), Dante MAC/IP (audio) and control <-> audio interface matching in a physical VCom unit. All units must be online (both interfaces) on the same subnet.

AMI Terminal, one of our free pieces of software available for download on our website, is used to send all the commands. AMI Terminal can broadcast across your subnet by connecting to X.X.X.255, i.e. 192.168.0.255. AMI Terminal cannot connect to a Dante audio interface, but it can match by the Dante information stored in the VCom, hence it can be used to match any given Dante interface information to the physical VCom including physical identify by the Dante MAC/IP address.

Action	Command	Response	Notes
Pinging all the VCom Station IDs	“ID” h0D	VCom Station ID from all the VComs online.	ID 99 is a default ID if Link hasn’t been performed.
Pinging all the VCom IPs	“IP” h0D	VCom IP from all the VComs online.	IP reported is a dynamic IP if obtained via DHCP or static IP, if one is set.
Pinging all the VCom MACs	“MC” h0D	VCom MAC from all the VComs online.	
Pinging all the Dante MACs	“UMC” h0D	Dante MAC from all the VComs online.	
Pinging all the VCom/Dante MAC pairs	“PMC” h0D	“VCom MAC, Dante MAC” from all the VComs online.	Response contains both of the MACs (VCom and Dante) from a single VCom unit.
Physically identifying by VCom Station ID	“XFN” h0D	“R” from matched VCom and VCom physically blinking for a short period of time.	X is the station ID assigned to the VCom unit.
Physically identifying by VCom or Dante IP	“X.X.X.XFN” h0D	“R” from matched VCom and physically blinking for a short period of time.	X.X.X.X is the VCom or Dante IP address.
Physically identifying by VCom or Dante MAC	“X:X:X:X:X:FN” h0D	“R” from matched VCom and physically blinking for a short period of time.	X:X:X:X:X:X is the VCom or Dante MAC address.

ACCESSORIES

Please contact sales@alcorn.com for pricing and availability.

HANDSET

Part Number: Handset-VC

Handset for VC12X and VC32K Intercom Stations.

HARDWARE SPECIFICATIONS

Size	Model VC32K: 10"W x 8" H x 2.5"D (25.4cm x 20.32cm x 6.4cm)
Controls & LED Indicators	12/32 (VC12X/VC32K) Illuminated Zone Select Pushbuttons
Ethernet Connector	Female RJ-45
Microphone Input	Balanced, Dynamic or Condenser (external 48VDC phantom power supply required)
Power Input	Voltage/Current: 5-37VDC @ 1A Max
Power Input Connector	Screw Terminal Block
POE Class	Power Over Ethernet (POE) Class 3
Operating Temperature	0C (32F) to 38C (100F) 0-90% Relative Humidity