Zip4 / Zip4-3G
IP Audio 4-Button Paging Station

User Manual

Date 2/21/2020

614-00053

IMPORTANT SAFETY INSTRUCTIONS

The symbols below are internationally accepted symbols that warn of potential hazards with electrical products.

This symbol, wherever it appears, alerts you to the presence of un-insulated dangerous voltage inside the enclosure -- voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

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 the 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 two blades with one wider than the other. A grounding type plug has two blades and third grounding prong. The wider blade or the third prong is 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 by Attero Tech
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
13. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. 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.
16. This apparatus shall be connected to a mains socket outlet with a protective earthing connection.
17. When permanently connected, on all-pole mains switch with a contact separation of at least 3mm in each pole shall be incorporated in the electrical installation of the building.
18. If rack mounting, provide adequate ventilation. Equipment may be located above or below this apparatus but some equipment (like large power amplifiers) may cause an unacceptable amount of hum of may generate too much heat and degrade the performance of this apparatus,
19. This apparatus may be installed in an industry standard equipment rack. Use screws through all mounting holes to provide the best support.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

WARRANTY INFORMATION

For a copy of the QSC Limited Warranty, visit the QSC website at www.qsc.com

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and EN55022. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.

CE

This symbol means the product must not be discarded as household waste, and should be delivered to an appropriate collection facility for recycling. Proper disposal and recycling helps protect natural resources, human health and the environment. For more information on disposal and recycling of this product, contact your local municipality, disposal service, or the business where you bought this product.

Contents

1 – Overview

The Zip4 4-zone in-wall Dante™/AES67 paging interface addresses the unique paging audio needs of large sporting venues, transit hubs like airport terminals and train stations, convention centers, and corporate facilities.

Paging audio and status data can be routed over a Dante™ or AES67 network to a DSP or other Paging Management System (PMS) controller to distribute paging audio to up to four zones.

An RJ-45 jack serves as the PTT microphone interface, and the included strain relief clamp can be installed into the mounting screw below the RJ-45 to ensure a reliable and rugged connection. A latching metal microphone clip is included for holding the PTT microphone when not in use.

The Zip4 is available in a 2-Gang (Zip4) and 3-Gang (Zip4-3G) US form factor. The Zip4-3G is optimized for desktop mounting and includes a front panel XLR connection and PTT switch for use with a gooseneck microphone.

Audinate's Dante™ Controller or other 3rd party manufacturer's Dante™ routing software can be used to control the Dante™ audio routing configuration of the device while the Attero Tech unIFY Control Panel application can be used to configure the device-specific features.

1.1 – What's in the Box

The Zip4 comes supplied with one of the following:

- o   Zip4 Paging Station (P/N: 900-00221)

- o   Zip4-3G Paging Station (P/N: 900-00221)

1.2 – Optional Accessories

The following are available as options for the Zip4 and may be ordered separately:
- o   Wired PTT paging microphone w/RJ45 termination, standard hanger (P/N: 900-00227-01)

- o   Wired PTT paging microphone w/RJ45 termination, magnetic hanger (P/N: 900-00227-02)

- o   2-gang surface mount wall box, gray (P/N: 308-00016-01)

- o   2-gang desktop mount enclosure kit (P/N: 308-00014-01)

- o   3-gang desktop mount enclosure kit (P/N: 308-00015-01)

- o   Magnetic mic hanger plate (P/N: 900-00226-01)

DEVICE FEATURES

ZIP4	ZIP4-3G
1 – Ready Indicator 2 – Busy Indicator 3 – Group Select buttons (x4) 4 – Group Select Indicators (x4) 5 – Microphone connection 6 – Microphone holder bracket (Not shown) Side Phoenix microphone connection	1 – Ready Indicator 2 – Busy Indicator 3 – Group Select buttons (x4) 4 – Group Select Indicators (x4) 5 – Microphone connection 7 – XLR gooseneck microphone connection 8 – PTT button

__Note:__ The MAC address is located on a label on the rear of each Zip4 unit. This is important for initial device identification as the last six digits make up part of the device's default network name that is shown when the device is detected by Dante™ Controller or unIFY Control Panel

2 – Device Installation

2.1 – Microphone

There are three microphone options depending on which model of the Zip4 is used. The mic input includes a DIP switch configurable microphone preamp.

Zip4 Microphone Options:
- Front Panel Mic Port (RJ-45)
- Side-mounted Expansion Port (Terminal Block)

Zip4-3G Microphone Options:
- Front Panel Mic Port (RJ-45)
- Front Panel XLR (3-Position XLR-F)

2.1.1 – RJ45 Mic Port

Pin Number	Signal Description
1	GND
2	GND
3	Push to Talk Logic Input
4	Mic Input +
5	Mic Input -
6	GND
7	Unused
8	Unused

2.1.2 – Zip4 Expansion Port

Pin Number	Signal Description
1	Mic Input +
2	Mic Input -
3	GND
4	Push to Talk Logic Input
5	+24V
6	LED (Cathode)

2.1.3 – XLR Port (Zip4-3G Only)

Pin Number	Signal Description
1	GND
2	Mic Input +
3	Mic Input -

2.2 – Preamp Configuration

The microphone preamp is configured by setting 2 DIP switches located on the rear of the Zip4. These should be set prior to final installation in the target enclosure or wall box.
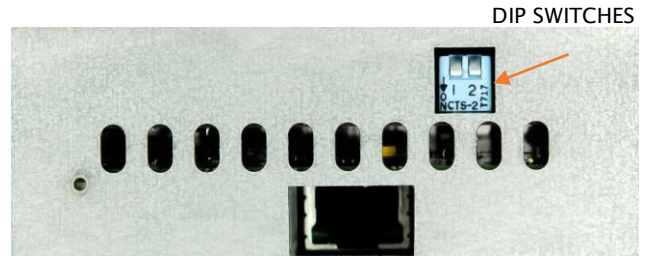

Figure 1 - Mic Preamp DIP Switch Location

SW 1	SW 2	Preamp Mode
OFF	OFF	0 dB Gain (External Preamp)
ON	OFF	+25 dB Gain (Low Mic)
OFF	ON	+25 dB Gain (Low Mic w/48V phantom)
ON	ON	+35 dB Gain (High Mic)

Phantom power is only available via one combination of switch settings (Sw1 – Off, Sw2 – On). For the Zip4, turning it on applies phantom power to "Aux mic Input" which is available via the phoenix connector on the side. For the Zip4-3G,

the mic signals on the auxiliary

2.3 – Mounting

Figure 2 - In-Wall Mounting

Figure 3 - On-Wall Surface Mount (shown w/accessory box)

Figure 4 - Desktop Mount (shown w/accessory kit)

A typical installation will involve mounting the Zip4 wall plate into a pre-mounted wall box, wall mounting bracket, or desktop enclosure. Before installation, make sure the wall box where the Zip4 is to be installed is pre-wired with a suitable cable back to a PoE-enabled network switch or mid-span injector. If a mid-span injector is being used, the cable should be connected to the port that supplies both Ethernet and power (refer to the mid-span injectors manual if unsure which port is which).

Note: *All Attero Tech products are tested using UTP cabling and it is recommended that UTP cabling be used when installing them. STP cabling can be used for installation though care must be taken not to introduce grounding issues into the system by creating a ground loop by doing so.*

Attach the network cable from the switch/mid-span injector to the Ethernet port of the Zip4. If the switch or mid-span injector is already running and PoE is enabled, the unit should power up and the backlight around the zone buttons should turn on.

With the cable attached, carefully place the Zip4 into the wall box taking care to not trap the cabling. Once fully in place, secure the front plate with the screws provided.

2.4 – Mic Hanger Options

The standard Zip4 product includes a latching metal microphone clip. A magnetic mic solution is available as an accessory and requires both the wired PTT with magnetic mic hanger and the mounting plate. The mounting plate is installed by removing the top mounting screw securing the mechanical hanger and replacing it with the magnetic mic mounting plate.
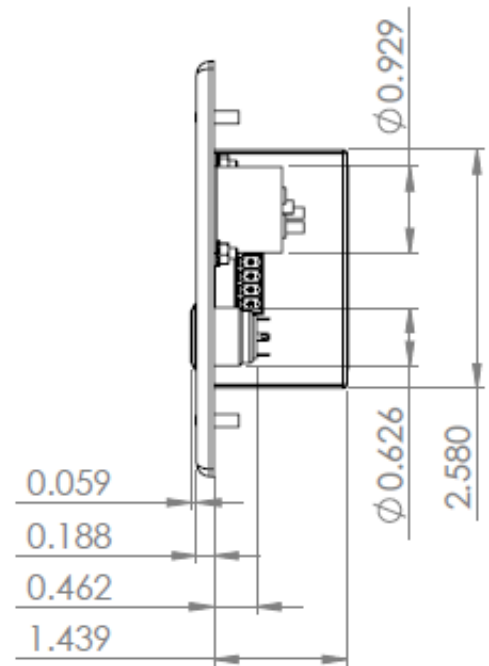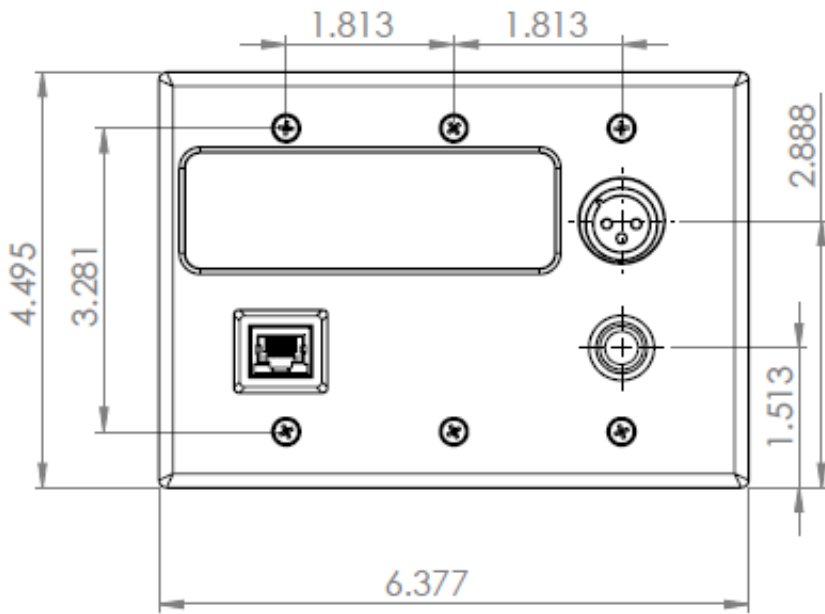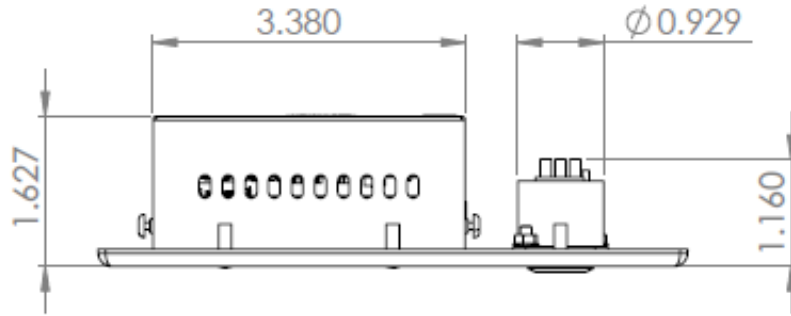

Figure 5 – Zip4 w/ Magnetic Mic Hanger Plate

2.5 – Zip4 Dimensions (2-Gang Dimensions)

Dimensioned drawings can be downloaded from the Documents section of the Zip4 and Zip4-3G product pages.
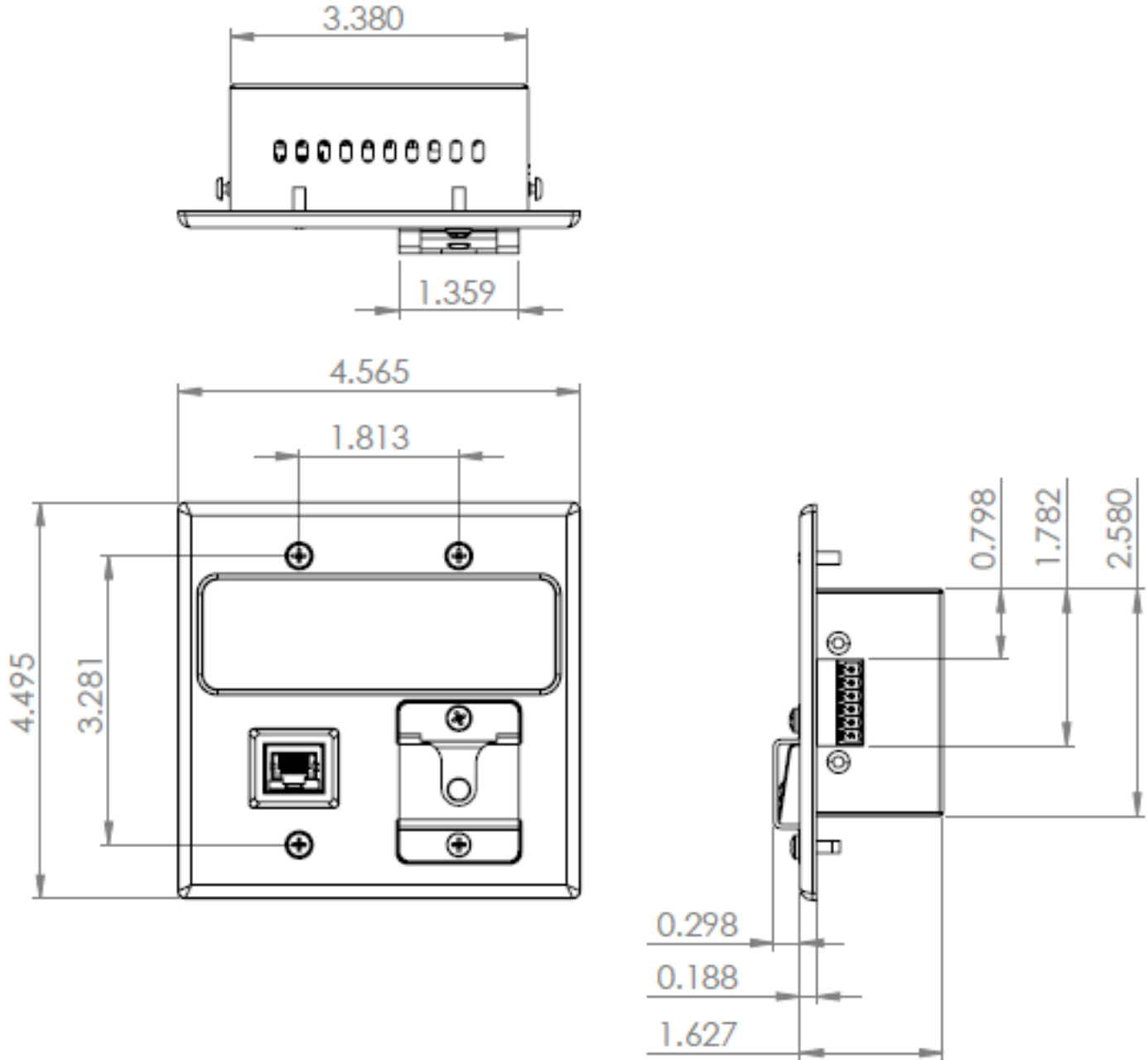
2.6 – Zip4-3G Dimensions (3 – Gang)

3 – Device Operation

For integrating the Zip4 with a QSC Q-SYS Core DSP, a plug-in has been developed that makes the ZIP4 and Zip4-3G operate like the Virtual Paging Station (VPS) component in Q-SYS Designer.

The Zip4 can also be used in non-Q-SYS applications though additional programming/integration will required.

3.1 – Q-SYS Integration

Note: This section assumes the user already has familiarity with the paging system functions that the Q-SYS platform provides.

Using a Zip4 or Zip4-3G with Q-SYS requires the use of the Zip4 plug-in. This can be obtained from the Q-SYS Asset Manager utility within Q-SYS Designer.

Each instance of the plug-in controls a single Zip4, so a design will require the same number of plugins as there are Zip4 devices to control.

The Zip4 plug-ins also requires an instance of the PA Router component to be added to the design. Even though the plug-in does not attach visibly to the PA Router, the number of stations on the PA Router still needs to be set to ensure there is one station available for each Zip4 the design intends to use.
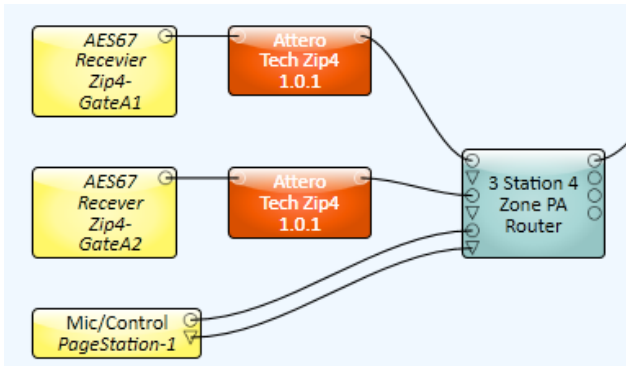
The plug-in only deals with the control portion of the Zip4. The audio will need to be routed to the Q-SYS Core separately. The Zip4 supports both AES67 and Dante. Only one of these protocols is required to get audio to the Core. To use Dante, the Core will require a Dante card and Dante Controller would then be used to setup a flow. For AES67, Dante Controller is again required, this time to enable AES67 (which is disabled by default) and then to create a multicast AES67 stream. The Core then requires an AES67 receiver to be configured to pick up the stream.

3.1.1 – Plug-in Configuration Properties

The plug-in has several properties that can be set. These enable/disable a specific feature or alter the device operation. They can only be set when the project is in "Design" mode.

Default Zone – (Default: "No") This setting determines what happens if a page is initiated with no zone groups selected. If set to "No", no page is initiated. If set to "Yes", a page is made to an additional "default" zone that's configured with its own set of paging parameters available via the Zip4 plugin interface.

Auto Cancel – (Default: "No") Allows a "Delayed" type page to be cancelled if audio level remains below a certain level for a given period. To take advantage of this feature, the incoming audio *MUST* be routed through the plug-in from the receiver.

Multi Zone Select – (Default: Yes) this setting determines if multiple group buttons can be selected simultaneously for a page. When set to "No", only a single zone group can be selected at one time.

Security – (Default: "Open") this setting allows configuration of the security mode on Zip4. In "Open" mode, the Zip4 can be used at any time without restriction for a page. In "Secured" mode, the unit is protected with a 3-digit pin which must be entered first before a page can be made.

3.1.2 – Network Setup
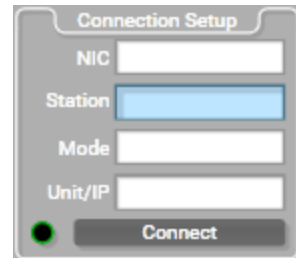
As the Zip4 is a control device, it is recommended that static IP address assignment to be used. If the network uses a DHCP server, it is recommended to configure the DHCP server with reserved IP addresses for each Zip4.

3.1.3 – Connecting a device

If the devices IP address is known in advance, select the "Manual" mode option and type in the devices IP address in the "Unit/IP" field. Alternately, "Discovery" mode can be used to find the device by its name. The Unit/IP down will list all devices that are found.

Note: It is recommended "Discovery" mode only be used to find the device's IP. Once the correct device has been selected, that should populate the devices IP field. It is recommended that the mode then be switched to "Manual" mode at which point the previously selected device's IP address will then be automatically populated.

Each instance of the plug-in also requires the station ID to be set with given a different ID. The first instance unit should be ID 1, then next 2 and so on.

The final step is to initiate a connection to the selected device which is done by clicking the "Connect" button. The connection setup fields will then become disabled and the "Connected" button turns orange to indicate it is active. If the plugin can correctly connect to the chosen device, the indicator next to the connect button will turn green. The "status" field shows the connected state including if the connection fails for some reason.

Once a device is connected, the "Identify" function can be used to indicate which device the plug-in specifically associated with. When active, the Ready and Busy indicators on the device in question will both flash green.

3.1.4 – Plug-in Setup

The plug-in for the Zip4 is designed to work in a similar way to the Q-SYS Virtual Paging Station component with the many of the configuration options being the same as those seen in the VPS.

*Note: Some of the configuration for paging is done using Q-SYS Administrator. Plug-ins *DO NOT* automatically pick up changes made by Q-SYS administrator. Each Zip4 plug-in will have to be manually updated to get the latest settings by clicking the "Refresh" button.*

*Note: To ensure correct operation, the name of all each "tag" and zone *MUST* be unique.*

3.1.4.1 – Zone / Zone Tag setup
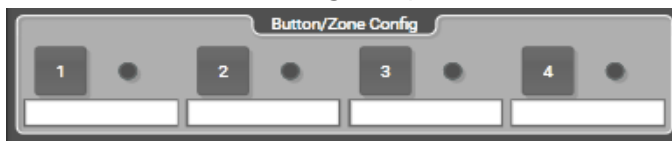
Each button on the Zip4 can be assigned a zone group which comprises of a single zone or a specific group of zones of the PA Router. Assignment is done using the combo boxes below each button. A button can be left unassigned if it is not required. Pressing a group button on the device that has no assigned zone or tag has no effect.

The group buttons in the plug-in mirror the state of the group buttons on the device the plug-in is connected to. When a zone button is pressed it toggles the selected state of that zone group. The zone group indicator turns green if the zone is selected.

During operation, if pages elsewhere on the system affect any of the assigned zone groups on this device, they will be marked busy and the zone group indicator will turn red. If the zone group is both selected and busy, the group indicator will turn yellow.

Note: The indicators shown in the plug-in mirror the Zip4 device state.

3.1.4.2 – Paging Configuration
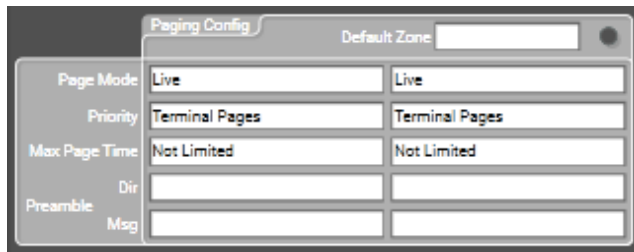
Each Zip4 station allows paging configuration using the parameters defined in the "Paging Config" section of the plug-in. If the "Default Zone" parameter is set to yes, a second set of parameters is also shown that relate purely to the default zone pages. This means the default page can be setup completely different to regular group pages.

Page Mode: Configures the page mode to one of three different options: Live, Delay or Auto. Live pages connect the microphone direct to the output, so any speech is heard live. Delayed pages

are first recorded then played back later to the required zones. "Auto" will activate a live page in possible and switch to a "delayed" page if the required zones are busy.

Priority: Determines the importance of a page. The options available are based on the priority configuration set using the Q-SYS Administrator tool.

Max Page Time: Sets time limit on the maximum length of a page. Options are "Not Limited", "30 Seconds", "60 Seconds", "90 Seconds", "120 Seconds", and "240 Seconds".

Preamble Dir & Msg: The preamble fields enable pages to be prefixed with a common audio clip. Q-SYS Core DSPs contain some default audio clips. If a custom clip is required, this must be pre-loaded into the DSP beforehand using Q-SYS Administrator. The "Directory" field lists all folders that contain supported audio files that can be used as a preamble. The "blank" option represents the "root" folder which contains default audio files. The "Msg" field lists the supported audio files within the selected directory that can be used. If the "Msg" field is empty, no preamble will be played for a page.
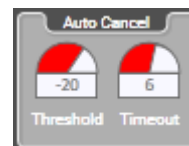
Note: Empty folders or folders not containing supported audio files will not be included in the "Dir" drop-down list.

3.1.4.3 – Brightness
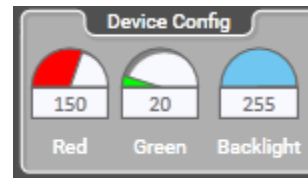
Configures the brightness of the various indicators on the ZIP4 can also be set from the plug-in. There are separate controls for the red LED's, Green LED's and the back light. Values range from 0 (off) to 255 (fully on)

3.1.4.4 – Auto Cancel

These controls only appear when the "Auto cancel property is Set to "Yes". The auto cancel only works on pages that record the message for later playback. The recorded page can be cancelled by keeping the audio level below the specified threshold for a specified amount of time. The threshold and the time are both configurable. If successfully cancelled, the "Ready" indicator will turn green even though the "PTT" button remains pressed.

This feature is useful for instances where the person initiating the page, speaks incorrectly and wishes to cancel the page and re-record it for correct delivery of the message.

3.1.4.5 – Security

These controls only appear when the "Security" property of the plug-in is set to "Yes". With security enabled, the device will appear to be off with all backlights and indicators turned off.

While "Locked" no pages may be initiated, and the zone status will not be updated on the keypad.

Any key press in the locked stated will light the Zip4 keypad backlight, to indicate the Zip4 is awaiting success pin code entry.

If the user enters the correct 3-digit pin, the status indicates will flash green and the Zip4 will enter the Active state.

The unit will automatically lock itself after a specified time has passed with no button activity or is the paging system remotely locks the station.

Lock button: Immediately locks the connected Zip4.

Unlock button: Immediately unlocks the connected Zip4

The lock / unlock command features are useful for scripted control of facility scheduling.

Code entry: The three drop downs controls allow selection of the 3-digit security pin code. Once the code is selected, use the "Apply" button to apply it to the device. The default pin code is 311.

Timeout: This control specifies the number of minutes of button inactivity that must elapse before the device locks itself. Range is 1 minute to 30 minutes.

3.1.4.6 – Status Controls
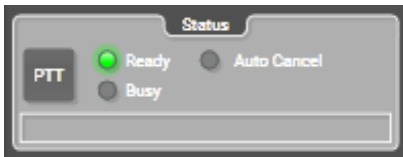
PTT Button: State of PTT button on device.

Ready Indicator: Mirrors the state of the "Ready" indicator on the device. Turns Green if the device is ready to accept a page. Will show yellow if page is being recorded.

Busy Indicator: Indicates the paging system is busy and cannot currently be used.

Auto Cancel Indicator: Only visible when the "Auto Cancel" feature is enabled. Briefly flashes green if the auto cancel activated.

Status: The Status field indicates the state of any page as reported by the PA Router to the plug-in.

3.2 – 3rd Party Usage

The Zip4 can also be used with other non-Q-SYS systems too.

The 3rd party system will be required to
1) Send UDP messages to the ZIP4 to setup parameters and update the status of the indicator LED's on the Zip4.
2) Accept asynchronous UDP message indicating an event such as a button press or release and acknowledge it by sending a message back.

Complete information on the exact protocol can be found in the 3rd Party Documentation under the Documents section of the Zip4 product page.

3.3 – Factory Reset

The Zip4 includes a factory reset function. Activating it affects both Dante™ and non-Dante™ settings of the device. All Dante™ settings are reset including device name and channel names, the Ethernet port mode will be defaulted back to redundant mode and the IP address setup will be reset to get an IP address dynamically.

The factory reset switch is accessed through a small hole on next to the vent holes on the bottom of the unit. To activate the factory reset, insert a paperclip or small screw driver into the factory reset hole and press and hold the factory switch for five seconds. If the reset was successful, the unit should reboot.

3.4 – Firmware Updates

If a firmware update for the Zip4 is released, it may be applied in the field by the end user or installer. The update process takes advantage of the smart firmware update tool in unIFY. The latest firmware .SFU files can be downloaded from the Attero Tech Product Firmware page on the QSC website.

To apply the update, download the appropriate SFU file for the Zip4, select the smart firmware update option under the Tools menu and follow the instructions. Further assistance for doing updates is provided in the unIFY Control Panel manual.

ARCHITECTS & ENGINEERS SPECIFICATION – (Zip4)

The Dante/AES67 paging interface shall have four zone selection buttons, four zone status bi-color LEDs and system "Ready" and "Busy" bi-color status LEDs. The user interface shall have a variable brightness backlight. Button state monitoring and LED state setting shall be accomplished via software over the Dante™ or AES67 network.

The microphone/PTT input shall be RJ-45 with strain relief provided. Two microphone gains, +25dB with automatic phantom power and +35dB, shall be switch selectable. The internal analog to digital signal conversion shall be performed at 24-bit resolution with a sampling frequency of 44.1 kHz or 48 kHz. The Dante™ interface unit shall receive power over the Ethernet cable from an 802.3af PoE compliant network switch. The Dante™ interface shall be wall mounted in a standard US dual gang junction box (Zip4).

The Dante/AES67 paging interface shall be compatible with the QSC Q-SYS PA Router software running on a Q-SYS Core series DSPs and configured with dedicated Q-SYS Designer control plugin. The Dante/AES67 paging interface shall be compliant with the RoHS directive. The Dante/AES67 paging interface unit shall be compliant with FCC 47CFR Parts 15B and 18 (Class A), EN 55011, ICES-003, CE (EN55022 Class A and EN55024 Class A).

The Dante/AES67 paging interface shall be the Attero Tech Zip4.

ARCHITECTS & ENGINEERS SPECIFICATION – (Zip4-3G)

The Dante/AES67 paging interface shall have four zone selection buttons, four zone status bi-color LEDs and system "Ready" and "Busy" bi-color status LEDs. The user interface shall have a variable brightness backlight. Button state monitoring and LED state setting shall be accomplished via software over the Dante™ or AES67 network.

The microphone/PTT input shall be RJ-45 with strain relief provided. Two microphone gains, +25dB with automatic phantom power and +35dB, shall be switch selectable. The internal analog to digital signal conversion shall be performed at 24-bit resolution with a sampling frequency of 44.1 kHz or 48 kHz. The Dante™ interface unit shall receive power over the Ethernet cable from an 802.3af PoE compliant network switch. The Dante™ interface shall be mounted or a standard US triple gang box or enclosure.

The Dante/AES67 paging interface shall include a panel mounted 3-pin XLR microphone jack and LED illuminated panel mounted PTT switch.

The Dante/AES67 paging interface shall be compatible with the QSC Q-SYS PA Router software running on a Q-SYS Core series DSPs and configured with dedicated Q-SYS Designer control plugin. The Dante/AES67 paging interface shall be compliant with the RoHS directive. The Dante/AES67 paging interface unit shall be compliant with FCC 47CFR Parts 15B and 18 (Class A), EN 55011, ICES-003, CE (EN55022 Class A and EN55024 Class A).

The Dante/AES67 paging interface shall be the Attero Tech Zip4-3G.

Device Specifications

User Interface	
Zone Buttons	Four assignable momentary buttons, adjustable white backlighting
Status LEDs	Ready / Busy LEDs (bicolor red/green) Zone Status LEDs (bicolor red/green)

Microphone Input	
Input Type (Zip4)	Front mounted RJ-45 with integrated PPT button Side-mounted 6-pin depluggable
Input Type (Zip4-3G)	Front mounted RJ-45 Front-mounted XLR
Preamp Gain	0dB, +25 dB, +35 dB (DIP switch selectable)
Phantom Power	+48V DC (DIP switch selectable)

Dante™ Network	
Physical Layer	Ethernet
Connector (s)	Single RJ-45 Ethernet (Rear)
Cable Quality	CAT-5e or better
Transmission Speed	100 Mbps
Supported Sample Rates	44.1kHz /48kHz
Minimum Dante™ Network Latency	1ms
Supported Modes	Supports Dante Domain Manager
AES67 Support	Dante-AES67 Interoperability Mode
Cable Quality	CAT-5e or better UTP

Power Specifications		
PoE Power	802.3af Class 0	
Power Consumption	< 5W max	

Physical Dimensions		
Width (Front)	4.57" (Zip4)	6.38" (Zip4-3G)
Height (Front)	4.49" (Zip4)	4.49" (Zip4-3G)
Depth	1.5" (Zip4)	1.5" (Zip4-3G)
Weight	0.6lbs. (Zip4)	1.1lbs. (Zip4-3G)

Regulatory Compliance	
Certifications	FCC 47CFR Parts 15B and 18 (Class A), EN 55011 ICES-003 CE (EN55022 Class A and EN55024 Class A) RoHS REACH

Environmental Operating Specifications	
Operating Temperature	0 to 40°C