AUSTRALIAN MONITOR ZONEMIX4 4 Zone Mixer and Paging System User Manual

Contents

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IMPORTANT SAFETY INFORMATION

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 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 a third grounding prong. The wide blade or the third prong are 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 the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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.
15. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid such as vases shall be placed on the apparatus.
16. Plug this apparatus to the proper wall outlet and make the plug to be disconnected readily operable.
17. Mains plug is used as disconnected device and it should remain readily operable during intended use. In order to disconnect the apparatus from the mains completely, the mains plug should be disconnected from the mains socket outlet completely.

18. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
19. An appliance with a protective earth terminal should be connected to a mains outlet with a protective earth connection.
20. The apparatus should be disconnected from the mains completely before speaker wiring. The speaker output should be proper protected from direct contact and pay attention to speaker connections, terminals and speaker wiring during normal operation.

INTRODUCTION & CONTENTS

ZONEMIX
The Australian Monitor ZONEMIX system provides a 4 or 8 zone mixing and paging solution featuring USB, Ethernet and RS232 connectivity. Optional wall panel accessories include 3 controller models, a Bluetooth receiver, and a mic/line level input.
The ZMPS paging station can also be included, with each ZONEMIX unit supporting up to 16 stations.
A PC application allows for setup and control of the ZONEMIX and customization of the wall panels and paging stations.

WARNING
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT USE THE PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER = OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

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

TO PREVENT ELECTRICAL SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT & FULLY INSERT.

CAUTION
TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

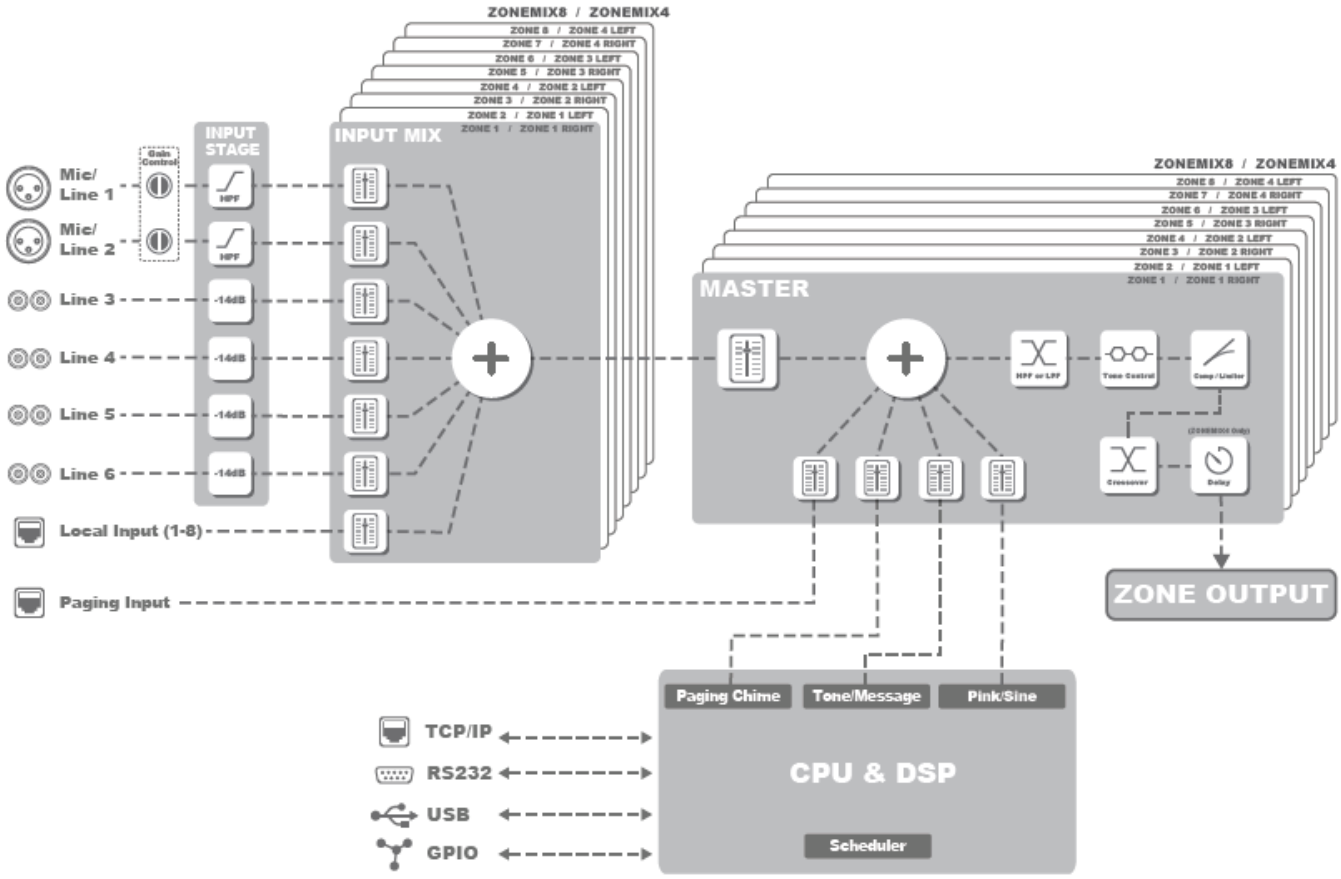
- The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
- **CAUTION**
  RISK OF ELECTRIC SHOCK DO DO NOT OPEN
  WARNING
  TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
- The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.
- For European Union countries: This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. Please contact your local authority for further details of your nearest designated collection point.

Rating plate and caution marking are marked on the back enclosure of the apparatus

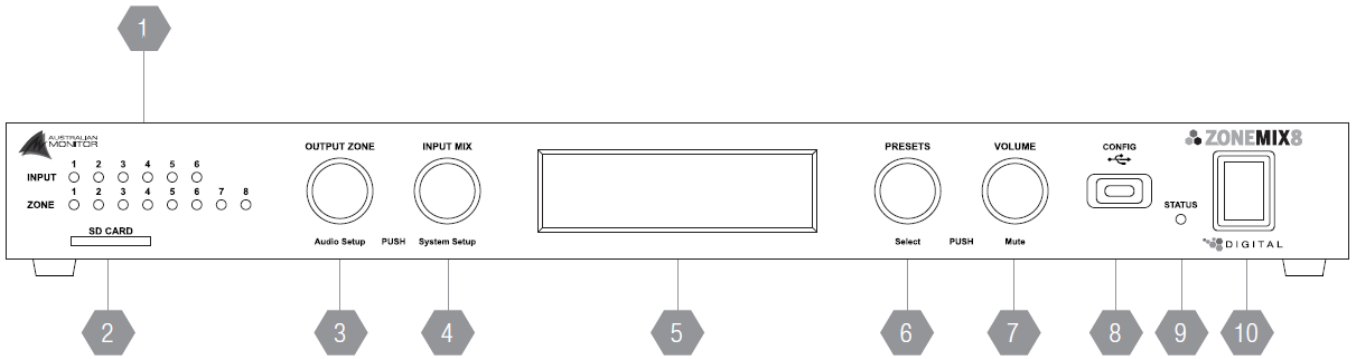
FEATURES

- 4 mono/stereo zone outputs (ZONEMIX4), 8 mono zone outputs (ZONEMIX8)
- 2 Mic/line and 4 stereo line inputs plus 1 local input per zone
- USB, Ethernet and RS232 connectivity
- mini DSP – Filters, Tone Control, Compressors/Limiters, Delay (ZONEMIX4)
- Built-in Tone Generator, Message Player and Scheduler
- Multi-stage priority control
- General purpose inputs/outputs, 4 (ZONEMIX4), 8 (ZONEMIX8)
- Supports up to 16 ZMPS Paging Stations and 16 WP10, WP4R, WPVOL wall panels
- Supports 4 or 8 local inputs,(ZONEMIX4/ZONEMIX8) such as WPBT, WPML or WPXLR wall panels
- ZONEMIX PC control software free via download

BLOCK DIAGRAM



FRONT PANEL



1. SIGNAL PRESENCE LEDS

   A green LED will illuminate to show a signal is present on the corresponding audio input or output zone. The ZONE LEDs will flash green every second when the corresponding output is muted. A red LED will illuminate when clipping occurs due to an excessive input signal or overdriven output. If clipping occurs reduce the input or output gain settings.

2. SD CARD CONNECTOR

   Input connector for a full size SD card. Maximum density 2TB.

   Consult the Support of SD cards larger than 32GB section on page 10 for further details.

   Note: Format the card to the FAT32 file system. Use a full size SD card adapter to support mini or micro sized SD cards.

3. OUTPUT ZONE KNOB

   Rotate left and right to select the output zone Pushing the knob will enter Audio Setup mode. Consult page 9 for more details.

4. MIX KNOB

   Rotate left and right to select the desired input channel mix for the output zone.

   Pushing the knob will enter System Setup mode. Consult page 9 for more details.

5. LCD CHARACTER DISPLAY

   20×2 blue LCD character display

6. PRESETS KNOB

   Rotate left and right to cycle through the available presets. Push the knob to select or save the preset.

7. VOLUME KNOB

   Rotate left and right to adjust the volume level of the currently selected input or output.

   Push the knob to mute or unmute.

8. USB-C CONFIG PORT

   Connect to a PC using a USB-C cable to control the ZONEMIX via the PC Control Software

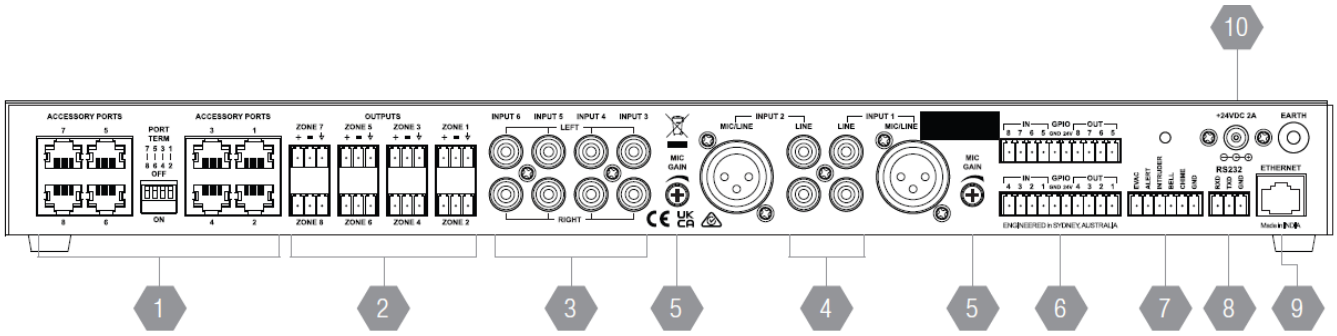
9. STATUS LED

   This blue LED will illuminate indicating that the ZONEMIX is on and receiving mains power.

10. POWER SWITCH

    Press the switch up to power on and down to power off.

REAR PANEL



1. ACCESSORY PORTS

   Allows connection of wall panel controllers, paging stations and audio wall panel inputs.

   See Paging Station and Wall Panels section on page 16 for further details.

2. ZONE OUTPUTS

   The ZONEMIX4 has 4 stereo, 4 crossover or 4 mono balanced line level outputs (Software configurable).

   The ZONEMIX8 has 8 mono line balanced level outputs.

   Balanced male 3-pin (3.81mm) autoblock connector.

3. STEREO RCA UNBALANCED INPUT

   A standard stereo RCA female socket for each input.

   This is summed to mono inside the ZONEMIX8. The ZONEMIX4 will maintain the stereo audio path unless mono output mode is selected.

   A -14dB pad can be applied, via software, using the front panel or PC control software.

4. XLR MIC/ RCA LINE INPUT, CH1-2

   A standard female XLR balanced socket is provided on each microphone input:

   Pin 1 = Signal Ground

   Pin 2 = Hot (non-inverting or in phase)

   Pin 3 = Cold (inverting or reverse phase)

5. MIC GAIN

   Provides a rear panel input gain adjustment for Inputs 1 and 2.

6. GENERAL PURPOSE INPUTS AND OUTPUTS

   Configurable in the PC control software to perform various actions. See page 15 for further details.

7. TONE GENERATOR

   Connect any of the EVAC, ALERT, INTRUDER, BELL and CHIME inputs to the GND input to play the tone.

8. RS232

   3-pin (3.81mm) autoblock connector for connection to external control systems.

9. ETHERNET

   Ethernet is used to communicate with the device over a LAN. The supported network speed is 100Base-T.

   Consult the Network Setup section on page 10 for further details.

10. POWER INPUT CONNECTOR

    Your mixer is powered via a 24VDC 2A universal power adapter.

    The power adapter is included with your mixer.

    The DC input accepts a 5.5/2.1mm plug with tip positive and ring negative connection.

BASIC SETUP AND OPERATION

POWER REQUIREMENTS

The ZONEMIX operates at 24V with a maximum 2A current draw (dependent on number of accessories and paging stations connected).
The DC input accepts a 5.5/2.1mm plug with tip positive and ring negative connection.

MOUNTING
The ZONEMIX is a one rack unit high (1RU) and will fit a standard EIA 19” rack.

BALANCED INPUT WIRING
WARNING: Input signal ground should NOT be used as a safety ground (earth).
The balanced input to the ZONEMIX is 3-pin configuration and requires all three pins to be connected.
Only high quality twin-core shielded cable should be used.

- Pin 1 = Signal Ground
- Pin 2 = Hot (non-inverting or in phase)
- Pin 3 = Cold (inverting or reverse phase)

When wiring from an unbalanced source you must ensure that pin 3 is connected to pin 1 (input ground), either by linking the pins in the input connector or by the source equipment’s output wiring.

When wiring for an unbalanced source:

- Pin 1 = Signal Ground
- Pin 2 = Hot (non-inverting or in phase)
- Pin 3 = Signal Ground

SENSITIVITY
Each channel of the ZONEMIX has a nominal balanced input impedance of 30kOhms (@1kHz) and should not present a difficult load for any signal source.
Your signal source (i.e. the equipment feeding signal to the mixer) should have an output impedance of 600 Ohms or lower to avoid unwanted high frequency loss in the cabling.

INSTALLATION AND BASIC SETUP & OPERATION

The inputs of the ZONEMIX can accommodate a wide range of sources including dynamic microphones, DVD and CD players. Each installation will require setting the appropriate relative mix of levels between microphones and program sources. Due to the variation in levels between the possible sources, the ZONEMIX offers a number of gain stage adjustments in order to set the correct levels for your application.
Setting up correct gain structure through the whole system is important to achieve optimal results. The following step by step setup has been devised to assist during the setup process.

INITIAL SETTINGS (FACTORY DEFAULT)

- Input
- Zone output and Equalizer controls.
    - Set to 0dB
- XLR Phantom power
    - OFF
- Audio Inputs/Outputs
    - Unmuted, -96dB
- Audio DSP settings

    - Disabled
- RS232
    - 115200, 8, 1, None
- Ethernet
    - DHCP Mode = True
    - DHCP Default IP = 192.168.1.10
    - TCP Port = 2626
    - UDP Port = 2626

STEP BY STEP SETUP

1. CONNECT THE SOURCES
   First connect all the required sources to the appropriate input connectors. If the source is an electret or condenser microphone, turn on the phantom power via the front panel or the PC control software.
2. TEST THE INPUT LEVELS
   For each source, try to achieve the highest signal level possible. i.e. for a CD player, radio or other music source, put on the loudest anticipated program music or for a paging mic make a ‘loud’ page. During this signal condition, the input level meter should light green and may occasionally turn red for a short period. If the level meter stays red (more than 10% of the time), you should reduce the audio source level or alternatively reduce the ‘MIC GAIN’ trim for input 1+2 on the rear panel or apply the -14dB for inputs 3-6 via the front panel or software.
3. SET THE LEVELS
   Turn the channel input volume controls up to -20dB on each channel being used. Turn up the master volume control until it is at an appropriate level for the listening environment. Now adjust the relative levels of each of the input channels to achieve a good balance. The aim of these adjustments is to have all level controls between -40dB and 0dB.
4. TURN DOWN UNUSED CHANNELS
   All input channels add noise into the system. To maximize the performance of your system turn down any unused channel volume controls.
5. PAGING / TONE GENERATOR / MESSAGE PLAYER
   The paging, tone generator and message player have independent volume controls that bypass the zone master and directly feed to the zone output. Each volume control should be set to the appropriate level required for the zone.
6. PAGING STATIONS
   Firstly, set the Paging input level to -20dB for the output zone being used. Next, perform a loud page by speaking closely to the paging station microphone. Increase the ZMPS rear level control until slight distortion is heard and then reduce the level slightly. Next, set the listening level required for each output zone by setting the paging input volume level using the software or front panel for each output zone.

FRONT PANEL CONTROLS

The following settings can be viewed or modified using the front panel menus

AUDIO SETUP

- Input 1 Mode Line/Mic/Mic+ Phantom
- Input 2 Mode Line/Mic/Mic+ Phantom
- Input 3 Pad (-14dB) Enabled/Disabled
- Input 4 Pad (-14dB) Enabled/Disabled
- Input 5 Pad (-14dB) Enabled/Disabled
- Input 6 Pad (-14dB) Enabled/Disabled
- Output Bass Zone1-8 ±10dB
- Output Treble Zone1-8 ±10dB

SYSTEM SETUP

- Date/Time
- Display Brightness
- Display Contrast
- RS232 Baud Rate
- Serial Number
- MAC Address
- IP Address
- Host Name
- Firmware Version
- Reset network configuration
- Reset Admin account login
- Reset to factory defaults

TONE GENERATOR

The ZONEMIX includes 5 factory programmed default tones.
Tones can be played by shorting the appropriate contact to GND on the back panel 10 way autoblock connector.

- The tone volume is set by adjusting the Tone/Message input level control on the front panel or software
- The internal tones can be optionally overridden by placing files on an SD card
- IMPORTANT: Do NOT drive external voltages into the pins or damage to the unit will occur.

TONES

1. **‘EVAC’:** a long continuous repeating tone with a ramped frequency.
   Triggered by shorting EVAC to GND, the sound will continue to repeat until the short is released.
2. **‘ALERT’:** a short tone burst tone repeated every 0.5s.
   Triggered by shorting ALERT to GND, the sound will continue to repeat until the short is released.
3. **‘INTRUDER’:** a two tone ‘low’ ‘high’ alert repeating every 0.4s.
   Triggered by shorting INTRUDER to GND, the sound will continue to repeat until the short is released.
4. **‘BELL’:** a short repeating tone burst with decay and reverb.
   Triggered by shorting BELL to GND, the sound will continue to repeat until the short is released.
5. **‘CHIME’:** a four note increasing tone suitable for paging preannounce.

Triggered by shorting CHIME to GND, it will sound only once each time the trigger is activated. Please note: ‘CHIME’ tone must play to completion before it may be retriggered.

- To activate a tone trigger input, short the relevant input to GND. The selection must be stable for longer than 150ms.
- Each tone is played to completion even if the trigger selection is removed during playback.
- A higher priority tone trigger will interrupt a lower priority tone being played.
- After deselection and completion of playing a higher priority tone, any selected lower priority tone will be played. Exceptions are BELL and CHIME tones which will not be played and must be re-triggered.

DURING TONE PLAYBACK:

- EVAC, ALERT and INTRUDER tone playback mute all input channels (except a Master Override input)
- BELL and CHIME tone playback will mute or mix with other inputs depending on Priority Configuration settings.

SD CARD

OVERRIDING DEFAULT TONE GENERATOR SOUNDS
The default tones of the ZONEMIX can be overridden by adding tones to a user supplied SD card. Simply place the tone WAV file on the root of the SD card and it will be played instead of the inbuilt tone.

Format: evac.wav, alert.wav, intruder.wav, bell.wav, chime.wav

- Only WAV files are supported. Do NOT use MP3 or other audio formats

NOTE: If the tone on the SD card is unplayable, e.g due to being the wrong format, a fault code will flash on the STATUS LED and the default tone will be played instead.

PAGING & SCHEDULER ANNOUNCEMENTS
Pre-recorded paging announcements and scheduler messages can be programmed for playback via the control software.
Place audio WAV files on the root of the SD card.
The audio files can then be selected using the ZONEMIX control software file explorer menu.

Format: message.wav

- Only WAV files are supported. Do NOT use MP3 or other audio formats

CUSTOM PAGING CHIME
The ZMPS paging station chime can be optionally overridden by placing an alternative file on the root of the SD card.

Format: pagingchime.wav

- Only WAV files are supported. Do NOT use MP3 or other audio formats

SUPPORT OF SD CARDS LARGER THAN 32GB
The ZONEMIX supports the FAT32 file format which is limited to a maximum of 2TB.

However, SD cards larger than 32GB are shipped with the exeats format. These must be reformatted to the FAT32 format.

- **NOTE:** Windows does NOT natively support formatting of SD cards larger than 32GB to FAT32.
- You must use third party applications to format SD cards larger than 32GB to the required FAT32 format.

PC CONTROL SOFTWARE

The ZONEMIX comes with a free PC application to allow advanced configuration and control of the system. The software can be downloaded from **www.australianmonitor.com.au** and can be accessed from either the USB or Ethernet connection.

USB CONNECTION

1. Simply connect the supplied USB cable from your PC to the ZONEMIX front panel connector.
2. Open the ZONEMIX Control Software
3. Select the device from the USB port dropdown list and select CONNECT

   Note: If the ZONEMIX does not show in the list press the DISCOVER button to perform a re-scan.

ETHERNET CONNECTION

The ZONEMIX can also be controlled over a network using the ethernet port. By default, the ZONEMIX uses DHCP to be automatically assigned an address from the network. The PC Control Software will then scan the network and list available devices for connection.
If no address is provided by the network the ZONEMIX will default to an IP address of 192.168.1.10.

PLUG AND PLAY (DYNAMIC/DHCP IP)

1. Connect an Ethernet cable from the ZONEMIX to the network
2. Open the ZONEMIX Control Software
3. Select the device from the Ethernet dropdown list and select CONNECT

   Note: If the ZONEMIX does not show in the list press the RESCAN FOR DEVICES button to perform a re-scan.

   Note: If the ZONEMIX still does not show, confirm the network has assigned an IP address by accessing the front panel System Setup menu and viewing the IP address. If the ZONEMIX states it's IP address is 192.168.1.10 it has failed to get an address and gone to the default address

POINT TO POINT CONNECTION

This is direct connection method between the PC and ZONEMIX which does not require a DHCP server or router. A standard ethernet cable or crossover cable can be used.

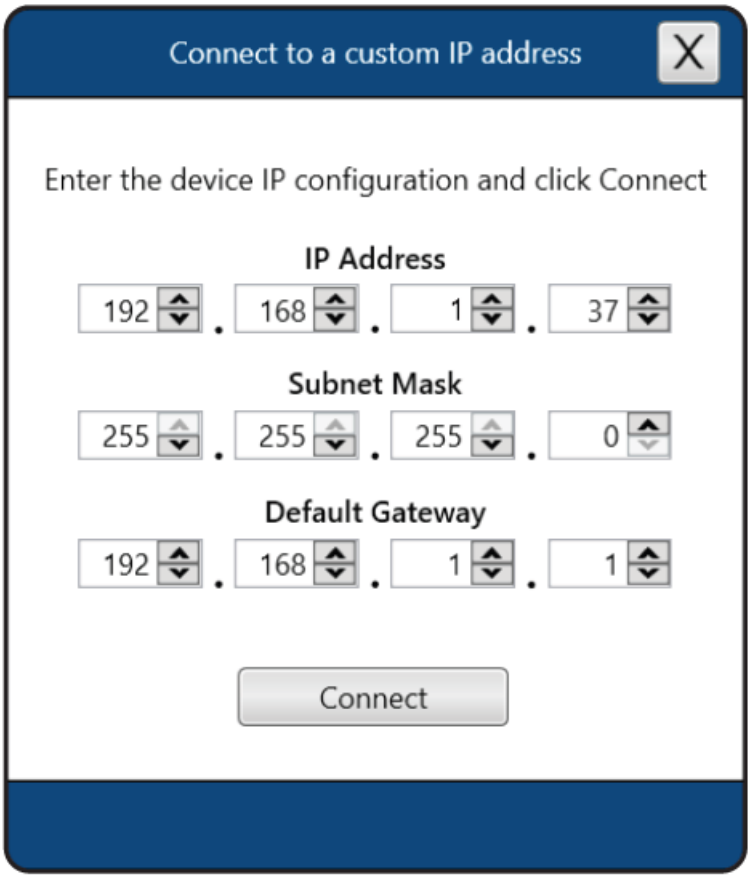
1. Connect an Ethernet cable to the PC and ZONEMIX and ensure both are powered on.
2. If the ZONEMIX is in its factory default state and has not been connected on a DHCP server network please proceed to Step 3. If not, the ZONEMIX needs to have it's IP address reset. To do this follow the instructions in the FACTORY DEFAULTING & IP ADDRESS RESETTING section .

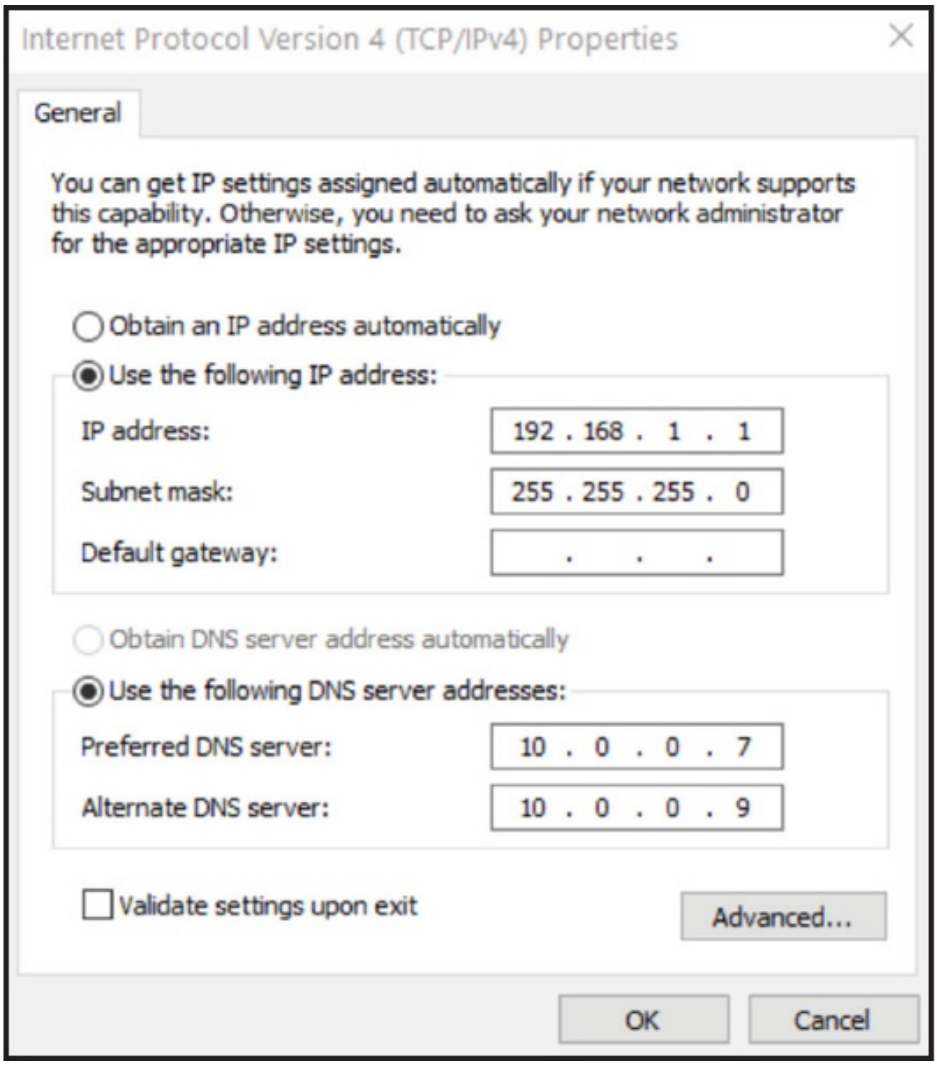
Configure your PC ethernet connection as follows,

1. Click Start Menu > Control Panel > Network and Sharing Center or Network and Internet > Network and

Sharing Center.

2. Click Change adapter settings.
3. Right-click on Local Area Connection that the ZONEMIX is connected to. Click Properties
4. Make sure IPv4 is enabled and select Internet Protocol Version 4 (TCP/IPv4). Click Properties.
5. Select Use the following IP address.
6. Enter the following as per the screenshot below:
    1. **IP address:** 192.168.1.1
    2. **Subnet mask:** 255.255.255.0
    3. **Default gateway:** 192.168.1.1
    4. Do not modify the DNS settings and click ok and then close to set the new IP address.
7. Using the PC control software, select the Custom Network Connection option
8. Enter the settings as shown below and press connect



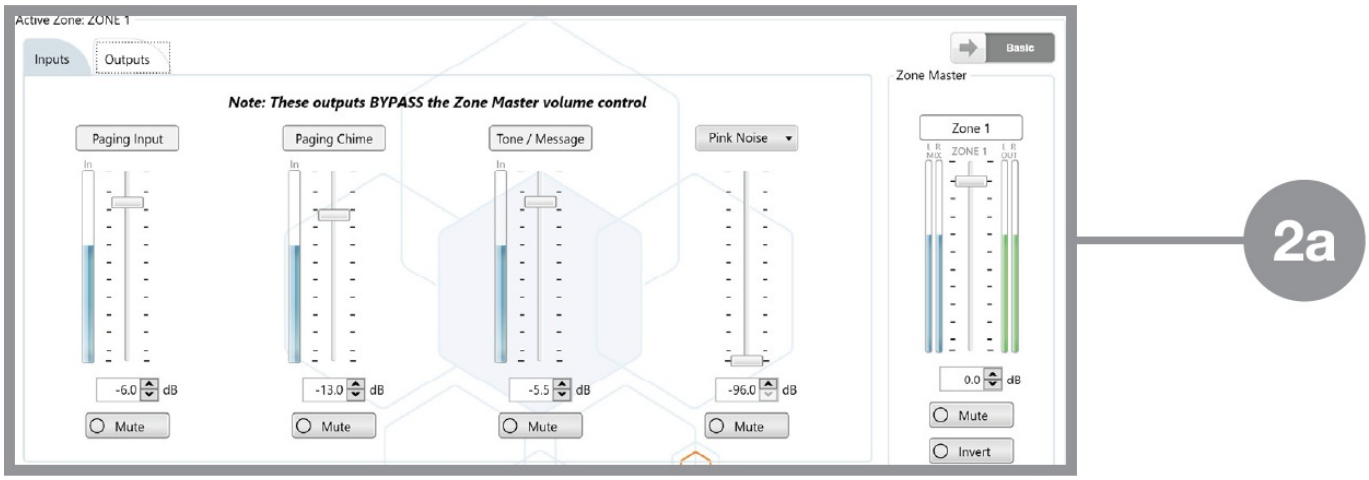


Forgotten or Lost the IP address?

- You can read the ZONEMIX IP address from the System Setup menu on the front panel

  or
- Reset the IP address using the system setup menu on the front panel.
- Consult the FACTORY DEFAULTING & IP ADDRESS RESETTING section .

OVERVIEW



The control software consists of three main sections

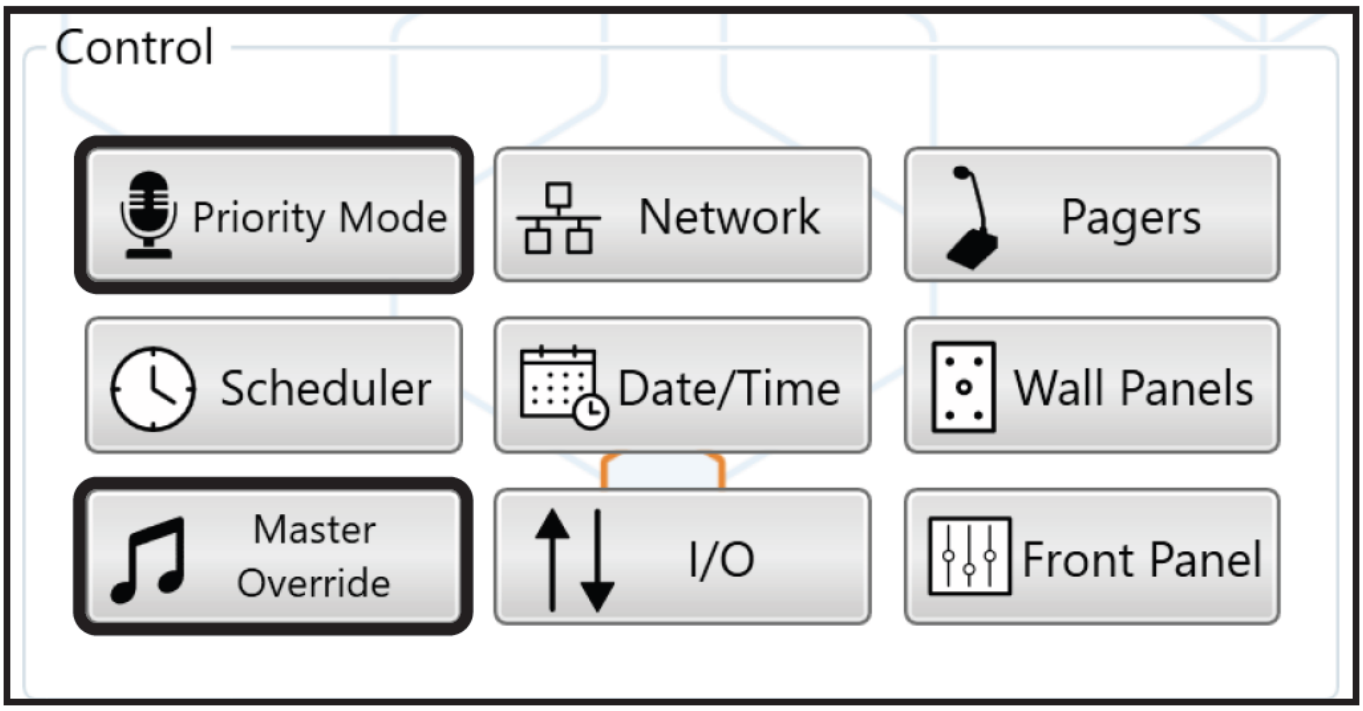
- Section 1 shows 4 zones for the ZONEMIX4 or 8 zones for the ZONEMIX8
  - Select the output zone to control
  - Set and adjust presets
- Section 2 for the currently selected output zone
  - Adjust the input channel volume levels, filters, compressor/limiter, crossover (ZONEMIX4 only), tone control and zone master volume level.
  - Apply maximum and minimum volume levels using the “Advanced” tab
- Section 2a (accessed by selecting the “outputs” tab)
  - Adjust the post zone master volume audio mix for paging, paging chime and message levels.
  - Pink Noise and sine waves can also be activated for use during system commissioning
- Section 3

- Mic or Line setting for Inputs 1 and 2 and stereo mode (ZONEMIX4 only)
- Apply high pass filters and turn on phantom power
- Apply delay to the output (ZONEMIX4 Only)
- Set output mode – Stereo, Crossover, Mono (ZONEMIX4 Only)
- Set various control options including paging station and wall panel setup, priority levels, scheduling, GPIO and front panel functions. See below for detailed information

CONTROL SECTION

PRIORITY CONTROL & MASTER OVERRIDE

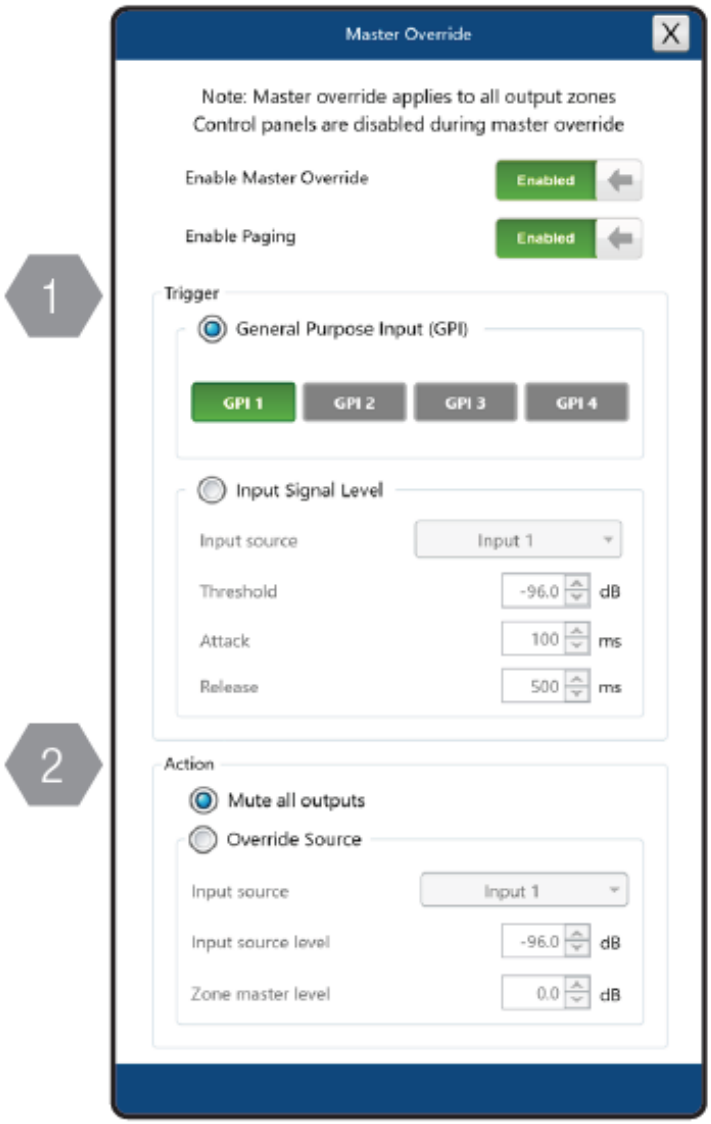
The ZONEMIX has an advanced priority scheme which can be customized for each individual zone.
Master Override is the highest priority and can mute or override all output zones, typically in an emergency situation.
Access the Master Override menu from the control section of the PC control software or through the Priority Mode



MASTER OVERRIDE SETUP

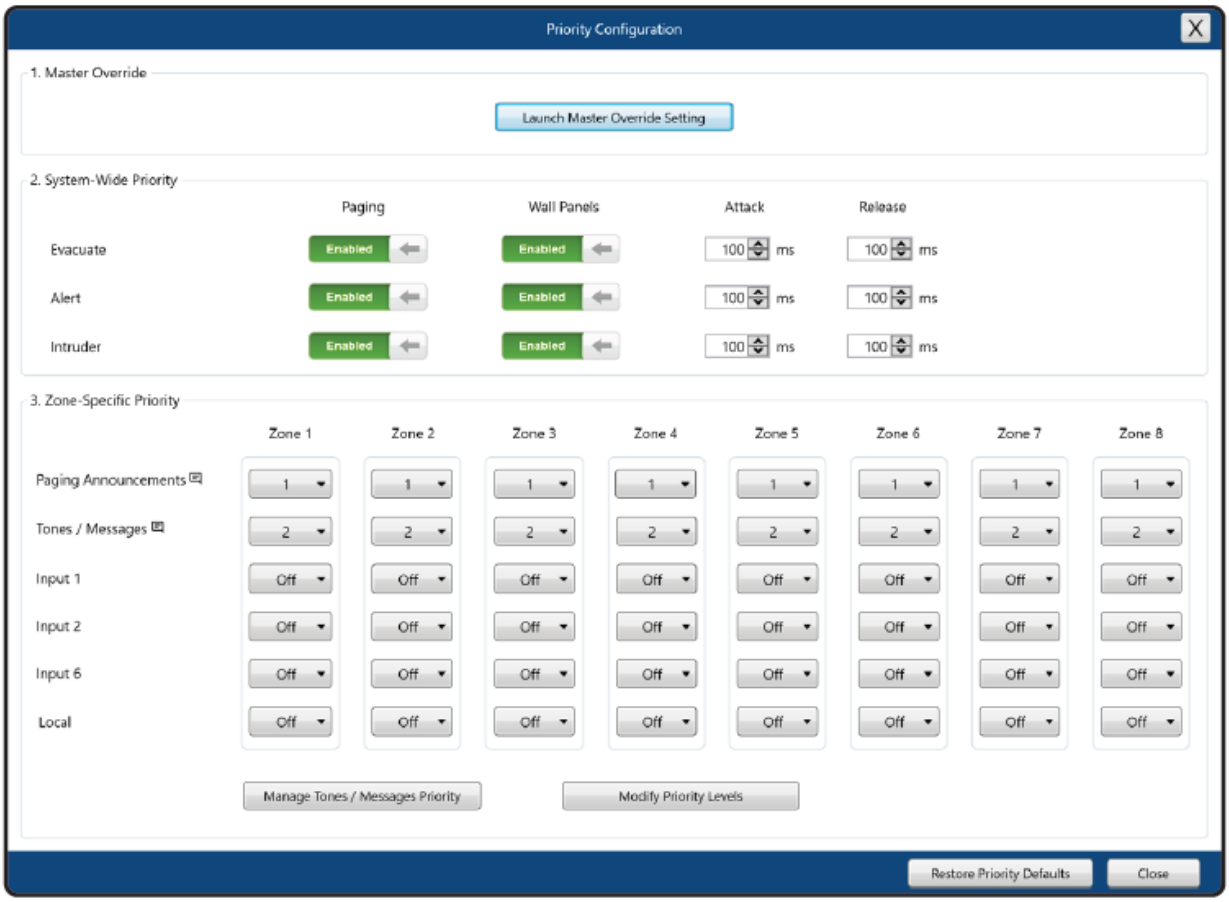
1. Select the trigger to activate the Master Override
   - General Purpose Input OR
   - Audio input signal
2. Select the action when the Master Override triggers
   - Mute all zone outputs

     OR
   - Override with a specific input source



The second highest priority after Master Override are the EVAC, ALERT and INTRUDER tones in descending order.
When active they will mute all other inputs and play the tone out of all zone outputs.
The last priority stage is configurable allowing 6 stages of priority per each output zone.
Each of the input sources can be assigned a priority level from 1 (Highest) to 6 (Lowest) as well as OFF.

- If all inputs for a Zone output are set to OFF then no priority is enabled.
- If a higher priority input is detected it will MUTE or DUCK any lower priority inputs.
    - To MUTE lower priority inputs, set the “Duck Depth” in the “Modify Priority Levels” to -96dB.
    - To MIX lower priority inputs at a reduced volume, set “Duck Depth” level in the “Modify Priority Levels” to a value between -96dB and 0dB.
- If two inputs are the SAME priority level they will MIX together and MUTE or DUCK lower priority inputs depending on the priority level set.



CONTROL SECTION CONT.
The input source priority audio levels can be set from the “Modify Priority Levels” sub window.

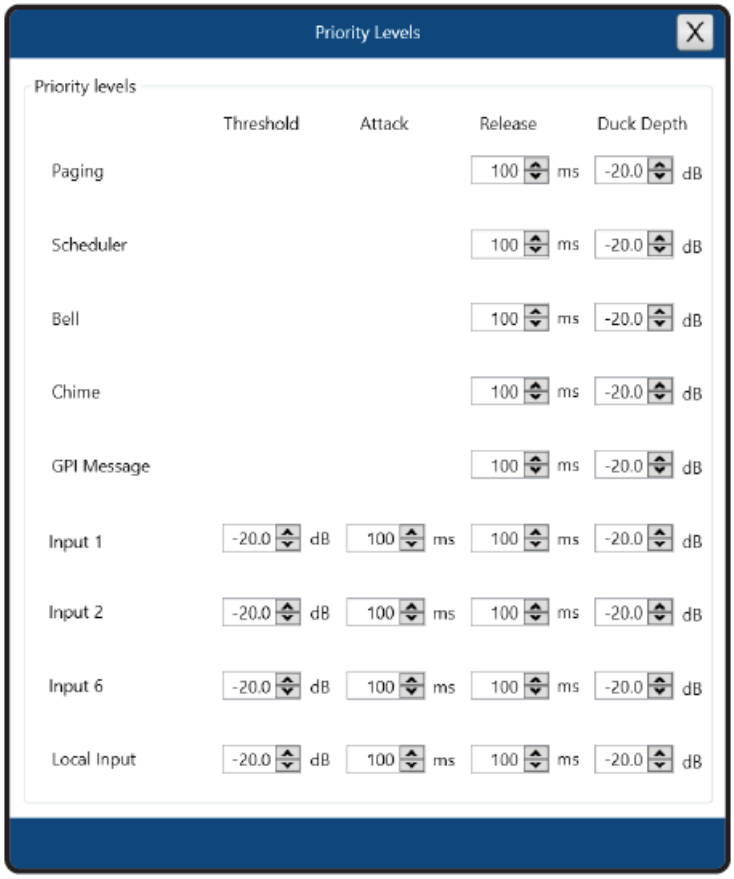
- Threshold sets the input level the audio must exceed to trigger the priority.
- Attack sets the time the input level must continuously exceed the threshold.

  This is useful to prevent a spike of loud audio triggering the priority
- Release sets the time the priority is still active after the input has dropped below the threshold.

  This allows for delay to be added if required, up to 25 seconds.
- Duck Depth sets the level lower priority inputs are set to during a priority event.

  Set it to -96dB to mute the input or a value lower than 0dB to mix the audio at a lower level.

The Tones / Messages (Scheduler Message, GPI Message, Bell and Chime) all share one audio channel from the CPU/DSP. This means only one can be active at a time. If required, the priority of these triggers can also be modified from the “Manages Tones/Messages Priority” sub window.



SCHEDULER
The inbuilt scheduler is capable of automating several actions in the ZONEMIX system.

- **Step 1** – Create a New Task

  Firstly, create a task list of all the actions you wish to schedule.

  Available scheduled actions:

  - Adjust Master Volume Level/s
  - Adjust Input Volume Level/s
  - Play tones and messages
  - Recall presets
  - Trigger general purpose outputs
- **Step 2 –** Apply a schedule to the task

  Once a task list has been created it can be applied to a schedule.

  1. Select “Create a new schedule”
  2. Give a subject name which will show in the calendar view
  3. Assign a task action (list of task actions created in step 1)
  4. Assign the date and time for the task to trigger
  5. Assign a repeating pattern if required
     - Daily

- Weekly
- Every X days

NETWORK
The ZONEMIX ships with DHCP mode enabled which allows the network to automatically assign an IP address. The PC Control software will then automatically scan the network for any ZONEMIX systems and display it on the PC control software connection window.

- The IP address can also be read from the SYSTEM SETUP menu on the front panel

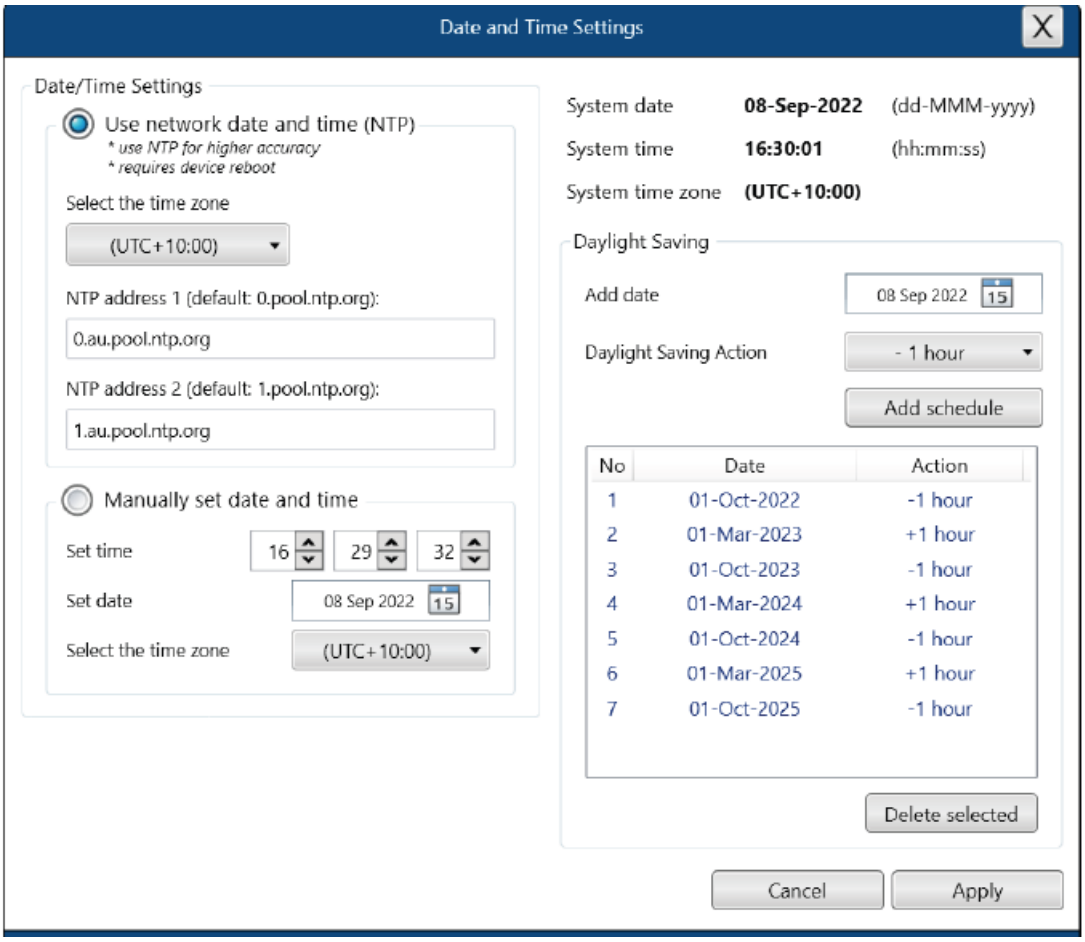
If a static IP address is required, the easiest method is to connect via USB using the PC Control Software and to assign manual network settings using the “Network” button in the Control section.

DATE/TIME
The Date and Time can be set from the front panel system setup menu or from the PC control software. The ZONEMIX has an integrated real time clock (RTC) to maintain the clock however it will drift over time.

CLOCK ACCURACY
If you are using the scheduler, it is HIGHLY recommended to attach the ZONEMIX to a network via the Ethernet connector and to set the Network Time Protocol (NTP) settings. The allows the ZONEMIX to retrieve date and time information from the network to ensure they are always accurate.

- Select the Date/Time control
- Select your time zone
- Use the default NTP address or enter your network NTP server address
- Finally, if required, enter any daylight savings dates for your region

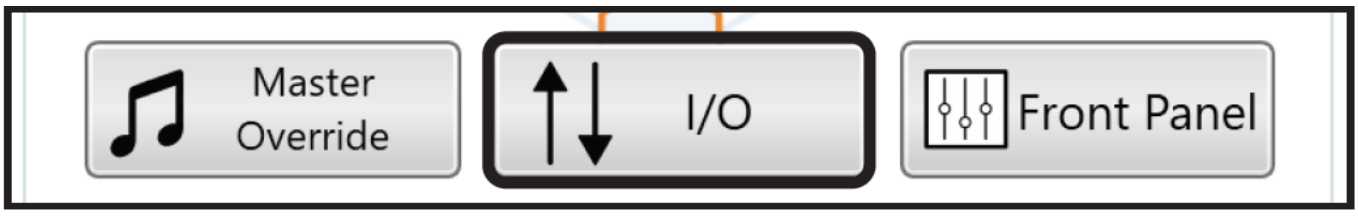
DAYLIGHT SAVING
Daylight savings dates can be entered if required in your territory. The time change will be actioned at 3am on the date specified.



GENERAL PURPOSE INPUTS AND OUTPUTS
The ZONEMIX4 and ZONEMIX8 have 4 inputs and outputs and 8 inputs and outputs respectively. Use the PC control software to configure the I/O,
Use the dropdown menus to select the desired function for the input or output.

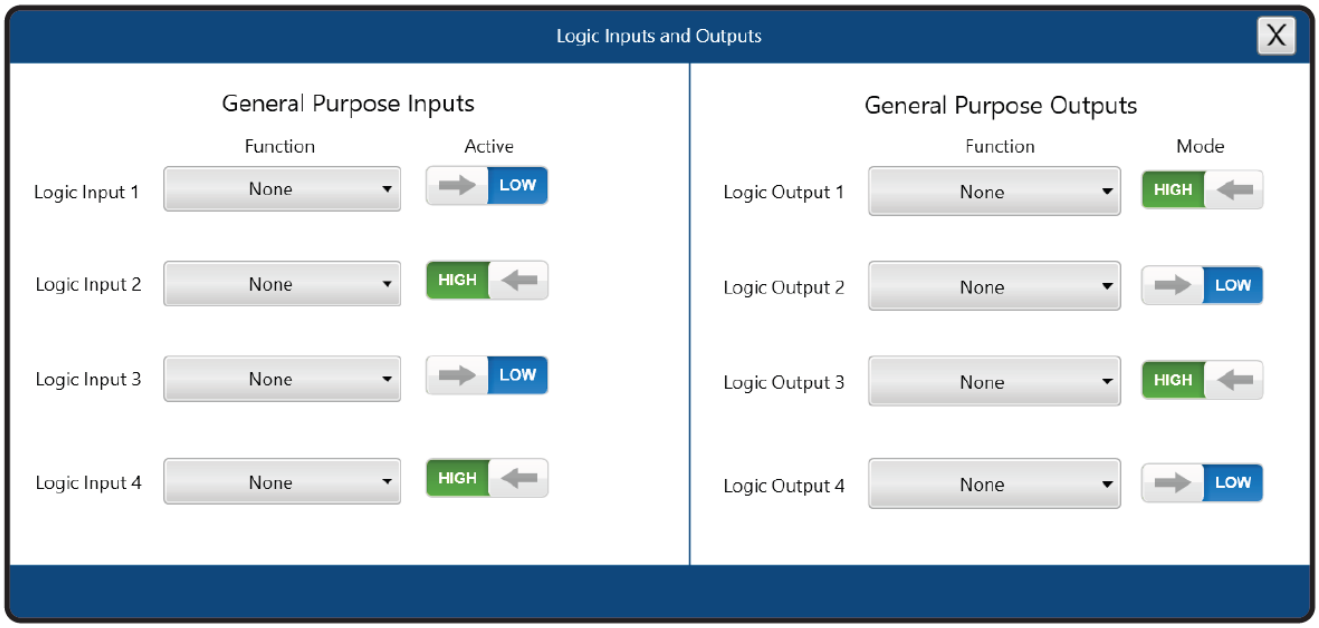
INPUTS

- Enable Master Override
- Mute Zone/s Master
- Recall a preset
- Trigger a message from the SD card



OUTPUTS

- Scheduler controlled
- Paging Active
- Wall Panel Control



ELECTRICAL SPECIFICATIONS:
Each INPUT detects the following levels

- Low input must be less than 0.5V
- High must be greater than 3V but less than 12V
- Input triggers must be stable for longer than 150ms.

Each OUTPUT is configured as follows,

- Open collector
- Can be connected to up to 50V systems
- Maximum 300mA sinker current

The 24V output can draw a maximum of 100mA.

CONNECTING ZMPS PAGING STATIONS

CONNECTING AND CONFIGURING THE ZMPS,

- Step 1 Wiring and Termination.
  Follow the wiring guide section on page 21 to connect and terminate the ZMPS to the accessory ports.
- Step 2 Power on the Zonemix4/8
- Step 3 Use the PC software to pair and configure the ZMPS
- Step 4 Set audio levels

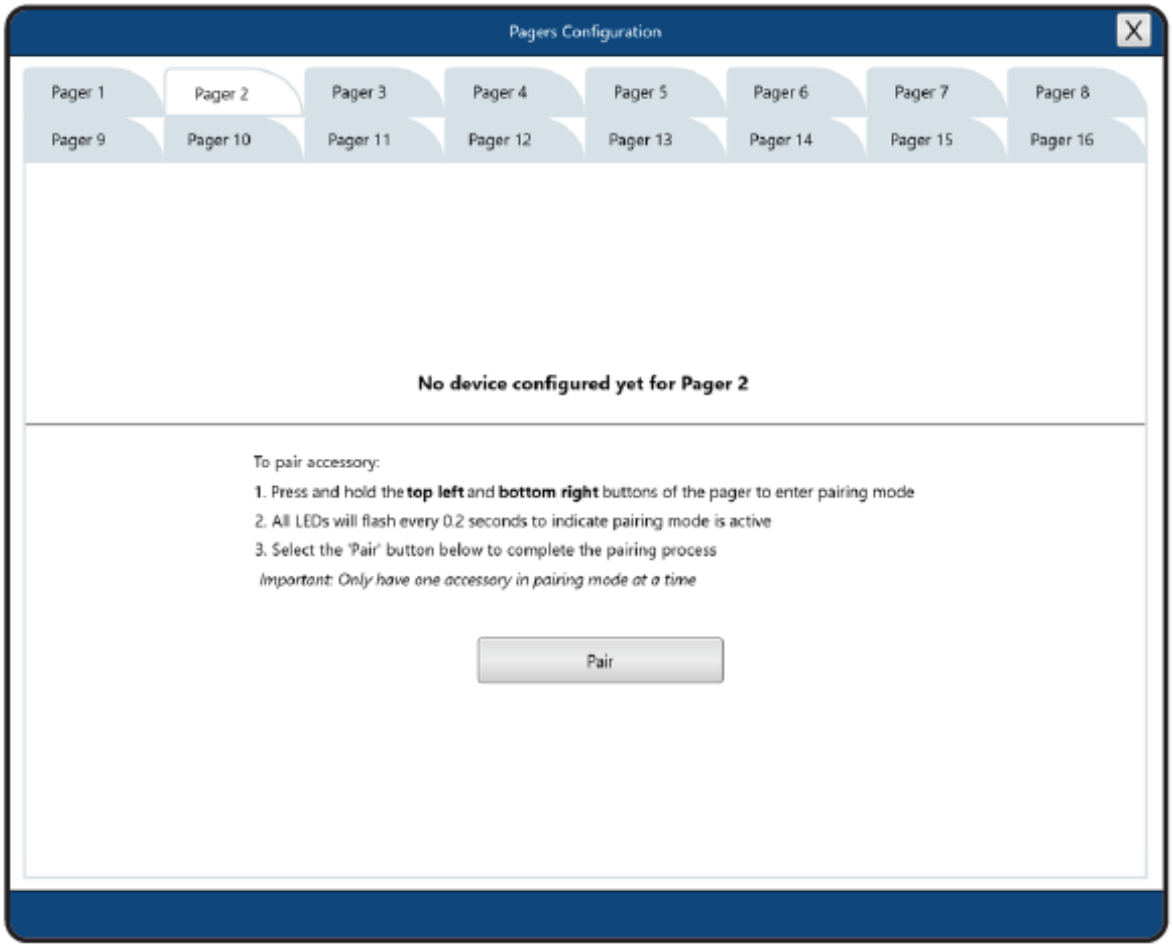
PAIRING THE ZMPS TO THE ZONEMIX4/8
Each ZMPS paging station must be individually paired with the Zonemix4/8 to function.
Follow these steps to pair the ZMPS,

On the ZMPS,

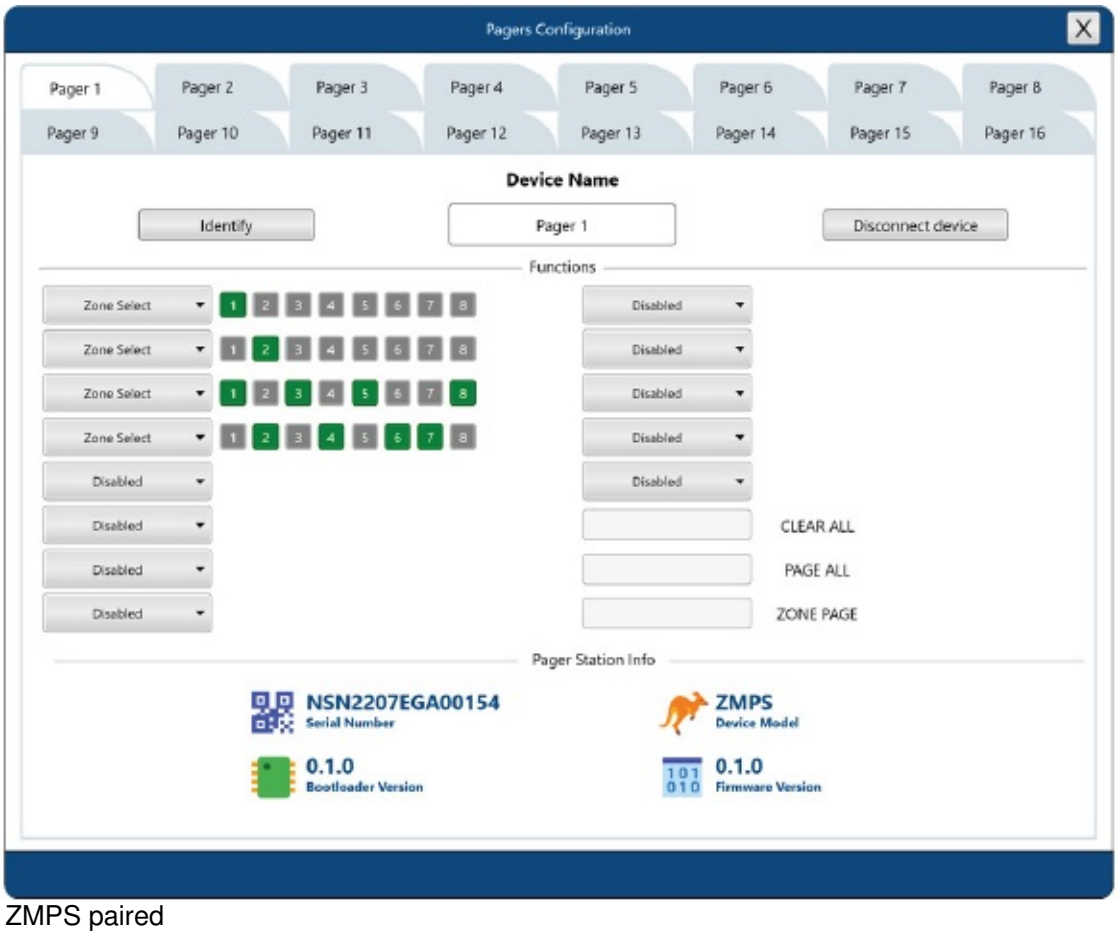
1. The ZMPS paging station will flash all LEDs every 1 seconds to indicate the device is not paired.
2. Press and hold the TOP LEFT and BOTTOM RIGHT buttons until all the LED's start flashing every 0.2s. (Press any button on the paging station during pairing to cancel the pairing mode)
   Only have one wall panel or ZMPS in pairing mode at a time

In the Zone mix PC control software,

1. Select the "Pagers" button in the main window
2. Select any unused Pager tab
3. Select the "Pair" button
4. The Zonemix4/8 will upload the latest firmware to the ZMPS. Note: this will take approx. 30 seconds. The LEDs will rotate anti-clockwise indicating software is being downloaded to the device. The LEDs with then rotate in a clockwise direction indicating the software is being written.
5. The PC software with then confirm that pairing is complete.
6. Name the paging station using the "Device Name" to identify it in future. If you forget or don't know which paging station is selected, use the "Identify" button which will make the paging station flash all it's LEDs every 500ms.
7. Proceed to configuration step below



View before ZMPS paired



View after ZMPS paired

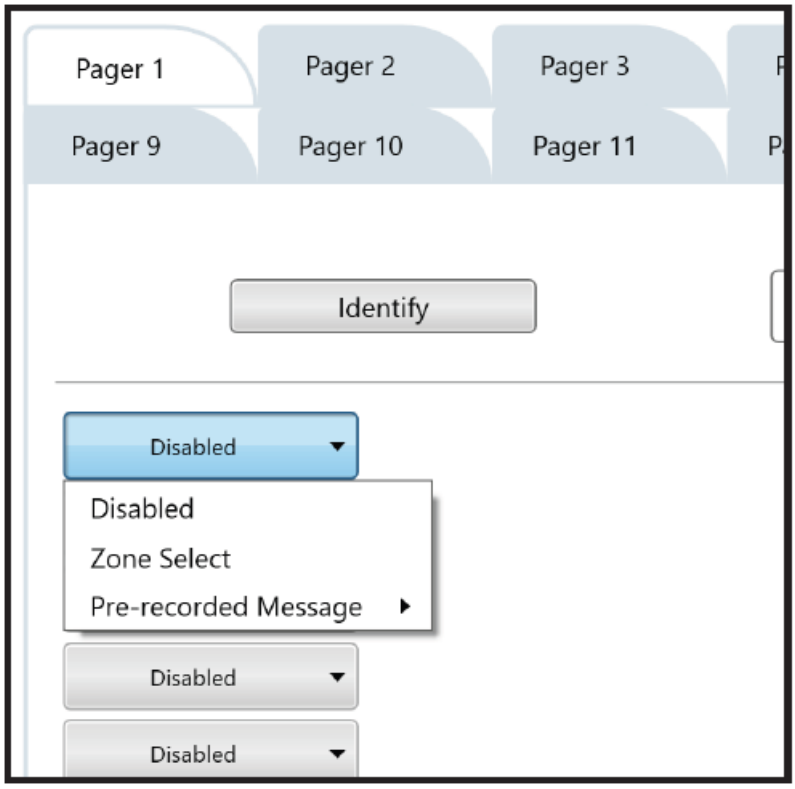
IDENTIFY MODE
If you need to identify which ZMPS is being controlled by the Zonemix software,

- Press the “Identify” button on the paging station tab in the “Pager Configuration” window
  This activates the ZMPS LEDs (Flashes every 500ms)
  Press any button on the paging station to cancel the identify state
- Alternatively, read the serial number on the rear of a ZMPS and match it to the paging station info shown in the paging station tabs.

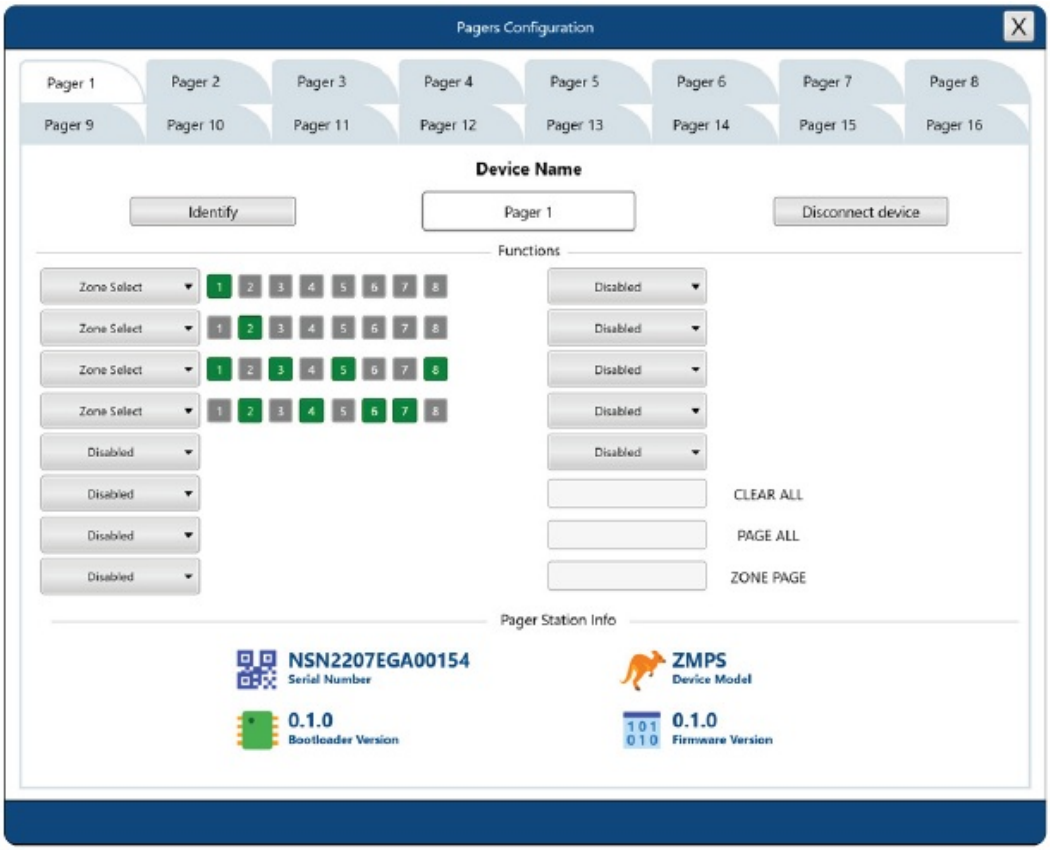
ZMPS CONFIGURATION
The ZMPS allows each button to be configured as either

- Zone Select (Single or Group)
- Pre-recorded Announcement
- Disabled

Select a button to show the drop down of assignable actions



ZONE SELECT
Select the “Zone Select” option from the dropdown list and then select which zone/s it should control using the zone buttons controls.
You can select a single zone or multiple zones if you wish to create a paging group.
Example: First two buttons are set as single zone selection, buttons three and four are set as zone group buttons



PRE-RECORDED ANNOUNCEMENTS
A button can also be set to play a pre-recorded announcement

1. Select the “Paging Message” option from the button dropdown list
2. Select the message to be played from the file explorer window

   Note: You must have an SD card installed with WAV audio files available
3. To playback the pre-recorded message select the zone/s and then press the assigned message button

PRE-RECORDED MESSAGE PLAYBACK
To playback a pre-recorded message, select the zone/s that the message should be sent to and press the assigned message button.

Note: You must also assign other buttons to be “Zone Select” buttons to allow the user to select the appropriate zone/s before the announcement is played.

DISCONNECTING A ZMPS
If a ZMPS needs to be removed from the system, it can be disconnected in the PC control software.

- Go to the appropriate paging station tab.

  See the Identify section above if you do not know which station to select.
- Select the “Disconnect” button
- In order to re-connect the ZMPS follow the pairing instructions section of this manual

  Note: You can customize the pre-announcement chime of the paging stations. See the SD card section for details

CUSTOMISE THE PAGING CHIME
The paging chime can be optionally overridden by placing an alternative audio file on the root of a customer

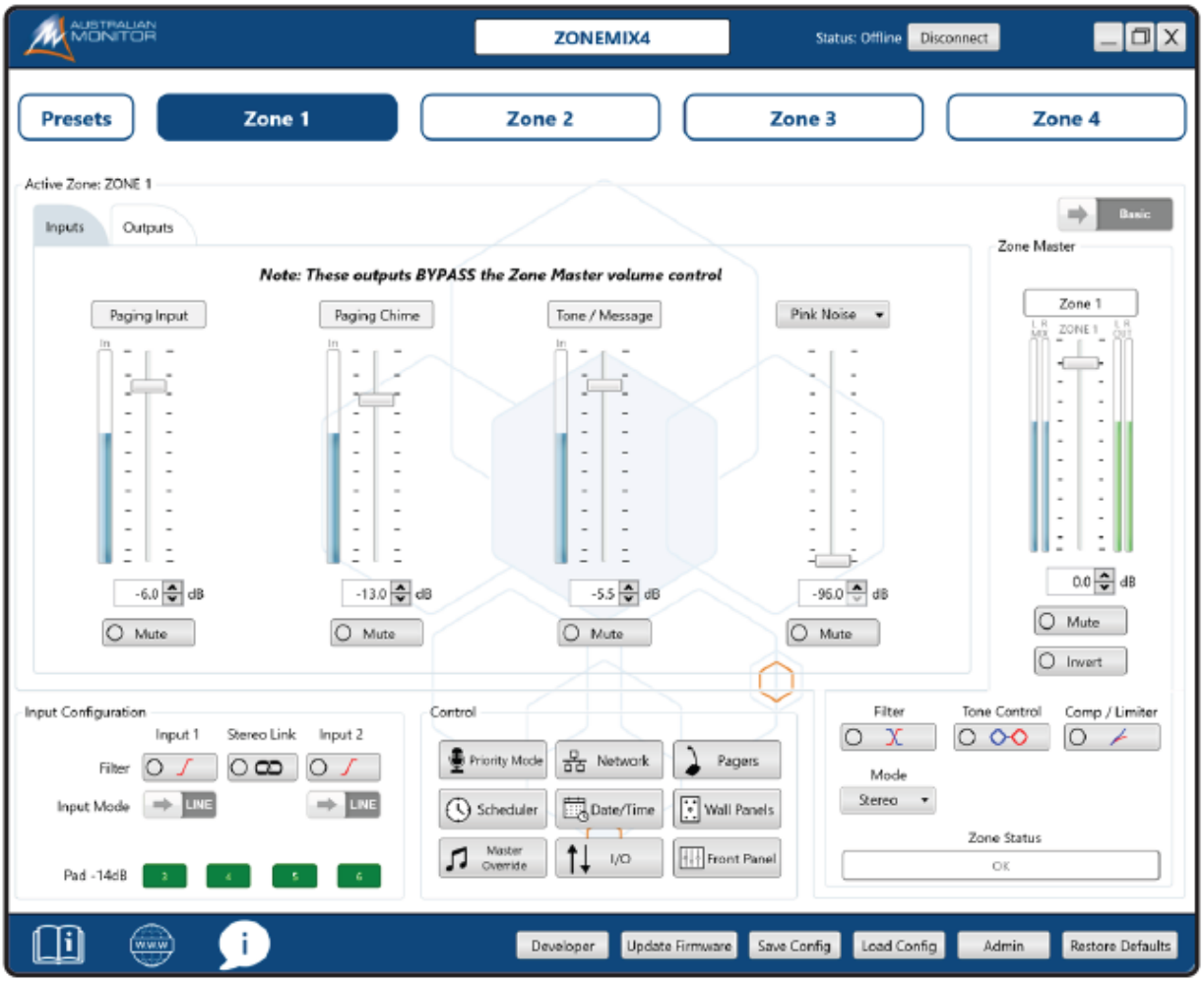
suppled SD card.

- **Format:** pagingchime.wav

(Only WAV files are supported. Do NOT use MP3 or other audio formats).

SET AUDIO LEVELS
Important: The paging input, chime and messages BYPASS the Zone master volume control. This is to ensure the paging is not too low or muted if a user turns down the master volume.

1. Select the Zone output you wish to control
2. Select the “Outputs” audio tab in the audio mix section
3. Set the Paging Input, Paging Chime and Message volume controls to the level desired



CONNECTING WALL PANEL CONTROLLERS

- Step 1 Wiring and Termination.

  Follow the wiring guide section of the manual to connect and terminate the wall panels to the accessory ports.
- Step 2 Power on the Zonemix4/8
- Step 3 Use the PC software to pair and configure the wall panels
- Step 4 Set audio levels

PAIRING THE WALL PANELS TO THE ZONEMIX4/8

Each wall panel must be individually paired with the Zonemix4/8 to function.
Follow these steps to pair the wall panels,
On the wall panels,

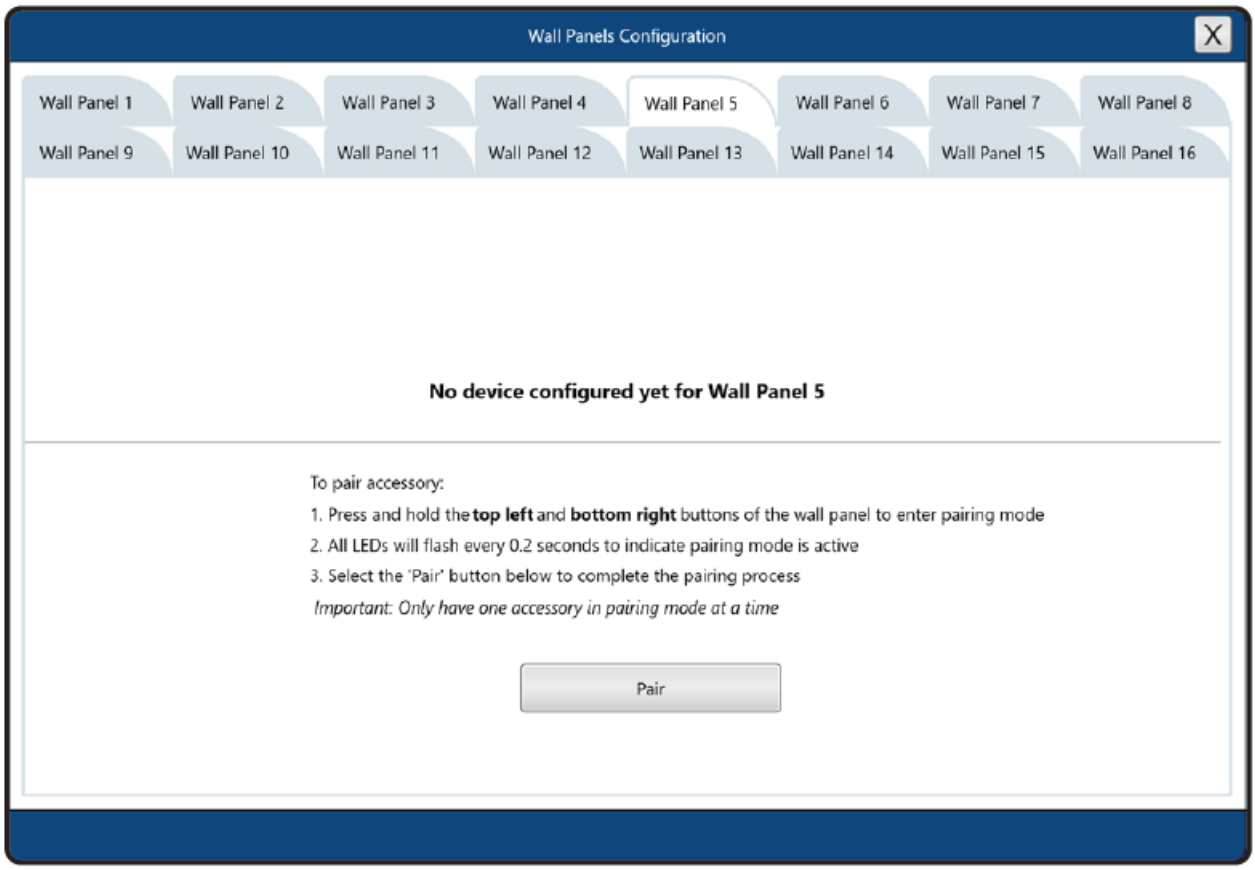
1. **On the WP10,**

   Press and hold the TOP LEFT and BOTTOM RIGHT buttons until all the LED's start flashing every 0.2s. (Press any button on the wall panel during pairing to cancel the pairing mode)

On the WP4R and WPVOL,
Press and hold the rotary encoder button for 5 seconds until all the LED's start flashing every 0.2s.
(Press any button on the wall panel during pairing to cancel the pairing mode)
Only have one wall panel or ZMPS in pairing mode at a time

In the Zonemix PC software,

1. Select the "Wall Panels" button in the main window
2. Select any unused wall panel tab
3. Select the "Pair" button
4. The Zonemix4/8 will upload any firmware updates to the wall panel.
   The LEDs will rotate anti-clockwise indicating software is being downloaded to the device.
   The LEDs with then rotate in a clockwise direction indicating the software is being written.
5. The PC software with then confirm that pairing is complete
6. Name the wall panel using the "Device Name" to identify it in future.
   If you forget or don't know which wall panel is selected, use the "Identify" button which will make the wall panel flash all it's LEDs every 500ms.
7. Using the dropdown menu for each button, select the function desired.
   Note: the WPBT does not have any configurable buttons and will instead shows the Bluetooth options that can be modified such as Name and PIN number.



Accessory LED States

LED Status	Meaning	Resolution
All LEDs on, once a second	Not Paired	Put accessory into pairing mode
All LEDs on every 0.2 seconds	Pairing Mode	Pair accessory with ZONEMIX using the PC c ontrol software
LED chase anti clockwise, one led on at a time (led chan ges every 0.5 seconds)	Erasing firmware to prepare f or new firmware	Wait until the accessory has finished erasing
LED chase clockwise, one led on at a time (led changes ever y 0.5 seconds)	Writing new firmware	Wair until the ZONEMIX has finished writing fir mware to the accessory
Alternate left, right LEDs every 500ms	Identify Mode	Press any button to cancel identify mode
Top left LED on once a second	Needs firmware download	Download new firmware to the accessory by p airing it to the system
All RED LEDs on	Master Override, Evac, Alert, Intruder Active (Wall panel dis abled)	Wait until the master override has finished
Top left LED on (led change st ate every 2 seconds)	Fault	Return to service

CONNECTING WALL PANEL AUDIO INPUTS

The ZONEMIX accessory ports each have a single balanced audio input for use with a remote audio wall panel. This input is referred to as the LOCAL input.
Each accessory ports LOCAL input is locked to the corresponding output zone. E.g. Accessory Port 1 is the Local input for Zone 1 Connect any balanced audio source to the accessory port.

Compatible wall panels include,

- WPBT – Bluetooth audio receiver
- WPML – MIC/Line active audio input
- WPXLR – passive XLR audio input

  Important: Only 1 audio input wall panel is supported per zone

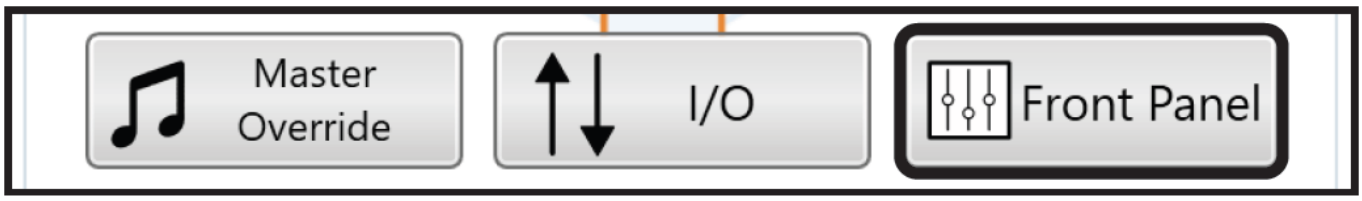
  Referring to the wiring guide section, the accessory port wiring for the LOCAL input is,
- Pin 5 GND
- Pin 7 Local Input +
- Pin 8 Local Input –

The WPBT must be paired to the ZONEMIX system which then instructs the wall panel to transmit mono audio out. If it is not paired it will transmit stereo out and you will only hear the left channel in the local input.

FRONT PANEL
The front panel allows the control of various features in the ZONEMIX. However, these can be disabled if you wish to prevent end users from modifying the setup.

- Disable input volume level control
- Disable output volume level control
- Disable preset recall/saving
- Disable Audio Setup menu access
- Disable System Setup menu access
- Disable entire front panel.

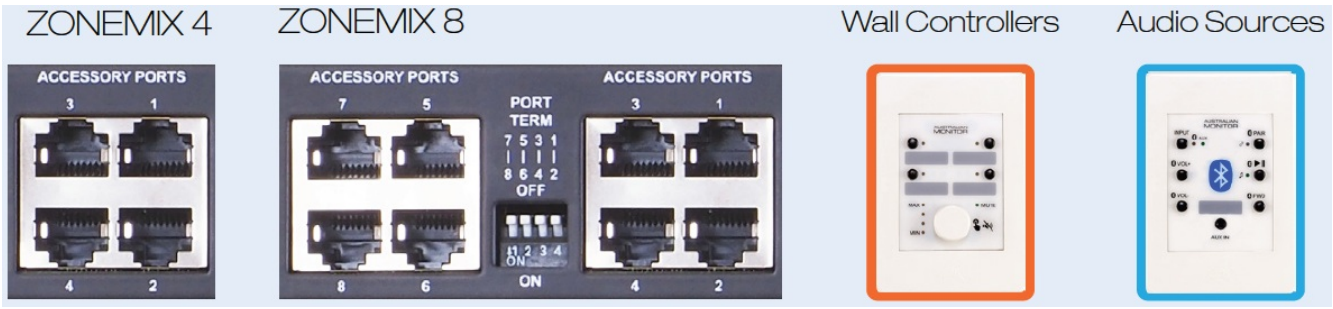
  (Shows device name and display locked message)



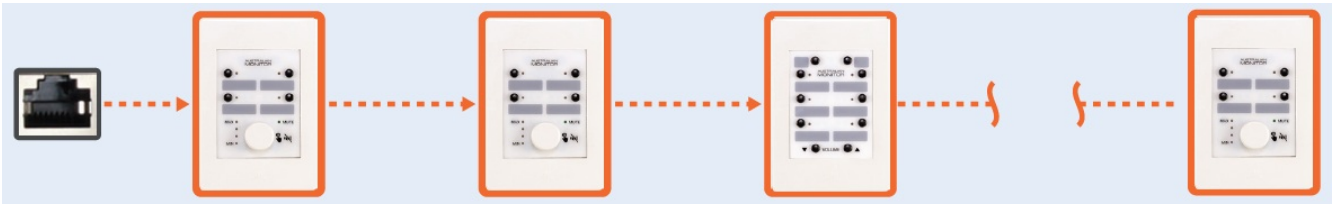
ACCESSORY WIRING GUIDE

INTRODUCTION
The ZONEMIX accessory ports allow for the connection of wall panels, paging stations and audio input sources. Please follow the guide below to set up your system.

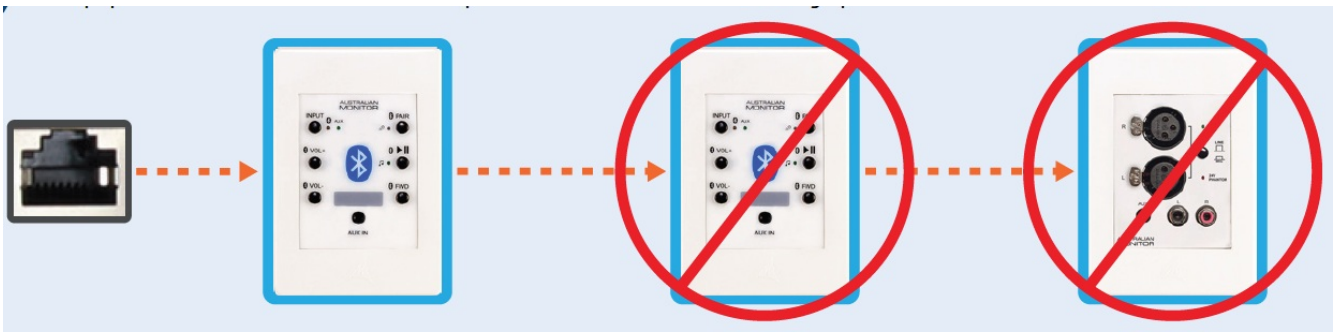
- Key:



- Supports up to 8 controllers per port. (see page 2 for details)

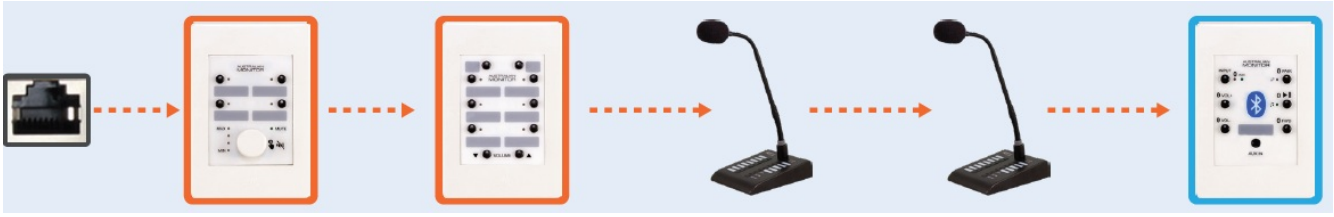


- Supports ONE audio input PER accessory port.



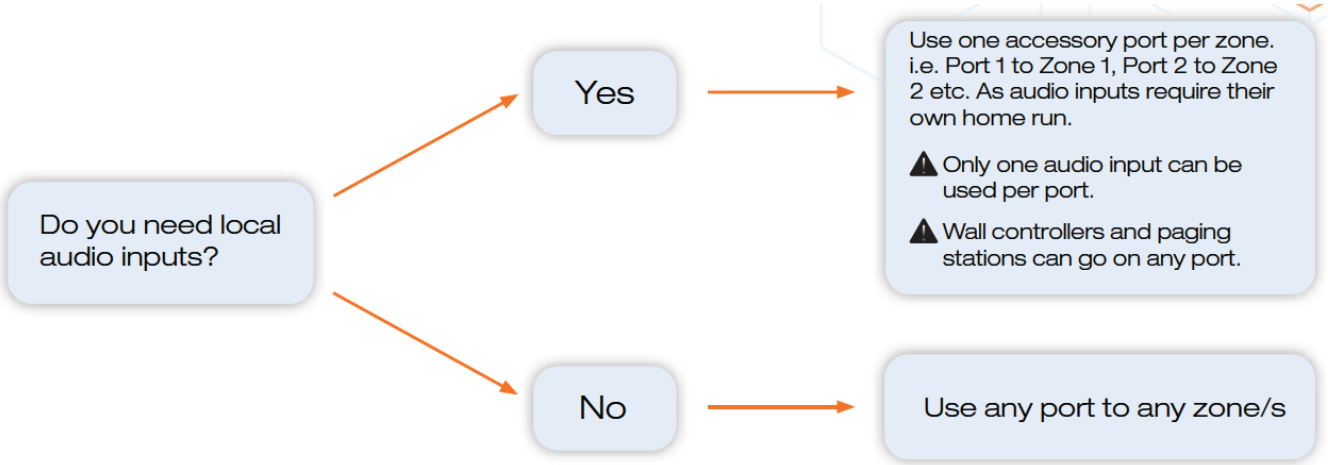
- Supports up to 8 paging stations per port. (see page 2 for details) Note: Supports one active page at a time.

- **Example setup:** Lots of controllers, lots of paging stations and ONE audio input.



Please note that accessory port local audio input channels are locked to the corresponding output zone and only one can be used per zone. E.g. Accessory port 1 local input connects to Zone 1. However, multiple wall panels and paging stations can be connected on the same accessory port.

- **STEP 1: DECIDE PORT WIRING LAYOUT**



- **STEP 2: CONFIRM YOU DO NOT EXCEED THE FOLLOWING LIMITS**

Maximum cable length per port	Accessories per port	Maximum Accessories in system
130m	8	24
150m	7	
170m	6	
200m	5	
250m	4	
350m	3	
500m	2	

The maximum distances quoted in the table are due to DC current limitations.

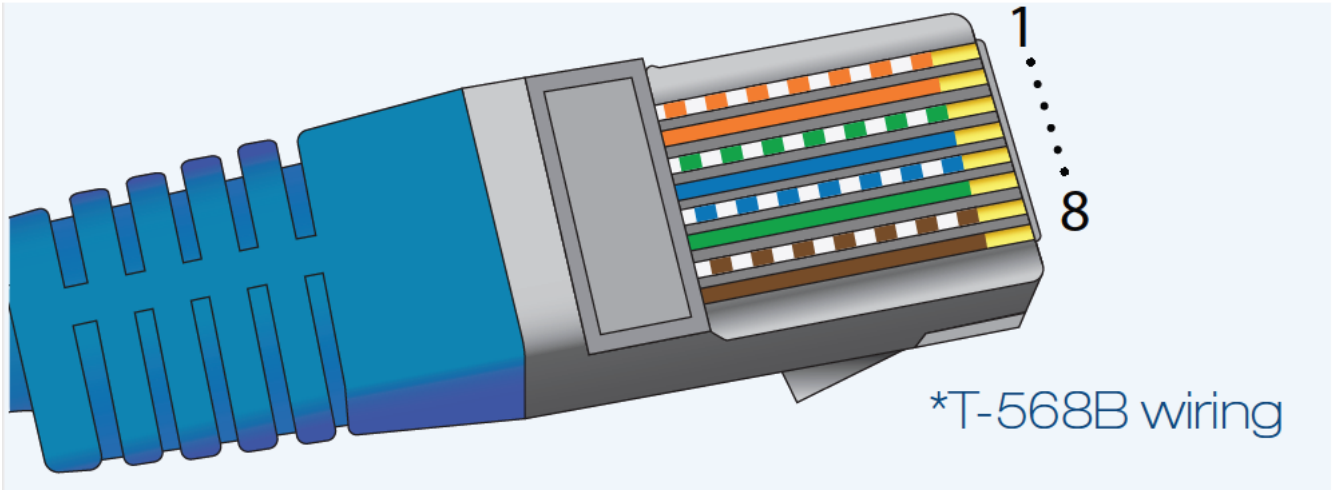
The paging stations and wall panels can be locally powered to increase the cable length to a maximum of 500m. Please read the following additional document: Advanced accessory port wiring guide.

- **STEP 3: ACCESSORY PORT WIRING**

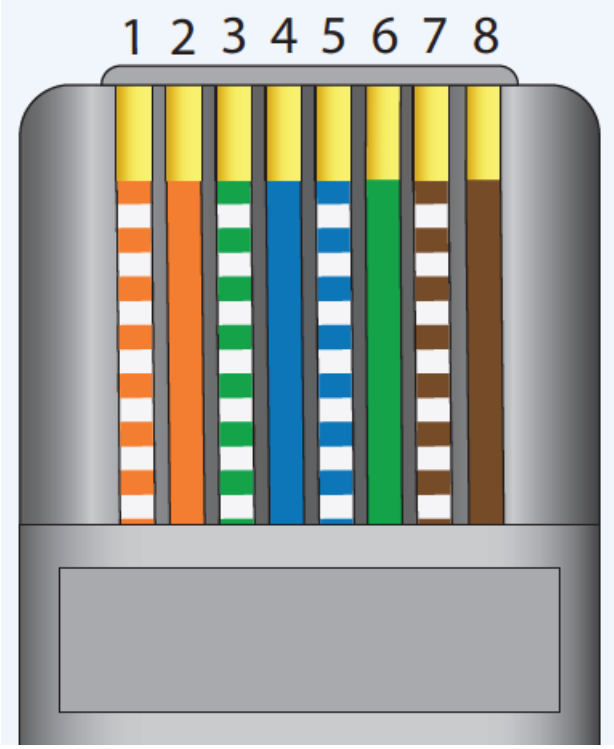
  Wire the ZONEMIX and ZMPS paging stations as per the images below.

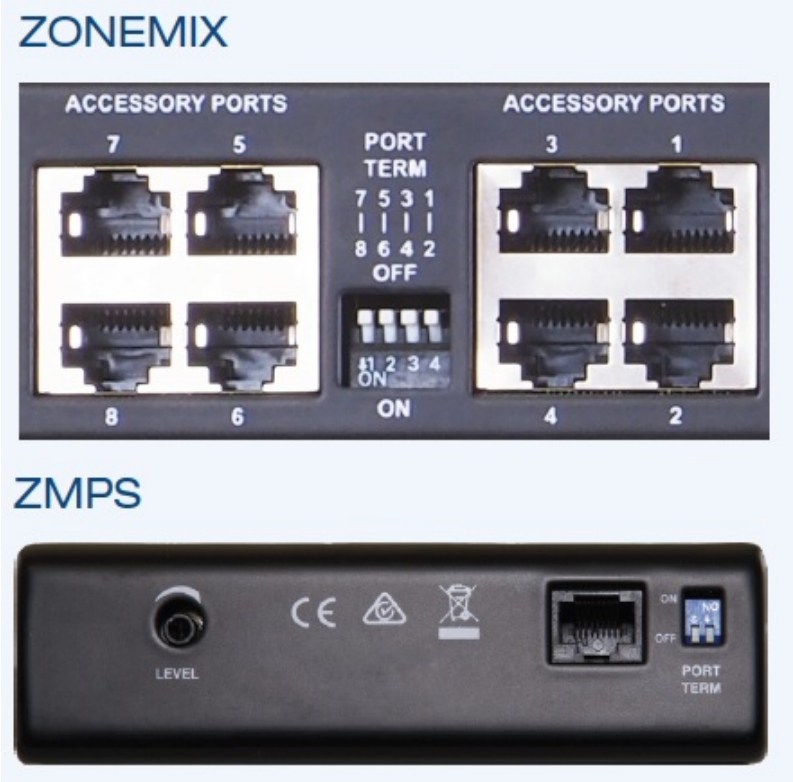
  - Category 5, 5e and 6 cabling supported.
  - T-568B wiring recommended. However, T-568A also supported.

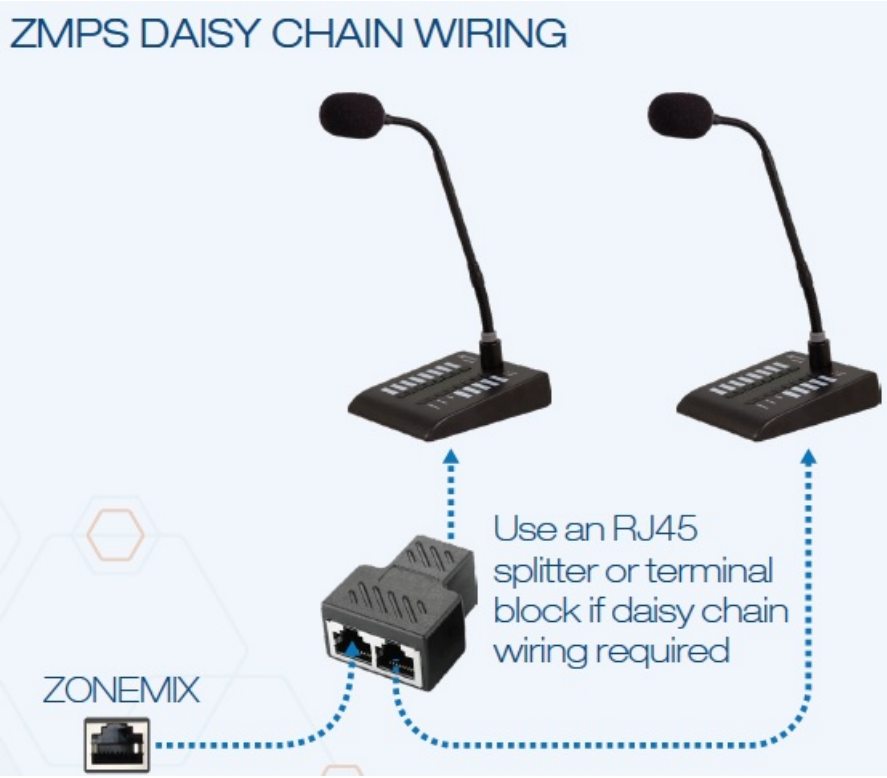
ZONEMIX AND ZMPS WIRING



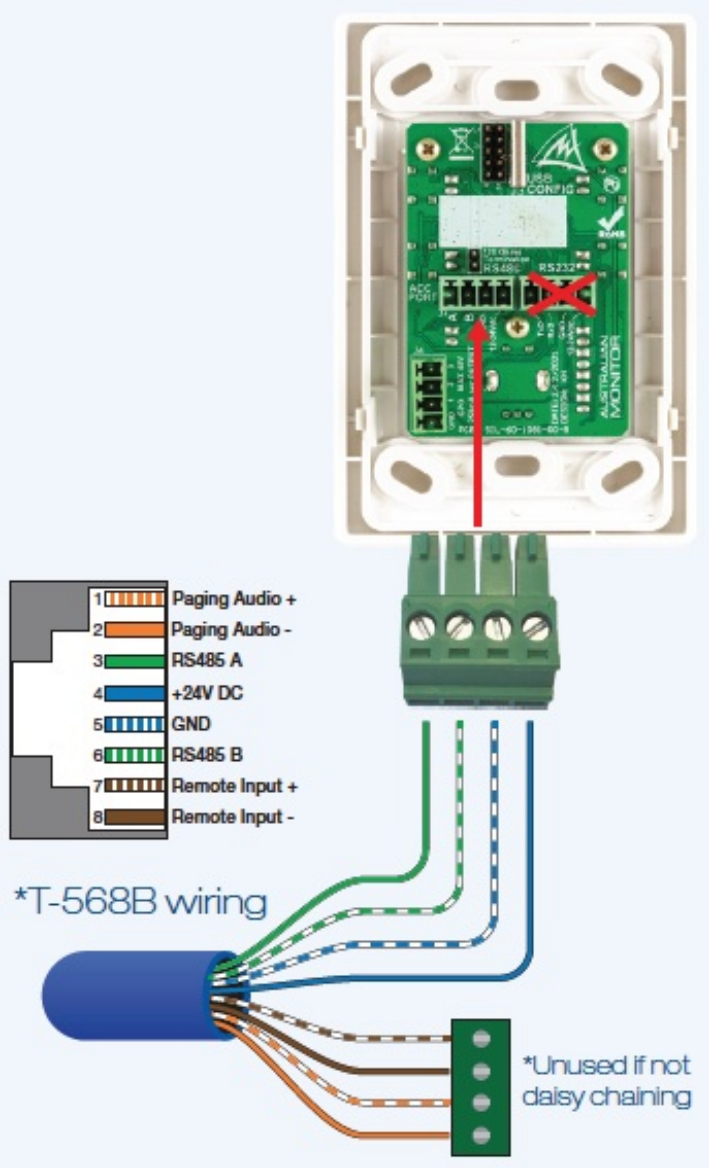
Pin	Colour	Signal
1	Orange/White	Paging Audio +
2	Orange	Paging Audio –
3	Green/White	RS485 B
4	Blue	+24V DC
5	Blue/White	GND
6	Green	RS485 A
7	Brown/White	Remote Input +
8	Brown	Remote Input –



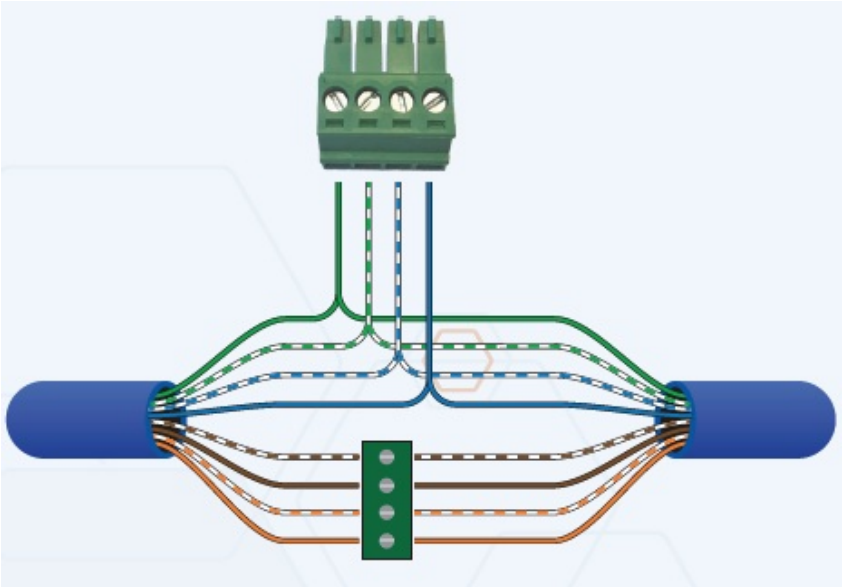




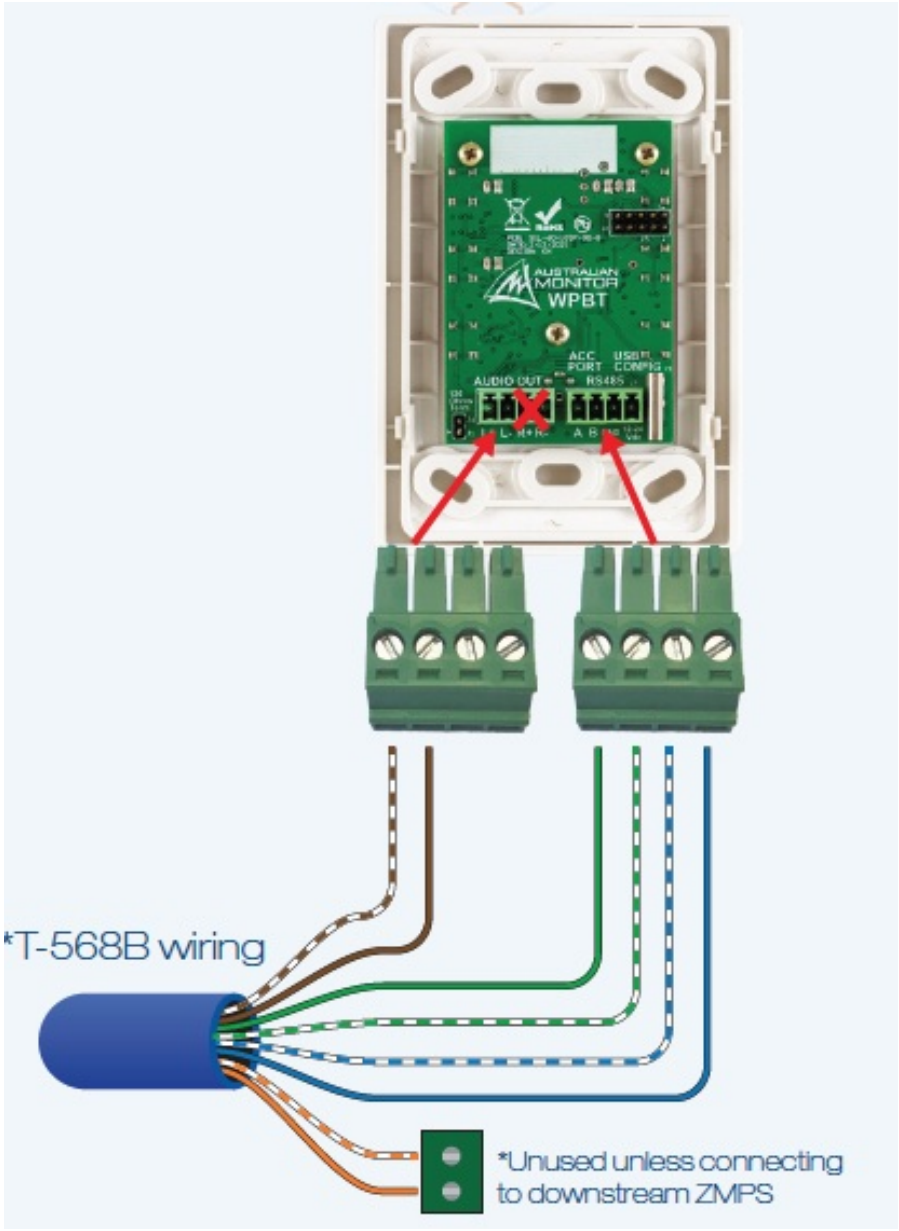
- WP4R, WP10, WPVOL WIRING



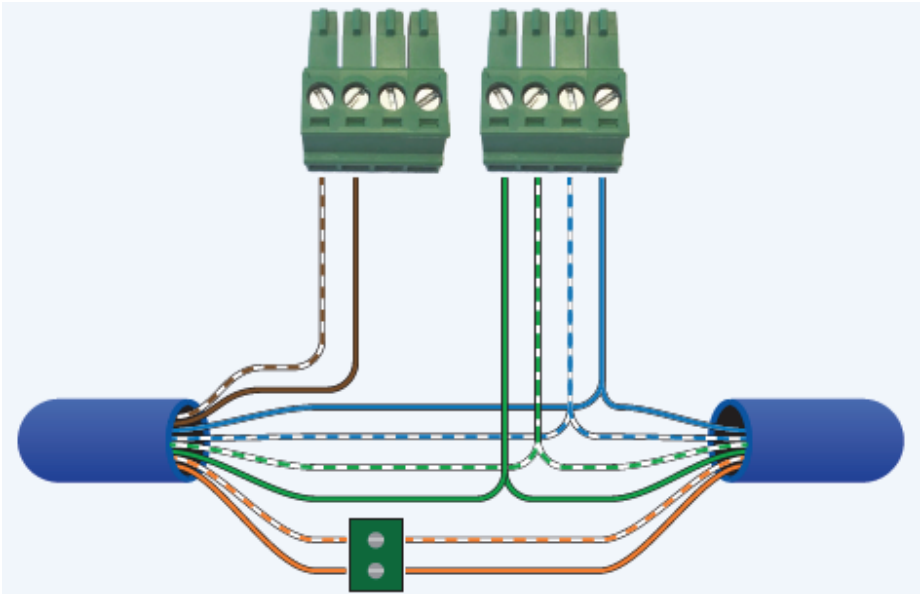
- Daisy chain wiring



- WPBT WIRING



- Daisy chain wiring

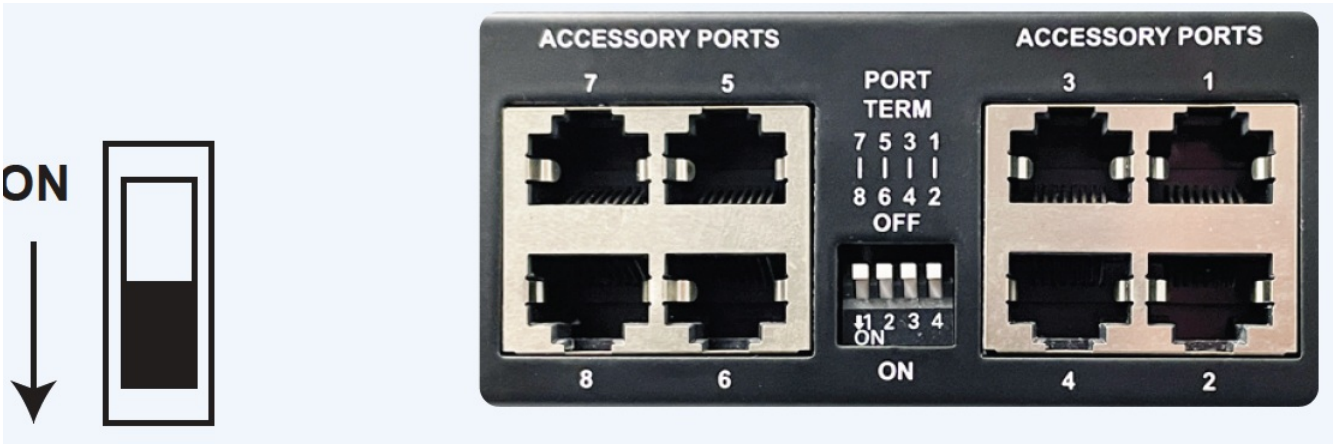


- **STEP 4: PORT TERMINATION – DO NOT SKIP THIS STEP**

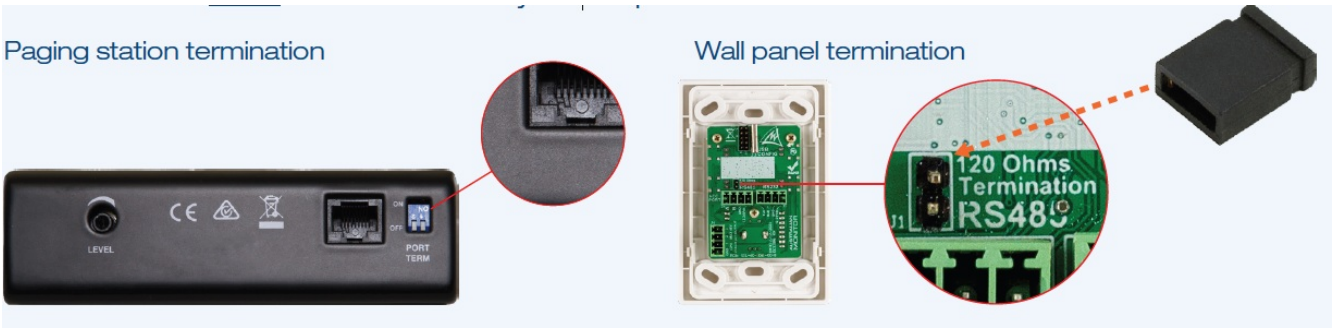
The ZONEMIX uses the RS485 standard to communicate to wall panels and paging stations. RS485 requires that each end of the cable run is terminated to prevent signal corruption due to signal reflections in the cable. The Accessory Ports are grouped in Pairs. 1+2, 3+4, 5+6, 7+8. You must terminate the ZONEMIX and Accessories based on which ports you use.

1. Terminate the ZONEMIX accessory ports, as per the table, using the PORT TERM switches

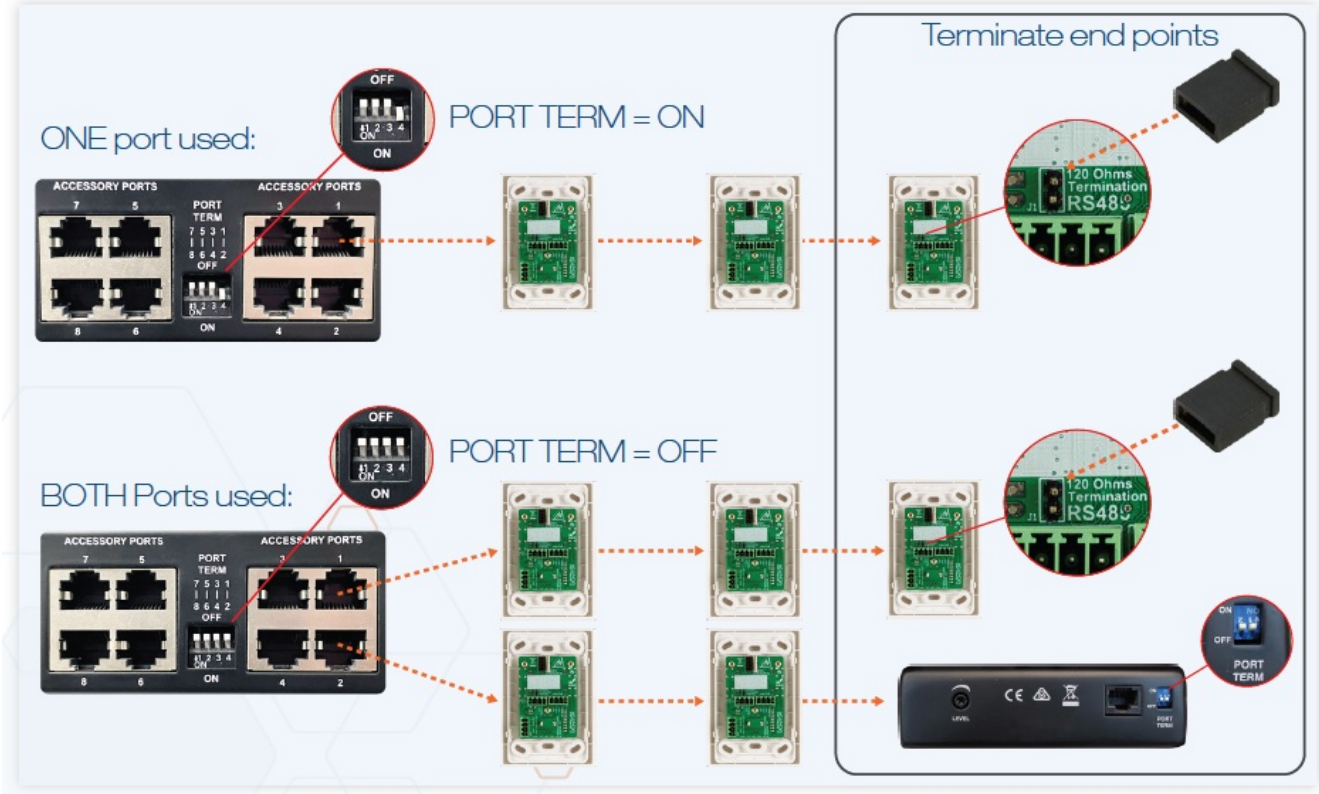
ACCESSORY PORT TERMINAL SWITCH SETTING			
ONE PORT USED	**TERM**	**BOTH PORTS USED**	**TERM**
Port 1 **OR** Port 2 used	**ON**	Port 1 **AND** Port 2 used	**OFF**
Port 3 **OR** Port 4 used	**ON**	Port 3 **AND** Port 4 used	**OFF**
Port 5 **OR** Port 6 used	**ON**	Port 5 **AND** Port 6 used	**OFF**
Port 7 **OR** Port 8 used	**ON**	Port 7 **AND** Port 8 used	**OFF**



2. Terminate the LAST RS485 accessory on the port cable run.



Examples:



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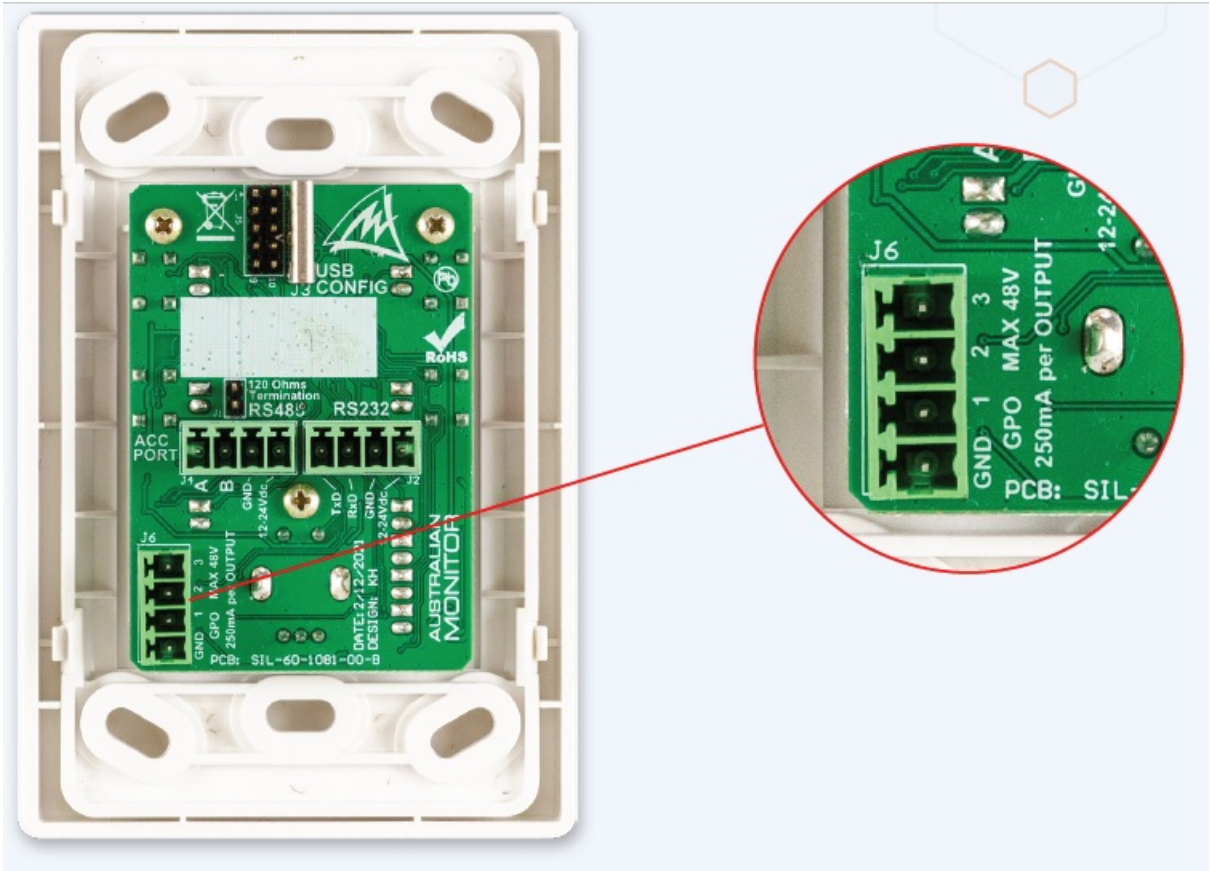
- **STEP 5: WP4R, WP10 GPO WIRING (OPTIONAL)**

  The WP4R and WP10 both have 3 general purpose outputs which can be controlled from the wall panel buttons to trigger external devices such as projectors.

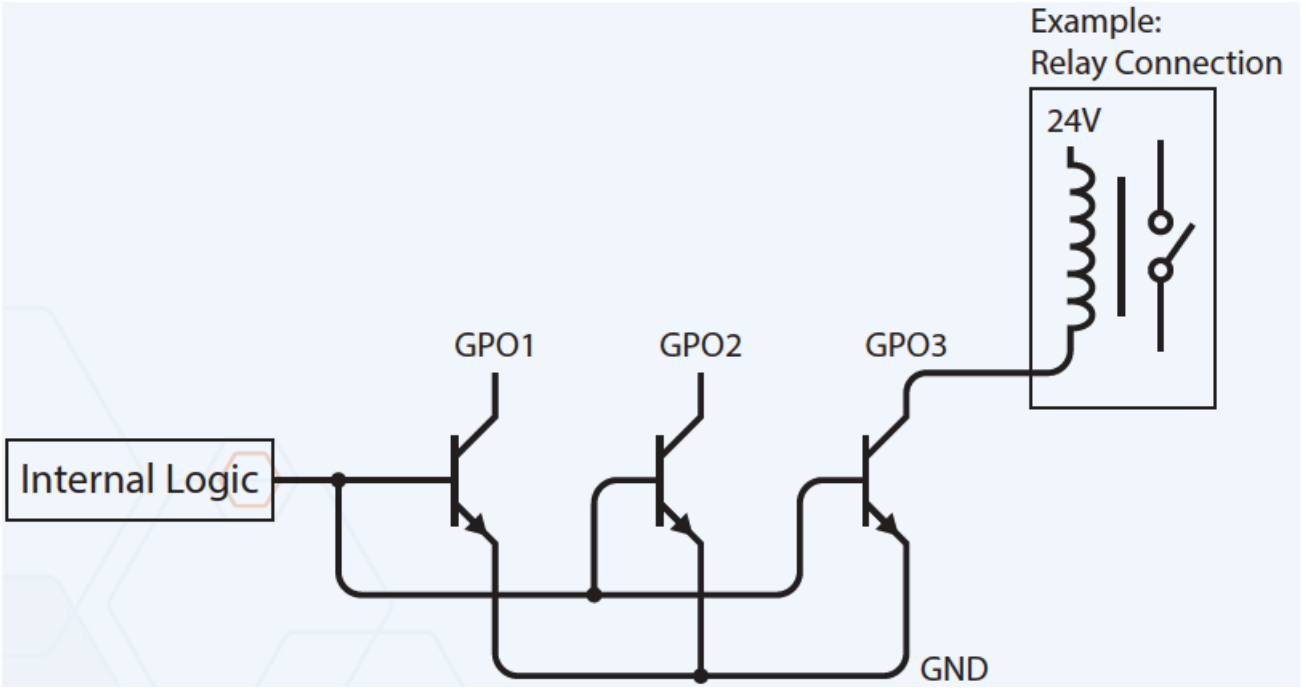


GPO Schematic

Each Output is an open collector transistor.

Maximum Voltage: 48V

Maximum Sink Current: 250mA



THIRD PARTY CONTROL

The ZONEMIX can be controlled from third party applications via the Ethernet or RS232 connections.

RS232 CONNECTION

The RS232 ships with the following default settings,

- BAUD 115200
- DATA 8
- STOP 1
- PARITY None
- FLOW None

These can be modified in the PC control software under the “Network” settings.

ETHERNET CONNECTION

Sending commands over the ethernet requires the IP address and PORT number.
The network settings can be accessed from the “Network” section of the control software

- Default IP Address 192.168.1.10
- UDP Port 2626
- TCP Port 2626

ALMA Interface Protocol

The 3rd party control interface is called ALMA, the full protocol can be downloaded from www.australianmonitor.com.au
In addition, the PC control software has a “Developer” mode button that brings up a dialog box which prints out commands sent and received by the ZONEMIX. It is strongly recommended using this feature to easily find the commands necessary to control functions in the product.

Example Commands:

Task	Command	Reply
Set Zone Output 1 to -20dB	set active out1 vol “-20.0”	reply active out1 vol “-20.0”
Set Zone 1, Input 1 to 0dB	set active mixout1in1 vol “0.0”	reply active mixout1in1 vol “0.0”
Unmute Zone 1, Input 2	set active mixout1in2 mute “false”	reply active mixout1in2 mute “false”
Recall preset 1	set device preset recall “1”	reply device preset recall “1”

The volume increment feature is commonly used,

Increment Zone8 Input 6 up 3dB	set active mixout8in6 vol up 3	reply active mixout8in6 vol up “3”
Increment Zone8 Input6 down 3dB	set active mixout8in6 vol down 3	reply active mixout8in6 vol down “3 ”

Note: Always wait for the reply command to prevent commands falling out of sequence or being send too quickly.

FACTORY DEFAULTING & IP ADDRESS RESETTING

Various settings of the ZONEMIX can be reset using the SYSTEM SETUP menu via the front panel display.
Press the HOLD the INPUT MIX knob to enter the SYSTEM SETUP menu.
The following settings can be changed,

RESET NETWORK CONFIGURATION

This will reset to the following defaults:

- DHCP Mode = True
- DHCP Default IP = 192.168.1.10

RESET ADMIN ACCOUNT LOGIN

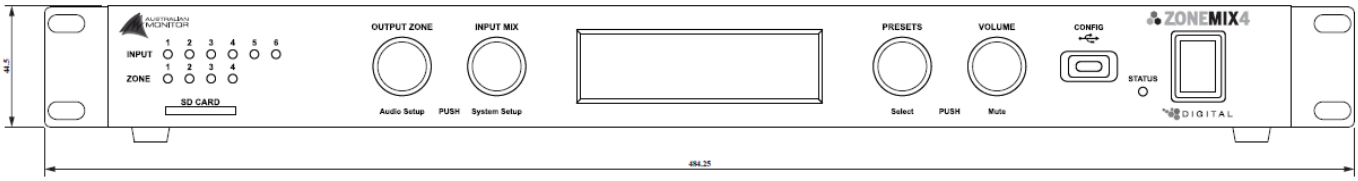
The account login settings will all be restored to to the following defaults:

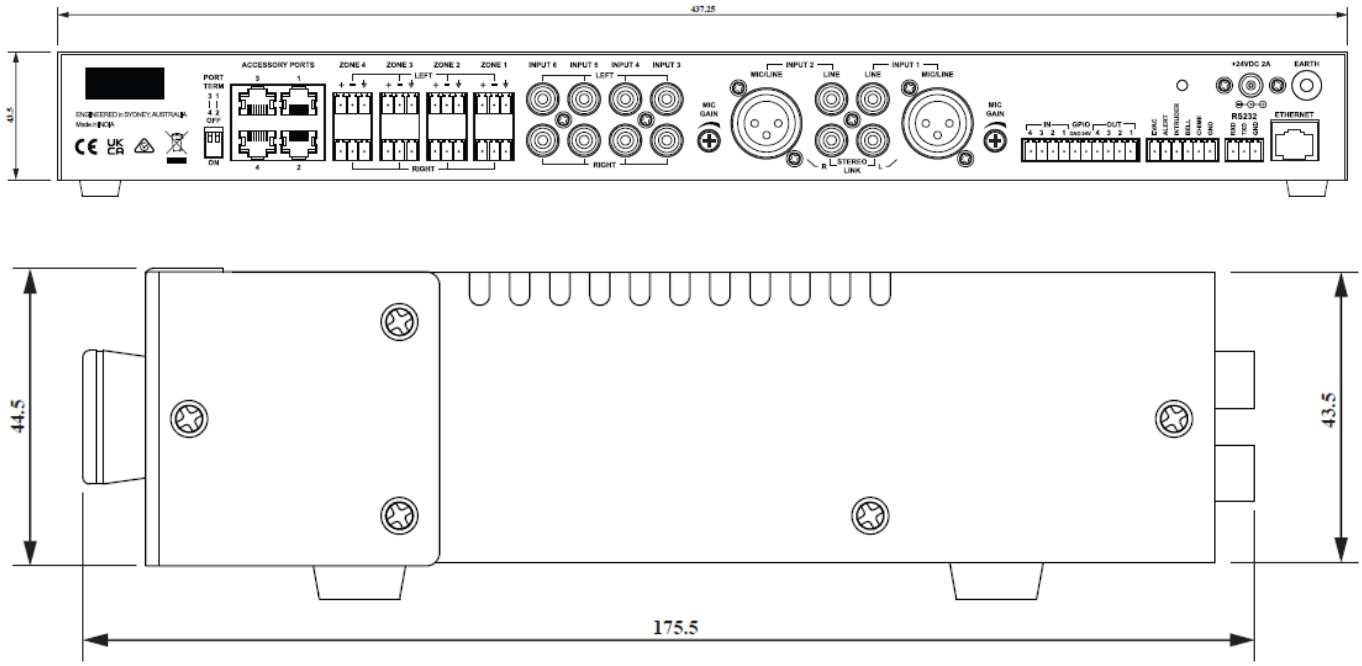
- **Username:** admin
- **Password:** admin

RESET ALL SETTINGS TO FACTORY DEFAULT

The network configuration, user account data and audio settings will be set back to the factory default values.

DIMENSIONS





SPECIFICATIONS

	ZONEMIX 4	ZONEMIX 8	COMMENTS
INPUTS/OUTPUTS			
ZONE OUTPUTS	4	8	
OUTPUT MODE	Stereo/Mono	Mono	
MIC/LINE INPUTS	2		
LINE INPUTS	4		
LOCAL AUDIO INPUTS	4	8	Inputs from Accessory Ports
PAGING STATIONS	Up to 16		
WALL PANELS	Up to 16		
AUDIO			
XLR SENSITIVITY	LINE Setting: 200mV, MIC Setting: 10mV		1Vrms output

RCA SENSITIVITY	-12dBu (200mV)		1Vrms output Software controlled -14dB pad a vailable
MAXIMUM ZONE OUTPUT LEVEL	4Vrms		
FREQUENCY RESPONSE	20Hz-20kHz		±0.5dB
THD	< 0.01%		20Hz-20kHz, 20kHz BW, Unity Gain
SNR	> 100dBA		Max Output, 1kHz, 20kHz BW, A -Weighted
mini DSP			
	Volume control Matrix Mixer High/Low pass fil ters Tone Control – 100Hz ±10dB, 10kHz ±10dB Compressor/Limiter Delay up to 50m(150ms) ZONEMIX4 Only Sine Wave Generator (500, 1k, 5k and 10kHz) Internal Pink Noise Generator		
CONTROL			
USER CONTROLS	Front Panel, Wall Panels		
COMMS INTERFACE	USB-C, Ethernet, RS232		PC GUI and 3rd Party API
GENERAL PURPOSE I/O	4 In, 4 Out	8 In, 8 Out	
TONE GENERATOR	5 Tones		Customizable from SD card
SD CARD	Full size SD card. FAT32 file format. 2TB max imum size		
SD CARD FILE FORMAT	WAV: PCM, 8 or 16 bit, up to 48kHz sample r ate		

	ZONEMIX 4	ZONEMIX 8	COMMENTS
ADDITIONAL FEATURES			
PHANTOM POWER	24V, 10mA		
POWER REQUIREMENTS			
INPUT VOLTAGE	24V DC		100-240Vac 48W plug pack
INPUT CONNECTOR	5.5/2.1mm Socket. Tip positive		100-240Vac 48W plug pack
POWER CONSUMPTION	8W / 48W		No accessories / Maximum Load
THERMAL DISSIPATION CONSUMPTION	27 BTU		1W = 3.412 BTU/Hr
24V OUT	100mA		Total from both outputs
DC INPUT SOCKET	100mA		Total from both outputs
MECHANICAL			
SHIPPING DIMENSIONS	484 x 160 x 44.5mm(19.0″W x 6.3″D x 1.7″H)		
PRODUCT DIMENSIONS (with rack ears)	484 x 176 x 44.5mm(19.0″W x 6.9″D x 1.7″H)		Including Knobs and Rear Connectors
PRODUCT DIMENSIONS (without rack ears)	484 x 176 x 44.5mm(19.0″W x 6.9″D x 1.7″H)		Including Knobs and Rear Connectors
NET WEIGHT	2.4kg		
SHIPPING WEIGHT	2.4kg		
MOUNTING	1 RU		
FINISH	Powder coated steel		
COLOUR	Black		
OPERATING TEMPERATURE	0°C to 40°C (95% RH)		
APPROVALS			
	CE, IEC, RCM		

ENGINEERED BY AUSTRALIAN MONITOR
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Website: www.australianmonitor.com.au

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ABN 86 003 231 187

Documents / Resources

	AUSTRALIAN MONITOR ZONEMIX4 4 Zone Mixer and Paging System [pdf] User Manual ZONEMIX4 4 Zone Mixer and Paging System, ZONEMIX4, 4 Zone Mixer and Paging System, Mixer and Paging System, Paging System

References

- Australian Monitor - Commercial and pro audio product manufacturer
- Australian Monitor - Commercial and pro audio product manufacturer