



Operating Manual

A 4489A Audio Switcher

Optional Accessories

A 4658 Power Injector (U/UTP Cat5)

A 4660 Emergency Paging Microphone Console (U/UTP Cat5)



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IMPORTANT NOTE:

Please read these instructions carefully from front to back prior to installation.
They include important setup instructions.
Failure to follow these instructions may prevent the unit from working as designed.



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1.0 OVERVIEW

The A 4489A Audio Switcher provides a Microphone level or Line level output which can be connected directly to the inputs of up to four amplifiers to provide up to four zones of audio. A BGM input on the rear of the A4489A directs background music to all zones until over-ridden by zone paging.

Zone paging is achieved with the addition of A 4660 paging consoles.

The A 4660 paging console provides up to 4 zones of paging, and allows the operator to manually select any zone or any combination of zones. A pre-announcement and post announcement chime is available at the paging console and through the PA system. Provision has also been made on the A 4660 for a local BGM input for background music.

Connection between the A 4660 and A 4489A is via a Cat5e/6 cable which carries power and the balanced audio output from the microphone.

2.0 FEATURES

A 4489A

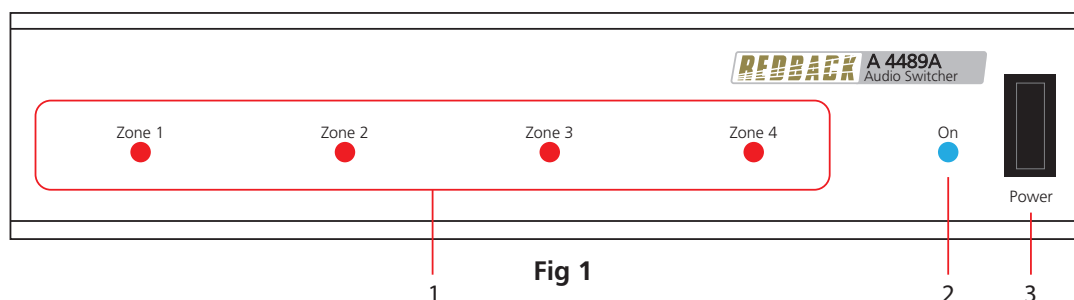
- Four output zones
- Microphone or Line level output
- BGM input for background music to all zones

A 4660

- Four zones of paging.
- Pre-announcement chime (optional A 4660).
- Post-announcement chime (optional A 4660).
- Chime volume adjustment
- Mic volume adjustment
- Additional BGM Input(paging microphone)
- High level balanced output via Cat 5 cable

3.0 FRONT PANEL GUIDE

Figure 1 shows the layout of the A 4489A front panel.



- 1 Active Zone Indicators**
The LED's indicate when a zone is active
- 2 On Indicator**
Indicates when the unit has power.
- 3 Power Switch**
Use this switch to turn the switcher on.

4.0 REAR PANEL CONNECTIONS

Figure 2 shows the layout of the A 4489A rear panel.

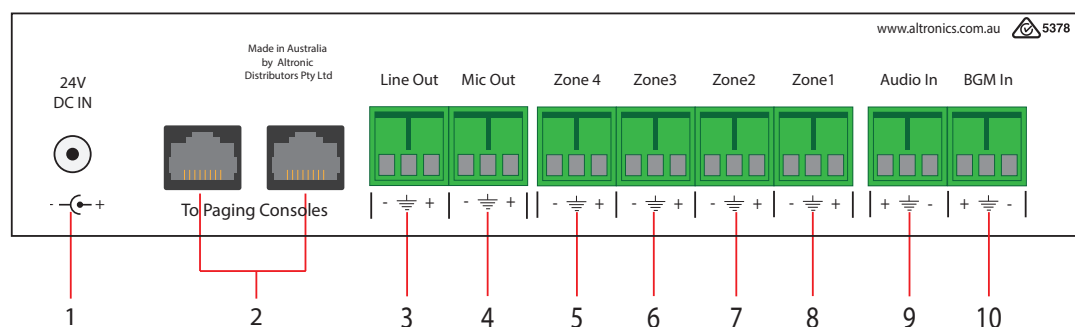


Fig 2

- 1 24V DC connector**
2.1mm DC jack (centre pin positive).
- 2 RJ45 connector**
For connection back to the A 4660 paging consoles. Either port can be used.
- 3 Line Out**
This is the line level audio output from the paging console/s.
- 4 Mic Out**
This is the low level audio output from the paging console/s.
- 5-8 Zone 1-4 Audio Outputs**
These are switched audio outputs which output the signal present at the "Audio In" terminals when the particular zone is triggered by a paging console.
- 9 Audio In**
This is the input used to supply audio to the zone outputs.
- 10 BGM In**
This is the input used to supply Background Music to the zone outputs.

5.0 CONNECTING THE A 4489A AUDIO SWITCHER TO AMPLIFIERS OR SPEAKERS

The balanced audio output from the paging console is transmitted down the Cat5e/6 cable to the Audio Switcher which splits and converts the signal to microphone and line level outputs. These are provided as screw terminal connections.

Connection Configurations

There are three basic different configurations for switching the audio output from the A 4489A Audio Switcher to the output zones.

Option 1 : Individual Zone Amplifiers using Microphone Level Signals

The audio from the paging console/s is fed down the Cat5e/6 cable to the A 4489A audio switcher. Take the low level balanced signal from the "Mic Out" terminals on the rear of the A 4489A and feed them back into the "Audio In" terminals on the rear of the A 4489A as shown in figure 3.

The audio from the "Zone 1" to "Zone 4" terminals, are then fed into individual amplifier mic level inputs to provide the audio for the four zones. The audio from these output terminals are switched internally by relays, and are not present unless the zone is activated by the A 4660 paging console/s.

Use this method if using amplifiers with low level balanced inputs.

Typical connection of the A 4489A with individual amplifiers for each zone using mic levels

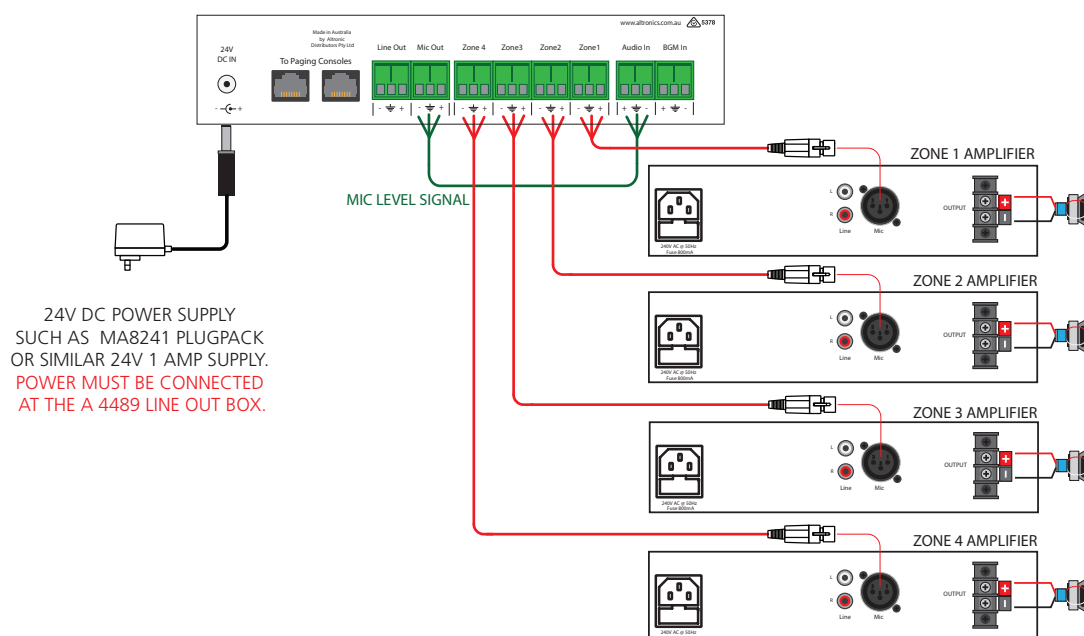


Fig 3

Option 2 : Individual Zone Amplifiers using Line Level Signals

The audio from the paging console/s is fed down the Cat5e/6 cable to the A 4489A audio switcher. Take the line level (1V balanced signal) from the "Line Out" terminals on the rear of the A 4489A and feed them back into the "Audio In" terminals on the rear of the A 4489A as shown in figure 4.

The audio from the "Zone 1" to "Zone 4" terminals, are then fed into individual amplifier line level inputs to provide the audio for the four zones. The audio from these output terminals are switched internally by relays, and are not present unless the zone is activated by the A 4660 paging console/s. Use this method if using amplifiers with Line level balanced inputs.

Background Music can be supplied to each zone by connecting a Background music source to the "BGM In" terminals.

Typical connection of the A 4489A with individual amplifiers for each zone using Line levels

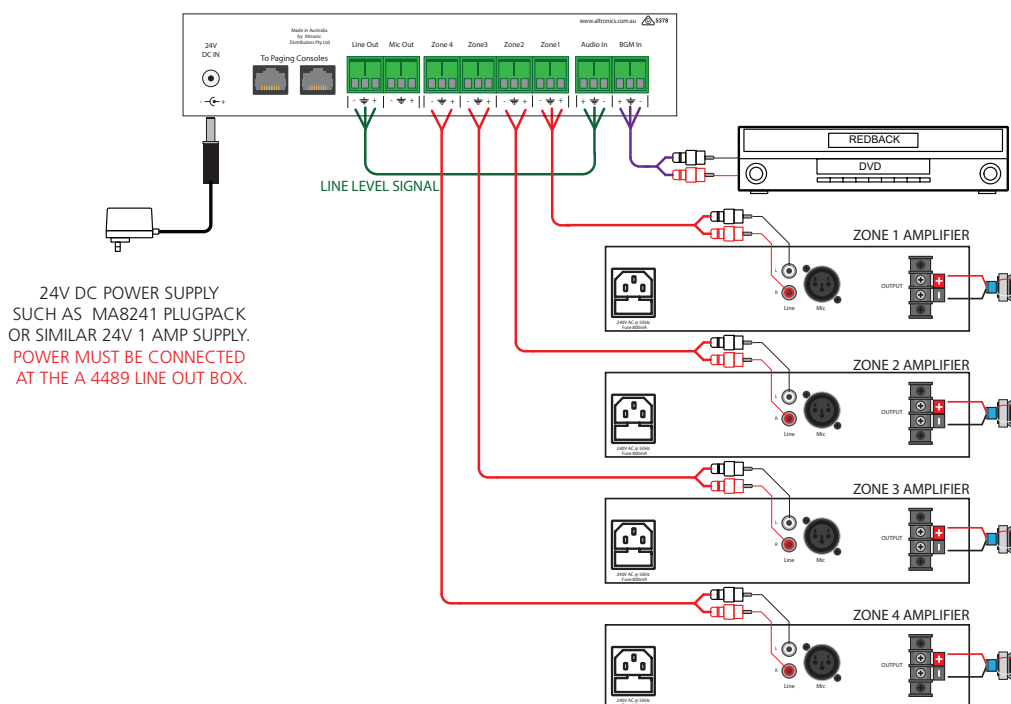


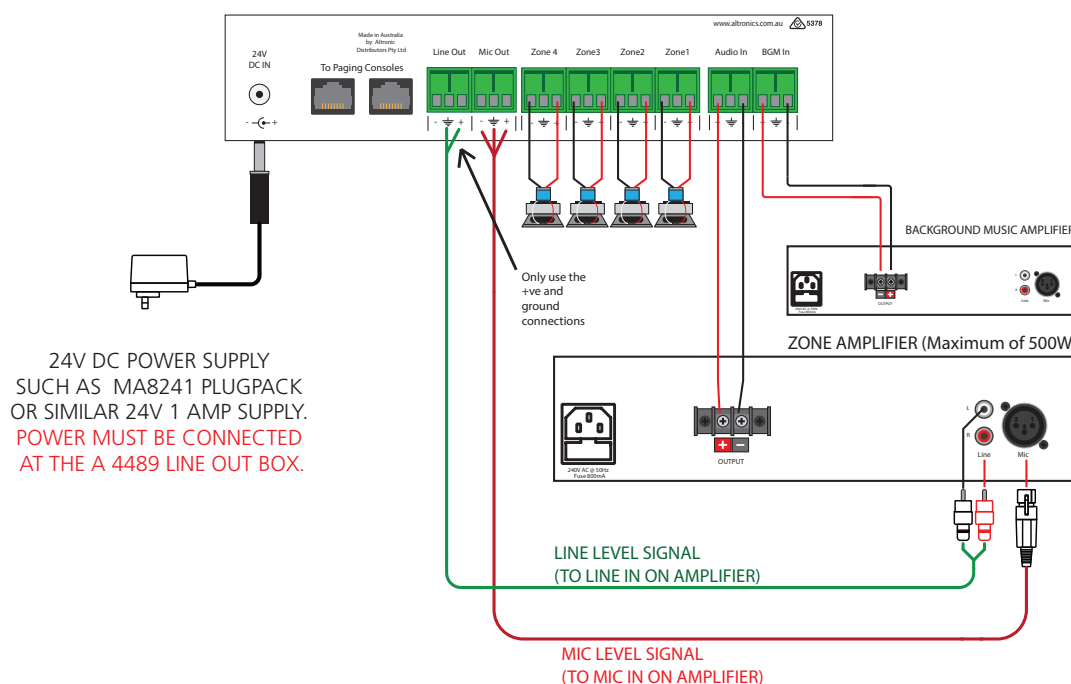
Fig 4

Option 3 : One Zone Amplifier using Mic or Line Level Signals and individual speakers for each zone

The audio from the paging console/s is fed down the Cat5e/6 cable to the A 4489A audio switcher. Take the line level (1V balanced signal) from the "Line Out" terminals or the low level balanced signal from the "Mic Out" on the rear of the A 4489A and feed them into the audio inputs of the zone amplifier as shown in figure 5. (Note: The Zone Amplifier can be up to a maximum of 500 Watts). The speaker output of the zone amplifier is then fed into the "Audio In" terminals of the audio switcher.

The audio from the "Zone 1" to "Zone 4" terminals are then fed directly into the speakers to provide the audio for the four zones. Background Music can be supplied to each zone by connecting a Background music amplifier to the "BGM In" terminals.

Typical connection of the A 4489A with a single zone amplifier and individual speakers for each zone



NOTE : ONLY ONE OUTPUT SHOULD BE USED

Fig 5

6.0 A 4660 PAGING CONSOLE OVERVIEW

The A 4660 paging consoles allows for paging to any of the four switcher output zones. This is achieved by selecting the zones required, or by pressing the all call button if all zones are required, and then simply pressing the page button. General paging will override the background music to all zones.

At the completion of the announcement, background audio will be restored to previously selected zones.

If two consoles are connected, they operate on a first in, first served basis, activating a system busy indicator on the inoperative console.

A maximum of 2 paging consoles can be connected back to the A 4489A. The consoles must be cascaded back to the A 4489A via Cat5e/6 cabling to only one of the RJ45 ports on the rear of the unit (Refer to figure 6).

Note: A maximum of two paging consoles can be connected to the A 4489A and they must be cascaded off one Rj45 port.

Each unit must be assigned an address which is set when the A 4660 is first initialised, or it can be re-assigned by accessing the Factory Reset option (see page 11). The address when connecting to the A 4489A must be 1 or 2.

The paging console can also be used as a secondary local source of background music (BGM).



6.1 Connecting the paging console

The console is connected to the A 4489A via standard Cat5e/6 cabling as shown in figure 6.

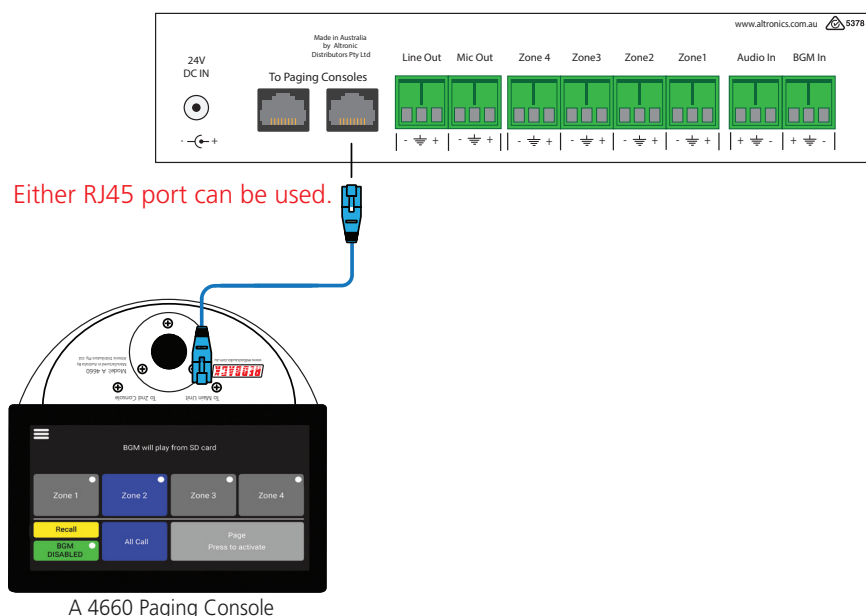


Fig 6

There are two RJ45 ports on the back of the A 4489A either of which can be used to connect an A 4660 paging console. The maximum distance between the A 4489A and a paging console is 200m.

Note: External power injectors (Redback ® A 4658) may be required if power problems are encountered from long cable runs. This is shown connected to the console in the example of figure 7.

6.2 Connecting the paging console with a power injector

If power losses are encountered from long cable runs, an A 4658 power injector may be required. The console is connected to the A 4658 via standard Cat5e/6 cabling as shown in figure 7.

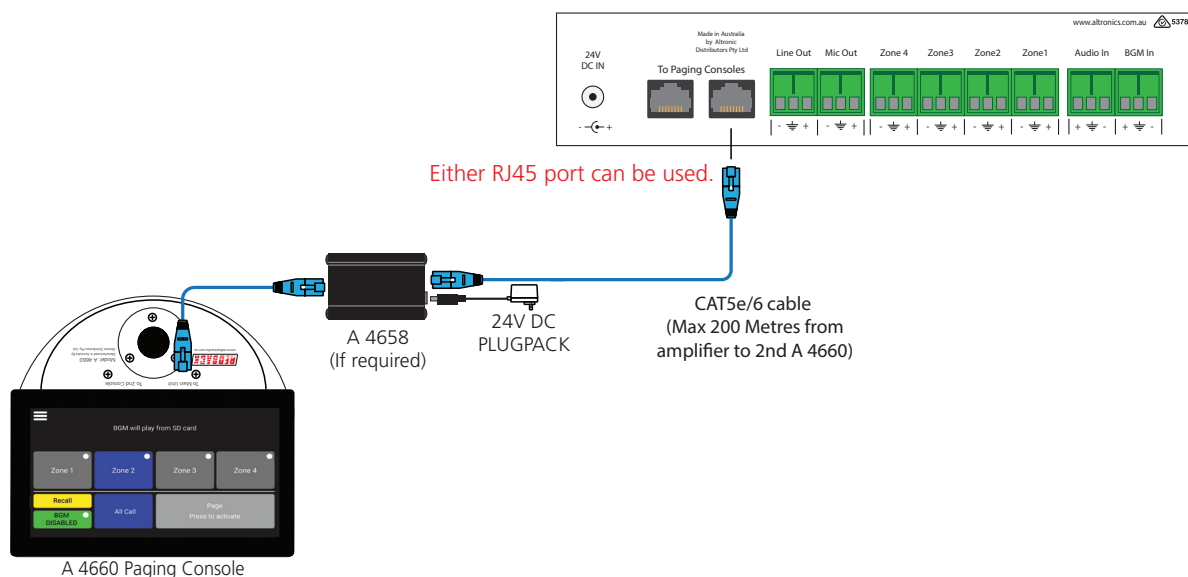


Fig 7

Note: Power Over Ethernet or POE's cannot be used as the power injectors as they run on 48V. The A 4489A and A 4660 systems are powered by 24V DC. Use of POE's will void the warranty.

6.3 Cascading two paging consoles

When connecting two paging consoles to the amplifier they must be cascaded and connected to only one of the two RJ45 ports on the rear of the A 4489A, as shown in figure 8. Standard Cat5e/6 cabling is used and the maximum total cable run length to the second paging console is 200m. If an A 4658 power injector is required, it can be connected before the first paging console as shown in figure 7, or in line before the second paging console.

Note: A maximum of two paging consoles can be connected to the A 4489A and they must be cascaded off one RJ45 port.

If a second A 4660 paging console is required, it must be cascaded from the first paging console. If the consoles don't power up due to power losses over the cable run, an A 4658 power injector may be required in line.

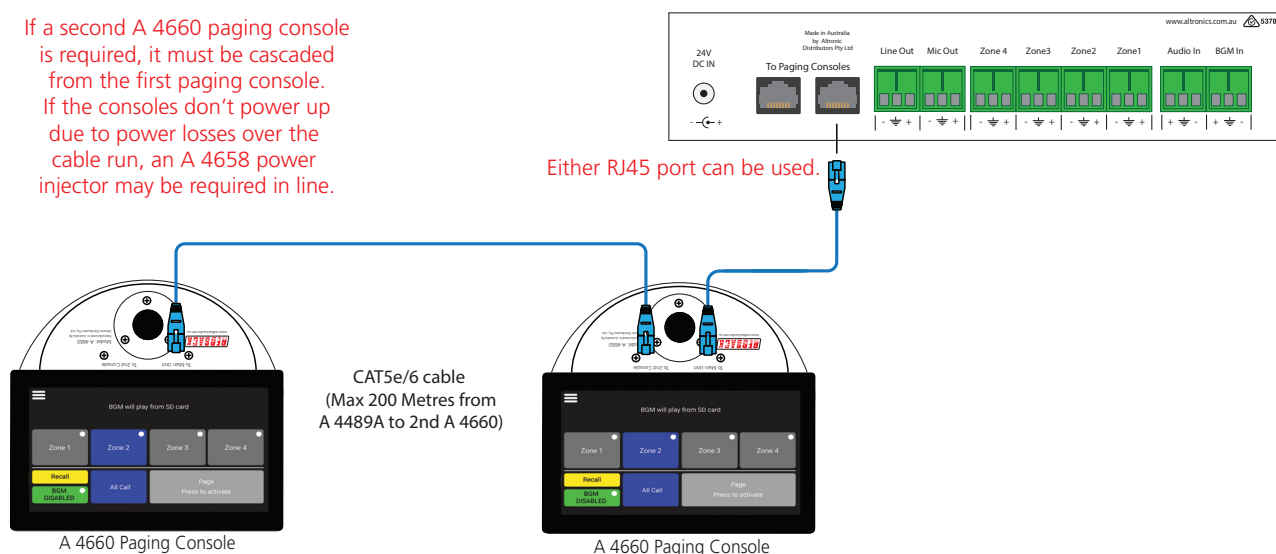


Fig 8 Cascading A 4660 paging consoles.

7.0 A 4660 HOME SCREEN

Figure 9 below outlines the main functions of the A 4660.

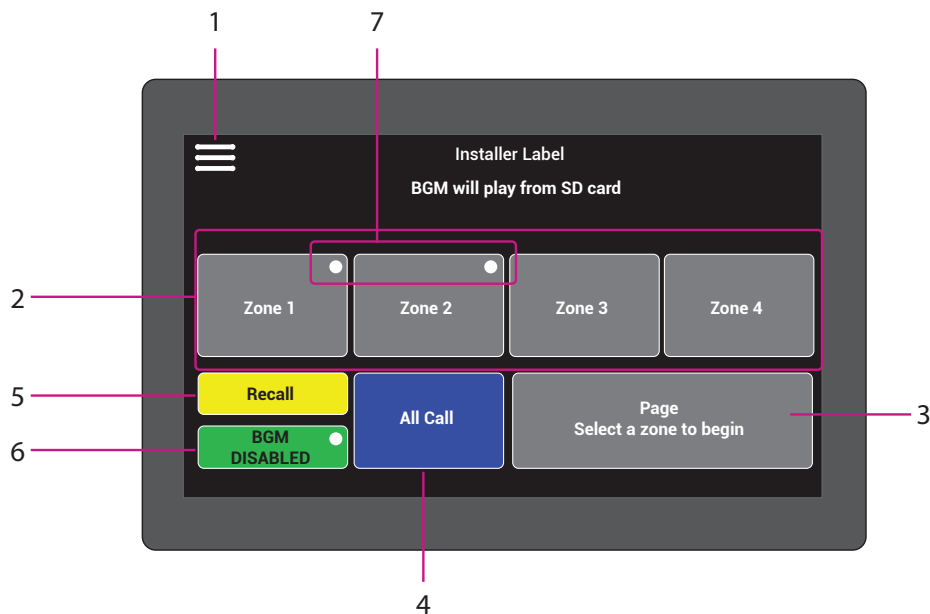


Fig 9

- 1 Menu Button** - Press this to access the system settings (see section 8.0)
- 2 Zone Selection** - To page to a zone select the desired zones by pressing the buttons 1- 4
- 3 Page Button** - Press this button to page to selected zones. Press again to cancel paging or press the cancel button.
Note: If the Chime In or Chime Out are enabled (see section 8.6) these will activate before and/or after paging is available.
- 4 All Call Button** - Press this button to quick select all zones.
- 5 Store/Recall Button** - Use this button to store zones to a fast recall button.
To store a group of zones select the zones you wish to group together. Once the desired zones are selected, press store. You can now assign a group to a button. Select a button and give it a label using the displayed keyboard. Press enter when done.
To recall zones press the recall button and select one of the labelled buttons to recall. The zones stored in this group will then illuminate automatically. Press the page button to page.
- 6 BGM Disabled/Enabled** - Press this button to enable or disable the background music option (see section 9.0).
- 7 BGM active indicator** - The dot in the corner of the zone button indicates which zones have the BGM selected.

8.0 A 4660 SETTINGS

The settings menu can be accessed using the icon on the top left of the screen. Once in this menu the following screen will be displayed, which shows the various settings available.

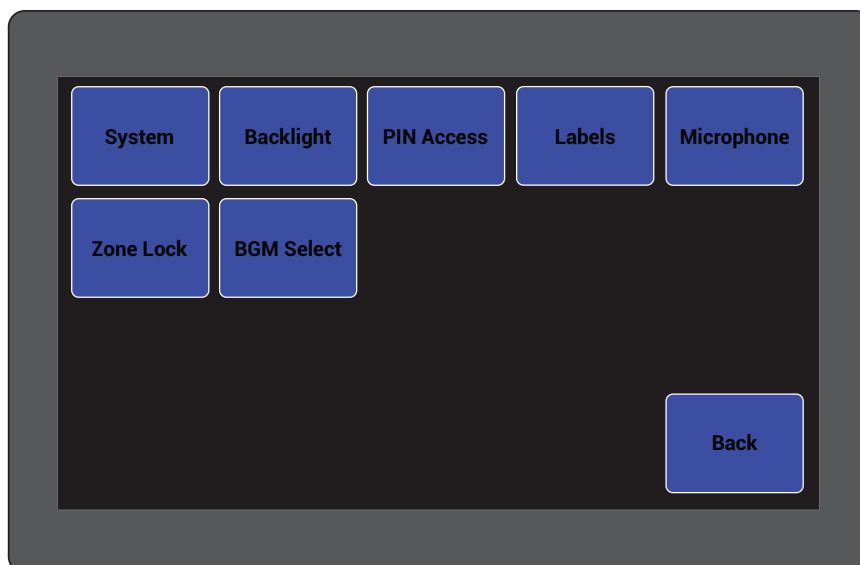


Fig 10 - Console Settings Screen.

8.1 A 4660 System Settings

The System settings screen is shown in figure 11.

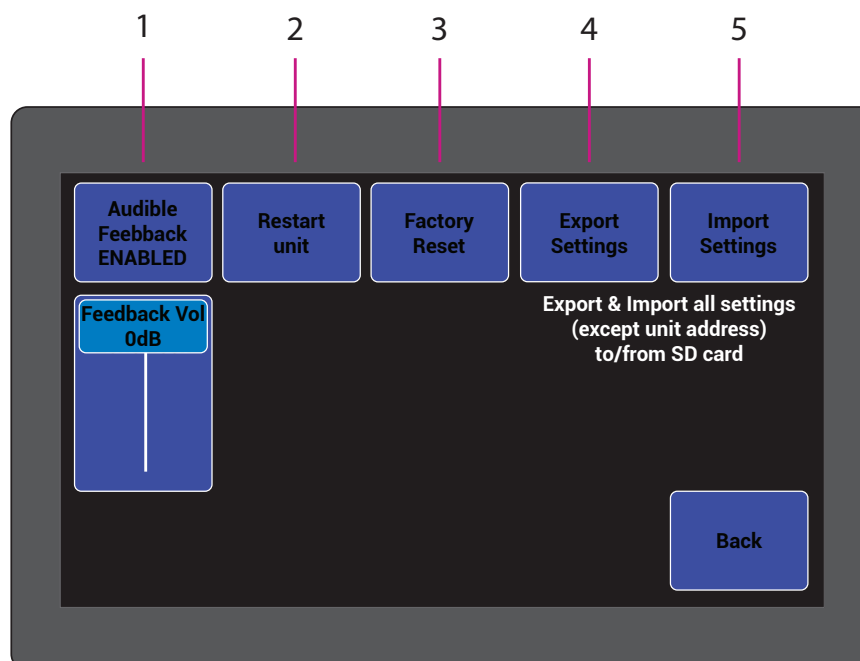


Fig 11 - System Settings Screen.

- 1 **Audible Feedback** - Allows you to enable/disable the audible feedback (in built speaker) on button presses and set the volume. Press the button to enable/disable and use the slider below to adjust the feedback volume.
- 2 **Restart unit** - This will restart the A 4660.
- 3 **Factory reset** - This will reset the unit back to it's default settings. This option is also required to re-assign the paging console address (Press the factory reset button, tap confirm and a prompt will appear for the units address. Select the required address (which can be any number from 1-2). If any settings need saving before the factory reset, use the Export Settings option below.
- 4 **Export Settings** - This feature allows the settings of the unit to be transferred to another unit or kept as a back up. Simply insert a Micro Sd card into the unit and follow the prompts.
- 5 **Import Settings** - This feature allows the settings of the unit to be imported from another unit. Insert a Micro SD card and follow the prompts.

8.2 A 4660 Backlight Settings

Press the “backlight” button to display the screen shown in figure 12.

There are two levels of screen brightness which come into effect, when the screen hasn’t been touched for a period of time set by the user.

This menu screen allows the user to select the active screen brightness level, the dimmed brightness level and timeout periods for the transition from active screen mode to dimmed mode, and the transition period from dimmed mode to screen off mode.

- 1 Active Screen Brightness Level** - Use this slider to adjust the brightness level of the active screen.
- 2 Dimmed Screen Brightness Level** - Use this slider to adjust the brightness level of the dimmed screen
- 3 Active Screen to Dimmed Mode transition time** - Use these buttons to adjust the timeout period to enter dimming mode (set to 0 for the screen to be remain always on).
- 4 Dimmed Mode to screen Off transition time** - Use these buttons to adjust the timeout period from dimmed screen mode to the screen turning off completely (This is unavailable if the dimming mode is set to zero).

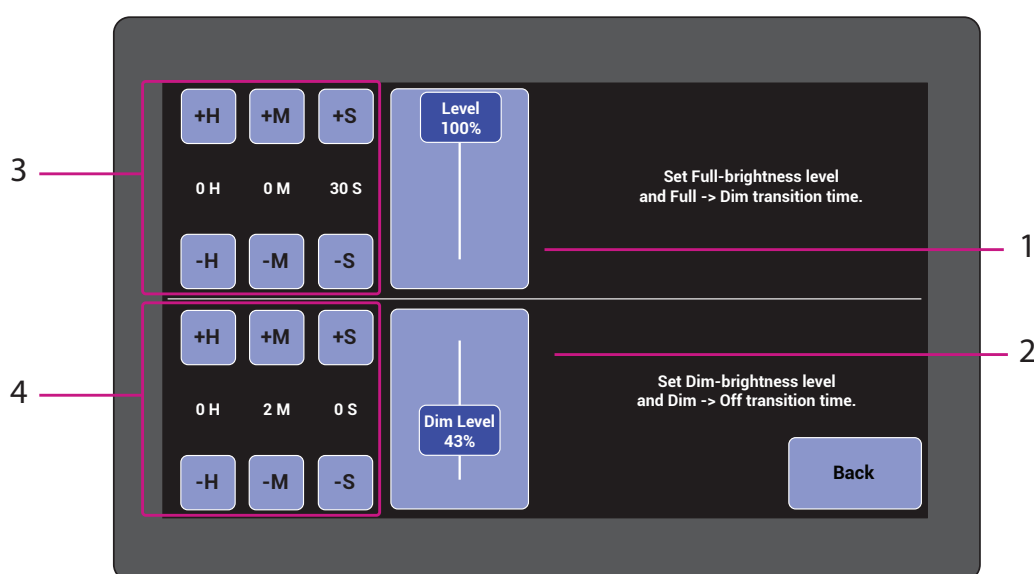


Fig 12 - Backlight Settings Screen.

8.3 A 4660 PIN Access - Set an optional access PIN preventing unauthorised access to the wallplates settings. Type in a preferred PIN and press “E” to accept. Press “C” to delete PIN digits or to reset the PIN (For access without a PIN, delete all PIN digits). Once complete press the BACK button and the change will take effect.

8.4 A 4660 Labels - Allows you to set and change the labels for the output zones ,customise an installer label which is displayed on the top of the main screen, and name the Bluetooth module.

Select the desired button and then use the displayed keyboard to enter the labels.

8.5 A 4660 Zone Lock - General paging can be blocked to any zones via this menu. Select the zones to be blocked and then press the back button. On the main screen these blocked zones will be blacked out and unavailable.

NOTE: This will only lock out zones for this console. It will not lock out the same zones from other paging consoles connected to the A 4580.

8.6 A 4660 Microphone settings

Press the "microphone" button to display the screen shown in figure 13.

From this menu the chime options and action of the paging button are set.

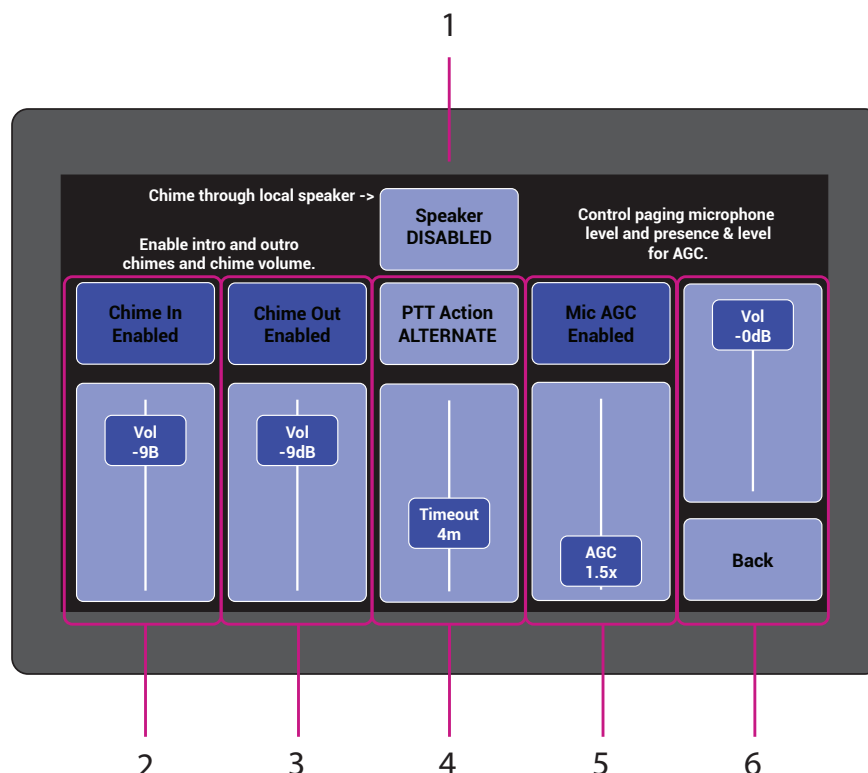


Fig 13 - Microphone Settings Screen.

- 1 Console Speaker** - This button enables the speaker built into the A 4660. If enabled the chime will be audible from the console as well as through the paging system.
- 2 Chime In** - This button allows you to enable or disable the pre-announcement chime on the paging audio. The level can also be adjusted to suit the installation. For instance a user may require the pre-announcement chime be louder than the normal programming. The standard pre-announcement chime can be replaced by an MP3 file installed on a Micro SD card by the user. A folder called "chime_in" needs to be created and the required MP3 file inserted into this folder (refer to section 16.0 for installing MP3 files). The micro SD card needs to be inserted into the A 4660 and kept there.
Note: The Micro SD card must be inserted into the A 4660 paging console. Not the amplifier.
- 3 Chime Out** - This button allows you to enable or disable the post-announcement chime on the paging audio. The level can also be adjusted to suit the installation. For instance a user may require the post-announcement chime be louder than the normal programming. The standard post-announcement chime can be replaced by an MP3 file installed on a Micro SD card by the user. A folder called "chime_out" needs to be created and the required MP3 file inserted into this folder. The micro SD card needs to be inserted into the A 4660 and kept there.
Note: The Micro SD card must be inserted into the A 4660 paging console. Not the amplifier.
- 3 PTT Action** - This button determines the action of the paging button. If momentary action is selected the paging button will need to be held to page. If alternate action is selected the paging button needs to be pressed and released to start paging. The paging mode will stay active for the period set by the timeout, or until the paging is cancelled by the user.
- 5 Mic AGC** - Allows for the microphones automatic gain control (AGC) effect to be adjusted up or down according to installation requirements. AGC allows the signal to automatically adjust to compensate for variations in level of peoples voices when making paging announcements. Please note high levels of AGC will increase audible noise in the system while paging.
- 6 Paging Level** - Adjust the paging level to suit the installation. This allows for paging to be adjusted to suit the level of programming from other sources connected to the system.

9.0 UNDERSTANDING AND CONNECTING THE BGM (BACKGROUND MUSIC)

Background music can be supplied to the paging system via one of two different methods.

9.1 BACKGROUND MUSIC (REAR OF A 4489A)

Firstly the background audio can be connected directly to the rear of the A 4489A either as a line level input, as illustrated in figure 4, or a speaker level input as illustrated in figure 5.

When using this method, the background music is output to all zones until over-ridden by zone paging.

9.2 A 4660 LOCAL BACKGROUND MUSIC (BGM)

A secondary source of background music is available through the A 4660 paging console itself.

This background music source can be routed to particular zones, and will override the main BGM from the A 4489A, to the selected zones only.

There are three options available as background music sources as outlined in section 9.3.

Press the "BGM Select" button accessed by the Menu button (refer to figure 10) to display the screen shown in figure 14. From this menu the local BGM options and volume are set.

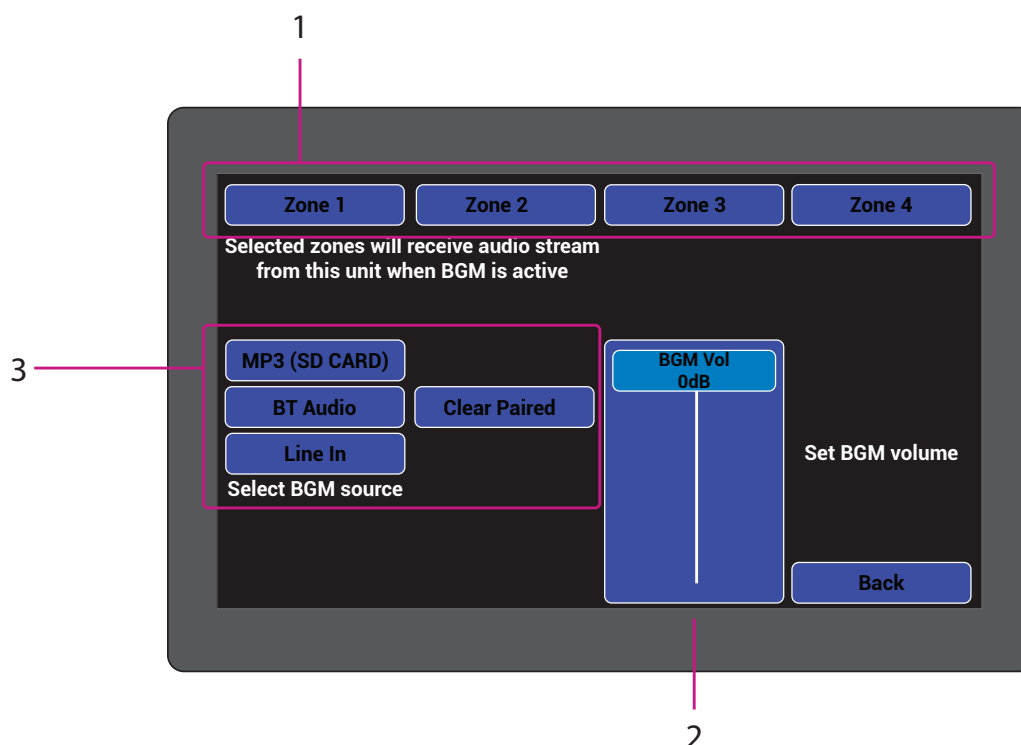


Fig 14

- 1 Zone Select** - Use these buttons to select which zones will receive the local background music (from the A 4660) when the BGM is enabled. (The BGM is enabled from the home screen). Once activated these zones will override the background music from the A 4489A BGM input (if connected). If the BGM is disabled from the paging console the BGM from the A 4489A will return.
- 2 BGM Level** - Adjust the BGM level to suit the installation.
- 3 Select BGM Source** - Use these buttons to select the A 4660 BGM input source (See section 9.3).

9.3 A 4660 Background Music Sources

MP3 via Internal SD card

Background music can be played from a Micro SD card inserted into the unit. A folder called "BGM" needs to be created and the required MP3 files inserted into this folder. MP3 files stored in the "BGM" folder will be played randomly.

Note: The Micro SD card must be inserted into the A 4660 paging console. Not the amplifier.

Please note: Every time paging occurs the background music will return to a new MP3 file. It will not resume from the previously playing file.

Bluetooth Connection

A bluetooth device such as a mobile phone, can be paired to the A 4660 for BGM playback. Simply search for the bluetooth device and pair. Previously paired devices can be cleared using the "Clear Paired" button.

The Bluetooth module can be labelled using the procedure set out in section 8.4.

Line In

A local BGM source such as a mobile phone or tablet, is connected to the A 4660 through a compatible Redback UTP solutions transmitter. Figure 15 illustrates the use of a mobile phone as the local BGM source. This is connected to the 3.5mm audio input of the Redback A 4944 and then fed through a Cat5e/6 cable to the A 4660 paging console.

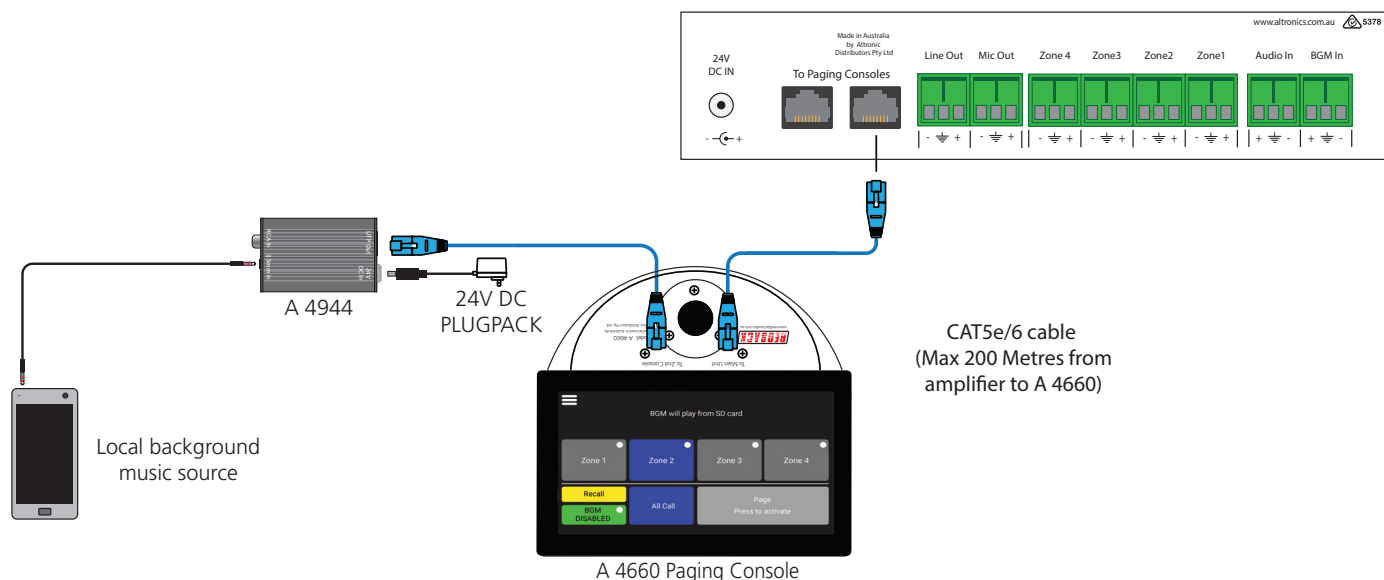


Fig 15 - Local BGM input via Redback A 4944 solutions transmitter

Redback® A 4489A Audio Switcher

RJ45 cabling configuration (586A 'Straight through')

System components are connected using "pin to pin" configuration RJ45 data cabling as shown in fig 16. When installing ensure all connections are verified with a LAN cable tester before switching any system component on.

**Failure to follow the correct wiring configuration may result in damage to system components.
and will Void the warranty.**

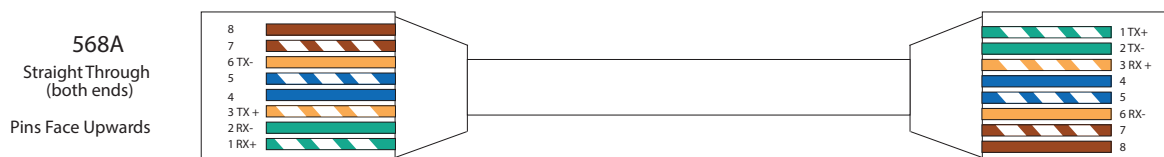


Fig 16

11.0 Trouble shooting

| SYMPTOMS | REMEDIES |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Paging consoles not responding | Make sure the addresses are set correctly |
| No audio out of A 4489A | Check Cat5e/6 lead wired correctly |
| No audio from zone terminals on rear of A 4489A | Check wiring to "Audio In" terminals |
| No Background music | Check lead on BGM input on rear of A 4489A Check BGM volume Check BGM enabled on A 4660 |
| No Pre or Post -announcement chime | Check Chime In and/or Chime Out is enabled |
| No sound from Microphone | Check Mic Volume |

12.0 specifications

OUTPUT MIC LEVEL:.....3mV
OUTPUT LINE LEVEL:.....1V
BGM INPUT SENSITIVITY:.....500mV
OUTPUT CONNECTORS:
Audio Outputs: (A 4489A).....Euroblock terminal

INPUT CONNECTORS:
Line Out Box Input:..... RJ45 8P8C
24V DC Power (A 4489A):...2.1mm JACK (centre +ve)
24V DC Power (A 4660):...2.1mm JACK (centre +ve)

CONTROLS:
Mic Volume:.....Rear Volume
Chime Volume:.....Rear Volume
BGM Volume:.....Rear Volume

POWER SUPPLY:.....24V DC @ 1 Amp
DIMENSIONS:~.....A 4489A - 210W x 122D x 44H