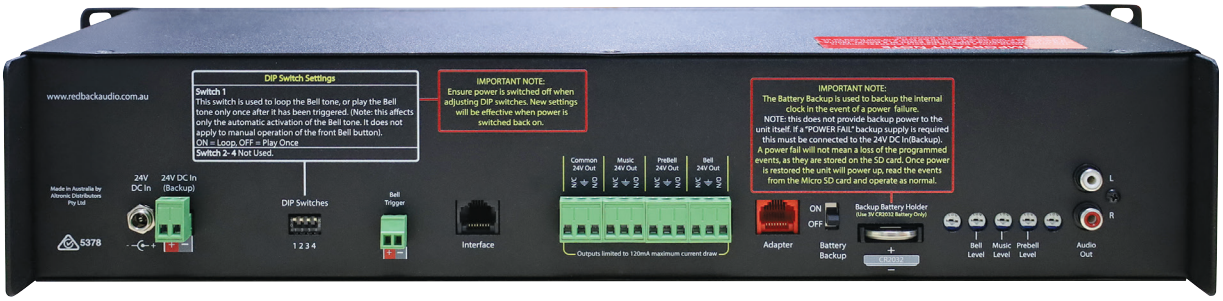

Operating Manual

A 4510A Yearly Timer

Redback® Proudly Made In Australia

Distributed by Altronic Distributors Pty. Ltd.
Phone: 1300 780 999 Fax: 1300 790 999 Internet: www.altronics.com.au

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.

User manual revision number: 1.3 22/09/2021

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1.0 OVERVIEW

1.1 INTRODUCTION

The A 4510A is an incredibly versatile, and easily programmed yearly timer housed in a convenient 2RU rack or desk mount chassis. The unit can be programmed for a maximum of 250 timing events for each day of the year. The timing events are programmed with Windows based software via a user friendly calendar layout.
When a timing event is activated, an MP3 audio file will be played and output through the dual RCA line level output. There are three MP3 playback options for the timing events, which include the Bell, Prebell and a Music option. An Micro SD card which is supplied, houses all the MP3 files to be played as well as storing all the timing events (Note: The audio files must be in MP3 format). The Prebell and Music outputs can be setup for random play of MP3 files, making the unit ideal for "Call to Class" playback of music which changes each time these outputs are activated.

The events when activated also trigger the 24V outputs available on the rear of the unit. Seperate 24V DC outputs are available for each of the Prebell, Bell and Music outputs, as well as a common 24V DC output which is activated for all output conditions.
The timing events can also be programmed to trigger the Bell 24V out (and in turn the common 24V Out), with no audio output. This is activated by setting the output to the "relay" option in the programming setup.

The unit features "Daylight Savings" mode which when activated automatically adjusts the clock time by one hour at the user programmed dates.

The internal clock has a battery backup (CR2032 supplied) in case of power failure. (Note: This will only backup the time, it will not power the unit in the event of a power failure).

1.2 FEATURES

- MP3 audio format for Bell, Prebell and Music timing outputs
- Random play of MP3 files for Prebell and Music activations
- Easy Windows based software timing event setup
- Daylight savings mode
- Local push button operation of Bell
- Switched 24VDC output for Bell, Prebell and Music activations
- Bell trigger for remote activation of the bell
- Pluggable screw terminal connections
- Auxiliary level output
- Battery backup of current time
- 24V DC operation
- Standard 2U 19" rack mount case
- Suitable for any amplifier with an auxiliary input
- 10 Year Warranty
- Australian Designed and Manufactured

1.3 WHAT'S IN THE BOX

A 4510A Yearly School Timer
Micro SD card
24V 2A DC Plugpack
Instruction Booklet
Programming Booklet

1.4 FRONT PANEL GUIDE

Fig 1.4A shows the layout of the A 4510A front panel.

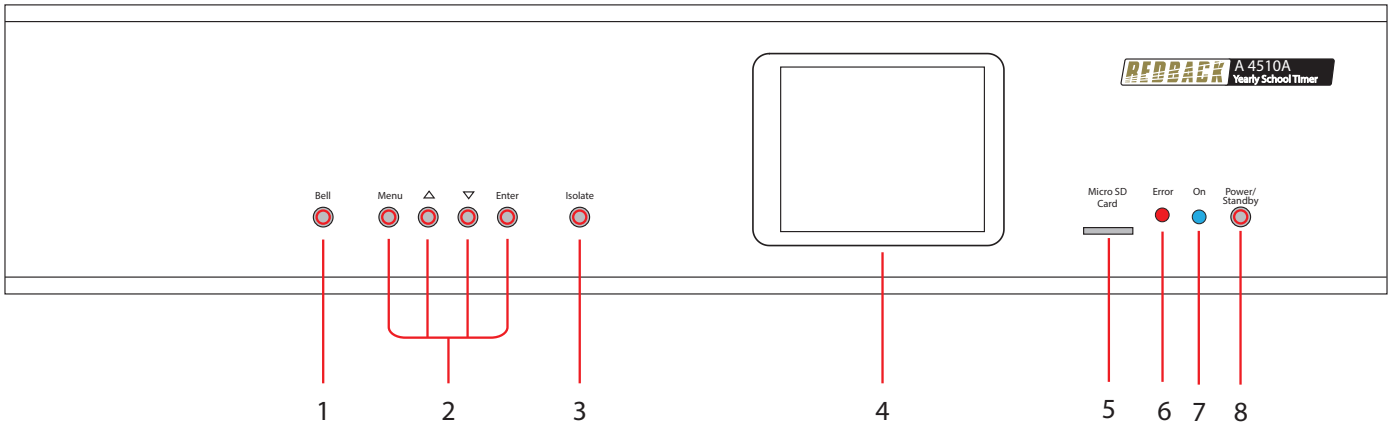

Fig 1.4A

1 Bell Tone Activation Switch
This switch is used to manually activate the Bell tone. It may need to be pressed for up to 2 seconds to activate.

2 Menu and Navigation Switches
These switches are used to navigate the menu functions of the unit.

3 Isolate Switch
This switch is used to isolate the timing functions of the unit. Once activated all the timing functions of the unit will be disabled. Press this button again to restore the unit to normal timing operation.

4 LCD Display
This displays the current time and other timing functions.

5 Micro Micro SD card
This is used to store the MP3 audio files for the Prebell, Bell and Music playback. The Windows based software for programming the calendar and the timing configuration files are also stored on this card. (More details in section 2.1).

6 MP3 Error Indicator
This LED indicates the unit has a fault condition with the MP3 playback.

7 On Indicator
This LED indicates the unit has power.

8 Power/Standby Switch
When the unit is in standby mode this switch will illuminate. Press this button to switch the unit ON. Once the unit is ON the On indicator will illuminate. Press this switch again to put the unit back in standby mode.

1.5 REAR PANEL CONNECTIONS

Fig 1.5A shows the layout of the A 4510A rear panel.

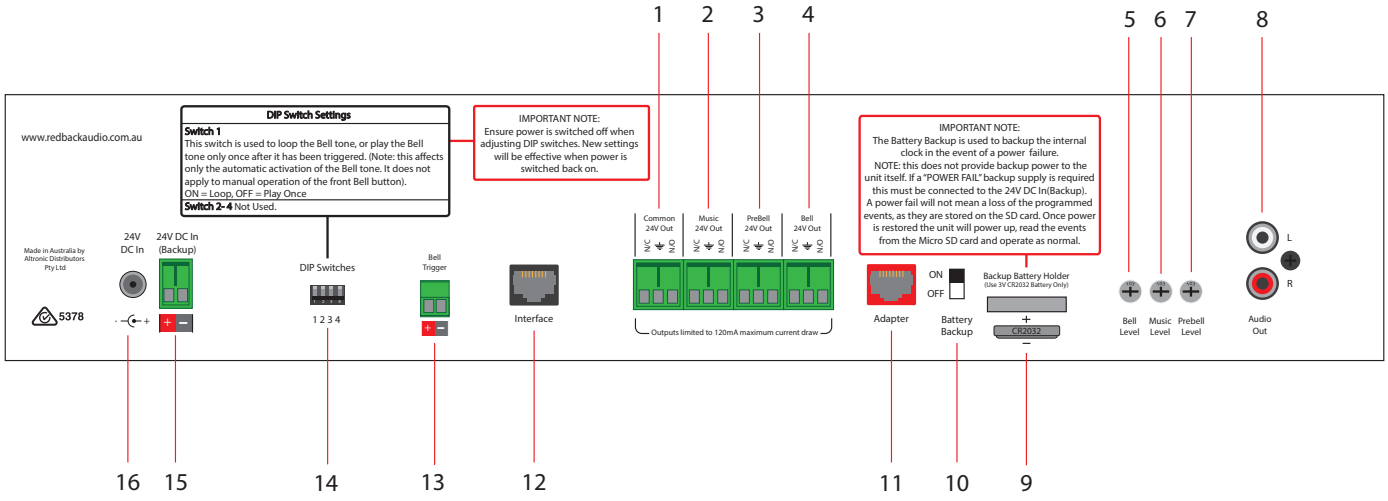

Fig 1.5A

1 Common 24V Out
This is a common 24V DC output which is activated when any of the Prebell, Bell, or Music tones or the Relay only option are activated. The terminals provided can be used for "Normal" or "Failsafe" modes (see section 2.6 for more details).

2 Music 24V Out
This is a 24V DC output which is activated when the Music tone is activated. The terminals provided can be used for "Normal" or "Failsafe" modes (see section 2.6 for more details).

3 Prebell 24V Out
This is a 24V DC output which is activated when the Prebell tone is activated. The terminals provided can be used for "Normal" or "Failsafe" modes (see section 2.6 for more details).

4 Bell 24V Out
This is a 24V DC output which is activated when the Bell tone or relay only (No MP3 option) is activated. The terminals provided can be used for "Normal" or "Failsafe" modes (see section 2.6 for more details).

5 Bell Volume
Adjust this trimpot to adjust the Bell playback volume.

6 Music Volume
Adjust this trimpot to adjust the Music playback volume.

7 PreBell Volume
Adjust this trimpot to adjust the PreBell playback volume.

8 Audio Out RCA Connectors
Connect these outputs to the input of the background music amplifier.

9 Backup Battery
Replace this battery with a 3V CR2032 only. Remove by pulling the battery.
Note: The positive side of the battery faces upward.

10 Backup Battery Switch
Use this switch to activate the backup batterry. (Note: This will only backup the time, it will not power the unit in the event of a power failure).

11 RJ45 Adapter
This RJ45 port is for future connection of Redback devices.

12 **RJ45 Interface**
This RJ45 port is for future connection of peripheral devices.

13 **Bell Trigger**
Short these contacts to trigger the Bell Function.

14 **Dip Switches**
These are used to select various options. Refer to DIP Switch Settings section.

15 **24V DC Input (Backup)**
Connects to a 24V DC backup supply with at least 1 amp current capacity (Please observe the polarity).

16 **24V DC input**
Connects to a 24V DC Plugpack with 2.1mm Jack. (The unit is supplied with a 24V DC 2 Amp plugpack).

2.0 SETUP GUIDE

2.1 INITIAL SETUP

Apply 24 Volts DC to the unit by connecting the supplied 24V DC plugpack and switch the unit ON.

The LCD screen should display "REDBACK A 4510A" for a couple of seconds before it performs an Micro SD card check. If the Micro SD card is not fitted the LCD will display "
SD card ERROR
CARD NOT FOUND
If this is the case make sure the Micro SD card is fitted correctly. *(NOTE: The unit will not function unless the Micro SD card is inserted).*

With the Micro SD card fitted the unit should perform a self check of the card (CHECKING SDCARD). The check involves searching for the relevant folders, configuration file and MP3 audio files.
The search information should come up on the screen and disappear after a couple of seconds if the check is successful. If there is an issue, the Self Check screen will flash and continue to be cycle through and display again until all issues are resolved. *NOTE: You can Press and Hold the "ENTER" button to keep this information on the screen.*

The Micro SD card should have the following MP3 music folders already installed "Bell, Music and Prebell". There should also be a CONFIG, GROUPS and a #LIBRARY# folder. The self check will search for the Bell, Music, Prebell, CONFIG and GROUPS folders. If the folders don't exist or if there is a problem with any of them, the fault will be displayed on the self check screen. NOTE: If this is the first time the unit is powered up and a calendar hasn't been programmed, the CONFIG and GROUPS folders will be empty and the A 4510A will not continue past the Self Check screen. (Refer to the "Software Programming Guide" for details regarding programming the calendar).

Inside each of the Bell, Music and Prebell folders there should be a sample MP3 audio file which was used to test the unit. If any of these folders are empty the self check will display a fault.
NOTE: The unit will display an MP3 error message on the "CHECKING SDCARD" screen if any of the MP3 folders on the Micro SD card are left empty. I.e. the Bell, Music and Prebell folders must all have an MP3 file inside.

NOTE: The "Bell" folder must have only one MP3 file installed. The "Prebell" and "Music" folders can have unlimited MP3 files (depending on available storage) and will then randomly play the MP3 files in the folder each time the corresponding prebell or music output is activated.

If these folders don't exist they will have to be created and MP3 files will need to be installed in them.
A library of sample MP3 files is supplied (in the #LIBRARY# folder) which can be used for this purpose.

In order to put MP3 files onto the card, or move the sample MP3's to their relevant folders, the Micro SD card will need to be connected to a PC. You will need a Windows based device such as a PC or laptop equipped with an Micro SD card reader to do this. If an SD slot is not available then the Altronics D 0371A USB Memory Card Reader or similar would be suitable (not supplied).

You will first need to disconnect power from the A 4510A and then remove the Micro SD card from the rear of the unit. To remove the Micro SD card push the card in and it will eject itself.

Step by step guide to copy an MP3 file into it's associated folder with a Windows installed device.

Step 1: Make sure the Windows based device is on and card reader connected and correctly installed. Then insert the Micro SD card into the reader.

Step 2: Go to "My Computer" or "This PC" and open the Micro SD card which is usually marked "Removable disk".
In this case it is named "Removable disk (F:)".
Select the removable disk and then you should get a window like that shown in figure 2.1.

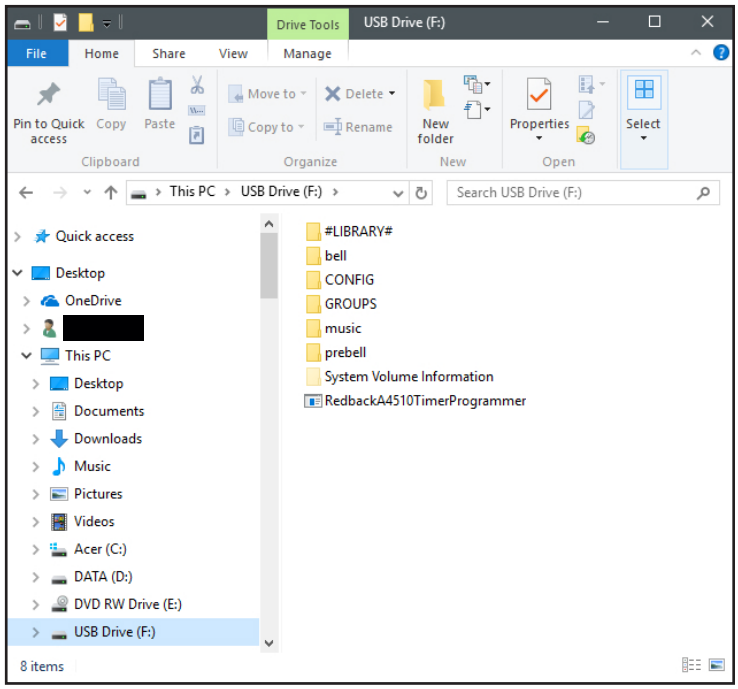

Fig 2.1

Step 3: Open the folder to change, in our example the "Bell" folder, and you should get a window that looks like figure 2.2.

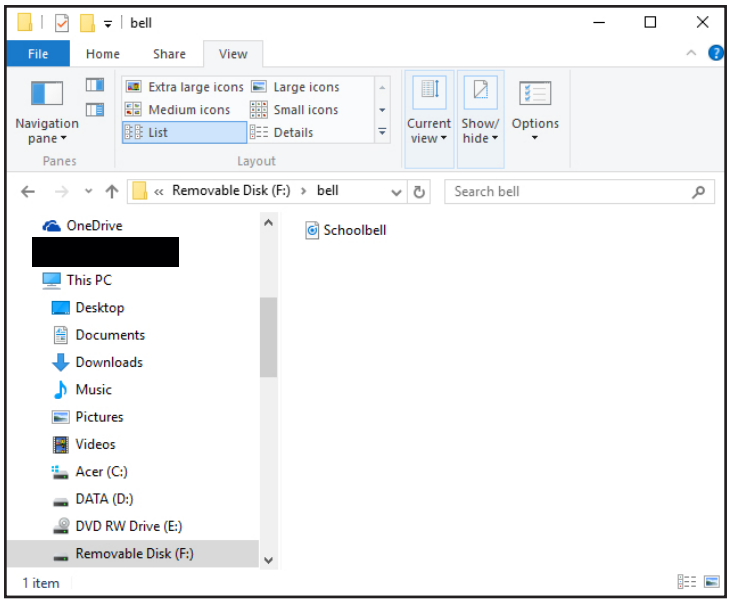

Fig 2.2

Step 4: You should see an MP3 file "Schoolbell.mp3". This MP3 file needs to be deleted and replaced by the MP3 file you want to play when you activate the bell. The MP3 file name is not important only that there is one MP3 file in the "bell" folder. Make sure you delete the old MP3!

NOTE the new MP3 file cannot be "Read only". To check this right click on the MP3 file and scroll down and select Properties, you will get a window that looks like figure 2.3. Make sure the "Read Only" box has no tick in it.

Repeat these steps for the other folders.

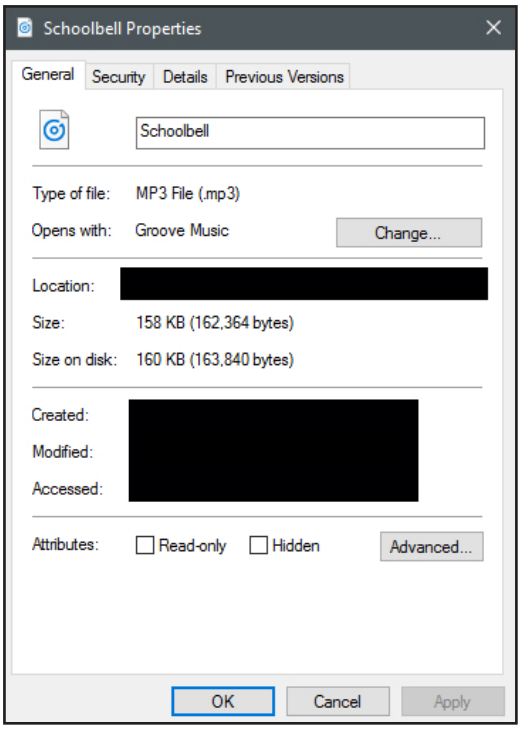

Fig 2.3

The new MP3's are now installed on the Micro SD card, and the card can be removed from the PC following windows safe card removal procedures. Make sure the A 4510A is OFF and insert the Micro SD card into the slot in the rear; it will click when fully inserted.

The A 4510A can now be switched back On.

Once again the A 4510A will the perform the Self Check on the Micro SD card.
If the MP3 files are OK then no errors will be displayed in relation to the MP3 files.
NOTE: The self check (CHECKING SDCARD) on startup will also display the number of MP3 files in each of the "Bell", "Prebell" and "Music" folders.

If the calendar hasn't been programmed at this stage, the Self Check will display error messages relating to the Config and Groups folders.
NOTE: These folders are empty until a calendar has been programmed and saved to the Micro SD card.

Without the Config and Groups configuration files the unit will not function.

To program the calendar, refer to the included "Software Programming Guide".

Once the calendar has been programmed insert the Micro SD card again.

If the self check is successful and the MP3 files and folders, Config and Groups configuration are OK then the unit will display the "Current Time" screen and the upcoming events.

2.2 SETTING THE CURRENT TIME

Press the "Menu" button on the front of the timer. The unit is now in "Menu Mode" and the screen should display the "CLOCK ADJUST" and "DATE ADJUST" options.

Use the UP and DOWN buttons to navigate through the options.
Press the ENTER button when the CLOCK ADJUST option is highlighted.
The Clock Adjust screen should now appear. Follow the on screen prompts to update the time.

Pressing the Menu button at any time will exit the menu structure and return the user to the Main Screen.

2.3 SETTING THE CURRENT DATE

Press the "Menu" button on the front of the timer. The unit is now in "Menu Mode" and the screen should display the "CLOCK ADJUST" and "DATE ADJUST" options.

Use the UP and DOWN buttons to navigate through the options.
Press the ENTER button when the DATE ADJUST option is highlighted.
The Date Adjust screen should now appear. Follow the on screen prompts to update the date.

Pressing the Menu button at any time will exit the menu structure and return the user to the Main Screen.

2.4 AUDIO CONNECTIONS

Audio Output:
This output consists of stereo RCA sockets with an output of 0dBm into a 600Ω input. This is suitable for most PA amplifier auxiliary inputs.

Rear Panel Volume Controls:
The output levels of the Prebell, Bell and Music tones can all be adjusted via trimpots located on the rear of the unit.

2.5 DIP SWITCH SETTINGS

The A 4510A has optional settings which are set by the DIP switches on the rear of the unit.

IMPORTANT NOTE:
Ensure power is switched off when adjusting DIP switches.
New settings will be effective when power is switched back on.

Switch 1
This switch is used to loop the Bell tone, or play the Bell tone only once after it has been triggered. (Note: this affects only the automatic activation of the Bell tone. It does not apply to manual operation of the front Bell button).
OFF = Loop, ON = Play Once

Switch 2-4 Not Used.

2.6 24V OUTPUT CONNECTIONS

These contacts can be used for connection of override relays in remote volume controls, or for operating an external relay used to operate something like a school bell etc.(Note: These 24V DC outputs are limited to 120mA maximum current draw).

Prebell 24V Out:
These contacts are for switched 24V outputs whenever the Bell tone is activated. These may be used to run external systems such as override relays in remote volume controls.
When this output becomes active, 24V will appear between the N/O contact and the GND contact. When this output is not active 24V will appear between the N/C contact and the GND.

Music 24V Out:
These contacts are for switched 24V outputs whenever the Music tone is activated. These may be used to run external systems such as override relays in remote volume controls.
When this output becomes active, 24V will appear between the N/O contact and the GND contact. When this output is not active 24V will appear between the N/C contact and the GND.

Bell 24V Out:
These contacts are for switched 24V outputs whenever the Bell or Relay Only (No MP3 option) are activated These contacts are for operating an external relay used to operate something like a lunch bell etc.
When this output becomes active, 24V will appear between the N/O contact and the GND contact. When this output is not active 24V will appear between the N/C contact and the GND.

Common 24V Out:
These contacts are for switched 24V outputs whenever the Bell, Prebell, Music or Relay Only (No MP3 option) tones are activated. When this output becomes active, 24V will appear between the N/O contact and the GND contact. When this output is not active 24V will appear between the N/C contact and the GND.

2.7 BATTERY BACKUP (TIME)

On the rear of the unit is a switch labelled Battery Backup. This is used to backup the internal clock in the event of a power failure. The switch is set to OFF by default to ensure the backup battery isn't discharged.

(NOTE: this does not provide backup power to the unit itself. If a power fail backup supply is required this must be connected to the 24V DC input).

A power fail will not mean a loss of the programmed events, as they are stored on the Micro SD card. Once power is restored the unit will power up and read the events from the Micro SD card and operate as normal.

3.0 TROUBLE SHOOTING

3.1 SYMPTOMS AND REMEDIES

SYMPTOMS	REMEDIES
SDCARD ERROR,Micro SD card NOT FOUND MESSAGE DISPLAYED	CHECK Micro SD card HAS BEEN INSERTED CORRECTLY (see section 2.1 for more details)
WINDOWS SOFTWARE WILL NOT RUN	The Windows software for this product may not run on all Windows based devices. The .NET framework on the Windows device has to be updated to .NET Framework 4. Available for download on the microsoft website.
MP3 ERROR MESSAGE ON STARTUP	Check that MP3 files exist in the Bell, Prebell and Music Folders on the Micro SD card. (Note: The Bell folder must have only one MP3 file, Refer to section 2.1).
CONFIG OR GROUP FOLDER ERROR MESSAGE ON STARTUP	The Micro SD card must have the relevant CONFIG and GROUPS folders installed, and the configuration files must be in these folders. These are created by the Calendar Software Program. (Refer to section 2.1 and the "Software Programming Guide").

4.0 SPECIFICATIONS

OUTPUT LEVEL:.....0dBm

DISTORTION:.....0.01%

FREQ. RESPONSE:.....140Hz - 20kHz

OUTPUT CONNECTORS:
- Audio Output:.....RCA Stereo Socket
- Common 24V DC Out:.....Screw Terminals
- Pre Bell 24V DC Out :..... Screw Terminals
- Bell 24V DC Out:.....Screw Terminals
- Music 24V DC Out:.....Screw Terminals

PLEASE NOTE: 24V DC Output loads limited to 0.12Amp each

INPUT CONNECTORS:
- 24V DC Power:.....Screw Terminals
- 24V DC Power:.....2.1mm DC Jack
- Bell Trigger: ..... Screw Terminals

CONTROLS:
- Bell:.....Rear Volume
- Prebell:.....Rear Volume
- Music:.....Rear Volume
- Power:.....On/Off Switch
- Bell Switch:..... Push Switch
- Isolate Switch:..... Push Switch

INDICATORS:..... Power on, MP3 error

MP3 FILE FORMAT: up to 320kbps, 44.1kHz, 32bit, VBR or CBR, Stereo (even better as mono).

POWER SUPPLY:..... 24V DC @ 1 Amp

DIMENSIONS:≈..... 482W x 180D x 88H

WEIGHT: ≈..... 2.8 kg

COLOUR: .....Black

* Specifications subject to change without notice

5.0 FIRMWARE UPDATES

It is possible to update the firmware for the A 4510A by downloading the latest update version from www.altronics.com.au or redbackaudio.com.au if available.
To perform an update, follow these steps.

1) Download the Zip file from the website.
2) Remove the Micro SD card from the rear of the A 4510A and insert it into your PC.
3) Extract the contents of the Zip file to the root folder of the Micro SD card.
4) Rename the extracted .BIN file to update.BIN.
5) Remove the Micro SD card from the PC following windows safe card removal procedures.
6) With the power turned OFF, insert the Micro SD card back into the A 4510A.
7) Turn the A 4510A ON. The unit will check the Micro SD card and if an update is required the A 4510A will perform the update automatically.

6.0 WARRANTY

REDBACK is a registered trademark of Altronic Distributors Pty Ltd

You may be surprised to learn that Altronics is still manufacturing hundreds of product lines right here in Australia. We have resisted the move offshore by offering our customers better quality products with innovations to save them time and money.

Our Balcatta production facility manufactures/assembles:

Redback public address products
One-shot speaker & grill combinations
Zip-Rack 19 inch rack frame products

We strive to support local suppliers wherever possible in our supply chain, helping to support Australia's manufacturing industry.

Redback Audio Products

100% developed, designed & assembled in Australia.

Since 1976 we have been manufacturing Redback amplifiers in Perth, Western Australia. With over 40 years experience in the commercial audio industry, we offer consultants, installers and end users reliable products of high build quality with local product support. We believe there is significant added value for customers when purchasing an Australian made Redback amplifier or PA product.

Local support & feedback.

Our best product features come as a direct result of feedback from our customers, and when you call us, you speak to a real person - no recorded messages, call centres or automated push button options.
It's not only the assembly team at Altronics who are employed as a direct result of your purchase, but hundreds more at local companies used in the supply chain.

Industry leading 10 year warranty.

There's a reason we have the industry leading DECADE warranty. It's because of a long tried and tested history of bullet-proof reliability. We've heard PA contractors tell us they still see the original Redford amplifier still in service in schools.

We offer this comprehensive parts & labour warranty on almost every Australian Made Redback public address product. This offers both installers and end users peace of mind that they will receive prompt local servicing in the rare event of any problems.