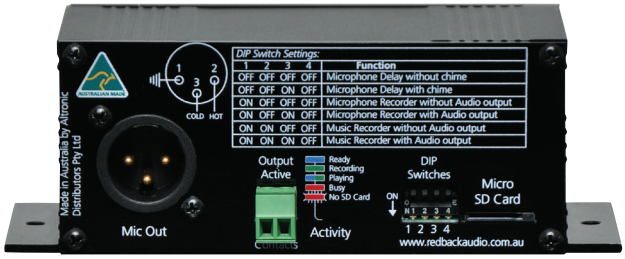

Operating Manual

A 1760 Microphone Delay/Mic-Line Recorder

1.0 INTRODUCTION

The Redback® A 1760 has three modes of operation, determined by DIP switches, which include an Audio Delay, a Microphone Recorder and a Audio Recorder.

When in Audio Delay mode (Mode 0), recording is activated by either the PTT switch on a 5 pin XLR microphone connected to the "MIc In" connector, or by the PTT switch or PTT trigger on the front of the unit. The A 1760 is designed to be inserted in between a microphone and an amplifier (for example), to remove feedback issues which arise when paging is executed in close proximity to the output speakers. This is achieved by delaying the output audio. The audio into the Mic or Music inputs will continue to be recorded while any of the PTT contacts are closed. Once the PTT contact becomes open, recording is completed and the recorded message will play back instantly. The recorded messages are stored on the Micro SD card for playback at a later date if required. A maximum of 999 recordings can be stored with the first message being over ridden once the limit is achieved. An optional pre announcement and/or post announcement chime or message in .mp3, .ogg or .wav. format can also be included with the playback.

When the unit is in Microphone or Audio recording modes (Mode 2 or 3), a momentary closure of the PTT switches will activate recording through either the respective Mic or Music inputs. As the audio is being recorded it is stored on the Micro SD card in the same manner as in the Audio Delay mode. The audio can be "Passed Through" to the Mic output connector as it is recorded, or set to NO audio output. When in "Audio Pass Through" the "Output Active" contacts will be closed, enabling remote monitoring. Recording is stopped when another momentary closure of the PTT switches occurs. The recording is saved to the Micro SD card and no further action is taken. The recorded messages can be accessed from the Micro SD card for playback at a later date if required.

2.0 SPECIFICATIONS

FREQUENCY RESPONSE
Mic input :.....50Hz - 12kHz, -3dB
Music input: .....50Hz - 15kHz, -3dB
INPUT SENSITIVITY
5 pin XLR Mic input: 3mV
3.5mm Music input: 1V
OUTPUT SENSITIVITY
3 pin XLR Mic output: 3mV
OUTPUT CONNECTORS
Output Active closing contact: .....Screw terminals
Mic output: ..... 3 pin XLR
PTT ACTIVATION..... PTT via 5 Pin XLR microphone switch
or PTT Screw terminals
or PTT switch

INPUT CONNECTORS
Mic Input: .....5 pin XLR balanced
Music Input: ..... 3.5mm stereo socket
24V DC power: .....Screw terminals
24V DC power: ..... 2.1mm DC Jack
PTT Trigger: .....Screw terminals

CONTROLS
LED Indicator:...Ready, Recording, Busy, Playing, No SD Card
AUDIO FILE FORMATS .....mp3, .ogg or .wav
POWER SUPPLY .....24V DC 1Amp
CURRENT DRAW ..... 40mA @ 24V DC
DIMENSIONS ..... 134mm(L) x 75mm(D) x 46mm(H)
WEIGHT 0.2kg

* Specifications subject to change without notice.
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3.0 FRONT PANEL GUIDE

Figure 1 shows the layout of the A 1760 front panel.

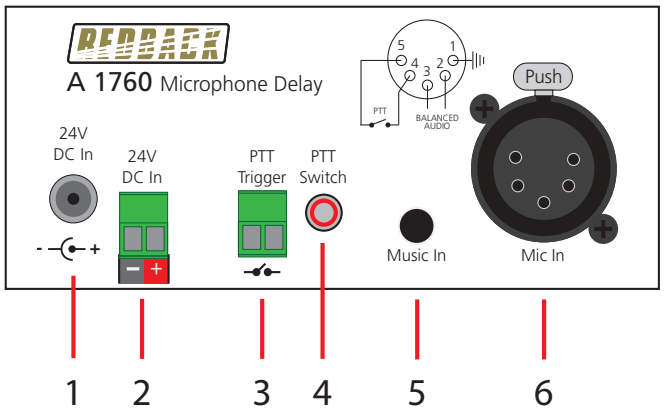


Fig 1

1 24V DC input
Connects to a 24V DC Plugpack with 2.1mm Jack to provide power to the unit. A 24V DC plugpack is supplied with a connector to suit.

2 24V DC Input (Backup)
Connects to a 24V DC backup supply with at least 0.5 amp current capacity. (Please observe the polarity)

3 PTT (Push To Talk) Trigger
This trigger operates in parallel with the PTT switch on the Mic In XLR connector and the PTT switch. This is a set set of voltage free closing contacts. Keep the lines short to avoid false triggering.

4 PTT (Push To Talk) Switch
This switch is used to trigger recording and operates in parallel with the PTT switch on the Mic In XLR connector and the PTT trigger.

5 Music Input
This input is a 3.5mm Line level (1Vpeak audio) stereo socket input which can be used to connect an audio source which can be recorded when the unit is in Audio Recorder mode (refer to section 5). When connected this input will disconnect the Microphone audio input. The XLR PTT is still functional.

6 Microphone Input
This Mic input is a 5 pin XLR with a 3mV rms sensitivity and a closing contact PTT switch which is used to trigger recording.
Pinout details are shown in figure 2.

Fig 2

4.0 REAR PANEL GUIDE

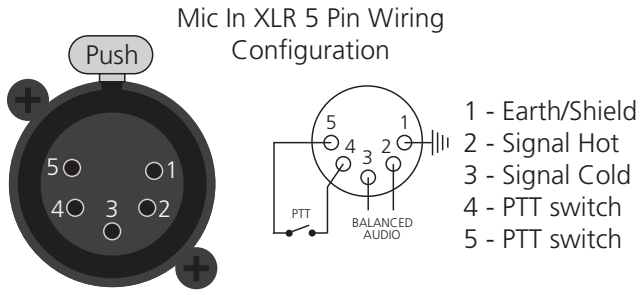
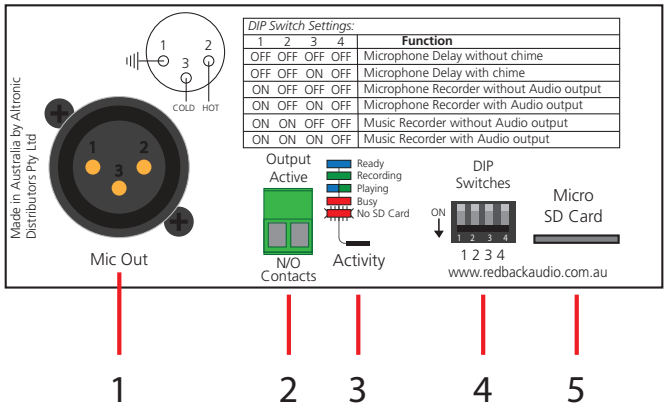


Figure 3 shows the layout of the A 1760 rear panel.

Fig 3

1 Mic Output



This is Mic level (3mV rms audio) output from the unit. This output can only be active when used in Mode 0 or Mode 1 and Mode 3 when option 1 is active (Refer to section 5 for more details). The connection is a 3 Pin XLR with the pinout details as shown in figure 4.

2 Output Active Contacts
The unit has a voltage free closing contact output (Normally Open) which is active whenever the unit is playing audio through its output. The output can only be active when used in Mode 0 or Mode 1 and Mode 3 when option 1 is active (Refer to section 5 for more details). The contacts are rated at 0.5A 24V.

3 Activity LED
This LED indicates the status of the unit.
BLUE : The unit is ready and waiting for a trigger to start recording.
GREEN : The unit is recording.
GREEN & BLUE : The unit is playing back recorded audio.
FLASHING RED 0.5s on - 0.5s off : No SD card present.
RED: Unit is busy. Situation will self-clear within 2s.

4 DIP Switches
These switches are used to set the Mode of operation and Chime and Audio Output options. Refer to section 5 for more details.

5 Micro SD Card
This is used to store the audio recordings and the chime/message audio files. (More details in section 5).

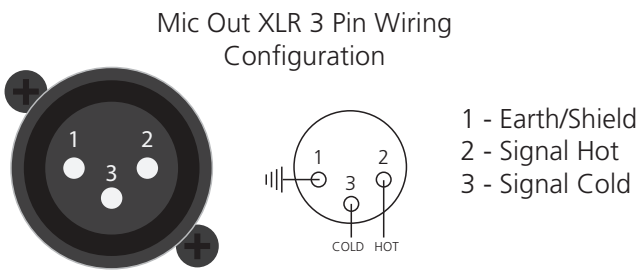


Fig 4

5.0 MODES and OPTIONS

The A 1760 has three active modes of operation. These include an Audio Delay, a Microphone Recorder and as an Audio Recorder. These modes are set by the DIP switches as outlined below.

DIP Switches 1 & 2 select the mode.
DIP Switches 3 & 4 select Options 1 and 2 respectively.

Mode 0 : Audio Delay (DIP SW 1= OFF, DIP SW 2 = OFF)
Press and hold any of the PTT triggers to begin and continue recording audio from the Microphone or Music input. The activity LED should change to GREEN to indicate the unit is recording. A 1 second minimum record time is required. If the trigger is released within this time period, the recording will be cancelled and the playback will also be cancelled. The recording is made in mono with a voice tuned AGC (automatic gain control) enabled. Release the PTT trigger to finish recording. When the recording is finished, the unit will begin playback immediately and the activity LED should change to BLUE and GREEN. The "Output Active" contacts will close while the recorded message is playing. Once the recording has finished playback, the LED will change to BLUE to indicate the unit is ready for the next recording. The recorded message is stored on the Micro SD card for playback at a later date if required (refer to section 6 for more detail).

Option 1 (DIP SW 3) : Pre-chime and Post-chime.
It is possible to play a chime, message, music track or just about any audio file before and/or after a recorded message. See section 5 for more information regarding the audio files.
Dip switch 3 is used to select this function.
DIP SW 3 = ON, Chimes are played before and after recording playback if files are present in folders (refer to section 5).
DIP SW 3 = OFF, No chimes are played.
Option 2 (DIP SW 4): Not currently used.

Mode 1 : Microphone Recorder (DIP SW 1= ON, DIP SW 2 = OFF)
Press any of the PTT triggers and release to begin recording audio from the Microphone input. The activity LED should change to GREEN to indicate the unit is recording. Press again to end recording. If the recording is for less than 1second the recording is cancelled. Holding the PTT trigger will result in constantly attempting to begin, and subsequently cancelling recording, which may leave the unit recording when unintended. The recording is made in mono with a voice tuned AGC enabled. Once recording has finished no further action is taken. i.e there is no audio playback and the activity LED will change to BLUE to indicate the unit is ready for the next recording. The recorded message is stored on the Micro SD card for playback at a later date if required.

Option 1 (DIP SW 3): Audio Pass Through
DIP SW 3 = ON
Audio is passed through IN to OUT while recording.
The "Output Active" contacts will close while the audio is passed through.
DIP SW 3 = OFF
No audio is output
The "Output Active" contacts will remain open.
Option 2 (DIP SW 4): Not currently used.

Mode 2 : Reserved (DIP SW 1= OFF, DIP SW 2 = ON)
Not currently available.

Mode 3 : Audio Recorder (DIP SW 1= ON, DIP SW 2 = ON)
Press any of the PTT triggers and release to begin recording audio from the Music input. The activity LED should change to GREEN to indicate the unit is recording. Press again to end recording. If the recording is for less than 1second the recording is cancelled. Holding the PTT trigger will result in constantly attempting to begin, and subsequently cancelling recording, which may leave the unit recording when unintended. The recording is made in stereo with no AGC enabled. Once recording has finished no further action is taken. i.e there is no audio playback and the activity LED will change to BLUE to indicate the unit is ready for the next recording. The recorded music is stored on the Micro SD card for playback at a later date if required.

Option 1 (DIP SW 3): Audio Pass Through
DIP SW 3 = ON
Audio is passed through IN to OUT while recording.
The "Output Active" contacts will close while the audio is passed through.
DIP SW 3 = OFF
No audio is output
The "Output Active" contacts will remain open.
Option 2 (DIP SW 4): Not currently used.

6.0 MICRO SD CARD

The A 1760 utilises a Micro SD card to store all recorded audio, and for storage of the audio files to be used for the Pre-Chime and Post-Chime tones/messages. The files are stored in three folders, which are created by the A 1760 if they are not present.
The folders are Record, Chime_End, Chime_Start and #LIBRARY# as shown in figure 5 and are outlined below.
In order to access these folders, the Micro SD card will need to be connected to a PC or laptop equipped with a Micro SD card reader. If a Micro SD slot is not available then the Altronics D 0371A USB Memory Card Reader or similar would be suitable (not supplied).

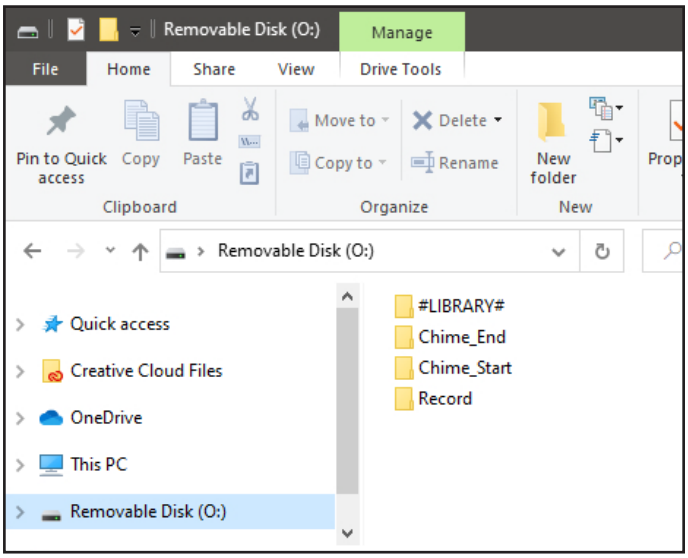


Fig 5

Record: This folder contains all the recordings made by the unit, whether they be recorded while in Audio Delay Mode or Recorder Mode. The files are saved as "RecXXX.ogg" where XXX is numbered 000-999 and increments each time a new recording is made. Once the number of files overflows 999, the first file Rec000.oog will be overwritten and increment.
The contents of the Record folder are shown in figure 6.

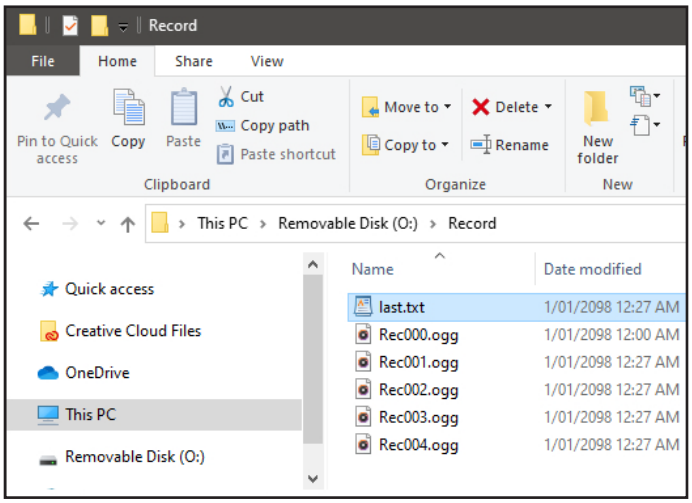


Fig 6
The file last.txt contains the number of the last completed recording. If the file doesn't exist, it is created and recording starts from "Rec001.ogg".
Note: There is no facility for the A 1760 to record the correct date or time code on recorded files.

Chime_Start: This folder contains the audio file to be played as the Pre-chime. The A 1760 must be in Delay Mode with Option 1 active. (DIP SW 1 = OFF, SW 2 = OFF, SW 3 = ON).
The file in this folder is played between the end of the recording and the beginning of playback. This step is skipped if no audio file is present in the folder.
An audio file in either .mp3, .ogg or .wav. formats needs to be copied into this folder. Examples of suitable chime MP3 files are located in the #LIBRARY# folder. Some sub-formats are unsupported, however the files generated by modern systems (and this recorder) should all be valid.
If multiple files are present in the folder then the unit will play the first it encounters. This is system dependant, but will be constant. Only ASCII file names are supported.

Chime_End: This folder contains the audio file to be played as the Post-chime and works in the same manner as the Chime_Start. The A 1760 must be in Delay Mode with Option 1 active. (DIP SW 1 = OFF, SW 2 = OFF, SW 3 = ON).
The audio file is played after the recording has completed it's playback. This step is skipped if no audio file is present in the folder.

#LIBRARY#: This folder contains a host of sample MP3 files which could be used for the Pre-chime or Post-chime.

6.0 FAULT FINDING & OPTIONS

Volume Control: If the volume of an audio file needs adjusting, a file named "volume.txt" can be included in the Record, Chime_Start or Chime_End folders. The file will be used to set the volume level for playback (defaulting to 100%). The number in numerical text (eg 10, 25, 57 etc) needs to be inserted into the text file as the first line of text. Valid values are 0-100. Invalid values will default to 100%.

Fault Finding:

Attempting to remove the Micro SD card or power while the unit is recording can result in undefined behaviour, and may cause the unit to overwrite or corrupt previous recordings.
Always wait until the unit is in an Idle state (BLUE LED) before removing the Micro SD card or power.

Flashing RED LED - An invalid operation condition has been selected (currently selecting Mode 2 is the only thing which triggers this).