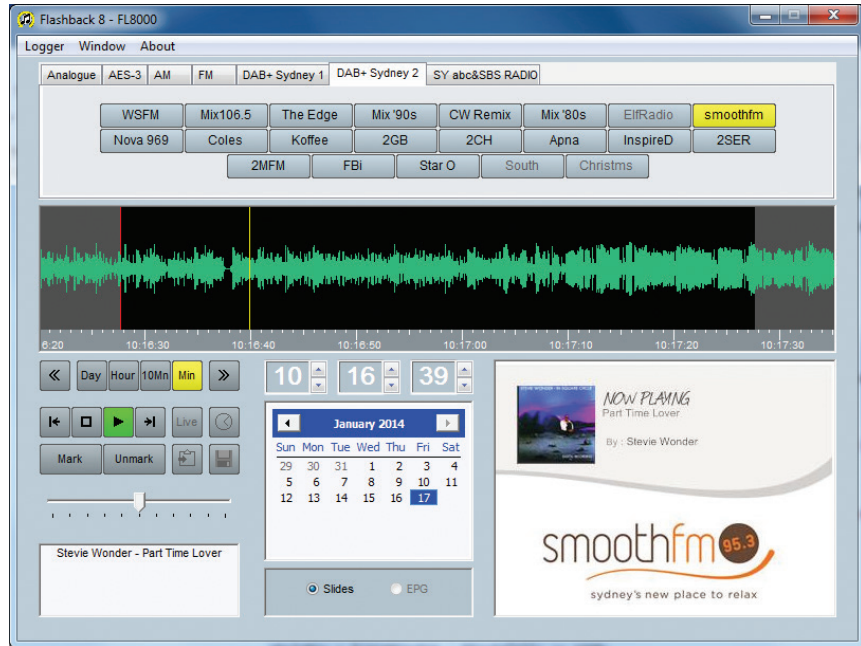


Flashback 8



Manufacturers of audio & video
products for radio & TV broadcasters

SONIFEX

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Flashback 8

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Sonifex Ltd, 61, Station Road, Irthlingborough,
Northants, NN9 5QE, England.

Tel: +44 (0)1933 650 700

Fax: +44 (0)1933 650 726

Email: sales@sonifex.co.uk

Website: <http://www.sonifex.co.uk>

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Flashback 8 Introduction

General Description

Flashback 8 offers the ability to replay audio at a remote workstation from one or more Flashlog 5, Flashlog 6, Flashlog 7 or Flashlog 8 logging recorders. Connection to the Flashlog is via an Ethernet network, and the replayed audio is output through any standard multimedia sound card that is installed in the workstation PC.

Flashback 8 supports playback of DAB+/DAB recordings on Flashlog 7 and 8, including the display of broadcast text and images, as well as traditional line and AM/FM radio capture.

Flashback 8 also allows the user to copy a portion of the log to the Windows clipboard or to a wave (.wav), Windows Media (.wma) or MP3* file.

Playback from Flashback 8 is independent of the local playback function on the logger unit itself, and both may be used simultaneously without any disruption or interaction. Multiple workstations can also be used simultaneously subject to Windows file-sharing limitations and the available bandwidth on the network.

System Requirements

The workstation that is to be used for running **Flashback 8** must meet or exceed the following requirements.

- Processor - Pentium 500MHz or faster
- Memory - 128MB minimum
- Operating System – Windows XP or later
- Multimedia audio card supporting 16 bit 48kHz stereo replay
- Network - Ethernet network adapter and drivers supporting TCP/IP protocol

*Save-as-MP3 is not available for use in the USA until 2018.

Installation

Please take care to follow each step precisely and in the order shown below. If an error occurs at any point either correct the cause of the error or seek assistance before continuing further with the installation.

Important Notes:

Flashback 8 can only be used with Flashlog 5, Flashlog 6, Flashlog 7 and Flashlog 8. It is not compatible with earlier versions of Flashlog. Flashback 2 should be used with Flashlog 3 and Flashlog 4 models, while Flashback 2 cannot be used with Flashlog 5, 6, 7 or 8.

Flashback 8 may be installed on any number of workstations on your network. There is no restriction in Flashlog or Flashback. However the number of workstations that may play back simultaneously is limited by Windows operating system restrictions or your network bandwidth. Specifically, if the Flashlog recorder is running a workstation version of Windows, Windows limits the number of simultaneous connections to ten (Vista or XP) or twenty (Windows 7 and 8), while for a Windows Server based recorder, this is determined by the number of CALs purchased from Microsoft.

On Server editions of Windows, it is necessary to enable “Desktop Experience” in order to provide the necessary Windows Media DLLs. Open Server Manager, go to Features, check the Desktop Experience checkbox and install it. The audio service may also need to be manually activated – if the loudspeaker symbol in the bottom right hand corner of the screen has a red cross on it, right-click on it, select Playback Devices, and when prompted, enable the Windows Audio Service.

Insert the **Flashback 8** CD/disc/flashcard into the workstation. **Flashback 8 requires that Windows Media Format 11 be installed before installing Flashback itself.**

- On Windows XP, run WMFDist11-WindowsXP-X86-ENU.exe to do this,

rebooting if required. Windows Vista and later systems already have the required Windows Media version and don’t need to be updated.

- Run Flashback 8.msi to install Flashback itself. Follow the installer prompts to complete the installation.

When the installation is complete, click on Start - Programs – **Flashback 8** to run the software. Immediately after starting **Flashback 8** for the first time, the **Flashlog Selection** dialog appears. You can click on the Add button to enter the local name (typically FL5xxx, FL6xxx, FL7xxx or FL8xxx), the full DNS name (if across multiple networks or a WAN) or the IP address of your Flashlog unit or units, or automatically search your network for Flashlog units by clicking on the Search button. Note that the automatic search can take a considerable amount of time (possibly tens of minutes or even hours) depending on the size and topology of your network.

Once the list of Flashlog units has been set up, click on OK. If you only have one Flashlog unit in the list it will be selected by default. If you have more than one unit on your network, select the required unit from the list.

The **Flashlog Selection** dialog can be re-entered at any time (for instance to select a different Flashlog unit) by clicking on **Logger** in the menu bar at the top of the **Flashback 8** window. The current selection is preserved and is automatically restored when Flashback is restarted.

Note: Flashback’s requirement that loggers be named FLxxxx has been relaxed. For Flashlog 6, 7 and 8 units only (not Flashlog 5), the Flashlog name can be anything. However names longer than 12 characters may cause network problems with older operating systems. The full DNS name of the logger, including all suffixes, must be less than 256 characters.

Operation

Overview

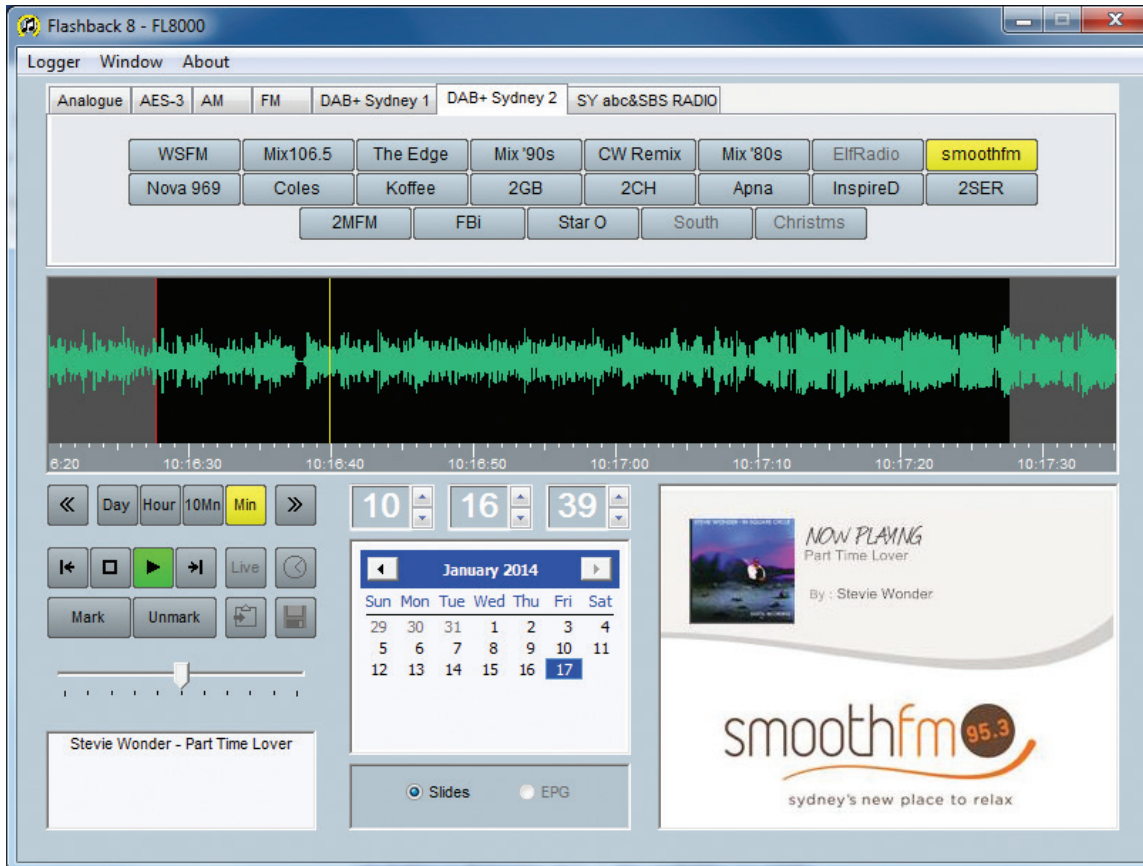


Fig 3-1: Flashback Window Page

The operation of the Flashback software is similar to other audio editing software products that are available in the marketplace, and is based around a visual waveform display.

The Flashback window can be made topmost (relative to other non-topmost windows) by clicking on **Window** in the menu bar and checking the **Topmost** option. This setting is saved in the registry and is restored whenever Flashback is restarted.

At the top of the window are the **channel select** buttons. The number of buttons will depend on the number of channels installed in the logger, while the names of the channels can be set up using the configuration dialog box in the Flashlog 5 software or the Sources window on Flashlog 6, 7 and 8. In the case of playback from a Flashlog 7 or Flashlog 8, the channel buttons are grouped according to source type, specifically Line (or line subcategories), AM, FM, each of the DAB ensembles being logged, and Internet. The group is selected from the tabs along the top of the channel button window.

In the case of a DAB service which has been discontinued but not yet fallen off the end of the log, the name in the channel button is greyed. When opened, the date and time will move to the last point at which that service was present.

Below the channel buttons is the waveform display window, where the yellow cursor shows the current playback position relative to the audio waveform. Clicking anywhere within the display will move the cursor to that position. The waveform can also be moved underneath the cursor by holding down the left mouse button and dragging the ruler bar at the bottom of the display.

The span of the waveform display can be set to one minute, ten minutes, one hour or one day, and the cursor can be moved forward or backward one span width using the left and right arrow buttons located either side of the span selection buttons.

The cursor position can also be moved using the up/down buttons on the time display window. Holding these buttons down will progressively scroll through the log. The time can also be set from the keyboard by clicking in the hour, minute or second window and keying in a number. When entering a time in this manner, the tab key moves the focus from hour to minute to second, the Enter key applies the new time and the Escape key cancels the entry. If the Enter key is not pressed within five seconds of the last keystroke, the editing is cancelled and the time reverts to its previous value.

The playback date is selected from the calendar panel, which only displays the range of days currently available on the selected channel or service. The left and right arrow buttons in the calendar panel move back or forward one month. For reference, the current date is marked with a blue square.

The transport controls (stop and play) are located below and to the left of the waveform display window. When the time-call button (with its clock-face icon) is activated, time call announcements are made each minute on the right channel while the logged audio is played out of the left (mixed to mono if the original was stereo).

The Move-to-start and Move-to-end buttons, located to the left and right of the transport buttons, move to the earliest and latest recording times respectively, or, if a section of audio is marked, the beginning and end of that section.

When the Play button is clicked, the yellow cursor begins moving across the waveform display, while a red cursor marks the original starting point. Clicking the Stop button once will halt playback at its current position, while clicking Stop a second time will move it back to the starting point. The starting point is changed whenever the cursor is forcibly moved, either by clicking within the waveform window, using the up/down controls on the time display or dragging the ruler bar.

Playback can also be started and stopped by pressing the spacebar on the keyboard. Each press toggles between Play and Stop.

If the playback starting point is within the most recent minute recorded, playback is disabled until such time as it will be safe to start playing without running into the end of the log. The danger zone is shown with a darker green on the waveform display, and moving into this zone while playing will cause playback to pause until such time as it's safe to resume. A similar mechanism operates at the beginning of the log to prevent playback of audio that's about to be overwritten.

The slider control below the transport buttons sets the playback volume. This affects only the audio level from Flashback and doesn't interfere with other applications or change the sound card mixer settings.

When playing from a Flashlog 7 or Flashlog 8 fitted with DAB capture, the transmitted DLS text information is displayed in the box at the bottom left of the window, while transmitted images appear in the box at the bottom right. Where multiple image types are broadcast, the image type can be selected using the radio buttons below the calendar panel. Both the DLS text and image display are cleared whenever the playback starting point is moved, and won't update until the next complete text frame or image is played.

For internet streams, the static metadata from the stream's header is displayed in the slideshow box, with Title and Artist metadata, if present, being shown in the DLS box.

Live monitoring of DAB services from Flashback is now supported, but be aware that this will consume network resources while running. Clicking on the "Live" button toggles live playback on and off.

When a DAB service is selected, leaving the mouse pointer hovering on that channel button for more than five seconds will display a tool tip balloon showing the full service name, service identifier (Sid), sub-channel number (SubChId), audio sampling rate and type of encoding, the stream bit-rate and the PAD bit-rate.

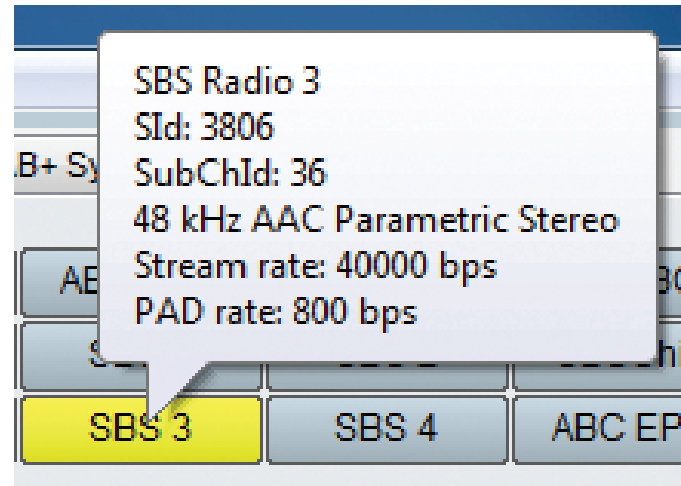


Fig 3-2: Tooltip Balloon

When playing from a Flashlog 7 or Flashlog 8 configured for FM RDS logging, the channel button will display the programme service name that was broadcast at the time of the recording, while any RadioText will be displayed in the bottom left panel. The RDS logo is also displayed in the bottom right panel of the Flashback window.

Copying from the Log

A section of log can be marked for copying to a file or the Windows clipboard. This is done by moving the cursor to the start position, clicking the Mark button, then moving to the end position and clicking the Mark button again. Alternatively, the start and end points can be set by clicking in the waveform display window while holding down the Shift key on the keyboard. Furthermore, a section can be marked by holding down the Shift key and left mouse button while dragging the mouse pointer across the waveform display window. The marked region, once set, can be adjusted by clicking or dragging in the waveform display window while holding down the Shift key. The start or end point closest to the mouse pointer is moved to the new position.

Double-clicking on a day in the calendar will mark that whole day from midnight to midnight. This can be useful if archiving days to wma files.

The playback cursor can be moved to the start or end marker by clicking on the Move-to-start and Move-to-end buttons located to the left and right of the transport buttons respectively.

If the playback starting point lies within the selected range, playback will stop at the end of the range and the cursor will return to the starting point. However, if the starting point is set outside the selected range, playback will run continuously. In this mode, the highlighting of the selected range is dulled to grey.

The marked section can be copied to a file or the Windows clipboard by clicking on the respective buttons located to the right of the Mark/Unmark buttons. When copying to a file, either wav, MP3*, wma or a low bit-rate (16kbps) wma format can be selected from the Save as type dropdown list. Additionally, for DAB services, the selection can be saved in AVI format which includes a video stream showing the DLS text and images along with the audio associated with the service. Saving to the clipboard is limited to a maximum length of ten minutes, while saving to .wav and .avi files is limited to 200 minutes.

The start and end markers can be cleared by clicking the Unmark button.

*Save-as-MP3 is not available for use in the USA until 2018.

Keyboard Operation

Some of the playback buttons can be activated directly from the keyboard.

- Function keys F1 to F8 toggle the first eight channel selection buttons, while holding down the Shift key gives the second block of eight, holding down the Control key gives the third block of eight, and holding down the Alt key gives the fourth block of eight.
- The + and – keys move forward and backward by one second respectively.
- The Right and Left arrow keys move forward and backward by ten seconds respectively.
- Holding down the Shift key while pressing the Right or Left arrow key moves in one minute steps.
- Holding down the Control key while pressing the Right or Left arrow key moves in one hour steps.

- The Up and Down arrow keys move forward and backward one day respectively.
- The space bar toggles between Play and Stop.
- The playback time can be entered from the keyboard as described in the overview.
- Pressing Alt-M sets a marker position (equivalent to clicking the Mark button).
- Pressing Alt-U unmarks all selections (equivalent to clicking the Unmark button).
- Pressing Ctrl-S opens the Save As dialog box if a selection has been marked.
- Pressing Ctrl-C copies the current selection to the Windows clipboard.

Skimming (Flashlog 6, 7 and 8 option)

When skimming is enabled on a line input channel, the times when the contact closure was activated are listed in the box to the right of the calendar window. Clicking on any of these will mark that section of audio in the waveform display window and the playback cursor will move to the beginning of the section. The list of events is confined to a single calendar day, and will change when the playback starting point is moved to another day.

Multiple skimming events, or a range of events, may be selected by holding the Control or Shift key down respectively while clicking in the list. Each event is highlighted in the waveform display window, and clicking on Play

will play them through sequentially. The Move-to-start and Move-to-end buttons step forwards and backwards respectively through the selected events. When copying multiple events to the clipboard or a file, a half-second gap is inserted between each event.

Skimming events can be individually deselected by holding down the Control key while clicking on the event, or they can all be deselected at once by clicking on the Unmark button.

Example: to copy all the skimming content during the breakfast session to a file, find the first event in the session and click on it, then scroll down to the last event and, while holding down the Shift key, click on that. Then click on the Copy-to-file button, choose a name and file type, and click on Save.

Electronic Programme Guide (Flashlog 7 / 8 with DAB+)

When a DAB EPG service is selected, click on Play and allow it to run for a few minutes until the complete programme guide is decoded, at which point it will be displayed in tree-view form. At the top level is the ensemble name, then below that the service names and within each service the guide itself.

When the cursor hovers over a programme entry, an info-tip box appears displaying any descriptive text associated with that programme.

The tree display will be destroyed and rebuilt whenever an updated EPG is decoded, so while exploring the guide it may be useful to pause the playback by clicking on Stop.

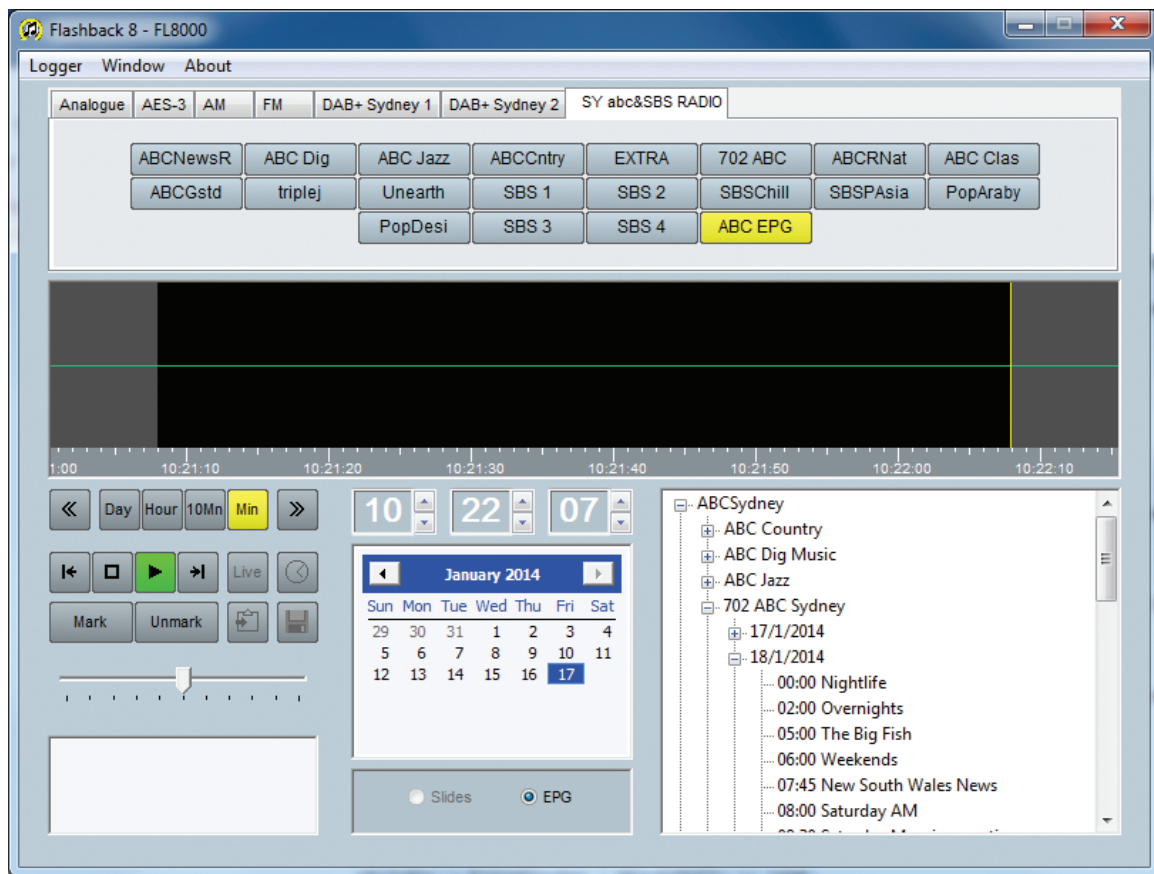


Fig 3-3: DAB EPG Service Page

Registry Settings

On startup, Flashback 8 looks in HKEY_LOCAL_MACHINE\Software\InnesCorp\Flashback8 and HKEY_CURRENT_USER\Software\InnesCorp\Flashback8 for the following DWORD values. A setting in HKEY_CURRENT_USER overrides any corresponding setting in HKEY_LOCAL_MACHINE.

AllowSave – If this value exists it operates as follows:

- 0 – save-to-file and save-to clipboard operations are disabled
- 1 – save-to-file and save-to clipboard are enabled (default).

LoggerListMode – If this value exists it operates as follows:

- 0 - logger list is read-only (Add, Delete and Search disabled)
- 1 - Add and Delete enabled, Search disabled
- 2 - Add, delete and Search enabled (default).

CurrentLogger – Specifies the ordinal value from the logger list of the initial logger selected on startup. The value in HKEY_CURRENT_USER is overwritten if the user selects a different logger from the list.

Timeout – Sets the inactivity timer to a timeout value in minutes. The timer is reset by any keystrokes or mouse clicks within the Flashback window, and upon timeout will deselect any selected channel, thus releasing all network connections to the Flashlog unit. If this value is not specified in either registry hive, a default of 1440 (one day) applies. Setting the Timeout value to zero will disable the timeout function. Setting this value to greater than 35,791 (approximately 24.8 days) will also disable the timeout function as this is the maximum delay supported by the Windows timer.

In addition, sub-keys representing logger names can also be created under **HKEY_LOCAL_MACHINE\Software\Innescorp\Flashback8** to install loggers for all users of a Flashback PC. For compatibility with Windows Vista and later versions, these globally-defined loggers can't be deleted from the logger list dialog box as HKEY_LOCAL_MACHINE is read-only for non-elevated applications.

Troubleshooting

There are a number of conditions which can cause the Flashback software to fail and/or report an error message. These conditions are now described.

- Unable to open connection to FLnnnn – there can be several causes for this, including inability to find the logger on the network, failure of the Flashlog recorder service on the logger itself, or file sharing not enabled on the logger. Open Windows Explorer on the workstation and check whether the logger is visible (its name will be FLnnnn where nnnn is the logger's serial number).

Flashlog 5: The C partition on the logger should be visible and when opened should contain subdirectories called logger1, logger2, logger3 and logger4. If Explorer reports an invalid user name and/or password, make sure that the Guest account in the logger's User Manager is enabled.

Flashlog 6: The folder called Audio should be visible and when opened should contain subdirectories called logger1, logger2, etc. depending on how many channels are fitted. Note that the Guest account does not need to be enabled on Flashlog 6, however File Sharing must be turned on and Password-protected Sharing must be turned off. The Audio folder should be shared with read access granted to Everyone.

Flashlog 7: The folder called Audio should be visible and when opened should contain subdirectories called logger1, logger2, etc. depending on how many channels are fitted. There should also be a subdirectory called DAB if it's fitted with DAB capture, with subdirectories in that for each ensemble. Note that the Guest account does not need to be enabled on Flashlog 7, however File Sharing must be turned on and Password-protected Sharing must be turned off. The Audio folder should be shared with read access granted to Everyone.

Flashlog 8: The folder called Audio should be visible and when opened should contain folders called Line, AM and/or FM (depending on hardware configuration), each of which contains folders called logger1, logger2, etc. depending on how many channels are fitted. There

should also be a folder called DAB if it's fitted with DAB capture, with subdirectories in that for each ensemble. Note that the Guest account does not need to be enabled on Flashlog 8, however File Sharing must be turned on and Password-protected Sharing must be turned off. The Audio folder should be shared with read access granted to Everyone.

If the logger is not visible on the network check that the TCP/IP protocol is installed on the workstation and that the network cables are correctly connected on both the workstation and the logger.

- Lost connection to Flashlog – check that the network cable has not become disconnected from either the workstation or the Flashlog itself. Another possible cause of this message is reboot or failure of the Flashlog.
- Unable to open audio output device - this may be caused by the sound card not being installed correctly in the workstation or another application may be accessing it. Note that the sound card must support 48kHz sampling rate. Make sure that the correct default playback device is selected in the Windows Control Panel if there are multiple devices available.
- No more connections can be made to this remote computer at this time because there are already as many connections as the computer can accept – Windows XP and Windows Vista both limit the number of concurrent network connections to ten, while on Windows 7 and 8 the limit is twenty. Flashback maintains a connection to the logger whenever a channel is selected. If simultaneous playback on more workstations is necessary, it will be necessary to upgrade the Flashlog operating system to the equivalent server version and purchase the required number of CALs.
- No sound when playing back - check that the speakers or headphones are correctly connected and that the volume setting on the PC is set correctly. Try running other applications that generate sounds to see if the problem affects them as well. Check that the correct playback device is selected in the Windows Control Panel.

- There are occasional gaps in the replayed audio - this may be caused by other applications running on the workstation that are consuming excessive processor time or you may have insufficient available network bandwidth. Audio files are stored on Flashlog 5 as either 64 kilobits per second (standard 13kHz bandwidth) or 128 kilobits per second (optional 18kHz bandwidth). Flashlog 6 uses 128kbps as standard. On Flashlog 7 and 8, the compression rate for line channels is configured from the Flashlog Sources window, while AM capture channels use 32kbps, FM capture channels use 64kbps and DAB+ / DAB capture channels are stored at their broadcast rate.
- Note that Flashback 8 will not work on Windows 2000, as the current Windows Media codecs are not supported on that platform.

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Reed-Solomon Error Correction

Reed-Solomon decoder Copyright © 2004 Phil Karn, KA9Q, used under the terms of the GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999. The library source code and licence text is included on the Flashback 8 distribution CD or ZIP file.

aacPlus-v2 Audio Decoder

FAAD2 aacPlus-v2 Decoder Copyright © 2003-2005 M. Bakker, Nero AG used under commercial licence.

Lame MP3 Audio Decoder

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www.sonifex.co.uk

t:+44 (0)1933 650 700

f:+44 (0)1933 650 726

sales@sonifex.co.uk