Connections and General information

DVS 1000 Video Store
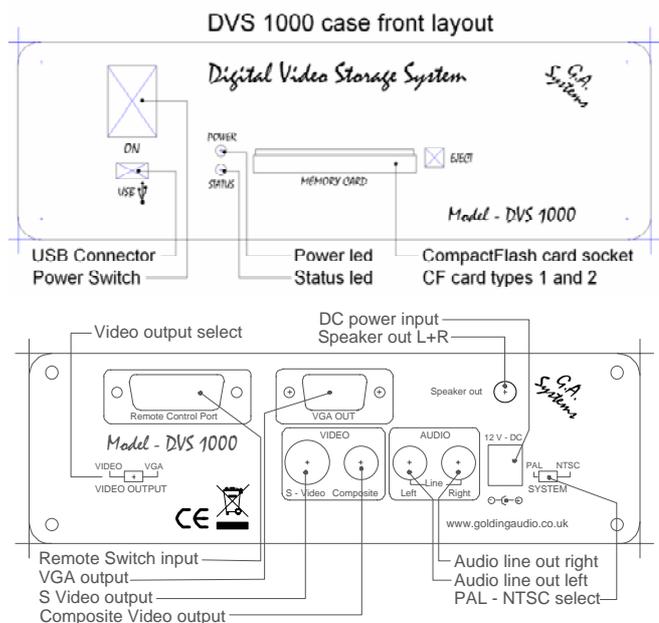MPEG Digital Video Store.

General
The DVS 1000 is an MPEG Video playback unit designed for use with TV's, Video Monitors Plasmas and projectors. It can play MPEG-1 and MPEG-2 video files.

The DVS 1000 can operate in various modes but is shipped to operate in one of the two modes detailed on page 2. If you require control options other than those covered in this datasheet please contact us to discuss your requirements.

- MPEG-1 video
- MPEG-2 video
- Video signals of PAL & NTSC standard
- Composite and S-Video signal output
- Stereo audio output

General Layout

DVS 1000 case front layout

Digital Video Storage System

ON
POWER
STATUS
USB
MEMORY CARD
EJECT
Model - DVS 1000

USB Connector   Power led   CompactFlash card socket
Power Switch   Status led   CF card types 1 and 2

Video output select   DC power input
Speaker out L+R
Remote Control Port
Model - DVS 1000
VIDEO VGA
VIDEO OUTPUT
VGA OUT
VIDEO   AUDIO   12 V - DC
S - Video Composite Line PAL NTSC
Left Right SYSTEM
www.goldingaudio.co.uk
CE

Remote Switch input
VGA output
S Video output
Composite Video output
Audio line out right
Audio line out left
PAL - NTSC select

Power Switch
Main power switch.

USB Connector
When connected to a PC's USB port the DVS1000's Compact Flash card can be accessed via the PC. Files can be dragged and dropped directly on to the Compact Flash card inserted into the DVS1000.

Power LED
Indicates when power is on.

Status LED
Flashes when unit is playing files, or system is busy.

Compact Flash socket
Compact Flash memory socket with eject button. Supports CF type1 and type 2.

Rear Panel

Remote Control port (15 way D type socket)

Pin 1 = Trip 1 (play)	Pin 2 = Trip 2 (stop)	Pin 3 = Trip 3 (pause)
Pin 4 = Trip 4 (repeat)	Pin 5 = Trip 5 (next)	Pin 6 = Trip 6 (vol down)
Pin 7 = Trip 7 (vol up)	Pin 8 = Trip 8 (mute)	Pin 9 = 0v common
Pin 10 = N/C	Pin 11 = N/C	Pin 12 = 12vdc 100mA
Pin 13 = GND	Pin 14 = VGA enable*	Pin 15 = VGA enable*

The switch inputs can be used to either control functions on the DVS1000 such as Play, Stop, Pause, Next track, Volume up and down etc. Or as direct trip inputs for up to 8 .mpg video clips.
See operation modes covered on page 2.

* Earlier version if no Video/VGA switch

VGA output 15 way Hi density D-Type socket

Pin 1 = Red	Pin 2 = Green	Pin 3 = Blue	Pin 4 = N/C
Pin 5 = N/C	Pin 6 = GND	Pin 7 = N/C	Pin 8 = N/C
Pin 9 = N/C	Pin10 = GND	Pin11 = N/C	Pin12 = N/C
Pin13 = Hsync	Pin14 = Vsync	Pin15 = N/C	

Note: Video/VGA switch must be in VGA mode. (ON EARLIER VERSION Pins 14 and 15 of the Remote Control port connector (above) must be linked to enable VGA output.)

S - Video output (4 way mini din)

Pin 1 = Ground	Pin 2 = Ground
Pin 3 = Luma Out	Pin 4 = Chroma Out

Composite Video output (phono socket Yellow)
Pin 1 = Center pin, composite video output, 0.7Vp-p
Pin 2 = Ground

Audio Line level left and right (2 phono socket)
Pin 1 = Center pin, Audio channel output
Pin 2 = Ground
Left out = White socket
Right out = Red socket

Speaker output (3.5mm Stereo Jack socket)
Output 1watt into 4R
Tip = Left speaker + **Mid** = Right speaker + **Base** = Common

Power Jack input (5.5mm plug)
Outer = 0v   (5.5mm dia)
Inner Pin = +12v (2.5mm dia)
12V DC, 1.2 amp minimum regulated supply.

PAL - NTSC selector switch
Left position = PAL format
Right position = NTSC format

Video - VGA selector switch
Left position = Video output
Right position = VGA output

Compact Flash card requirements.

Compact Flash cards supported
Type 1 and 2
40 X speed or greater

File formats supported.
MPEG 1 video files   .mpg
MPEG 2 video files   .mpg

Operation Modes

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The DVS 1000 unit can operate in various modes but is shipped to operate in one of the two modes detailed below. If you require control options other than those listed below please contact us to discuss your requirements.

Basic Play mode.
Basic play mode requires only .mpg video files to be present on the Compact Flash card. On power up the DVS 1000 will replay files in alphabetical sequence continuously until power is removed. If only one file is present on the compact flash card, that file will loop continuously.

Trips inputs 1 to 8 detailed on page 1 are configured to operate as follows in **Basic Play mode.**

PLAY (Trip 1)
Resumes playback from the start of the last selected video after STOP has been pressed.

Resumes playback of any PAUSED track from the point that it has been set to PAUSE.

STOP (Trip 2)
When STOP is pressed the video stops playing and a black screen is displayed.

PAUSE (Trip 3)
When PAUSE is pressed the video image instantly freezes.
Press Pause again or PLAY to resume normal playback from the position where it was paused.

REPEAT (Trip 4)
When REPEAT is pressed the current track will loop continuously.
To disable the repeat mode, press REPEAT or STOP.
If repeat mode is enabled and NEXT TRACK is pressed, the next track will also loop.

NEXT TRACK (Trip 5)
The NEXT TRACK function can be activated only when a track is already playing. When NEXT TRACK is pressed, the current video stops playing and jumps directly to the start of the next track in the sequence.

VOLUME DECREASE (Trip 6)
Decreases audio output.

VOLUME INCREASE (Trip 7)
Increases audio output.

MUTE (Trip 8)
When MUTE is pressed, all audio output is muted.
Press MUTE again to resume normal sound of all tracks.

Direct Trip Mode
Direct Trip Mode enables up to 8 video files to be replayed directly via a momentary contact closure on trip inputs 1 to 8.

Trip inputs
Accessing trip 1 replays TRACK1.MPG accessing trip 2 replays TRACK2.MPG etc.
Once playback of a particular track has finished the DVS1000 will display the 'STANDBY.MPG' file until a new valid trip input is applied.

One shot operation
Trip inputs have one shot operation i.e. if any trip input is held on, the relevant track will be played once only. The trip input must be cleared and reapplied for the track to play again.

Project files
The supplied CD contains different project types including the following which provide different methods of triggering the DVS1000. These and other project files can be downloaded from our website www.goldingaudio.co.uk

The "**Any interrupts**" project allows any MPEG file to be interrupted by any other MPEG file including the one that is currently playing.
For example, if TRACK1.MPG is playing and trip1 is activated, TRACK1.MPG will restart from the beginning.

The "**Any other interrupts**" project will allow any other file to interrupt the currently playing file but will not allow itself to re-start if re-triggered during playback.

With the "**Uninteruptible**" project, an MPEG file will be allowed to finish before accepting a new trigger from the trip inputs.

Files required when using Direct Trip Mode
The following files must ALL be present on the Compact Flash card when using Direct Trip Mode.
Eight MPEG video files named **TRACK1.mpg**, **TRACK2.mpg** up to **TRACK8.mpg, STANDBY.mpg, ??????.PLL** and **DEFAULT.PRJ**
??????.PLL is the appropriate file for the triggering method required.

Example of contents of compact flash card:
TRACK1.mpg
TRACK2.mpg
TRACK3.mpg
TRACK4.mpg
TRACK5.mpg
TRACK6.mpg
TRACK7.mpg
TRACK8.mpg
STANDBY.mpg
NOINT.PLL
DEFAULT.PRJ

NOTE.
Please ensure that you do not copy the directory itself but only the contents as shown above.

Supplied files
TRACK1.mpg contains colour bars and tone for test purposes.
TRACK2.mpg ~ TRACK8.mpg files supplied with the DVS1000 contain a default black screen. Once generated, your MPEG video files will replace any or all of these files depending if that particular trip input is required. Any trip inputs not required must have the supplied default black screen file left on the Compact Flash card for the system to operate correctly.

STANDBY.mpg file
The supplied STANDBY.mpg file contains a black screen image. This image is displayed while none of the video files stored on the DVS1000 are being played. This file can be replaced by another video file with the same name containing text, a logo, a still image or a video track. This new file will then be displayed whenever the DVS1000 is not playing a tripped file. A video track would continuously loop if used as the STANDBY.mpg file.

Accessing files on the Compact Flash card
Files on the Compact Flash card can be accessed in two ways either by the DVS1000's onboard USB port or by removing the card and placing it directly into a Compact Flash card reader connected to a PC.
To use the USB option, the DVS1000 must be switched off to gain access to the card. No software installation is necessary under Windows XP.

Specification

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Adding files to the DVS1000 (Direct trip mode)
If for instance you require the DVS1000 to replay four video clips accessed by trip 1 to trip 4 without being interruptible you would do the following:

1. Copy the entire contents of the directory named "uninterruptible" from the CD onto a blank compact flash card.
2. Create or view your .mpg video files on any PC.
3. Rename your MPEG files to TRACK1.mpg to TRACK4.mpg.
4. Replace the default files TRACK1.mpg toTRACK4.mpg on the DVS1000's Compact Flash card with your newly generated files.

Note 1
The DEFAULT.PRJ file must be taken from the same subdirectory as the .PLL file on the CD and must be of the same date and time origination.

Note 2
The video MPEG files must be named exactly as described above for the project files to work correctly.

Note 3
*Ensure that you do not copy the directory itself but only the **contents** of the directory.*

Specification

Playable Formats	MPEG 1 and 2 video and audio MPEG 2 video limited to 5.5Mb/s	
Memory medium	Compact Flash card Type 1 and 2 Speed 40X minimum	
Video Output	Composite and S-Video	
Video Format	PAL or NTSC	
Output Resolution	Low resolution	352 x 288 pixels (PAL) 352 x 240 pixels (NTSC)
	High resolution	720 x 576 pixels (PAL) 720 x 480 pixels (NTSC)
Audio Outputs	Phono sockets Stereo 3.5mm jack	3.2 V p-p max 5K ohm 1 watt per channel into 8 Ohms
Signal to Noise	96dB	
Power input	12V DC regulated, 500mA typical	
Power consumption	6 W	
Trigger input	Contact closure 15 way D-type socket Internal pull-up to 3.3V. Response time approx 450 to 600mS.	
USB port	Standard Mini USB	
Size	W 160mm x H 54mm x D 93mm	

Notes on MPEG

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File Creation – Encoding Chart
When encoding video or images on your computer, the table below indicates what size to create your images, what size to make your images in an editor or video software, and finally what size to actually encode at.

Format	Create at	Export Video	Encode At
MPEG 1 PAL	704 X 576	352 X 288	352 X 288
MPEG 1 NTSC	704 X 540	352 X 240	352 X 240
MPEG 2 PAL	768 X 576	720 X 576 PAL	720 X 576PAL
MPEG 2 PAL WIDE	1024 X 576	720 X 576 PAL	720 X 576 PAL
HD1 MPEG 2 PAL	768 X 576	352 X 576 PAL	352 X 576 PAL
MPEG 2 NTSC	720 X 540	720 X 480 NTSC	720 X 480 NTSC
MPEG 2 NTSC WIDE	864 X 480	720 X 480 NTSC	720 X 480 NTSC
HD1 MPEG 2 NTSC	720 X 540	352 X480 NTSC	352 X 480 NTSC

File formats
File formats that can be played on a DVS 1000 are MPEG-1 and MPEG-2 video. These are described in the following text.

MPEG 1
Compressed video format with audio. Output quality is equivalent to what you would get from a VCD-player. MPEG-1 images have a filename that ends in .MPG (e.g. "track1.mpg")
MPEG-1 formats differ depending on whether it is NTSC or PAL format.

PAL MPEG-1 FORMAT:
Video:	• Size: 352x288
	• PAL Pixel Aspect Ratio 1.0950 (4:3)
	• 2 Fields Interlaced 25fps
	• Field order must match input file if transcoding from Quicktime or AVI
Audio:	• 44.1 kHz Stereo
	• Mpeg must be encoded with an audio stream, even if audio is not used.
Data Rates:	• Video: 1,120,000 bps
	• Audio: 224 kbps
	• Multiplex: 170 kbps

NTSC MPEG-1 FORMAT:
Video:	• SIZE: 352x240
	• NTSC Pixel Aspect Ratio 0.9157 (4:3)
	• 2 fields Interlaced 25fps
	• Field order must match input file if transcoding from Quicktime or AVI
Audio:	• 44 kHz Stereo
	• Mpeg must be encoded with an audio stream, even if audio is not used.
Data Rates:	• Video: 1,119,200 bps
	• Audio: 224 kbps
	• Multiplex: 170 kbps

Notes on MPEG 1:
• Maximum data rate of video & audio content is 270kbps.
• Increasing screen size of MPEG 1 beyond these specifications will not improve picture qualityand in most cases will make playback worse.
• Increasing data rates will also not create significantly better MPEG-1 as the format can only hold a limited amount of information.
• MPEGs must be tested on the DVS 1000 testing on a different machine such as a PC is no guarantee of compatibility or of quality.
• 16x9 Aspect ratios can be used however due to lack of industry standardisation of hardware there is no guarantee that the DVS 1000 or any other hardware will auto-detect this flagging. Content must therefore be previewed on the DVS 1000.

MPEG-2
Compressed video format with audio. Output quality is similar to what you would get from a DVD-player. File size is therefore considerably greater than MPEG-1 file size. MPEG-2 files have a filename that ends in .MPG (e.g. "track1.mpg")
MPEG-2 format is different depending on whether it is NTSC or PAL format.

PAL MPEG-2 FORMAT:
Video:	• Video Size: 720x576
	• PAL Pixel Aspect Ratio (4:3)
	• 2 Fields Interlaced 25fps
	• Field order must match input file if transcoding from Quicktime or AVI
Audio:	• 48 kHz Stereo
	• Mpeg must be encoded with an audio stream, even if audio is silent.
Data Rates:	• Video: 4-6 Mbps (*)
	• Audio: 224 kbit/s

(*) the format supports higher bit rates but these will not work reliably on the DVS 1000.

NTSC MPEG2 FORMAT:
Video:	• Video Size: 720x480
	• NTSC Pixel Aspect Ratio (4:3)
	• 2 fields Interlaced 29.97fps
	• Field order must match input file if transcoding from Quicktime or AVI
Audio:	• 48 kHz Stereo
	• Mpeg must be encoded with an audio stream, even if audio is silent.
Data Rates:	• Video: 3Mbits/s to 5.5Mbits/s (*)
	• Audio: 224 kbit/s

(*) the format supports higher bit rates but these will not work reliably on the DVS 1000.

Data rates:
• We recommended a maximum data rate of 5.5 Mbps.
• Variable bit rate encoding can be used, but a fixed rate is recommended for general use.

NOTE
Widescreen (16:9) format
The DVS1000 will replay anamorphic 16:9 material only if the source has been encoded as a 4:3 stream. If you try and replay a 16:9 stream, the DVS1000 will crop the left and right sides of the image.