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DVS1080

HD Compact video audio player

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Typical Applications: Interactive kiosks
Theme park attractions
Point Of Sale
In-vehicle video systems
Digital signage

Features

Two default modes: Basic play
Direct trip

Interactivity : Supports 8 buttons
PIR input (trip 1)
Serial port control

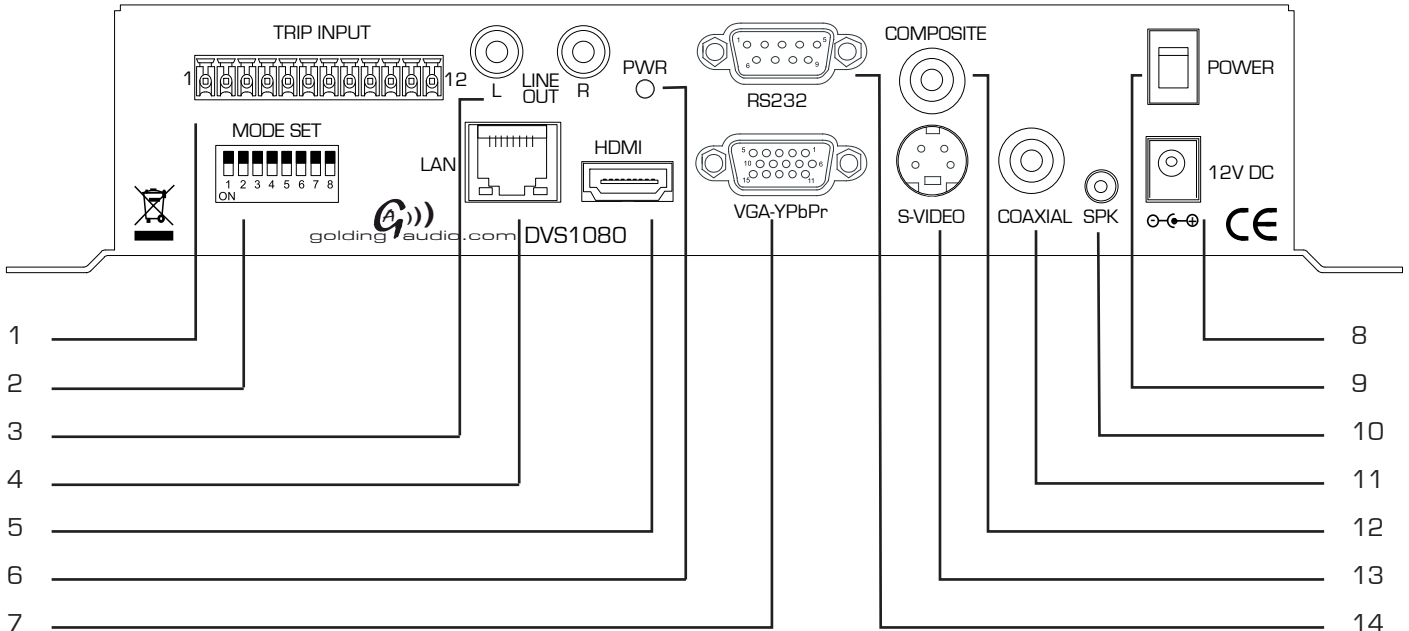
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1 Introduction

The DVS1080 is a powerful yet easy to use commercial HD (High Definition) digital media player designed for retail point of purchase (POP) product promotions, product demonstration videos and similar applications such as museum information displays.

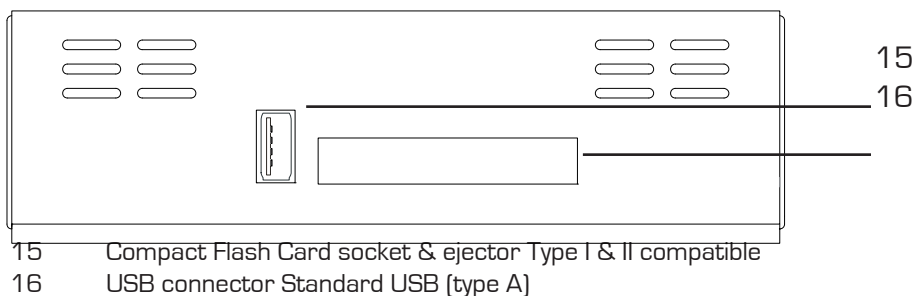
1.1 Guide to the DVS1080

Diagram 1 – DVS1080 rear panel



Item	Description	Type	Use
1	Trip input	12 way 3.5mm	Trips 1-8, PIR in (tr1), 12Vdc out 250Ma max
2	Mode set	8 way DIP switch	Display output selection
3	Line out	RCA x 2	Line level audio
4	LAN	RJ-45	For future use
5	HDMI	HDMI connector	HDMI/DVI out
6	PWR	LED	Power indicator, On [green], Off [clear]
7	VGA-YPbPr	DB-15-F connector	VGA/YPbPr output
8	12V DC	2.1mmDC jack	12V DC input, center positive
9	Power	2 way rocker switch	Power on/off
10	SPK	Stereo jack, 3.5mm	Speaker output
11	Coaxial	RCA jack, orange	Coaxial audio output
12	Composite	RCA jack, yellow	Composite video output - yummy
13	S-Video	5 pin mini DIN	S-Video output
14	RS232	DB-9-M connector	RS-232 port

Diagram 2 – DVS1080 side panel



- 15 Compact Flash Card socket & ejector Type I & II compatible
- 16 USB connector Standard USB (type A)

2 Basic setup

When powered on the DVS1080 will automatically start to play video or still images found in the media folder of an installed Compact Flash (CF) card.

Files will be played in alphanumeric order. (if no playlist file (.pll) is present)

Basic setup involves 4 main steps:

1. Installing a CF card with suitable media
2. Setting DIP switches appropriately for desired resolution output
3. Connecting to a display and power
4. Switching on

The DVS1080 also offers a range of Features. For details of these see the Additional Functions section below.

2.1 Compact Flash (CF) cards:

The recommended brand is Pretec (233x), all capacities should be suitable. Other brands may also be acceptable. It is recommended to use at least 15MB/sec (sometimes referred to as 100x or faster) CF cards for HD video (e.g. 1080p).

CF cards should be formatted using FAT32 before first use.

All media files on the CF card **must** be in a folder name "media".

All media filenames **must** be an alphanumeric character only, not space, "~", "_", "-", "!", "@", "^", etc.

The media filename **must** not exceed 16.3 format.

Without a playlist, media files will play in alphanumeric order according to the filename.

A Playlist is optional, for details as to preparation see the Additional Functions section below.

2.2 Video content:

Many popular video editing programs have a "HD Video" setting, however it is important that the file produced is a compatible format supported by the DVS1080 (see the Specification in this manual on page ???).

HD resolution: 1920x1080, 1280x720

Bit Rate: 12-15Mbit/s

Audio Bit Rate: 224 Kbit/s, 48 kHz at 16 bits sample rate

Frame Rate: 25 Hz / 29.97 Hz

Codec: MPEG-4 (H.264/AVC)

Typical filename extension: .ts / .mp4 / .mov

The DVS1080 is also MPEG-2 compatible. For further details of video format and codec compatibility see the Specifications section.

2.3 JPEG still images:

A compression setting of medium to good is recommended.

Resolution settings:

For output to a widescreen display : 1920x1080

For output to a standard 4:3 display: 1600x1200
















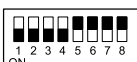
2.4 Display:

Users are recommended to consider the following:

Video resolution: As a general rule it is recommended to use a display of the same resolution as the media to be played. If this is not possible, although the media player supports scaling, choosing a display with a good scaling engine will provide flexibility and optimal results.

Aspect ratio: Many displays are widescreen with an aspect ratio of 16:9. However PAL/NTSC is 4:3. Consequently video output to widescreen displays may be stretched or shown with black bars. If possible this is best corrected during the video production and encoding process.

2.5 DIP Switch settings:

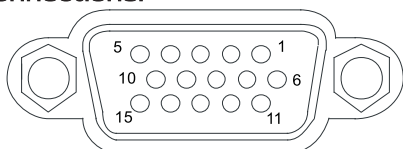
SW1 	HDMI/DVI 1920x1080p	SW1 	Component (YPbPr) 1920x1080i @60Hz
SW1 	HDMI/DVI 1280x720p	SW1 	Component (YPbPr) 1280x720p @60Hz
SW1 	HDMI/DVI 1600x1200	SW1 	Component (YPbPr) NTSC
SW1 	HDMI/DVI 1024x768	SW1 	Component (YPbPr) PAL
SW1 	ARGB 1920x768 @60Hz	SW1 	S-Video/Composite Reserved
SW1 	ARGB 1280x720p @60Hz	SW1 	S-Video/Composite Reserved
SW1 	ARGB 1600x1200 @60Hz	SW1 	S-Video/Composite NTSC
SW1 	ARGB 1024x768p @60Hz	SW1 	S-Video/Composite PAL

 UP (off)

 DOWN (on)

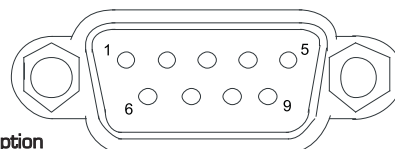
2.6 I/O Pin-out connections:

VGA/YPbPr



Pin	Description
1	Analogue Red (Component Pr)
2	Analogue Green (Component Y)
3	Analogue Blue (Component Pb)
4	Ground
5	Ground
6	Ground
7	Ground
8	Ground
9	N/C
10	Ground
11	N/C
12	N/C
13	Horizontal sync
14	Vertical sync
15	N/C

RS232



Pin	Description
1	Data carrier detect (DCD)
2	Receive data (RXD)
3	Transmit data (TXD)
4	Data terminal ready (DTR)
5	Signal ground (GND)
6	Data set ready (DSR)
7	Request to send (RTS)
8	Clear to send (CTS)
9	Ring indicator (RI)

Speaker Out

Tip	Left
Ring	Right
Sleeve	Ground

Trip Input



Pin	Description	Pin	Description
1	Ground	7	Trip 6
2	Trip 1	8	Trip 7
3	Trip 2	9	Trip 8
4	Trip 3	10	PIR IN (Trip 1 only)
5	Trip 4	11	12V DC out (250mA max)
6	Trip 5	12	Ground

2.7 OSD Configuration menu:

In Configuration mode, you can read the MAC address/Firmware version of the unit, setup master volume, system clock, time zone and options for Datalog and OSD messages, etc. To configure this you will need 3 buttons connected to the TRIP INPUT port.

To enter configuration mode, hold down Button 8 for 30 seconds while powering up the unit.

Change the Volume

Press Button 8 to select Volume.

Press Button 6 / 7 to change the volume level (range from 1 to 32)

Press Button 8 to select Save and Exit

Press Button 6 / 7 to confirm and exit.

Change the Time Zone

Press Button 8 to select TZ.

Press Button 6 / 7 to change the time zone value.

Press Button 8 to select Save and Exit

Press Button 6 / 7 to confirm and exit.

Reboot the unit.

Set the GMT time

Press Button 8 to select YY, MM, DD, hh,mm and ss.

Press Button 6 / 7 to set the date and time.

Press Button 8 to select Save and Exit

Press Button 6 / 7 to confirm and exit.

Reboot the unit.

Important Note: The player is set to GMT=0 by default. If you have already set your local time zone in previous section (Change the Time Zone). Please skip this section or leave the clock to GMT setting.

Set the OSD

Press Button 8 to select OSD.

Press Button 6 / 7 to set "ON" or "OFF".

Press Button 8 to select Save and Exit

Press Button 6 / 7 to confirm and exit.

Set the System Message

Press Button 8 to select System Message.

Press Button 6 / 7 to set "ON" or "OFF".

Press Button 8 to select Save and Exit

Press Button 6 / 7 to confirm and exit.

2.8 Content update

Content on the DVS1080 can be updated by either of the following:

- 1) Copy the new media onto the CF card. This can be done using direct copy using a PC or MAC.
- 2) Using the USB update process. The new media, and playlist if required, is copied to a USB flash drive. This can then be updated to the DVS1080's CF card using the USB update process, refer to the application note.

3 Operation Modes.

The DVS1080 unit can operate in various modes but is shipped to operate in one of the two modes detailed below. If you require control options or specific interactivity other than those listed below, please contact us to discuss your requirements.

3.1 Basic Play mode:

Basic play mode requires only .mpg video files or .jpg files to be present on the Compact Flash card.

On power up the DVS 1080 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.

Example:

APPLE.MPG	Plays first
CAR.MPG	Plays second
PLANE.MPG	Plays next
SPACE.MPG	Plays last
	Repeat list

Still Images:

The DVS1080 will replay still images for a preset time in alphabetical sequence in Basic Play Mode.

Example:

LOGO5.JPG (displayed for 5 seconds)
APIC9.JPG (displayed for 9 seconds)

The number before the dot in the above example denotes the length of time the still will be displayed before the next still or video is displayed. If no number is present before the dot in the filename, the still will be displayed for 5 seconds. The files must be placed on the compact flash card in a directory named 'MEDIA'

Trip Inputs:

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 had 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 or a still image will remain on screen. 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 or still image 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 DOWN (Trip 6)	Decreases audio output.
VOLUME UP (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.

Note 1:

The selected function will be displayed on screen briefly when a trip is activated.

Contact Golding Audio if you wish to disable the on screen messages in 'basic mode'.

3.2 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.

After playback of a particular track has finished the, DVS1080 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 re-applied 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 DVS1080. These and other project files can be downloaded from our website www.goldingaudio.co.uk

The "DV2 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 "DV2 Any other interrupts" project will allow any other file to interrupt the currently playing file but will not allow itself to re-start if retriggered during playback.

With the "DV2 Uninterruptible" project, an MPEG file will be allowed to finish before accepting a new trigger from the trip inputs.

The "DV2 loop8" project provides eight looping tracks and 8 triggered tracks. Tracks 1 to 8 will loop when they are triggered. Tracks 9 to 16 will play once when triggered and then return to standby.

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 video files named TRACK1.mpg, TRACK2.mpg up to TRACK16.mpg, STANDBY.mpg, ??????.PLL, DEFAULT.PRJ and BARCODE.INI

?????.PLL is the appropriate file for the triggering method required.

Example of contents of compact flash card:

When using video files:

TRACK1.mpg
TRACK2.mpg
TRACK3.mpg
TRACK4.mpg
TRACK5.mpg
TRACK6.mpg
TRACK7.mpg
TRACK8.mpg
STANDBY.mpg
NOINT.PLL
DEFAULT.PRJ
BARCODE.INI

When using stills:

1STILL.JPG
2STILL.JPG
3STILL.JPG
4STILL.JPG
5STILL.JPG
6STILL.JPG
7STILL.JPG
8STILL.JPG
STANDBY.JPG
LPSTILLS.PLL
DEFAULT.PRJ
BARCODE.INI

Note:

The above files MUST be placed in a folder (directory) named MEDIA at the root of the compact flash card.

3.2 Direct Trip Mode (continued):

Supplied files

TRACK1.mpg contains a test track.

TRACK2.mpg to TRACK8.mpg files supplied with the DVS1080 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.

1STILL.JPG TO 16STILL.JPG are black images. Replace these with your images but make sure the same names are used otherwise the project will not function.

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 DVS1080 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 DVS1080 is not playing a tripped file. A video track would continuously loop if used as the STANDBY.mpg file.

Transferring files on to the Compact Flash card

Files can be transferred to the compact flash card by placing the card in a standard flash card reader connected to a PC. The files can then be copied using normal methods.

EXAMPLE:

Adding files to the DVS1080 (Direct trip mode)

If for instance you require the DVS1080 to replay four video clips accessed by trip 1 to trip 4 without being interruptible you would do the following:

1. Create a directory named "MEDIA" on a blank compact flash card.
2. Copy the entire contents of the directory named "DV2 uninterruptible/media/" from the CD into the "MEDIA" directory of the compact flash card.
3. Create or view your .mpg video files on your PC.
4. Rename your MPEG files to TRACK1.mpg to TRACK4.mpg.
5. Replace the default files TRACK1.mpg to TRACK4.mpg on the DVS1080'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.

Note 2

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

Note 3

Ensure that the compact flash card has a directory named "MEDIA" and all of the files are copied in to it

4. Specifications

4.1 Hardware

Playable formats	MPEG-2 (.mpg) MPEG-4 DivX (.avi) MPEG-4 H.264/AVC (.ts / .mp4 / .mov*) JPEG (.jpg) up to 1920x1080 pixels Note: Depending on the features desired, customer/purchaser may be required to obtain a video codec license with the relevant organisations.
Storage media	Compact Flash card (high speed type)
Video output	HDMI (v1.2) / DVI* (720p / 1080p) VGA / YPbPr* (720p / 1080p) Composite / S-Video (480i / 576i) *Adapter is required.
Audio out	3.5mm Speaker output jack (Stereo) RCA phono , line level L&R Digital coaxial (SPDIF) HDMI (Stereo)
External I/O ports	RS-232 (9600, N-8-1) USB (Data upload) Trip input (External button/PIR connection) RJ-45 port (For future use)
LEDs	Power LED (Green) Network LED (Green)
Real time clock	Battery-backup RTC
Power requirement	DC 12V input
Power consumption	500mA @ 12V
Environmental	Operating temperature : 0oC to 50oC Relative humidity : 5%-95% relative humidity (Non-condensing)
Dimensions	217mm (W) x 156.7mm (D) x 52mm (H)
Weight (net)	556g

4.2 Video

The following are the recommended encoding specifications for video content on the DVS1080.

MPEG-4 H.264 specifications	Screen size (recommended) Resolution Encoding bit rate Audio bit rate Frame rate Codec Typical filename extension	16:9 screen (e.g. 1280x720, 1920x1080) 1920x1080 12-15Mbit/s 224Kbit/s, 48kHz at 16bits sample rate 25Hz / 29.97Hz MPEG-4 H.264 .ts / .mp4 / .mov
MPEG-2 specifications	Screen size (recommended) Resolution Encoding bit rate Audio bit rate Frame rate Codec Typical filename extension	16:9 screen (e.g. 1280x720, 1920x1080) 1920x1080 12-15Mbit/s 224Kbit/s, 48kHz at 16bits sample rate 25Hz / 29.97Hz MPEG-2 (PS/TS) .mpg / .ts
JPEG specifications	Optimal JPG resolution on selected output	
	16:9	Composite/S-video output 720x576(PAL) 720x480 (NTSC)
		HDMI/DVI/VGA/YPbPr output 1920x1080
	4:3	Composite/S-video output 720x576(PAL) 720x480 (NTSC)
HDMI/DVI/VGA/YPbPr output 1600x1200		

4 Advanced functions

The DVS1080 offers a wide selection of options as briefly introduced below.
For more information on each of these please refer to detailed application notes that can be downloaded at www.goldingaudio.co.uk/support

USB update: The CF card content can be updated from a USB memory stick.

Scheduling: Multiple playlists can be loaded and scheduled to play at specified times.??????

RS-232 protocol: The DVS1080 RS-232 port is complemented by a complete set of protocols allowing for both external device control and control by external devices.

Firmware upgrade: From time to time the operating system of the DVS1080 may be upgraded providing bug fixes and new features. With compatible hardware it is possible to install these upgrades through a simple process.

5 Troubleshooting

Problem	Check & Correction
Nothing is displayed on the screen	First check that all parts of the system are connected and powered on Check that the display is getting a signal from the DVS1080 Ensure that all media content are placed inside a "MEDIA" folder on the CF card Ensure the media is compatible, see specifications. Ensure that files are in a compatible format.
The display cannot fit the whole screen	The output resolution currently set on DVS1080 may not be supported by the monitor being used. (For example, display a 4:3 content on a wide screen.) This may be compensated for using monitor settings to scale the image or by reworking the media.
Video is jerky	It is likely that the video is encoded at a data rate too high for the player or the CF card. It is recommended not to use greater than 40Mb/s bit rate on the DVS1080. A high speed CF card (100x or above) is recommended to playback HD video
Video is very blocky	The SD video encoding settings are for a lower resolution. DVD settings are recommended. Original content source was low resolution
Audio playback is intermittent:	It is likely that the video is encoded at a data rate too high for the player. It is recommended not to use greater than 40Mb/s on DVS1080
Video in the playlist does not play in accordance with the playsequence	Make sure both the project (.prj) and playlist (.pll) files have been uploaded on the player. Check if these two files were present in the USB memory stick before activating a content update procedure.