



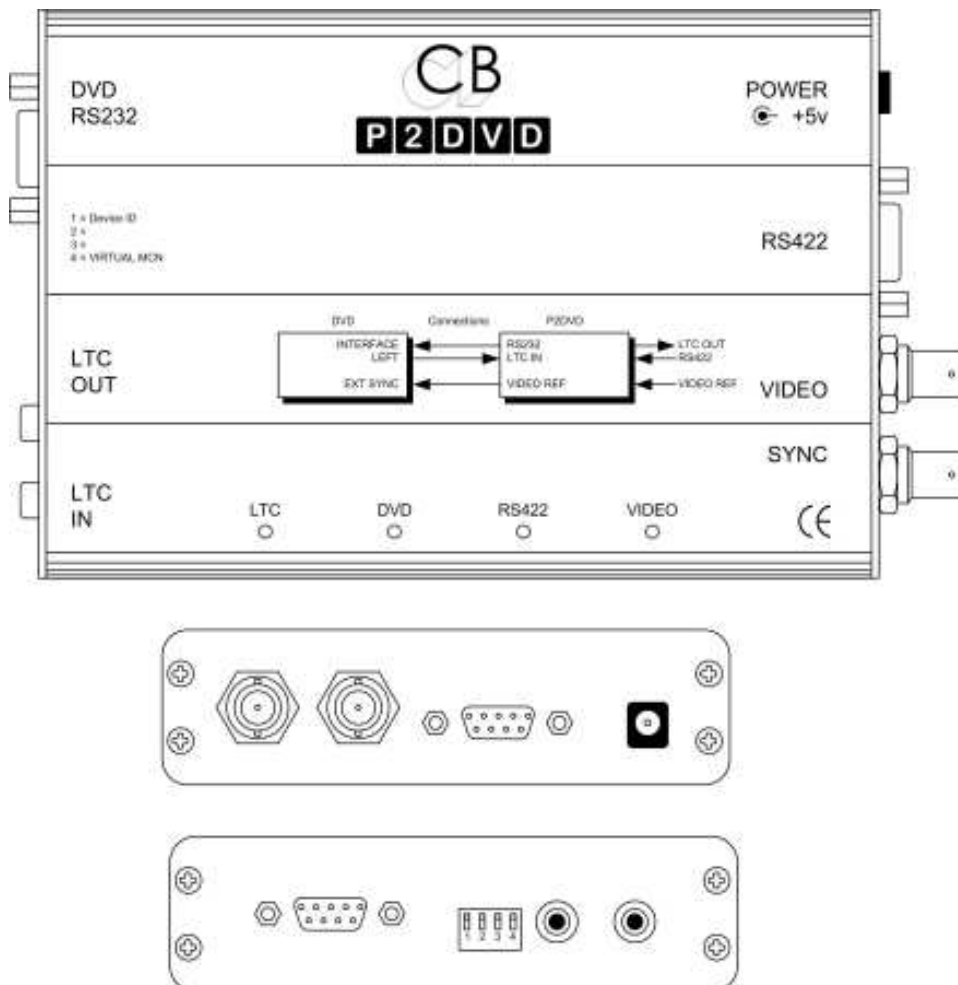
P2DVD

P2DVD Pioneer DVD-V7300D/V7400D/V8000 RS422 Machine Control Interface

- * RS422 Input.....For use with Consoles, DAW or Synchronisers
- * Timecode Output From frame-count or timecode on audio track
- * Timecode Input Convert continuous or single burst of timecode on Audio track to RS422
- * PAL/NTSC One machine only
- * Low Running costs 30,000 Hours MTBF, No expensive heads to replace
- * DVD, RS422, LTC Reader, Video Indicators Self Test

The P2DVD Interface uses experience gained from both the SR and MR series remote control system. Designed to be used with existing consoles and DAW's and synchronisers the interface will connect any Sony P2 Protocol serial port to the Pioneer RS232 Port.

The P2DVD Interface may be used The Pioneer V7300D DVD is a well proven industrial DVD player with two unique features, 1) Lock to external video syncs, 2) RS232 Control. The combination of the P2DVD interface and the Pioneer DVD player can replace U-Matic's and Beta's as a controllable picture source. The advent of consumer DVD recorders to make copies in the transfer bay makes DVD as simple to use as Beta or U-matic. The DVD provides the advantages of Hard disk, low maintenance cost, and instant access with the picture quality and portability of tape.



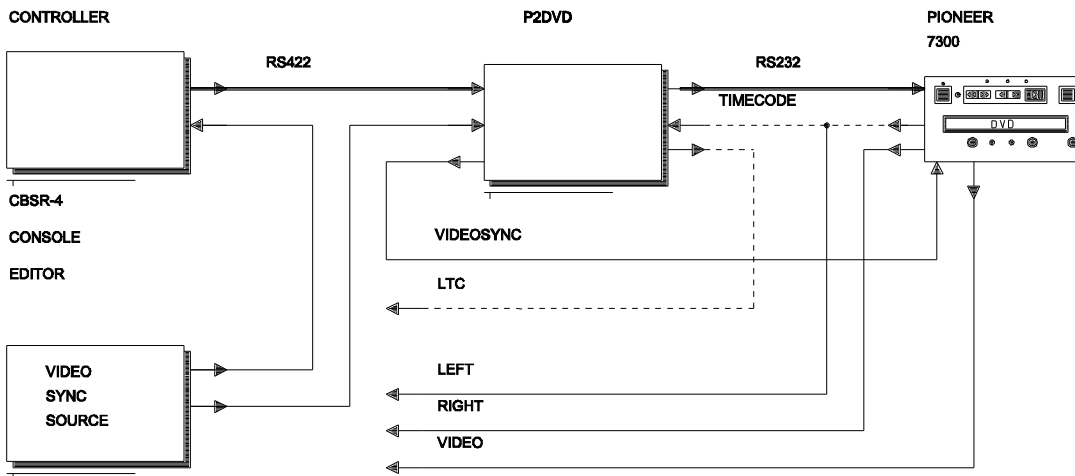
Size 170x114x31mm

As a RS422 controlled Master with most RS422 synchronisers, Digital Audio Work-stations and Console automation systems..

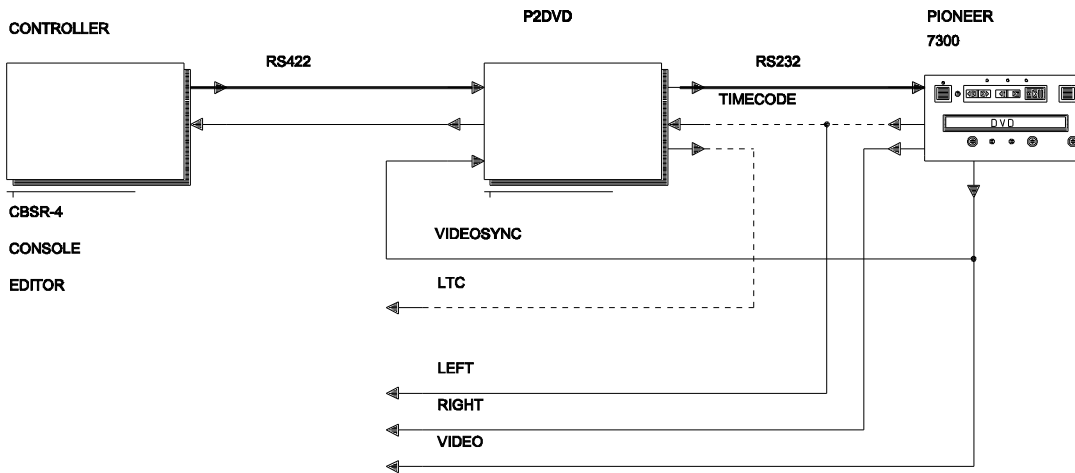
Note. For the P2dvd to communicate the Pioneer DVD-V7300D/V7400D.V8000 must be set to 9600 Baud, see advanced setup below.



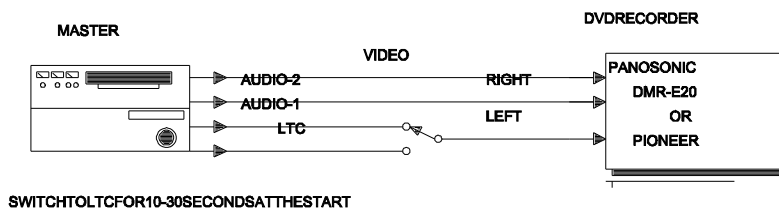
P2DVD



USING THE P2DVD TO CONTROL A DVD WITHOUT EXTERNAL SYNC'S



MAKING A DVD





P2DVD

Special Functions

Select Title

DVD's can have one or more titles, in order to select one of the titles (This could be reels or episodes) locates to 00:00:00:01..00:00:00:09 are used as select title commands. A Locate to 00:00:00:00 will display the title list. It is not possible to directly locate a timecode number between 00:00:00:00 and 00:00:00:09, if you need to locate to a timecode position used as a select title command then locate to 00:00:00:10 and use the jog wheel to find the frame.

Note: On SR and MR systems the Locate with pre-roll must be turned off or shift locate should be used when trying to locate a title!

Position

Using the P2DVD all DVD's have a frame-count starting from 00:00:00:10, When you select a new title it will start at 00:00:00:10. Once timecode is read the update the position after 10 frames.

If there is no timecode on the disk then a SET GENERATOR (Macro 85 on SR/MR Systems) command may be used to set the timecode at any point.

Limitations

- 1) When emulating a RS422 machine the DVD must be the Master, it cannot vari-speed to lock so as to slave to Timecode or Biphase. It has a faster response than tape but a slower response time than a hard disk, locates to anywhere on the DVD take about 1 second. Once located it will respond to a play command within one frame.
- 2) The audio output is only available in play forward.
- 3) Limited range of Jog and Shuttle speeds (1/25, 1/8, 1/4, 1/2, 1* and 10*).
- 4) Approximately 1/2 second delay when changing direction.

Notes:

Jog

The latest version of P2DVD firmware has improved jog performance, a special jog algorithm with hysteresis is used to remove code jitter and improve the performance of DAW's whilst jogging the picture. The timecode output of the P2DVD can run a 1/25..1* play speed, at 10* play speed 6 frame bursts of stationary code are output. The limitations of the DVD player in jog are 1) there is no audio during jog and 2) during the transition from -1/2 and -1* the DVD will stop playback in order to load the data buffer. Because of the hysteresis the transition points are different when increasing or decreasing the speed. When using switched jog commands the following commands (without checksum) will always set the appropriate speed.

Speed	Forward	Reverse
Step	\$21 \$11 \$10	\$21 \$21 \$10
1/8	\$21 \$11 \$18	\$21 \$21 \$18
1/4	\$21 \$11 \$2C	\$21 \$21 \$2C
1/2	\$21 \$11 \$36	\$21 \$21 \$36
1*	\$21 \$11 \$40	\$21 \$21 \$40
10*	\$21 \$13 \$60	\$21 \$23 \$60

When Jogging forward the DVD will stop on the second field, when jogging reverse the DVD will stop on the first field. If the burnt in timecode (BITC) is recorded one field late it will appear as if the DVD misses a frame on the direction change. For example four frames A1 A2, B1 b2, C1 C2, D1 D2 on direction change the DVD will display B1 -> C2 or C2 -> B1, if the BITC is one field late the A2+B1 = 0, B2+C1= 1, C2+D1= 3 thus the BITC for B1= 0 and for C2 = 2 missing frame 1 on direction change.



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Locate

If you try to locate to a point that is not within the title the DVD will not locate. Ensure that the DVD has read the timecode! After a locate the DVD will display the second field of the frame.

DVD Title Selection Page

If the title selection page is displayed only a locate command to a valid title number will operate (Select title above). A locate to 00:00:00:00 will display the title page.

DVD Recorders

Currently available are the Panasonic DVR-E20 which can record DVD-R and the Pioneer DVDR-7000 which can record both DVD-R or DVD-R/W.

PAL/NTSC

Both the Recorders and player are dual standard.

Pinoneer DVD-V7300D Setup

To Stop Video jitter when stopped

- 1) Select setup using the infra-red remote
- 2) Select the Video page
- 3) Cursor down to Still Picture
- 4) Cursor Across then Select Field or Auto (NOT frame)
- 5) Enter
- 6) Depress Setup to exit

Pioneer DVD-V7300D Advanced Setup

To Enable External Video Lock

- 1) Switch to **Auto** on the rear of the DVD player, the player will output PAL from a PAL DVD and NTSC from an NTSC DVD.
- 2) Remove any disc in the unit
- 3) Using the infra-red remote select advanced setup by depressing setup for approx one second
- 4) Select **Baud Rate** using the down arrow key
- 5) Set to **9600bps** using the right arrow key
- 6) Set **Rev Step/Rev Play** to **Frame**
- 7) Set **External Sync** to the required standard
- 8) Turn off Advanced setup using the Setup key

DVD-8000 Advanced Setup

- 1) Remove any disc in the unit
- 2) Using the infra-red remote select advanced setup by depressing setup for approx one second
- 3) Select **Baud Rate** using the down arrow key
- 4) Set Serial port to 15 Pin to use cable supplied
- 5) Set to **9600bps** using the right arrow key
- 6) Set **Rev Step/Rev Play** to **Smooth**
- 7) Set **External Sync** to the required standard
- 8) Turn off Advanced setup using the Setup key

Lock to External Sync

The unit will display **Locking to External Sync** whilst locking. If a DVD is present when Video syncs are connected or the unit is switched on, it must be ejected to allow the DVD player to lock to video syncs.

Operation without Video Sync

When Not using external video syncs connect one of the DVD video outputs to the sync input on the



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Video Reference input of the P2DVD.

DIP SWITCH SETTINGS

The DIP switch is read regularly by the interface and may be changed at any time.

DIP Switch 1 RS-422 Device ID

The RS-422 Device ID tells the controlling device which machine it is controlling. The RS-422 interface can emulate the following devices:-

Switch 1	Emulation	Device ID
Off	Sony BVU-950	1S 1C
On	P2DVD	1s A3

The Timecode standard is included in the Device ID and is set by reading timecode via the LTC input.

DIP Switch 2 & 3

Pre 2004 Software only: Jog/Shuttle Mode

Jogging with timecode emulation is only possible at a constant speed, switches 2 & 3 allow the user to select this speed. Below the selected speed the P2DVD will jog normally, when the selected Jog mode speed is reached the P2DVD locks at the selected speed, to exit the Jog Mode the Jog command must drop below 1/8th speed for 3 frames or go above 4* play speed.

A number of controllers only use either Jog or Shuttle commands and do not separate them, The jog mode parameter is used for both Jog and Shuttle. For shuttle to operate normally Jog Mode should be turned off.

Switch 2	Switch 3	Jog Mode
Off	Off	1* Speed
ON	Off	1/4 Speed
OFF	ON	1/2 Speed
ON	ON	Off

DIP Switch 4 Virtual Machine

LED Indicators

Video

No/Incorrect Video Reference	Flashing (Approx once per second)
Good Video Reference	On Continuous

This LED is also used to indicate that the unit is powered and that the processor is working when the video reference is disconnected

RS422 Illuminated when valid Sony P2 RS422 communications are received

DVD Illuminated when valid DVD replies are received. If the LED does not illuminate when the DVD is connected check the BAUD rate in the DVD Advanced Setup (see notes above).

LTC Illuminated when valid LTC is read by the Interface.



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Timecode Connections

LTC O/P

Current DVD frame-count + timecode offset converted to LTC timecode. Stationary timecode is output for approx 1/2 second when stopped.

NOTE: The LTC output is only active when video syncs are present.

LTC I/P

Connect to the left channel of the DVD, timecode or timecode burst will be used in set the offset between timecode output and the DVD frame-count. A phono cable with stacking connector is supplied with the unit. When the timecode on the DVD is received it is used to set the offset between the timecode and the frame-count. A four second timecode burst at the start may be used to preset the timecode output, allowing two channels of audio to be used.

Cleaning

Keeping the DVD Clean is **VERY** important, a dirty DVD will not replay Video, Audio or Timecode Correctly. Use DVD or CD cleaning and polishing kits available from HiFi shops if necessary.

Timecode Phase

The time-code output of the P2DVD is generated phase locked to video sync's, the phase of the timecode recorded on the DVD may not be the same. The difference between the recorded phase and the recorded timecode will always be less than one frame.

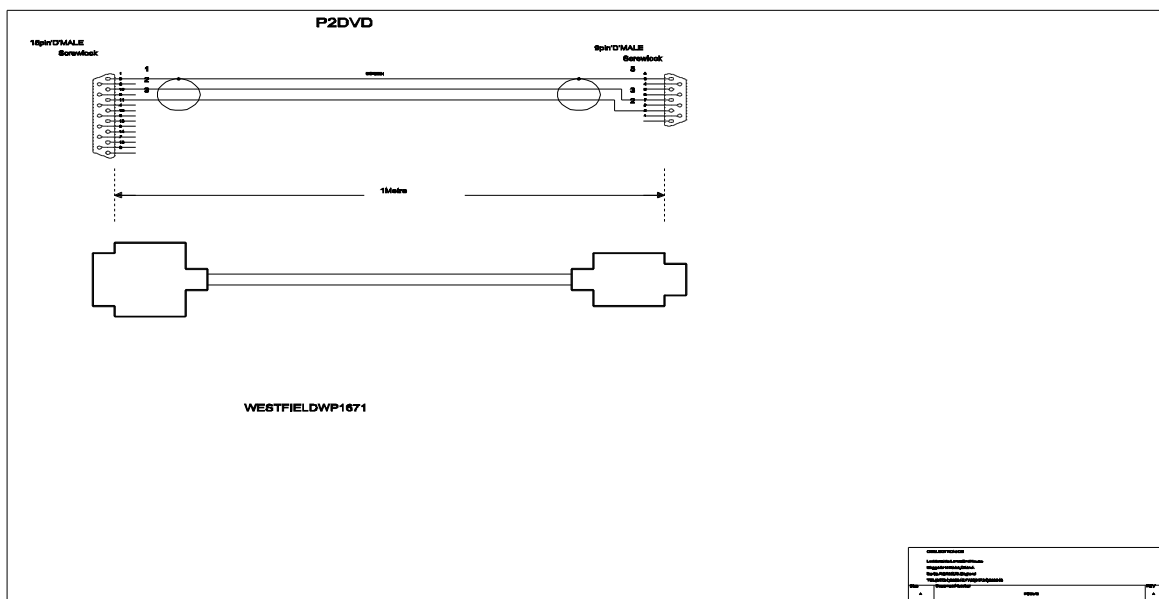
Instant Replay Mod

The Pioneer 7300 provides only reverse play and 10* reverse, in order to provide more control we have implemented an 'Instant Replay' key input that will locate 3 seconds back each time it is depressed. In order to implement this it is necessary to modify the PCB as follows.

- 1) Link RN2 pin 5 to U2 (2681) pin 38
- 2) Link U2 pin 38 to J4 (RS422) pin 5

Connect an external push button switch connected across pins 4 & 5 of the RS422 line to implement.
note1: The DVD takes 1 second to make the locate!

note2: The instant replay time can be changed at location \$7EED in the EPROM (\$4B = 3 Secs)





P2DVD

DVD to P2DVD connection cable		
DVD: 15 pin 'D' Male	Cable Colour	9 pin 'D' Male
1	Screen	5
2	Red	3
3	Black	2

RS422 (Sony 9 pin) CABLE			
Function Controller	9 pin 'D' Male on cable (Both Ends)	Cable Colour	Function P2DVD (Controlled Device)
	1		
Rx-	2	Red	Tx-
Tx+	3	Yellow	Rx+
Ground	4	Screen	Ground
	5		
	6		
Rx+	7	Blue	Tx+
Tx-	8	White	Rx-
	9		

Interface Notes

CB Electronics MC-1
<p>As it is not possible to slave the DVD we have introduced new software to allow the MC-1 to slave to the RS422 port. To operate correctly you will need new software in the MC-1 if your unit was supplied before April 2002.</p> <p>Using the P2DVD as a Master</p> <ol style="list-style-type: none"> 1) Ensure that Serial B Config is set to SYNC ENAb not SYNC ALL 2) If not using film set Unit Config to Tapeless 3) Set the unit config to SLV SErb 4) Connect the P2DVD to port B 5) Set the timecode on the MC-1 to be the correct value for the Start mark 6) Enable Chase on the MC-1 front panel.



P2DVD

Akai DL1500

- 1) Set for timecode+RS422 in System menu for accurate position information when stopped
- 2) To set Jog/Shuttle Limits use Shift+SET (Jog Shuttle switch)
- 3) Maximum shuttle speed command from the Akai is 5* the DVD will shuttle at 1* or 10* only.
- 4) RS422 only control modes do not work as there expect the P2DVD to slave
- 5) The Akai cannot read code with the field bit set.

DAR Storm

- 1) Set for Locate using Sony Cueup With Data commands only, check that locate mode=1 in the **tx /ssdat/local.dat** file.

To access use Menu Key,
then touch Restart/shutdown,
then select system on the terminal

Waveframe

To ensure that locates are always used change the vtr capture distance in the Wavefrm.ini.
It defaults to 30,000 (for random access machines)



P2DVD

Making DVD's

- 1) Use DVD-R
- 2) We use domestic recorders, very easy to use! set the compression ration, then request Record to start and Stop to end.
- 3) If you want the original timecode, put a 4 second burst of timecode at the start of the recording.
- 4) If you have a false start, press STOP and then start the Recording again, delete any recordings that you do not want.

Timing Errors (PAL):-

Machine Type	Compression Setting	Video Field	Audio Delay MSec	P2DVD Run Error MSec	P2DVD Park Error Frames
Panasonic DMR-HS2	XP 1hr	Normal	+14 +26	0	+1 Frm 0 Frm
Panasonic DMR-HS2	SP 2hr	Normal	+21 +24	0	0 0
Panasonic DMR-HS2	LP 4hr	Normal	+18 +23	0	+1 0
Panasonic DMR-HS2	EP 6hr	Wrong Phase	-3 +4	-20	+1 +1
Pioneer DVR-7000	1hr	Normal			

asasasas



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RS422 Machine Control Commands Implemented			
00 11	Device Type request		
20 00	Stop		
20 01	Play		
20 10	Fast Forward		
20 20	Fast Rewind		
21 11	JOG Fwd (Restricted Range)		
21 21	JOG RVS (Restricted Range)		
21 12	Varispeed Fwd (Restricted Range)		
21 22	Varispeed RVS (Restricted Range)		
21 13	Shuttle Fwd (Restricted Range)		
21 23	Shuttle Reverse (Restricted Range)		
20 30	Pre-roll		
24 31	Cue up with Data		
20 40	Preview Without EE		
20 41	Review		
20 42	Auto Edit Without record		
44 04	Generator preset (Set current Timecode)		
40 10	In Entry		
40 11	Out Entry		
44 14	In Preset		
44 15	Out Preset		
44 31	Set Pre-roll		
61 0A	Read Gen		
61 0C	Read Position		
61 10	Read In Point		
61 11	Read Out Point		
61 20	Read Status		

CB Electronics

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