

Play synchronisation system for Philips DVD-170/175 players

Also compatible with the Marantz PMD930

Technical Data

Features

- Emulates a standard DVD-170/175 MMC device
- Ultra low power consumption from players
- Simple connection to Philips DVD-170/175 player external I/O port
- Available for synchronisation of 2 to 8 players*
- Automatically switches off On-Screen-Display (OSD) and UOP's on each player (not on 'D' version)
- Compatible with DVD media with or without automatic disc PLAY.
- Supplied with Velcro™ hook and loop fixings (mounting bracket available)

Description

The DVD-SYN unit permits the PLAY^τ synchronisation of 2 to 8 Philips DVD-170/175 players when using DVD media^φ.

All players are individually controlled and monitored by the DVD-SYN, each player having it's operational status confirmed, On-Screen-Display (OSD) and User Override (UOP) disabled (not on 'D' version) on power-up.

Once the DVD-SYN has determined that a player is ready, an MMC PLAY track 1 command is issued followed by an MMC PAUSE command. Once the DVD-SYN has determined that all connected players are active and PAUSED, an MMC PLAY track 1 is issued globally to all players. Each player then continues to play

DVD-SYN2-17 unit

Firmware revision 4.00



DVD-SYN6 shown

the inserted media until the 'return-to-beginning' loop programmed at the end of the media re-starts the program and signals the DVD-SYN to re-issue an MMC PAUSE and repeat the cycle.

Applications

The DVD-SYN is primarily for use in automatic multiple player presentations of DVD video material.

DVD PERIPHERALS

Selection Guide

| Description | Part Number |
|---|---|
| 2 – 17 channel synchronisation unit | DVD-SYNnD (where n = number of ports required) |
| 2 – 17 channel synchronisation unit with dual button trigger (single shot & constant) | DVD-SYNnBTD (where n = number of ports required) |
| 4 channel synchronisation unit with switch selectable Title selection (Title 1-10) | DVD-SYN4TS |
| Individually boxed Product | Order Option #01 with the above referenced part number. The product is shipped in a box, including this DVD-SYN data sheet. |

Note: All products are subject to availability; normal despatch is 10 working days following order date. * Custom port numbers are available; please contact your sales representative for more details.

D option is with OSD and UOP enabled, for DVD-175 exclusive installations.

φ CD-A & Videodisk not supported

τ Note: The DVD-SYN does not frame synchronise playback between players.

Power requirements

The DVD-SYN is operated from the +5V supplies of the connected DVD players. The maximum current draw is 6mA per-channel.

DVD I/O interface

The DVD connection is a standard DB9 female as specified within the DVD player specification. Serial communication protocol is 9600 Baud, 1 Start bit, 8 Data bits, 1 Stop bits, No parity for all MMC commands. All I/O is RS232 and TTL compatible.

DVD I/O interface

| Function | DB9 Female |
|-------------------------------|------------|
| Vcc | 4 |
| RXD | 2 |
| TXD | 3 |
| Ground | 5 |
| All other connections are N/C | |

DVD MMC protocol

The DVD-SYN communicates with each player using the MMC protocol **. This protocol takes the form of ASCII command strings of format:

[PC,GETNRT]r

These strings allow features such as the On-Screen-Display (OSD) to be controlled and media control commands such as PLAY, PAUSE, STOP etc. to be issued to the player.

DVD-SYN function

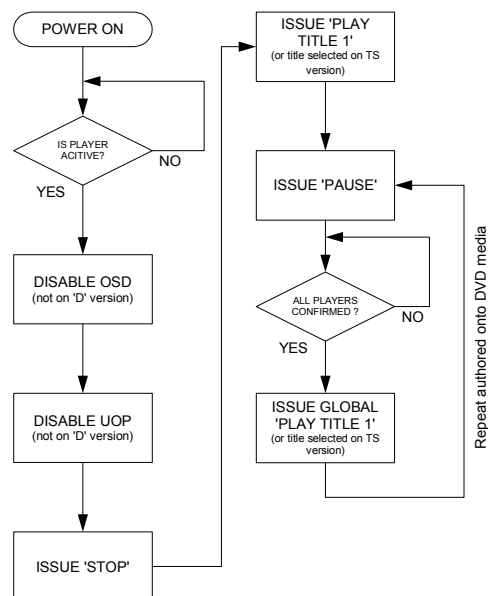
Flowchart 1 shows how the DVD-SYN functions on the Master channel. The master channel will wait for up to 60 seconds for all of the slave players to be switched ON, confirm that a DVD disc is inserted and go into PAUSE.

Should a slave player fail to respond within this period the player is 'locked out' by the master and will not be queried when the global PLAY needs to be issued.

The Master channel must ALWAYS be connected to an active player. The DVD-SYNnBT provides two button inputs that allow the media to be triggered for play on a one-shot or constant basis.

Note: Accurate play synchronisation will not be attained until the first loop has been completed.

Flowchart .1



DVD Media Authoring Notes

When authoring DVD media for use with the DVD-SYN product range the following requirements should be adhered to:

- Discs with automatic PLAY at power-up can be used, BUT, it is advised that this feature be disabled.
- A short (10 frames max.) video black period should be included at the beginning of the presentation to prevent still frame images being displayed when the DVD-SYN issues a PAUSE condition.
- The disc MUST be laid out as a single Title with at least two chapters (Note: Some authoring systems require these two chapters to be authored within title 1 (or selected title on SYN4TS) for correct function, this being indicated by the DVD player not displaying a PAUSE when the media loops back to the beginning).
- AN AUTOMATIC RETURN TO START (TITLE 1 CHAPTER 1) **MUST** BE AUTHORED ON THE MEDIA AT THE END OF PRESENTATIONS FINAL CHAPTER TO ALLOW THE DVD-SYN TO FUNCTION CORRECTLY.
- All discs to be used in one DVD-SYN application should be authored with approximately the same length of content on each. This will prevent long periods of video black being shown if discs are of significantly different length.

Electrical Characteristics (T_A = 25°C Typical)

| Parameter | Minimum | Maximum | Units | Notes |
|------------------------------|---------|---------|---------|-------|
| Supply Voltage (VCC) | 4.5 | 5.5 | V | |
| Supply Current per channel | - | 6 | mA | 1 |
| Power-on to global PLAY time | 25 | 60 | seconds | |
| RXData output high level | GND | 0.8 | V | |
| RXData output low level | 2.4 | VCC | V | |
| TXData input low level | 2.4 | 15 | V | |
| TXData input high level | 0.8 | -15 | V | |

Absolute Maximum Ratings

| Parameter | Minimum | Maximum | Units |
|-----------------------|---------|---------|-------|
| Supply Voltage | -0.5 | +6 | V |
| Operating Temperature | 0 | 70 | °C |

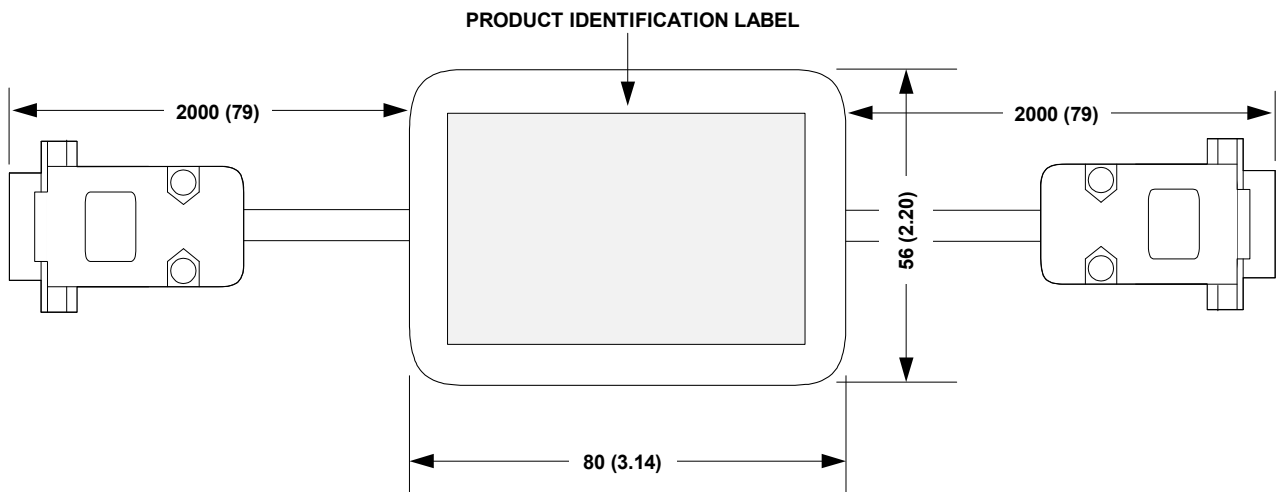
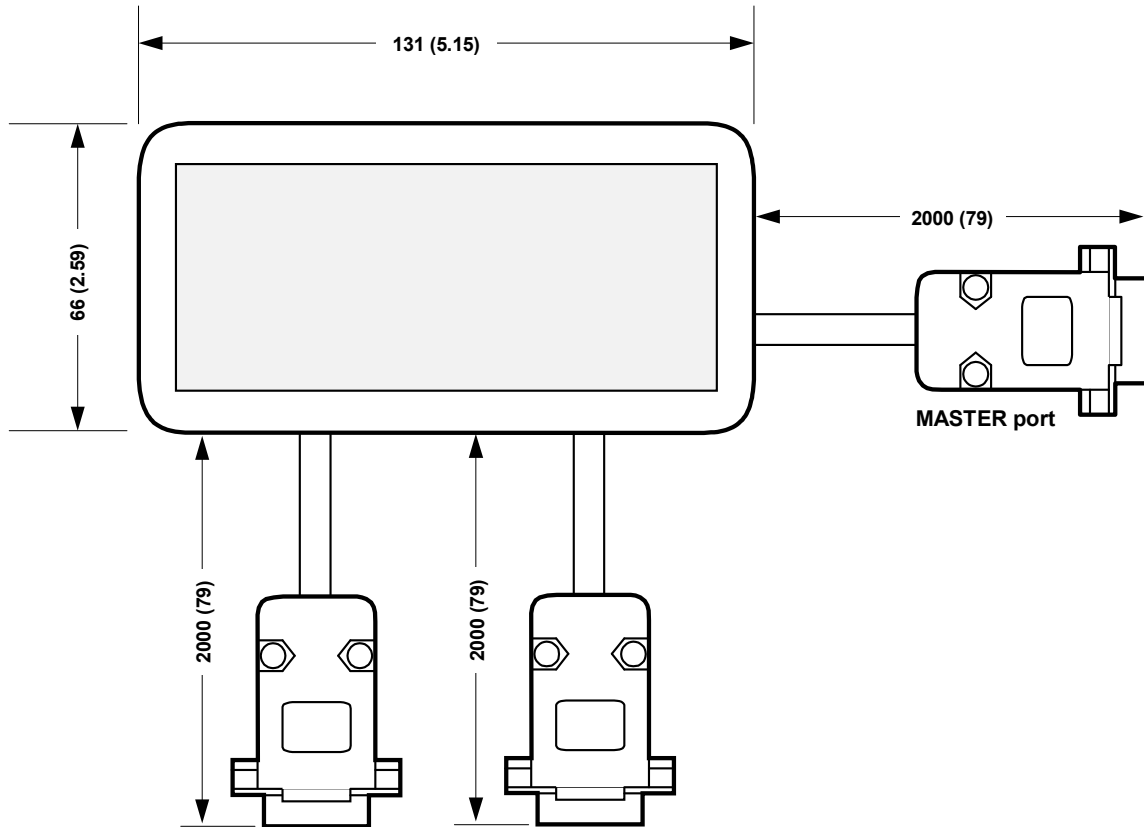
Notes:

1. Value given is for each channel i.e. for a DVD-SYN3 value would be 18mA total.

** See Philips DVD technical specification for more information.

Mechanical Specifications – Units millimetres (inches)

DVD-SYN3 and DVD-SYN2 shown



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