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SONY

Sony Cinema Products Corporation

Tech Note

Connecting the Sony DFP-3000 to the Dolby™ CP500 with the CP500 as master.

Product: DFP-D3000.
S/N: All units with firmware version 2.60 and higher.
Document: **TN99061402**, TS/CC
Summary: Connecting the Sony DFP-3000 to the Dolby CP500 with the CP500 as master.

Connecting the DFP-3000 to the CP500 is complicated by the possibility of various firmware versions. This document describes the approach when using the most recent versions for each product. Each step must be followed very carefully to avoid problems. If you have earlier versions of firmware, see your Sony or Dolby representative to receive the latest versions.

Considerations.

Sony does not advise customers to use the CP500 as theatre master and the DFP-3000 only for playback of SDDS film tracks. There are a number of reasons for this.

1. The SDDS analog output will be processed by the analogue output circuitry within the CP500 which does not meet Sony's high standards of audio quality.
2. The powerful theatre control features and easy setup of the DFP-3000 A- and B-chain will be partly lost.
3. The balanced interface of the DFP-3000 to external playback equipment will be lost and problems may be encountered when unbalancing Sony's professional outputs with the unbalanced inputs of the CP500.
4. Channel level trims of the CP500 will affect the SDDS channels.
5. The course analogue bass and treble controls will also affect SDDS playback.

In some cases, customers may chose to install the DFP-3000 using the CP500 as master temporarily. They may do this to ease wiring changes or to use optional crossover cards in the CP500 (even though these cards may prevent THX theatre certification).

Logic wiring connections.

DFP-D3000 Automation I/O Connector (DB37 Female D-Sub)	**CP500 Automation Connector (DB25 Female D-Sub)**
Pin 16; Tally Common	Pin 12; Signal Ground
Pin 32; SDDS Data OK - wired to - Pin 11; Preset 8 select	Pin 6; SK 6 Format Select Input *
Pin 36; SDDS Data not OK	Pin 4; SK 4 Format Select Input *

* These connections are valid only if Dolby Digital is assigned to SK 4 and SDDS (User 1 or higher) is assigned to SK 6 on the CP500. On the DFP-D3000, SDDS must be assigned to Preset 8.

Audio wiring connections.

DFP-D3000 System Output (DB25 Male D-Sub)	CP500 Analog Accessory Rack Connector (DB37 Female D-Sub)
1 Left ground	NC
2 Left hot (+)	7 X10 (Left)
4 Center ground	NC
5 Center hot (+)	6 X11 (Center)
7 Right ground	NC
8 Right hot (+)	5 X12 (Right)
9 Left Surround ground	NC
10 Left Surround cold (-)	26 Signal Ground
11 Right Surround cold (-)	27 Signal Ground
12 Subwoofer cold (-)	28 Signal Ground
13 Subwoofer ground	NC
14 Left cold (-)	36 Signal Ground
17 Center cold (-)	34 Signal Ground
20 Right cold (-)	29 Signal Ground
22 Right Surround ground	NC
23 Left Surround hot (+)	2 X15 (Left Surround)
24 Right Surround hot (+)	3 X14 (Right Surround)
25 Subwoofer hot (+)	4 X13 (Subwoofer)

Note that the outputs of the DFP-3000 are professionally balanced, whereas the inputs of the CP500 are not. Sony does not advise connecting the outputs of the DFP-3000 to unbalanced inputs, but when this is a necessity proper wiring techniques must be used to minimize complications. All DFP-D3000 audio grounds should be connected to the shield of each twisted pair at the CP500 end only.

Setting up the CP500.

On the CP500, make a custom user format derived from Format 5 (SR). Then perform the following CP500 commands:

1. After copying existing format (5), press “Accessory Rack” and select “Xmit/Receive enable”
2. Press “Channel Mute”. A double cross point table is then accessed.
3. Open all cross points
4. The first cross point table is called “Accessory rack”. Make connections from L to L, C to C and so on.
5. The second cross point table (named “Normal”) should be left open.
6. Store the user format as User 1 (or other) and configure the format selector so that this user format is assigned to SK 6.

With the automation wiring specified above, the DFP-D3000 will automatically force the CP500 to SK6 once SDDS data is detected.

Make sure that the appropriate user format is not assigned as a source for Auto Digital on the CP500, since this will disable SDDS playback whenever a dual digital format print is played back.

Audio signal adjustments.

Since the channel output adjustment and the course bass and treble control of the CP500 is done on the output board (in the analog domain), these settings will also affect SDDS. Therefore, adjust the B-chain of the CP500 prior to the B-chain of the D3000.

To obtain an optimum gain structure, select –10 dBu as the D3000 reference output level, and increase the channel level trims to approximately +2 dB to match the 300 mV reference input level of the CP500.

With this set-up, the master level control of the CP500 will not affect the playback levels for formats played through the DFP-D3000 and vice versa.

Changeover logic wiring.

For change-over installations, connect the motor start and changeover relays to the D3000 automation port and follow the table below to make the D3000 pass this information on to the CP500:

DFP-D3000 Automation I/O connector (DB37 Female D-Sub)	**CP500 Motor start connector (DB9 Female D-Sub)**
Pin 12, motor 1	Pin 1, motor start, projector 1
Pin 13, motor 2	Pin 9, motor start, projector 2
Pin 19, changeover command, tally	Pin 3, changeover relay
Pin 16, tally common	Pin 5, GND