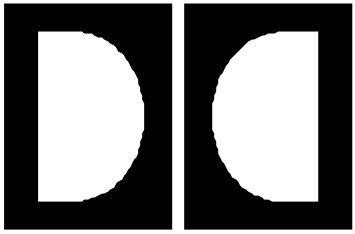

Dolby E Tri-Level Sync Interface Model DP579

Issue 2 Part Number 91757

MAIN

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WARNING: ***Check that the correct fuses have been installed. To reduce the risk of fire, replace the fuses only with the same type and rating.***

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Regulatory Notices and Fuse Information

FCC

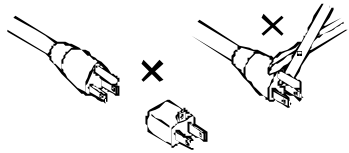
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

Canada

This Class A digital apparatus complies with Canadian ICES-003.

UL

WARNING: ***Troubleshooting must be performed by a trained technician. Do not attempt to service this equipment unless you are qualified to do so. Check that the correct fuses have been installed. To reduce the risk of fire, replace only with fuses of the same type and rating.***



The ground terminal of the power plug is connected directly to the chassis of the unit. For continued protection against electric shock, a correctly wired and grounded (earthed) three-pin power outlet must be used. Do not use a ground-lifting adapter and never cut the ground pin on the three-prong plug.

UK

The power cord Dolby part 92021 supplied for use in Europe is not suitable for use in the UK. To use the cord in the UK cut off the CEE7/7 plug and replace with an approved BS 1363 13A plug:

The core that is coloured green and yellow must be connected to the terminal in the plug identified by the letter **E** or by the earth symbol ⏚ or coloured green or green and yellow.

MAIN

The core that is coloured blue must be connected to the terminal that is marked with the letter **N** or coloured black.

The core that is coloured brown must be connected to the terminal that is marked with the letter L or coloured red.

This apparatus must be earthed.

EU

This equipment complies with the EMC requirements of EN55103-1 and EN55103-2 when operated in an E2 environment in accordance with this manual.

IMPORTANT SAFETY NOTICE

This unit complies with the safety standard EN60065. The unit shall not be exposed to dripping or splashing and no objects filled with liquids, such as coffee cups, shall be placed on the equipment. To ensure safe operation and to guard against potential shock hazard or risk of fire, the following **must** be observed:

GB

- Ensure that your mains supply is in the correct range for the input power requirement of the unit.
- Ensure **fuses** fitted are the **correct rating and type** as marked on the unit.
- The unit **must be earthed** by connecting to a correctly wired and **earthed** power outlet.
- The **power cord** supplied with this unit must be wired as follows:

Live—Brown Neutral—Blue Earth—Green/Yellow

NT – NOTE DE SECURITE

Ce materiel est conforme à la norme EN60065. Ne pas exposer cet appareil aux éclaboussures ou aux gouttes de liquide. Ne pas poser d'objets remplis de liquide, tels que des tasses de café, sur l'appareil. Pour vous assurer d'un fonctionnement sans danger et de prévenir tout choc électrique ou tout risque d'incendie, veillez à observer les recommandations suivantes.

F

- Le selecteur de tension doit être placé sur la valeur correspondante à votre alimentation réseau.
- Les fusibles doivent correspondre à la valeur indiquée sur le materiel.
- Le materiel doit être correctement relié à la terre.
- Le cordon secteur livré avec le materiel doit être cablé de la manière suivante:

Phase—Brun Neutre—Bleu Terre—Vert/Jaune

MAIN

WICHTIGER SICHERHEITSHINWEIS

Dieses Gerät entspricht der Sicherheitsnorm EN60065. Das Gerät darf nicht mit Füssigkeiten (Spritzwasser usw.) in Berührung kommen; stellen Sie keine Gefäße, z.B. Kaffeetassen, auf das Gerät. Für das sichere Funktionieren des Gerätes und zur Unfallverhütung (elektrischer Schlag, Feuer) sind die folgenden Regeln unbedingt einzuhalten:

D

- Der Spannungswähler muß auf Ihre Netzspannung eingestellt sein.
- Die Sicherungen müssen in Typ und Stromwert mit den Angaben auf dem Gerät übereinstimmen.
- Die Erdung des Gerätes muß über eine geerdete Steckdose gewährleistet sein.
- Das mitgelieferte Netzkabel muß wie folgt verdrahtet werden:

Phase—braun Nulleiter—blau Erde—grün/gelb

NORME DI SICUREZZA – IMPORTANTE

Questa apparecchiatura è stata costruita in accordo alle norme di sicurezza EN60065. Il prodotto non deve essere sottoposto a schizzi, spruzzi e gocciolamenti, e nessun tipo di oggetto riempito con liquidi, come ad esempio tazze di caffè, deve essere appoggiato sul dispositivo. Per una perfetta sicurezza ed al fine di evitare eventuali rischi di scossa êlettrica o d'incendio vanno osservate le seguenti misure di sicurezza:

I

- Assicurarsi che il selettore di cambio tensione sia posizionato sul valore corretto.
- Assicurarsi che la portata ed il tipo di fusibili siano quelli prescritti dalla casa costruttrice.
- L'apparecchiatura deve avere un collegamento di messa a terra ben eseguito; anche la connessione rete deve avere un collegamento a terra.
- Il cavo di alimentazione a corredo dell'apparecchiatura deve essere collegato come segue:

Filo tensione—Marrone Neutro—Blu Massa—Verde/Giallo

AVISO IMPORTANTE DE SEGURIDAD

Esta unidad cumple con la norma de seguridad EN60065. La unidad no debe ser expuesta a goteos o salpicaduras y no deben colocarse sobre el equipo recipientes con liquidos, como tazas de cafe. Para asegurarse un funcionamiento seguro y prevenir cualquier posible peligro de descarga o riesgo de incendio, se han de observar las siguientes precauciones:

E

- Asegúrese que el selector de tensión esté ajustado a la tensión correcta para su alimentación.
- Asegúrese que los fusibles colocados son del tipo y valor correctos, tal como se marca en la unidad.
- La unidad debe ser puesta a tierra, conectándola a un conector de red correctamente cableado y puesto a tierra.
- El cable de red suministrado con esta unidad, debe ser cableado como sigue:

Vivo—Marrón Neutro—Azul Tierra—Verde/Amarillo

MAIN

VIKTIGA SÄKERHETSÅTGÄRDER!

Denna enhet uppfyller säkerhetsstandard EN60065. Enheten får ej utsättas för yttre åverkan samt föremål innehållande vätska, såsom kaffemuggar, får ej placeras på utrustningen." För att garantera säkerheten och gardera mot eventuell elchock eller brandrisk, måste följande observeras:

- Kontrollera att spänningsväljaren är inställd på korrekt nätspänning.
- Konrollera att säkringarna är av rätt typ och för rätt strömstyrka så som anvisningarna på enheten föreskriver. (S)
- Enheten måste vara jordad genom anslutning till ett korrekt kopplat och jordat el-uttag.
- El-sladden som medföljer denna enhet måste kopplas enligt foljande

Fas—Brun Neutral—Blå Jord—Grön/Gul

BELANGRIJK VEILIGHEIDS-VOORSCHRIFT:

Deze unit voldoet aan de EN60065 veiligheids-standaards. Dit apparaat mag niet worden blootgesteld aan vocht. Vanwege het risico dat er druppels in het apparaat vallen, dient u er geen vloeistoffen in bekers op te plaatsen. Voor een veilig gebruik en om het gevaar van electrische schokken en het risico van brand te vermijden, dienen de volgende regels in acht te worden genomen:

- Controleer of de spanningscaroussel op het juiste Voltage staat. (NL)
- Gebruik alleen zekeringen van de aangegeven typen en waarden.
- Aansluiting van de unit alleen aan een geaarde wandcontactdoos.
- De netkabel die met de unit wordt geleverd, moet als volgt worden aangesloten:

Fase—Bruin Nul—Blauw Aarde—Groen/Geel

Fuse Information

WARNING: To reduce the risk of fire, replace fuses only with the same type and rating.

The unit uses a universal switching power supply that handles the full range of nominal mains voltages between 90 and 264 VAC and any frequency between 50 Hz and 60 Hz.

Check Main Fuse

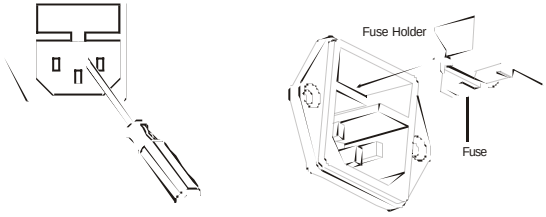
The Main fuse rating is:

1 Amp, 250 V, 20 mm, time-lag fuse (for all operating voltages)

MAIN

WARNING: ***The power to the unit must be off when the following steps are performed. Ensure that the main power cable to the unit is not connected to a power source.***

1. Open the fuse compartment door in the AC power input housing with a small flat-blade screwdriver. Carefully pull out the fuse holder.



Checking or Replacing the Main Fuse

2. Check that the fuse has the correct rating. The fuse carrier must be inserted into the compartment with the orientation shown in the figure above. *Do not force the carrier into the compartment or both could be damaged.*

3. Snap the fuse compartment door closed.

MAIN

MAIN

1 Introduction

Postproduction is migrating towards 24-frame acquisition and storage to give high quality and flexibility across multiple delivery formats. The DP579 Dolby E Tri-Level Sync Interface allows high-quality Dolby E multichannel audio and metadata to be stored on these 24-frame systems using the DP571 and DP572 Dolby E encoder and decoder. Applications for the DP579 include DTV postproduction, electronic cinema, telecine, and archiving.

The DP579 converts tri-level video sync into a specific reference signal (which we have termed *Dolby Black*) that can be used by existing Dolby E equipment. The DP579 also accepts traditional NTSC and PAL program and black reference. The DP579 enables a pair of Dolby E codecs to operate at 23.98, 24, and 30 fps in addition to 25 and 29.97 fps. Please note that this requires a software upgrade for the Dolby E codecs; the new software is included with the DP579.

The DP579 includes a loop-through for the input video reference signal, and two Dolby Black outputs. Front-panel LEDs indicate power, tri-level or composite sync presence, as well as error and fault conditions.

Its convenient half-rack width allows a single DP579 to be installed alongside (or behind) existing DP571 and DP572 units. A rack-mount kit (Cat. No. 546) is also available that allows two units to be mounted side by side for redundancy or to drive multiple Dolby E codecs.

1.1 Dolby Black

Dolby Black is a bi-level, interlaced reference signal consisting of sync information only. It contains between 500 and 700 lines, and is compatible with the video front end of the DP570, DP571, DP572, and other Dolby products. Dolby Black is a non-standard reference signal, intended for use only with Dolby products, and should not be used as a reference generator for other equipment.

MAIN

1.2 Product Compatibility

Use of the DP579 at any rate other than standard NTSC or PAL requires a DP571 and/or DP572 running software version 2.0.0.0 or later and a DP570 running software version 1.0.8.6 or later. The DP579 is shipped with appropriate DP571 and DP572 software, which should be loaded if an earlier version is currently installed.

MAIN

2 Setting Up

2.1 Rack Mounting

The DP579 is 1-U high, and approximately one-half the width of a standard rack. A mounting bracket is included that allows the unit to be mounted vertically inside a standard rack. Alternatively, two units can be mounted together horizontally using the optional Cat. No. 546 Rack Mount Kit.

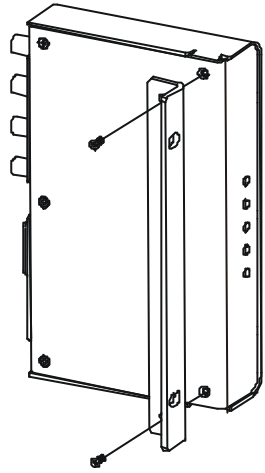


Figure 1 Vertical Rack Mounting

To mount the DP579 vertically, remove the two chassis screws nearest the front panel. Use those same screws to reassemble with the mounting bracket in place as shown in Figure 1.

MAIN

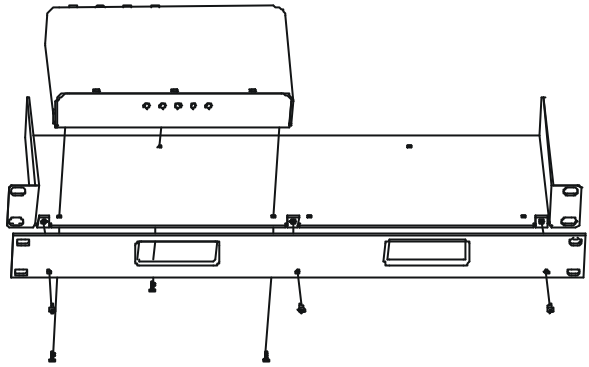


Figure 2 Tandem Horizontal Rack Mounting with Cat. No. 546

To mount one or two units horizontally in a 1-U space, remove the two chassis screws nearest the front panel and the center screw near the rear panel. Use those same screws to secure the DP579 to the Cat. No. 546 Rack Mount Kit tray. Assemble the rack-mount front panel to the tray with the supplied screws and hex key. See Figure 2.

2.2 Rear-Panel Connectors

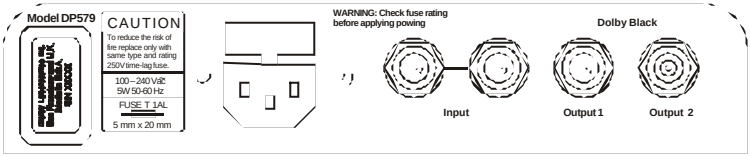


Figure 3 Model DP579 Rear Panel

2.2.1 AC Power

The DP579 incorporates a universal switching power supply that handles the full range of nominal mains voltages between 90 and 264 VAC and any frequency between 50 Hz and 60 Hz.

MAIN

2.2.2 Input

Two female BNC connectors on the rear panel are provided for video reference input with a loop-through output. It is important that the video reference signal is terminated correctly. A 75Ω terminator is supplied in the DP579 packing kit for this purpose.

2.2.3 Dolby Black

Two female BNC connectors on the rear panel provide electrically independent Dolby Black signals on **Output 1** and **Output 2.**

2.3 Installation

Figure 4 shows an example of a DP579 installation.

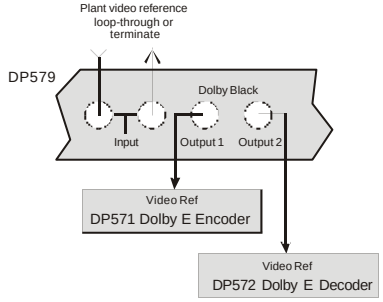


Figure 4 DP579 Wiring Example

The DP579 input is connected to the local plant video reference, while the outputs are connected to the DP571 and DP572 Dolby E Encoder and Decoder. It is important to correctly terminate both the input reference signal and the two output signals. If one of the outputs is not used, however, it is not necessary to terminate the unused connection, as each signal is isolated.

MAIN

The DP579 can be permanently connected to the Dolby E encoder and decoder as it will detect standard black and burst reference signals, and pass them directly through to the output connectors.

The DP571 Dolby E Encoder will need to be configured to the video frame rate present at the DP579 input. This setting is made in the Operating Mode/Frame Rate setup menu.

The DP572 Dolby E Decoder will automatically detect the appropriate frame rate from the DP579.

Both the DP571 and DP572 will indicate the presence of a valid Dolby black signal via a green VRef LED on the front panel. If the Vref is yellow this indicates a valid video reference, however this reference does not match the Frame Rate setting in the case of the DP571 or the frame rate of the input Dolby E stream in the case of the DP572. A red LED indicates an invalid reference or no reference signal.

MAIN

3 Operation

The DP579 converts a tri-level video reference at its input into Dolby Black, while preserving the input frame rate. No user intervention is required. Table 1 summarizes the picture formats and the corresponding frame rates that the DP579 will accept and support. SMPTE 274M specifies these formats in detail.

If an analog composite NTSC (29.97 fps) or PAL (25 fps, or 'slow' PAL at 24 fps) video signal is detected, the DP579 will enter Bypass mode, and the signal is passed straight through to the output connectors. Any other type of signal (e.g., AES/EBU, LTC, etc.) will force the DP579 outputs to 0 V.

Table 1 Supported Input Scanning Rates

	Input Format	Frame Rate (fps)	Scan	Lines
1	1920 × 1080/60/2:1	30	i	1125
2	1920 × 1080/59.94/2:1	29.97	i	1125
3	1920 × 1080/50/2:1	25	i	1125
4	1920 × 1080/48/2:1	24	i	1125
5	1920 × 1080/47.95/2:1	23.98	i	1125
6	1920 × 1080/30/1:1	30	P	1125
7	1920 × 1080/29.97/1:1	29.97	P	1125
8	1920 × 1080/25/1:1	25	P	1125
9	1920 × 1080/24/1:1	24	P	1125
10	1920 × 1080/23.98/1:1	23.98	P	1125

MAIN

4 Front-Panel Indicators

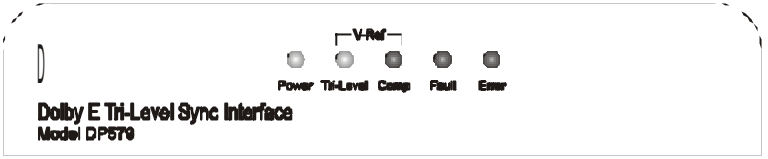


Figure 5 Model DP579 Front Panel

4.1 Power

The **Power** LED will light whenever AC power is present.

4.2 V-Ref Indicators

One of the following status LEDs will light if a suitable video reference signal is detected.

4.2.1 Tri-Level

The **Tri-Level** LED indicates that a tri-level video input signal, in a format supported by the DP579, has been detected (see Table 1).

4.2.2 Comp

The **Comp** LED indicates that a standard composite video input signal has been detected.

4.3 Fault

If a hardware fault is detected within the DP579, the **Fault** LED will light.

MAIN

4.4 Error

If neither tri-level nor composite video is detected, the **Error** LED will light.

MAIN

5 Specifications

5.1 Electrical Specifications

Video Reference Input	BNC female connector with loop through, SMPTE RP154, 274M, 318M
Dolby Black Outputs	Two BNC female connectors, per SMPTE RP154, 318M (electrical)
Power Requirements	90–264 VAC, 50–60 Hz via internal supply; designed to operate from a centrally switched power source
Power Consumption	5W typical; 9W maximum

5.2 Temperature and Humidity Specifications

Operating	0° to 50° C, natural convection cooling
Non-Operating (Storage)	–20° to +70° C
Humidity	Up to 98% relative humidity, non-condensing

5.3 Mechanical Specifications

Dimensions	200 × 120 × 40 mm (7.9 × 4.7 × 1.6 inches)
Net Weight	0.7 kg (1.5 lb), approximately
Shipping Weight	1.2 kg (2.5 lb), approximately

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