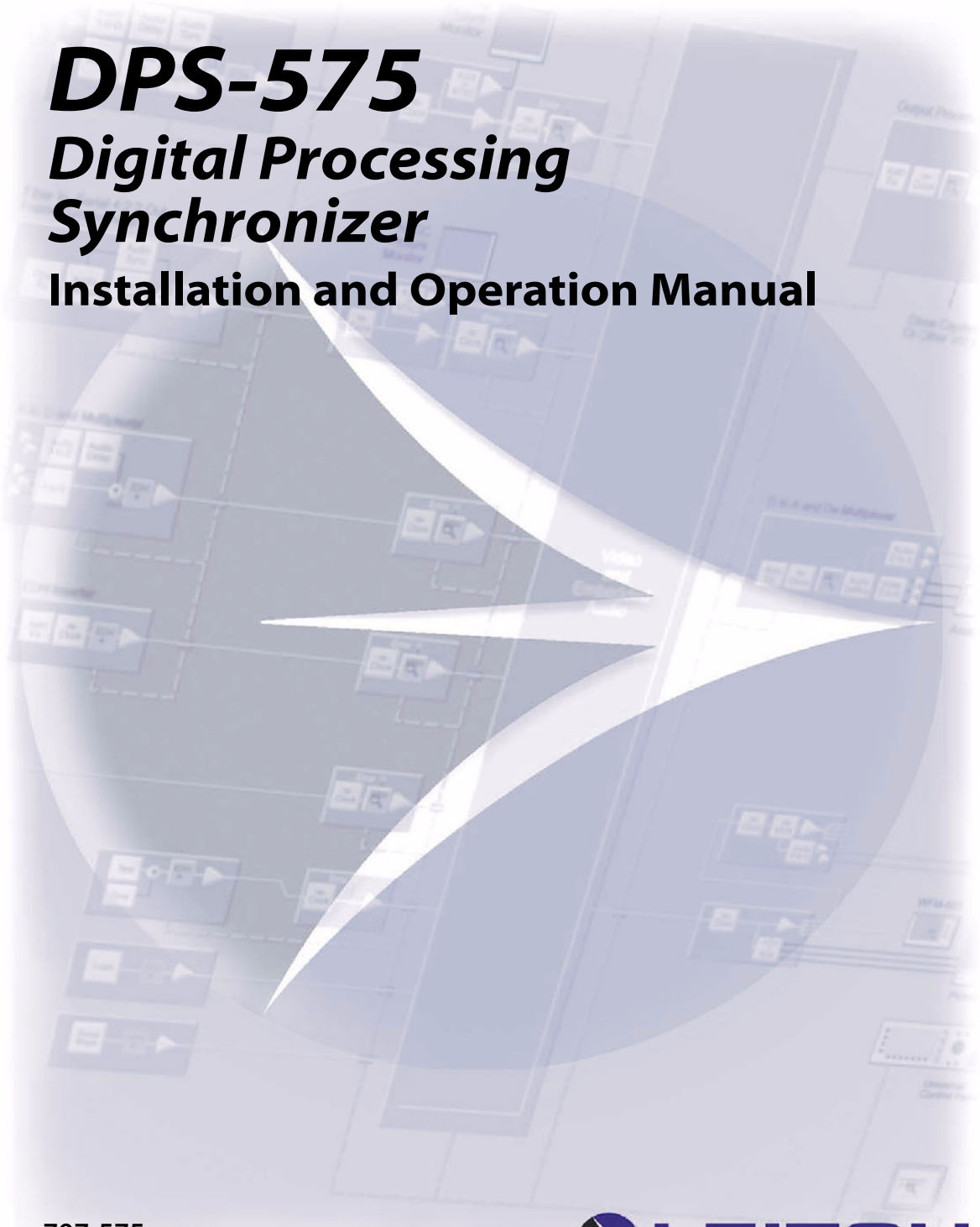
DPS-575

Digital Processing Synchronizer

Installation and Operation Manual



707-575
Edition C

LEITCH

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DPS-575
Digital Processing Synchronizer

Installation and Operation Manual

Edition C
November 2002

LEITCH

Preface

Purpose

This manual details the features, installation procedures, operational procedures, and specifications of the DPS-575 Installation and Operation Manual.

Audience

This manual is written for technicians and operators responsible for installation, setup, and/or operation of DPS-575 Installation and Operation Manual.

Writing Conventions

To enhance your understanding, the authors of this manual have adhered to the following text conventions:

Bold	Indicates dialog box, property sheet, field, button, checkbox, listbox, combo box, menu, submenu, window, list, and selection names.
Italics	Indicates email addresses, names of books and publications, and first instances of new terms and specialized words that need emphasis.
CAPS	Indicates a specific key on the keyboard, such as ENTER, TAB, CTRL, ALT, DELETE.
`Code`	Indicates variables or command-line entries, i.e., a DOS entry, something you type into a field, etc.
>	Indicates direction of navigation through a hierarchy of menus and windows.
hyperlink	Indicates a jump to another location in the document or elsewhere (such as a website).

Revision History

Edition	Date	Revision History
A	October 2000	Initial release.
B	January 2001	Formatting changes.
C	November 2002	Formatting changes.

Important Safety Instructions

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. Read these instructions. Keep these instructions. Heed all warnings. Follow all instructions.

Servicing

Only qualified personnel should perform service procedures. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Safety Terms and Symbols

Terms and Symbols in This Manual

WARNING:
Statements identifying conditions or practices that can result in personal injury or loss of life: High voltage is present. Uninsulated dangerous voltage within the product's enclosure may be sufficient to constitute a risk of electric shock to persons.

CAUTION:
Statements identifying conditions or practices that can result in damage to the equipment or other property: Important operating and maintenance (servicing) instructions in the literature accompanying the product.

Terms and Symbols on the Product

DANGER:
High voltage and indicates a personal injury hazard immediately accessible as one reads the marking.

WARNING:
Indicates a personal injury hazard not immediately accessible as one reads the marking.

CAUTION:
Indicates a hazard to property including the product or to take attention and refer to the manual.

Protective ground (earth) terminal.

Fuse:
Replace with same type and rating of fuse.

Observe precautions for handling electrostatic-sensitive devices.

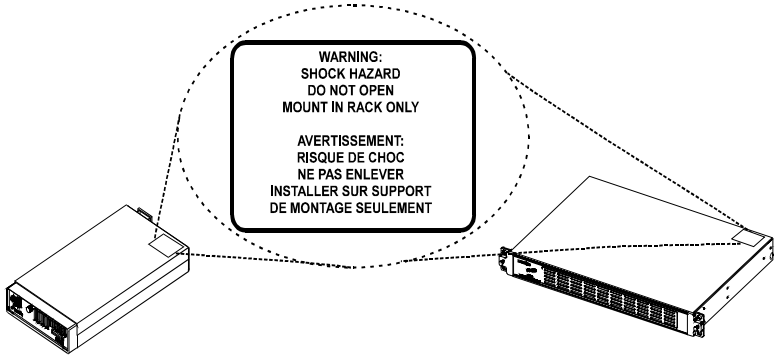
Injury Precautions

WARNING!
To reduce the risk of electric shock, do not expose this apparatus to rain or moisture.

WARNING!
Potentially lethal voltages are present within this product's frame during normal operation. The AC power cord must be disconnected from the frame before the top panel is removed. (In frames with multiple power supplies, remove ALL power cords.) Power should not be applied to the frame while the top is open, unless properly trained personnel are servicing the unit.

[PL Poland] Przod zdjeciem pokrywy wyciagnac wtyczke z gniazda sieciowego.

[French] AVIS: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR. INSTALLER SUR SUPPORT DE MONTAGE SEULEMENT.



WAARSCHUWING:
SCHOK GEVAAR
NIET OPEN MAKEN
ALLEEN IN RAK MONTER

AVVISO:
PERICOLO DI CORRENTE
E PROIBITO L'APERTURA
SI PREGA DI FARE IL MONTAGGIO
AL PROPRIO SOPPORTO

FIGYELEM:
ÁRAMÜTÉS VESZÉLY
CSAK A MEGTELELÖ
TARTÓKERETBE ÜZEMBEHELYEZNI

ADVARSEL:
MULIGHED FOR ELEKTRISK STØD
INDEHOLDER STRØMFØRENDE DELE
APPARATET MÅ KUN ÅBNES AF
KVALIFICERET.
SKAL INSTALLERES I JORDET RACK

ATENÇÃO:
PERIGO DE CHOQUE
SO PARA MONTAGEM
EM BASTIDOR

注 意 ：
請 勿 打 頂 板 以 免 觸 電
該 設 備 須 放 在 機 櫃 中 使 用

경고 전기 충격 위험 가능 열지 마십시오

WARNUNG:
SCHOCK GEFAHR
NICHT ÖFFNEN
NUR IN DAS GESTELL MONTIEREN

UWAGA:
GROZI PORAZENIEM
NIE OTWIERAC
MONTOWAC TYLKO W RAMIE

VARNING:
FARA FÖR ELEKTRICITETNEM KINYITNI
ÖPPNA EJ
MONTERES ENDAST I RACK

ADVERTENCIA:
PELIGRO DE DESCARGA ELÉCTRICA
NO ABRIR EL EQUIPO
SOLO PARA INSTALAR EN RACK

ΠΡΟΕΙΔΠΟΙΗΣΗμ
ΚΙΝΔΗΝΟΣ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ
ΜΗΝ ΑΝΟΙΓΕΤΕ
ΤΟΠΟΘΕΤΕΙΣΤΕ ΜΟΝΟ ΣΕ ΚΑΤΑΛΛΗΛΟ
ΉΠΟΣΤΗΡΙΓΜΑφîΧ ΠπψΤψ

ТРЕДУПРЕЖДЕНИЕ:
Электрический опаность не открыте.
Монтироваете в ракете только.

AVIS - Risque de choc electrique. Ne pas ouvrir.

Use Proper Power Cord
To avoid fire hazard, use only the power cord specified for this product.

Ground the Product
Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

[United Kingdom] WARNING: THIS APPLIANCE MUST BE EARTHED.

[Sweden] APPARATEN SKALL ANSLUTAS TILL JORDAT UTTAG NÄR DEN ANSLUTS TILL ETT NÄTVERK.

Do Not Operate Without Covers
To avoid electrical shock or fire hazard, do not operate this product with covers or panels removed.

Use Proper Fuse
To avoid fire hazard, use only the fuse type and rating specified for this product.

Do Not Operate in Wet/Damp Conditions
To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Do Not Operate in an Explosive Atmosphere
To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.

Avoid Exposed Circuitry
To avoid injury, remove jewelry such as rings, watches, and other metallic objects. Do not touch exposed connections and components when power is present.

Product Damage Precautions

Use Proper Power Source
Do not operate this product from a power source that supplies more than the specified voltage.

Use Proper Voltage Setting
Before applying power, ensure that the line selector is in the proper position for the power source being used.

Provide Proper Ventilation
To prevent product overheating, provide proper ventilation.

Do Not Block Any Ventilation Openings
Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.

Only Use Attachments/Accessories Specified by the Manufacturer

Do Not Operate With Suspected Failures
Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

For Products with Multiple Power Cords:
CAUTION: This unit can have more than one power supply cord. To de-energize the internal circuitry, disconnect all power cords before servicing.

[Norwegian] ADVARSEL: Utstyret kan ha mere ennn en tilførselsledning. For å gjore interne deler spennigsløse må alle tilførselsledningene trekkes ut.

[Sweden] VARNING: Denna apparat har mer än en nätanslutning. Samtliga nätkablar måste bortkopplas för att göra de interna kretsarna spänningsfria.

Do Not Use This Apparatus Near Water
Do not expose this apparatus to dripping or splashing water. Ensure that no objects filled with liquid, such as vases or cups, are placed on the apparatus.

Clean Only With a Dry Cloth

Keep Product Away from Heat Sources
Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Install Near Socket Outlet
The equipment shall be installed near the socket outlet, and a disconnect device shall be easily accessible.

Protect the Power Cord
Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Attention:
Observe precautions for handling electrostatic-sensitive devices. See “Preventing Electrostatic Discharge” below for details.

Fuse Replacement:
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE OF FUSE.
[French]ATTENTION: REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE.

List of replaceable fuses	Marking
F1 main primary (P.S.)	F4A/250 V

Preventing Electrostatic Discharge

CAUTION: Electrostatic discharge (ESD) can damage components in the product. To prevent ESD, observe these precautions when directed to do so:
Use a Ground Strap. Wear a grounded antistatic wrist strap to discharge the static voltage from your body while installing or removing sensitive components.

- Use a Safe Work Area. Do not use any devices capable of generating or holding a static charge in the work area where you install or remove sensitive components. Avoid handling sensitive components in areas that have a floor or benchtop surface capable of generating a static charge.
- Handle Components Carefully. Do not slide sensitive components over any surface. Do not touch exposed connector pins. Handle sensitive components as little as possible.
- Transport and Store Carefully. Transport and store sensitive components in a static-protected bag or container.

Certifications and Compliances

This product has been tested and found to comply with the following CE, FCC, UL, ICES and CSA standards.

EMC Standards

Standard	Description
EN 55103-1:1997	Emissions, Conducted and Radiated, per EN 55022 Class A; Peak Inrush Current - Product Family Standard - Audio, Video, Audio-Visual and Entertainment Lighting Control Apparatus for Professional Use. Peak Inrush Current is 21.7A max
EN 55103-2:1997	Immunity, Electromagnetic environment E4 -controlled EMC Environment - Product Family Standard - Audio, Video, Audio-Visual and Entertainment Lighting Control Apparatus for Professional Use.
EN 61000-4-2	Electrostatic Discharge 4kV contact discharge (direct & indirect) 8kV air discharge
EN 61000-4-3	Radiated RF Immunity 3 V rms/m, 80-1000 MHz, 1 kHz 80% AM Modulation
EN 61000-4-4	Electrical Fast Transient ± 1 kV on AC Lines ± 0.5 kV on I/O Lines
EN 61000-4-5	Surge Withstand Immunity ±1 kV Common Mode on AC Lines ± 0.5 kV Differential Mode on I/O Lines
EN 61000-4-6	Conducted RF Immunity 3 V rms/m, 0.15-80 MHz, 150Ω, 1 kHz 80% AM Modulation on AC & I/O Lines
EN 61000-4-8	Magnetic Field Immunity 50 Hz, 3 A/m
EN 61000-4-11	Dipp100% - 20 ms Dip 60% - 100 ms Dropouts >95% for 5 sec, 5 times at 10 sec interval
EN 61000-3-2	Harmonic Current Emissions Class A (Other)
EN 61000-3-3	Voltage Fluctuation and Flicker in Low-Voltage Supply Systems

Per the provision of the Electromagnetic Compatibility Directive 89/336/EEC of 3 May 1989 as amended by 92/31EEC of 28 April 1992 and 93/68/EEC, Article 5 of 22 July 1993.

These devices are for professional use only and comply with Part 15 of FCC rules. Operation is subject to the following two conditions:

1. These devices may cause interference to Radio and TV receivers in residential areas.
2. These devices will accept any interference received, including interference that may cause undesired operations.

   This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

   Changes or modifications not expressly approved by Leitch, the part responsible for compliance to the FCC Part 15 Rule, could void the user's authority to operate this equipment legally in the US.

Safety Standards

Standard	Description
EN 60950	Safety of information technology equipment, including electrical business equipment (IEC 60950 (1999)), per the provision of the Low-Voltage Directive 73/23/EEC of February 19, 1973 as amended by 93/68/EEC.
CSA C22.2 No. 1	Safety standard for Audio/Video and similar electronic equipment.
UL 1419	Safety requirements for professional audio video equipment.

Contents

Chapter 1

Introducing the DPS-575

Overview

The Leitch DPS-575™ Digital Processing Synchronizer is equally suited for analog, digital, or hybrid facilities, and represents the ideal choice for broadcasters making the transition to digital television (DTV). Available in video-only and audio/video configurations, these synchronizers provide an ideal bridge from analog video signals, such as satellite and microwave feeds, to digital production facilities. The DPS-575 is an auto-sensing dual-standard (PAL/NTSC) device.

Figure 1-1. The Leitch DPS-575

The DPS-575 offers unparalleled I/O flexibility. Four input and five output formats are provided on all units:

- Serial Component Digital Video (SDI) input and output
- Component Analog Video (Betacam®) input and output
- S-Video (S-VHS / Hi8) input and output
- Composite Video input and output
- RGB-S output

DV (IEEE-1394) I/O with transport control is available as an option. A built-in auto-sense TBC circuit provides seamless mode switching between direct color and heterodyne sources such as camcorders and VTRs.

The versatile DPS 12-bit comb filter offers three processing modes: Simple, Adaptive-2D, and Adaptive-3D.

3D combing utilizes a proprietary algorithm to combine information from previous frames to eliminate residual subcarrier artifacts, such as cross luminance and cross chrominance. 3D combing can also be applied to non-composite sources, to clean up component video that was previously decoded from a composite source using lower-quality combing in other equipment. Combining the high-quality comb filter with proprietary advanced 12-bit analog encoding provides maximum signal transparency and optimum transcoding.

The DPS-575 also features optional adjustable temporal and spatial digital noise reduction and variable 2D filtering with separate horizontal and vertical bandwidth controls. Applying digital bandwidth filtering and noise reduction prior to MPEG encoding can improve overall MPEG performance through entropy reduction.

The exclusive **DigiDuplex Mode** provides bi-directional connectivity between analog tape machines and digital audio/video routing systems. DigiDuplex saves space and money by enabling digital to analog transcoding with simultaneous analog to digital frame synchronization–all in one compact box. In **DigiDuplex Mode**, the unit's SDI video input is routed directly to the analog video outputs, which feed the inputs of an analog device. The analog output of the device can be simultaneously connected to the synchronizer's analog inputs, where it is processed and sent to the SDI video outputs. Conversion between digital and analog audio is handled in a similar fashion.

With the addition of the four-channel audio synchronizer module, the DPS-575 can provide dual stereo audio and video synchronization in a single rack-unit-high package. The internal audio synchronizer option supports analog, AES/EBU digital, and embedded SDI and DV audio I/O (with the DV I/O module installed). All audio outputs are simultaneously active, which enables both analog and digital audio devices to be connected at the same time. All four audio channels can dynamically track the internal delay of the video synchronizer, and a fixed delay can also be specified, ensuring proper lip sync regardless of the program source. Audio test tones can be generated at operator-specified frequencies.

The DPS-575 is more than just a synchronizer. In addition to the features listed above, other functions include:

- Time Base Corrector
- Audio Synchronizer
- Digital Framestore with Linear Keyer
- Digital Noise Reduction (optional)
- DV Transcoder (optional)
- Video AGC
- 10-bit Video Test Signal Generator with Zone Plate
- Audio Test Signal Generator
- VITS Inserter, Video Bandwidth Processor
- Serial Digital Audio Embedder/De-Embedder
- Animated Logo Inserter (optional)

These functions can be accessed from the front panel or from an RC-575™ remote control.

Chapter 2

Installation and Configuration

Installation

Unpacking and Inspection

The DPS-575 unit has been thoroughly calibrated and inspected, both electronically and mechanically, to ensure that it meets the published specifications.

The following items are included with each unit:

Quantity	Description
1	DPS-575 Digital Processing Synchronizer
1	AC Power Cord (Part # 773-254 or 773-505)
1	Rear Support Bracket (Part # 741-983)
1	Video Breakout Cable (Part # 774-753)
1	Audio Breakout Cable (Part # 774-755) (included only with the DPS-575AV)
2	12 x Analog Audio Terminal Blocks (Part # 722-184) (included only with the DPS-575AV, which may be preinstalled on your unit)

Mounting

The DPS-575 fits into most standard consoles or 19-inch racks. If the unit is to be mounted into a rack, then the included rear support bracket must be used. Care must be taken to select a dry, well-ventilated location with a minimum of dust and vibration. Also, leave sufficient clearance from the unit's sides to allow for proper air circulation.

After unpacking the unit and before installing into a console or rack, allow at least 30 minutes for temperatures to equalize and to eliminate any condensation that may have developed.

Hardware Options

If you purchased hardware options, such as the Audio Synchronizer module, the Animated Logo option, or the DV I/O module, separately from the main unit, you will need to install them. *See* Appendix C "Starting the Installation" on page 203 for detailed instructions for installing your options safely and correctly.

Firmware Options

If you purchased firmware options such as the Noise Reduction with Video Bandwidth Filtering and Audio Limiter options, they must be enabled by using the **Enable Extra Options** setting in the **System Config** menu. *See* Chapter 12 "System Config Menu" on page 153 for more information.

Configuration

Breakout Cable

Figure 2-1 and Figure 2-2 display the left and the right hand side of the DPS-575AV back panel.

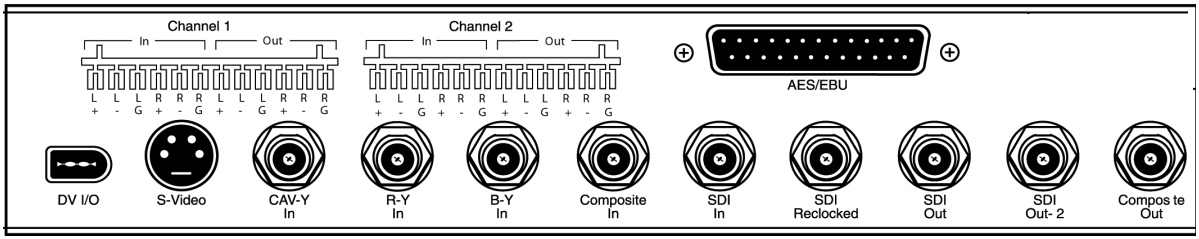


Figure 2-1. DPS-575AV Back Panel - Left Hand Side

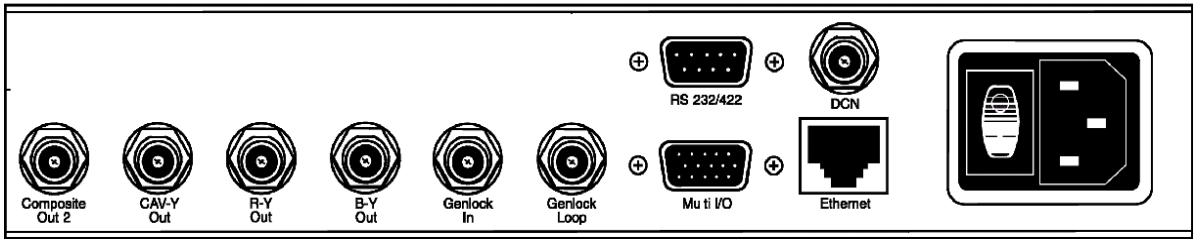


Figure 2-2. DPS-575AV Back Panel - Right Hand Side

Some connections to the DPS-575 are provided on the supplied breakout cables. These breakout cables must be connected to the specified ports on the back of the unit.

Multi I/O Breakout Cable

Note

The RGB output from the 15-pin **Multi I/O** breakout cable does not operate in the **DigiDuplex Mode**; it only operates in the **Normal** mode.

The Multi I/O breakout cable (Part # 774-753) connects to the DB-15F high-density connector labeled **Multi I/O** on the right rear side of the unit. This cable provides connections for RGB output, sync/key/ auxiliary-composite output, S-Video output, and GPI.

AES/EBU Audio Breakout Cable

Note

The AES/EBU audio breakout cable is available on audio-equipped units only.

The AES/EBU audio breakout cable connects to the DB-25F connector labeled **AES/EBU** on the rear of the unit. This cable provides connections for AES/EBU audio input and output. The standard AES/EBU audio breakout cable (Part # 774-755) provides BNC connections; an optional audio breakout cable (Part # 774-470A) provides BNC and XLR connections.

Video Connections

The following are the video connections on the rear of the DPS-575, in left-to-right order, followed by those on the supplied breakout cable.

DV Input/Output

This six-pin IEEE-1394 connector, labeled **DV I/O**, is used to connect DV (often referred to as "Firewire") devices. In addition to carrying DV video and audio input and output, this port also provides DV device control, allowing control of the DV device directly from the DPS-575. This connection is active only if the optional DV I/O module is installed.

S-Video Input

The four-pin connector on the rear of the unit, labeled **S-Video**, is used for S-Video (Y/C) signals, such as from an S-VHS or Hi8 device. It is normally connected to the S-Video output of a playback VTR using a standard four-pin to four-pin S-Video cable. Some JVC "industrial" type S-VHS players use a seven-pin connector for their S-Video output. To interface with such machines, a seven-pin to four-pin adapter cable is required from the manufacturer of the VTR.

Component Analog Video Input

These three BNC connectors, labeled **CAV-Y In**, **R-Y In**, and **B-Y In**, are used to input the signals from analog component devices, such as Betacam VTRs.

If component analog video input is not needed, the CAV-Y In connection can be reassigned as a second composite video input with the **CAV-Y Composite** option in the **Video Setup** menu (*see* Chapter 5 "Video Setup Menu" on page 53).

Composite Video Input

This BNC connector, labeled **Composite In**, is used to feed composite 1Vp-p 75Ω video to the DPS-575. In **Synchronizer** mode, the input video signal must be direct color or monochrome (such as from a satellite feed or live camera); in **Timebase Corrector** or **Auto Switching** mode, the input signal can be connected to the video output of a heterodyne source such as a camcorder or VTR.

Serial Digital Input

This BNC connector, labeled **SDI In**, accepts serial digital ITU-R BT.601 video and embedded audio data at a rate of 270 Megabits per second.

Serial Digital Reclocked Output

This BNC connector, labeled **SDI Reclocked**, provides a digitally regenerated copy of the SDI Input, with no processing applied.

Serial Digital Outputs

These BNC connectors, labeled **SDI 1 Out** and **SDI 2 Out**, provide the processed and synchronized serial digital ITU-R-BT.601 video and embedded audio, at an output rate of 270 Megabits per second.

Composite Video Output

These BNC connectors, labeled **Comp 1 Out** and **Comp 2 Out**, provide processed, synchronized/timebase-corrected versions of any of the input signals. If the unit is set to **Bypass** mode, the Composite Input is bypassed directly to the Comp 1 output (the leftmost of the two connectors), providing an unprocessed signal. Comp 2 Out operates as normal (providing processed output from the selected video input). The Comp 1 input is automatically bypassed to the Comp 1 Out output when the unit is off.

Genlock Reference

These BNC connectors, labeled **Genlock In** and **Genlock Loop**, are used to loop a genlock signal through the unit to establish the timing for its video output signal. The signal for this input must always be stable, such as the output from a black-burst or color-bar generator. Do not attempt to use a signal that has not been timebase-corrected. When a valid signal is connected to the Genlock In input, the video output of the DPS-575 will be genlocked to this signal, and the **Genlock** LED will be on. When no external reference is supplied to the Genlock input, the unit will operate using its own internal sync generator. If the Genlock Loop is unused, terminate it with a 75Ω terminator.

S-Video Output

This four-pin connector on the Multi I/O breakout cable provides processed, synchronized/timebase-corrected S-Video (Y/C) output.

RGB(S) Video Output

These four BNC connectors on the Multi I/O breakout cable, comprising auxiliary Red, Green, Blue, and Sync, provide processed, synchronized/ timebase-corrected RGB(S) (RGB with auxiliary sync) video output. If RGB without auxiliary sync is sufficient, the Aux Sync connection can be reassigned as an auxiliary composite output. If RGB(S) output is not required, these outputs can be reconfigured to provide a key channel output.

Auxiliary Composite Output

The Aux Sync connection on the Multi I/O breakout cable, normally used for sync in RGB(S) (RGB with auxiliary sync)video output, can be reassigned to provide an auxiliary composite video output with the **Aux Sync/Comp** option in the **Video Setup** menu.

Key Output

The Aux Sync connection on the Multi I/O breakout cable, normally used for sync in RGB(S) (RGB with auxiliary sync) video output, can be reassigned to provide a key channel output with the **Aux Output** option in the **Video Setup** menu.

Audio Connections

The DPS-575AV can process two stereo pairs of analog, AES/EBU, Serial Digital (SDI) or DV audio (with the optional DV I/O module). The audio inputs can be selected from the front panel or **Audio Setup** menu, and the operator can specify which of the stereo channels are to be processed. All of the outputs are active simultaneously.

Analog Audio Inputs and Outputs

Two stereo pairs of analog audio inputs and outputs are supported, designated **Channel 1** and **Channel 2** on the rear of the unit. Each is comprised of a left and right component. Each analog audio input channel can be configured as 600Ω or high impedance. Each channel can be configured as balanced or unbalanced.

Two terminal strips (one for Channel 1, one for Channel 2) provide analog audio connections. Each terminal strip uses the following pinouts:

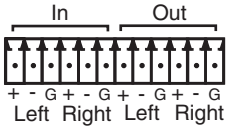


Figure 2-3. Terminal Strips

AES/EBU Inputs

Two BNC connectors (one for each of Channel 1 and 2) are provided on the standard audio breakout cable (Part # 774-755) for AES/EBU input.

An optional audio breakout cable (Part # 774-470A) provides four connectors for AES/EBU input: two XLR (one for each of Channel 1 and 2), and two BNC (one for each of Channel 1 and 2). The XLR connectors are used for AES/EBU balanced audio input, while the BNC connectors are used for unbalanced AES/EBU input. Note that only two of the above input connections can be used at a time (one for Channel 1 and one for Channel 2), and they must be of the same type (XLR or BNC). The **AES Source** menu option selects between the XLR and BNC connections.

AES/EBU Outputs

Two BNC connectors (one for each of Channel 1 and 2) are provided on the standard audio breakout cable for AES/EBU output.

An optional audio breakout cable, provides four connectors for AES/EBU output: two XLR (one for each of Channel 1 and 2), and two BNC (one for each of Channel 1 and 2). The XLR connectors are used for AES/EBU balanced audio output, while the BNC connectors are used for unbalanced AES/EBU output. Both BNC and XLR outputs are available concurrently.

Audio Delay Pulse/GPI Output

The general-purpose GPI output, a BNC connection on the Multi I/O breakout cable, can be configured for use as an audio delay pulse output, to be sent to an external audio delay box or synchronizer.

Serial Digital Embedded Audio Input (SDI)

The unit accepts four channels of embedded audio on the SDI input port. The four channels can be selected from any group on the SDI input.

Serial Digital Embedded Audio Output (SDI)

Any of the selected audio inputs can be embedded into the output of the SDI stream. The operator can select which group of 4 audio channels (of the 16 available in the SDI format) the output will be embedded into.

Remote Control Ports

In addition to GPI input (for remote triggering of functions such as Freeze) and output (for triggering external devices), all functions of the DPS-575 can be remotely controlled by devices capable of either RS-232 or RS-422.

Two additional remote control methods are supported:

- Digital Coaxial Network (DCN), for use with controllers such as the RC-575 Remote Control Systems.
- 10BaseT Ethernet networking, for control through a TCP/IP-based network.

The type of control, and any appropriate parameters, are selected in the **System Config** menu, under the **Remote Control** submenu (*see* Chapter 12 “System Config Menu” on page 153).

RS-232 and RS-422

This DB-9F connector, labeled **RS-232/422** on the rear panel of the unit, is used to upgrade the internal FLASH firmware. The RS-232 port is also used for transferring files to the unit from a Microsoft® Windows® based workstation via custom software (included). *See* Appendix D, “The Uploader Software” on page 213 for information on transferring files from a Microsoft Windows system.

Ethernet Port

The 10BaseT Ethernet connector, labeled **Ethernet** on the rear of the unit, is used to connect the DPS-575 to a TCP/IP-based network for remote control and status monitoring. Control of the unit is then handled through web-browsing software or an RC-575 remote control panel. *See* Appendix F, "Ethernet Control" on page 231 for details of controlling the unit from your web browser. Ethernet can also be used to control additional DPS-575 units from the front panel of this unit. When using Ethernet, the IP Address, Netmask, and Gateway settings of the unit must be configured for your network; your network administrator can provide you with these settings. These settings are located in the **System Config** menu, under the **Remote Control** submenu. *See* Chapter 12 "System Config Menu" on page 153 for more information.

DCN

The BNC connector, labeled **DCN** on the rear of the unit, is used to provide a DCN (Digital Coaxial Network) interface for remote control and status monitoring. DCN is a proprietary network in which 75Ω coax is used as a multi-drop, bi-directional network. Using a BNC T-connector on the DPS-575, loop coax between each unit and the remote controller (such as the RC-575). At each end of the chain, install a 75Ω terminator. Every DPS-575 is assigned a unique DCN address at the factory, so there is no software configuration required. The maximum cable length (total) in a DCN configuration should be limited to 2,000 feet (0.6 km). DCN can also be used to control additional DPS-575 units from the front panel of this unit.

RC-575 Remote Control

The RC-575 remote control provides an Ethernet port, which permits it to be conveniently connected to a TCP/IP network. *See* the RC-575 manual for instructions on using the DPS RC-575 remote control.

GPI Inputs

Two RCA-jack GPI inputs are provided on the Multi I/O breakout cable. These allow a GPI-based external controller to trigger functions of the unit. The function triggered by each GPI input is configured in the **System Config** menu, under the **Misc Setup** submenu. *See* Chapter 12 "System Config Menu" on page 153 for more information.

GPI Output

A user-configurable general-purpose BNC output is provided on the Multi I/O breakout cable. This output can be used for feeding an audio delay pulse to an external audio synchronizer, or it can be configured as a GPI output to trigger external devices. The functionality of this output is configured with the **GPO Output** option in the **System Config** menu (*see* Chapter 12 “System Config Menu” on page 153 for more information).

Chapter 3

Operation–Front Panel Controls

Functional Areas of the Panel

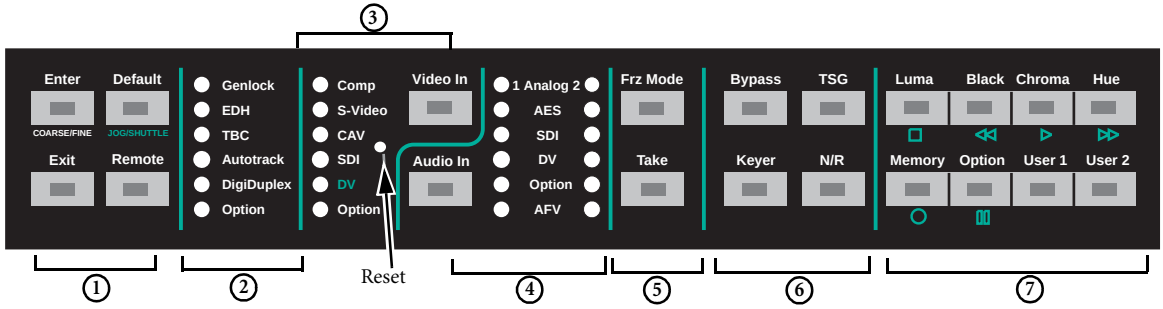


Figure 3-1. The Leitch DPS-575 Front Panel (Right Side)

The front panel controls of the DPS-575 are organized into seven main functional areas:

1. Menu controls
2. Status indicators
3. Video input selection
4. Audio input selection
5. Freeze controls
6. Mode selection
7. Proc Amp controls and User buttons

In addition, while in **DV Control** mode (selected from the **Main** menu), the **Control** knob and specific buttons become dedicated to device control of a DV deck or camcorder. *See* "DV Control Mode"on page 36.

Certain buttons on the front panel can be user-programmed to specific functions (*see* "User-Programmable Buttons" on page 37), and some buttons activate special functions when they are held down during power-up of the unit (*see* "Power-Up Buttons" on page 38).

VFD Display Panel

Menu options, selections, and feedback are shown on the Vacuum Fluorescent Display (VFD) panel. When the unit is first powered-up, the display shows product information, which is then replaced by the idle screen**:**

Figure 3-2. Idle Screen Display

The idle screen is a real-time status screen which provides feedback about various parameters of the currently selected inputs. The idle screen is shown when the user is not adjusting parameters or browsing the menus.

The first three lines of the idle screen provide real-time feedback of the Luma, Black, and Chroma levels of the currently selected video input source.

With the Audio Synchronizer module installed, the next two lines of the display show real-time feedback of the Channel 1 and 2 audio input levels.

On units with the DV I/O module installed, the bottom line of the idle screen displays the current DV Time Code reported by the connected DV device, and just to the left of this, the current DV transport state.

The **Machine Name** specified in the **System Config** menu (*see* "System Config Menu" on page 153) is also shown on the idle screen. On units without DV or audio capability, the idle screen will display the current measured video delay through the unit.

Note

At regular intervals, the display "inverts" itself. In the initial state, text and information appears lit, over an "unlit" background. In the inverted state, the background will be lit, with the text and information appearing "unlit" (black). *This periodic inversion is normal;* it does not indicate any kind of problem or status. The inversion is done to preserve the life span of the display panel.(Leaving the display in a single state can cause display pixels to burn out prematurely.)

Resetting the Unit

In the video input selection section of the front panel, just to the right of the CAV and SDI indicators, is a small hole. This hole provides access to the **Reset** button, which resets the DPS-575 unit. This is equivalent to power-cycling the unit.

Menu Controls

All options and parameters for the DPS-575 are accessed through configuration menus, which appear on the display panel. Selecting any of the menu and submenu options follows the same procedure as using them. *See* "Features" on page 42.

Navigating Through the Menus

To navigate through the menus, follow these steps:

1. With the idle screen displayed, press the **Enter** button. (If the idle screen is not displayed, press **Exit** repeatedly until it is.) The display panel will show the **Main** menu options.
2. Scroll through the list using the **Control** knob until the desired submenu is highlighted. Press the **Enter** button to enter the submenu.
3. Use the **Control** knob and **Enter** button to choose and activate the option you want. If there are further submenus, use the procedure in step 2 to select between them, and to select the option you wish to change.
4. Press the **Exit** button while in a menu or submenu to return to the previous submenu, or if you are at the **Main** menu, to return to the idle screen.

Changing Parameters

Once you have selected the option you wish to change, use the **Control** knob to set the new value for the parameter. When setting parameters that have discrete value options (such as selecting **Field**, **Frame**, or **Strobe** mode), the **Control** knob will cycle through the valid settings.

Note

Adjustments affect the output immediately as the knob turns.

For parameters that have a numerical range of values, the display shows both a numeric and a visual representation of the range. Use the **Control** knob to set the new value.

When setting parameters that have a numerical range of values, you can use the **Control** knob to switch between **Fine** and **Coarse** adjustment mode. When you first enter the parameter adjustment screen, the **Control** knob is in **Fine** mode. Press the **Enter** button to switch to **Coarse** adjustment mode; the **Enter** button lights up. **Coarse** adjustment mode allows you to make large adjustments more quickly. Press **Enter** again to return the **Control** knob to **Fine** mode.

For example, when setting a parameter, you may use the **Control** knob to adjust the value in increments of 0.02 in **Fine** mode and 0.50 in **Coarse** mode.

Press the **Default** button to reset the configuration parameter to its default values. The **Default** LED lights up whenever the current value of the parameter is equivalent to the default value, whether you reached this value by pressing the **Default** button, or by scrolling to it with the **Control** knob.

Press the **Exit** button to accept your new value and return to the previous menu or submenu.

Remote Control

By placing the DPS-575 in **Remote** mode, you can control additional DPS-575 units on the same DCN or Ethernet network from the front panel of this unit.

Press the **Remote** front-panel button to bring up a list of available units that can be controlled. The <**local device**> option, representing the unit being used, is always available on this list. Use the **Control** knob to scroll through the list of available devices. Highlight the unit you wish to control, and then press the **Enter** button to activate it. Select <**local device**> to exit **Remote** mode and resume normal single-unit operation.

Once you have selected a remote unit to control, all front-panel features operate as if you were actually at the front panel of that remote unit. The VFD display, status indicators, and buttons (LEDs) all reflect the status of the remote unit. All buttons and controls, with the exception of the **Remote** button, control the remote unit, not the one you are physically operating. To stop controlling the remote unit, use the **Remote** button to select a new unit (or the local device) to control.

The light on the **Remote** button flashes while the unit is remotely controlling a device.

Status Indicators (LEDs)

The status indicator LEDs provide visual feedback on the current mode and operating conditions of the unit.

Genlock

The **Genlock** LED indicates the current status of the external genlock source.

LED Status	Operating Condition
On	If the unit is configured to Auto Genlock mode, this indicator will be lit as long as a stable genlock source is connected to the unit.
Off	If no genlock source is present, the unit will automatically switch to Internal Genlock mode, and this indicator will flash.
Flash	If the unit is configured to Internal Genlock mode, it will operate on its own internal crystal, and this indicator will be unlit.

EDH

The **EDH** LED indicates the current configuration and status of Error Detection Handling (EDH) in the input Serial Digital video stream.

LED Status	Operating Condition
Off	If the indicator is off or unlit, EDH detection is turned off in the unit.
Flash	If the indicator flashes briefly, EDH detection is enabled, and EDH errors have been detected and not yet cleared by the operator. The actual count of these errors is reported in the EDH Error Count menu option.

TBC

The **TBC** LED indicates whether or not the composite input signal is timebase-corrected by the unit's TBC circuitry.

LED Status	Operating Condition
On	If the unit is in Sync mode, the internal TBC is not active, and this indicator will be off.
Off	If the unit is in TBC mode, the unit will timebase-correct the input signal (generally for heterodyned signals from sources such as a VTR), and this indicator will be lit.
Flash	If the unit is in Auto-Switch mode, the unit will sense the incoming composite video signal and select between Sync and TBC modes automatically; in this mode, the indicator will flash when the TBC is active.

Autotrack

The **Autotrack** LED indicates whether or not the audio **Auto Track** mode is enabled.

LED Status	Operating Condition
On	When enabled, this indicator will be lit, and the unit will automatically delay the audio data to match the delay of the video data through the Synchronizer (up to four fields).
Off	The indicator will be off when Auto Track is disabled.

DigiDuplex

The **DigiDuplex** LED indicates whether or not the unit is in **DigiDuplex Mode.**

LED Status	Operating Condition
On	In DigiDuplex mode, the indicator is lit, and the unit's SDI video input is routed to the analog video outputs, while the selected analog video input is simultaneously synchronized and sent to the SDI output. With an audio-equipped unit, conversion between digital and analog audio is handled in similar fashion, simultaneously with the video.
Off	This indicator is unlit when DigiDuplex Mode is off.

See Appendix E, "DigiDuplex Mode" on page 229 for a detailed explanation of **DigiDuplex Mode** and its settings.

Option

The **Option** LED indicates the status and/or configuration of the currently installed option card module (if any). The meaning of this indicator varies depending on the particular option installed; please see the documentation for your option module for further details.

Video Input Selection

To select the current (active) video input, press the **Video In** button until the desired LED becomes lit. The selectable inputs are:

- Comp (Composite)
- S-Video
- CAV (Component Analog Video)
- SDI (Serial Digital)
- DV– With the optional DV module installed, **DV** can also be selected as an input.
- Option–If an option card module is installed that includes an additional video input, it will be selectable as **Option**.

If no input signal is present on the selected video input, the corresponding LED will flash.

Audio Input Selection

On DPS-575AV units and DPS-575 units with the Audio Synchronizer module installed, to select the current (active) audio input:

- Press the **Audio In** button to open a menu where you can select the Channel 1 audio input; this is the same as the **Ch1-Input** menu option.
- Press the **Audio In** button a second time to open a menu where you can select the Channel 2 audio input; this is the same as the **Ch2-Input** menu option.

The selectable audio inputs, with corresponding LEDs, are:

- Analog
- AES/EBU
- SDI Embedded
- DV–With the optional DV module installed, **DV** can also be selected as an input.
- Option–If an option card module is installed that includes an additional audio input, it will also be selectable.
- If **AFV (**Audio FollowsVideo) mode is enabled through the audio menus (*see* Chapter 7, "Audio Setup Menu" on page 95), the AFV indicator for that channel will be lit. In this mode, each of the selectable video inputs has an audio input selection linked to it. Whenever the video input selection is changed, the audio input selection for any AFV-enabled channel automatically changes correspondingly.

  You can override **AFV** mode by manually selecting a different audio input even when **AFV** is enabled. This does not, however, turn **AFV** mode off; the next time the video input selection is changed, the audio will again follow it. **AFV** mode can only be disabled through the audio menus.

  The AFV link to each of the video inputs is set through the **Audio Setup** menu. *See* Chapter 7, "Audio Setup Menu" on page 95.

  The input selection for Channels 1 and 2 cannot be selected independently if **96 kHz AES Output** mode is enabled; they must always be set to the same input source. *See* Chapter 7, "Audio Setup Menu" on page 95.

The selection menus also provide access to two "special" audio modes:

- **Mute**–disables audio output; while in this mode, all input source LEDs for that channel will be on.
- **Test Tones**–outputs audio test tones from the unit. The parameters of the test tones (Level, Frequency) are set from the **Audio Setup** menu (*see* Chapter 7, "Audio Setup Menu" on page 95). While in **Test Tones** mode, all input source indicator LEDs for that channel will flash.

When **Dolby-E** (**Data**) **Mode** is enabled (*see* Chapter 7, "Audio Setup Menu" on page 95), the audio input selection for Channel 1 is locked to AES/EBU, and only this Channel supports Dolby-E Data. SDI Embedded Audio cannot be used in this mode.

Press and hold the **Audio In** button for one second to open the **Audio Setup** menu (the same as is available through the **Main** menu), from which you can set additional audio configuration options.

When one input channel is routed to both output channels through the **Channel In->Out** or **Aud Follows Vid** menu options (*see* Chapter 7, "Audio Setup Menu" on page 95 for details), only that input channel's LED is lit to indicate the audio input source.

On DPS-575 units without audio capability, the **Audio In** button is user-programmable; that is, you can assign the button to a desired menu function. *See* "User-Programmable Buttons" on page 37 for instructions on assigning this button to a menu function.

Freeze Controls

The freeze controls provide instant access to freezing individual frames or fields of the incoming video source, strobing the incoming video, or performing a 3:2 pull-down on the input source.

Press the **Frz Mode** button to open a menu where you can select a **Freeze** mode to apply to the incoming video. This is the same as the **Freeze** mode menu option under the **Video Setup** menu.

Press the **Frz Mode** button multiple times to cycle through the different modes, or the **Control** knob can be used for selection. The available modes are:

- **Frame**–freezes an entire frame of the incoming video
- **Field**–freezes a single field of the incoming video
- **Strobe**–strobes the incoming video
- **Film**–applies a 3:2 pull-down to the incoming video, effectively giving a simulated 24fps look to the video output

Press the **Take** button to activate the selected **Freeze** mode and apply it to the incoming video. The LED on the **Take** button flashes while **Freeze** mode is active. Press **Take** again to return to the live video feed.

If **Field Freeze** mode is selected, the display panel indicates which field of the video is frozen (1, 2, 3, or 4). This will initially be the same as the value of the **Field Select** menu option. The **Control** knob changes the currently selected field (and the **Field Select** menu option is updated accordingly).

If **Strobe Freeze** mode is selected, the display panel indicates the current strobe rate (number of frames per update) applied to the incoming video (1 to 255). This will initially be the same as the value of the **Strobe Rate** menu option. The **Control** knob changes the rate (and the **Strobe Rate** menu option is updated accordingly).

Press the **Frz Mode** button while **Frame** or **Field Freeze** mode is already active to toggle between **Frame** and **Field Freeze** mode.

The **Mute In Freeze** audio menu option specifies whether or not audio output will be muted while the video is frozen in **Frame** or **Field** mode.

Mode Selection

The mode selection controls provide direct access to Bypass, Test Signal Generator (TSG), and Noise Reduction (NR) functions.

Bypass

The **Bypass** button toggles between **Process** and **Bypass** mode. The **Bypass** button must be held in for one second to activate **Bypass** mode; a normal press will return to **Process** mode. **Process** mode is the normal mode of operation. In **Bypass** mode, no processing is applied to the Composite In video signal; it is passed directly to Composite Out. Similarly, in **Bypass** mode, no processing is applied to the analog and AES/EBU audio inputs; they are routed directly to the outputs.

The light on the **Bypass** button flashes while the unit is in **Bypass** mode.

Composite In and the analog and AES/EBU audio inputs are also bypassed when the power to the unit is off.

TSG

The **TSG** button sets the unit to **Test Signal Generator** mode. Press the **TSG** button to activate the Test Signal Generator and send the currently selected test pattern to all video outputs. This will initially be the test pattern selected in the **TSG** menu option of the **Video Setup** menu.

When **TSG** mode is active, the light on the **TSG** button flashes, and the display panel shows a list of available test patterns (and indicates which one is active).

You can change the displayed pattern by scrolling through the list with the **Control** knob and pressing the **Enter** button to select a new pattern.

Press the **TSG** button again to return the outputs to the incoming video feed.

Keyer

The **Keyer** button provides access to the unit's linear keyer. Press the **Keyer** button once to take you directly to the **Keyer Setup** menu, from which you can enable the keyer and configure the keyer settings.

If a file (animation or still) to be displayed has been selected previously, press the **Keyer** button a second time to fade in the animation or still over the live video. Press the **Keyer** button a third time to fade it back out. Note that if it is an animation being keyed, the animation will fade out automatically after the number of repetitions specified in the **Repeat** option of the keyer settings, if not faded out manually first.

If no file has been previously selected, press the **Keyer** button a second time to take you to the keyer's file selection list (equivalent to the **File** option of the **Keyer Setup** menu), from which you can select a file from among the still images and animations stored in the unit. These images could have been uploaded to the unit from a PC (*see* Appendix D, "The Uploader Software" on page 213, and Appendix F, "Ethernet Control" on page 231) or grabbed from video from the **TSG/Image Grabbing** menu.

The image or animation to be displayed or keyed is selected by scrolling through the list with the **Control** knob and then pressing the **Enter** button to select the desired file. The file is loaded, and you are returned to the **Keyer Setup** menu. Press the **Keyer** button again to fade in the file, and press it again to fade it out.

The light on the **Keyer** button flashes while the key is in transition (fading in or fading out) and lights up while the key is displayed. *See* Chapter 8, "Keyer Setup Menu" on page 125 for more information about the **Keyer Setup** menu.

N/R

On units with the **Noise Reduction and Video Bandwidth Filtering** option installed, press the **N/R** button to access the noise reduction functions of the unit. Press the **N/R** button once to take you directly to the **Noise Reduction** menu, from which you can configure noise reduction settings. *See* Chapter 9, "Noise Reduction Menu (Option)" on page 137 for a detailed description of the **Noise Reduction** menu.

Press the **N/R** button repeatedly to toggle the noise reduction features on and off. The light on the **N/R** button lights up when noise reduction is enabled.

Proc Amp Controls and User Keys

The Proc Amp controls allow the modification, storing, and recalling of Proc Amp settings.

Automatic Proc Amp Setup ("Gimme Bars")

The Luminance Gain, Black Level, Chrominance Gain, and Hue can all be automatically set by the unit based on incoming SMPTE bars.

To use the Gimme Bars automatic setup mode, SMPTE bars (or other 75% bars) must be supplied to the currently selected video input. Press and hold the **Luma** button; the four Proc Amp parameters are automatically adjusted.

Luma

Press the **Luma** button to adjust the luminance gain by using the **Control** knob and menu controls (*see* "Menu Controls" on page 21). This is equivalent to the **Luma Gain** menu option in the **Video Setup** menu.

While setting the luminance gain, the display panel also shows the maximum luminance level (in IRE or mV) of the incoming video signal.

Valid Range	-99.99 dB to 6.00 dB (Y/C, SDI, DV) -8.01 dB to 4.04 dB (Composite, CAV)
Default Setting	0.00 dB

Black

Press the **Black** button to adjust the black level by using the **Control** knob and menu controls (*see* "Menu Controls" on page 21). This is equivalent to the **Black Level** menu option in the **Video Setup** menu.

While setting the black level, the display panel also shows the minimum luma level of the incoming video signal.

Valid Range	-30.0 IRE to 30.0IRE (525-line mode) -210.0 mV to 210.0 mV (625-line mode)
Default Setting	0.0 IRE (525-line mode) 0.0 mV(625-line mode)

Chroma

Press the **Chroma** button to adjust the chrominance gain by using the **Control** knob and menu controls (*see* "Menu Controls" on page 21). This is equivalent to the **Chroma Gain** menu option in the **Video Setup** menu.

While setting the chrominance gain, the display panel also shows the saturation peak (in%) of the incoming video signal.

Valid Range	-99.99dB to 6.00 dB (Y/C, SDI, DV, Composite) -8.01 dB to 4.07 dB (CAV)
Default Setting	0.00 dB

Hue

Press the **Hue** button to adjust the output phase by using the **Control** knob and menu controls (*see* "Menu Controls" on page 21). This is equivalent to the **Hue Phase** menu option in the **Video Setup** menu. This button can be reprogrammed if not needed. *See* "User-Programmable Buttons" on page 37 for instructions on assigning a different function to this button.

Valid Range	-45.010° to 44.080°
Default Setting	0.000°

Memory

Press the **Memory** button to provide access to the Proc Amp memory controls. These controls allow you to store and recall Proc Amp settings profiles. Up to 10 settings profiles can be stored, containing the settings for Luma Gain, Black Level, Chroma Gain, and Hue.

Storing Settings

To store the current Proc Amp settings:

1. Press the **Memory** button.
2. Use the **Control** knob to select **Store**, and press the **Memory** button.
3. Use the **Control** knob to select one of the 10 available memory locations, and then press **Memory**.

Recalling Settings

To recall the stored Proc Amp settings:

1. Press the **Memory** button.
2. Use the **Control** knob to select **Recall**, and then press the **Memory** button.
3. Use the **Control** knob to select the desired profile from one of the 10 available memory locations, and then press **Memory** again.

   The Proc Amp settings are changed to those stored in the specified profile. In addition to the 10 memory locations, you can select the **Unity Values** profile, which resets the Proc Amp settings to factory preset unity.

User 1 and User 2

The **User 1** and **User 2** buttons are programmable and have no default function. *See* "User-Programmable Buttons" on page 37 for instructions on assigning desired functions to these buttons.

Option

On units in which an option module has been added, the **Option** button may be used to control functions of that hardware option. Please see the documentation for your option module for further details. If the option board does not require the **Option** button to be used, it becomes user-programmable and has no default function. *See* "User-Programmable Buttons" on page 37 for instructions on assigning a different function to this button.

DV Control Mode

On units with the **DV I/O** option installed, where a DV device (such as a deck or camcorder) is connected to the DPS-575 by IEEE-1394 (Firewire), you can control transport from the front panel of the unit.

To enable DV device control, select **DV Control** from the **Main** menu. (To reach the **Main** menu, press the **Enter** button while the idle screen is displayed.) The display changes to show the current time code of the DV device, as well as the transport status (play, stop, etc.). While in **DV** mode, the normal functionality of the front panel controls is replaced by DV device control.

If you look carefully at the front panel of the unit, you will see standard representations of transport controls below many of the buttons. The buttons used for DV device control are as follows:

Button	Function
Luma	Stop
Black	Rewind/Scrub Backward
Chroma	Play
Hue	Fast-Forward/Scrub Forward
Memory	Record (used in conjunction with Play)
Option	Pause
Default	Toggle the Control knob between Jog mode and Shuttle mode

The **Control** knob functions as a jog or shuttle controller, depending on the currently selected mode.

To exit **DV Control** mode and return to normal operation, press the **Exit** button.

User-Programmable Buttons

You can program many of the front-panel buttons on the DPS-575; they are user-programmable. That is, you can program them to take the user to a menu or specific function of your choice.

On all units, the **User 1**, **User 2**, and **Hue** buttons are user-programmable. On units that do not have audio capability, the **Audio In** button is also programmable. On units in which an added option board does not require the **Option** button to be used, it can be programmed as well.

Of these buttons, only the **Hue** button has a default function. If you press one of the other buttons before it is programmed, the following message appears on the display panel:

```
This button has not yet been assigned a
function. To program it, select the desired menu
or setting that you wish to assign to it, using
the normal menu controls. Then press and hold
this button for five seconds.
```

It is easy to reprogram a button, whether a programmable button already has a function assigned to it or not. Hold down a programmable button for five seconds to assign to it whatever menu or option is currently displayed on the display panel.

For example, to assign the **User 1** button to adjust the video AGC Bias, select the **AGC Bias** option from the **Video Setup** menu. With the AGC Bias adjustment screen displayed, press and hold the **User 1** button for approximately five seconds. All LEDs on the unit will then flash once to indicate successful programming. If programming fails for any reason (for example, if you attempt to program a button to the idle screen), all LEDs on the unit will flash three times quickly.

Note

If the programming fails, any function previously assigned to that button will have been erased, so the button will have to be reprogrammed.

Once the button is programmed, press it to jump to the menu or option assigned to it. Press it again to cycle through the values (if the button is assigned an option) or select the active menu choice (if the button is assigned a menu).

In the above example, press the **User 1** button to take you to the AGC Bias adjustment screen. Each additional press of the **User 1** button cycles through the allowed adjustment values.

Power-Up Buttons

Certain special functions of the DPS-575 are accessed by holding down specific front-panel buttons while turning on the unit.

Force Firmware Download

To force the unit into **Firmware Download** mode, hold down the **Enter** button while turning on the unit.

Normally, the unit automatically enters **Firmware Download** mode whenever the Windows-based Uploader® software attempts to upload a firmware upgrade file to the unit. *See* Appendix D, "The Uploader Software" on page 213. However, if the firmware within the unit becomes corrupted (possibly during a failed firmware upgrade), the unit may not start up properly, and thus would be unable to automatically enter **Firmware Download** mode. In this case, pressing the **Enter** button during power-up allows you to upload new firmware to the unit from the Uploader software.

Self-Test Mode

To force the unit into **Self-Test** mode, hold down the **Bypass** button while turning on the unit. **Self-Test** mode allows you to test the front-panel controls and indicators of the unit. The display panel indicates which particular controls and indicators are being tested.

When you are testing buttons, each press of a button is reported on the display panel, with the name of the button. To end the testing of buttons, turn the **Control** knob left to right.

When you are testing LEDs, each column of indicators on the buttons lights consecutively left to right. Each row of LEDs on the buttons then lights consecutively top to bottom. The columns and rows of the standalone LEDs follow the same pattern, and the process repeats. Press any button to end the testing of LEDs.

When you are testing the **Control** knob, each turn reflects a numeric value shown on the display panel. Press any button to end the testing of the **Control** knob, and begin the testing of buttons again.

To exit **Self-Test** mode, turn the unit off and than back on, or reset the unit using the **Reset** button.

Erase Firmware

After performing this operation, replacement FPGA and firmware files must be uploaded to the unit before the unit will be operational again.

To erase all FPGA and firmware files from the unit's memory, hold down the **Keyer** button while turning on the unit. This will have to be done if you are attempting to upgrade the unit's FPGAs or firmware, but there is not enough available memory to upload the new file.

Factory Reset

Clearing the unit's non-volatile memory will reset all configurations to factory default. All saved setting presets will be lost.

Holding down the **Memory** button while turning on the unit will perform a factory reset by clearing the unit's non-volatile memory.

Chapter 4

Feature Cross-Reference

Overview

This section provides a cross-reference between the key features of the DPS-575, and the primary menu options and controls associated with their use. Detailed explanations of these features appear in subsequent chapters. Menu options are listed in the format Menu/Submenu/Option. If all options in a menu or submenu are relevant to the feature, only the menu or submenu is listed.

Features

Animated Logo Insertion

Topic	Location
Keyer Setup Menu	Chapter 8, “Keyer Setup Menu” on page 125
Front Panel Controls/Mode Selection/Keyer	Chapter 3 “Keyer” on page 30
The Uploader Software	Appendix D, “The Uploader Software” on page 213
System Config/Misc Setup/Key Reload on Reset	Chapter 12, “System Config Menu” on page 167

Audio Configuration

Topic	Location
Front Panel Controls/Audio Input Selection	Chapter 3, “Operation–Front Panel Controls” on page 27
Audio Setup Menu	Chapter 7, “Audio Setup Menu” on page 95

Audio Delay

Topic	Location
Audio Setup/Global Audio Config/ Auto Track	Chapter 7, “Auto Track” on page 109
Audio Setup/Global Audio Config/ Pitch Change	Chapter 7, “Pitch Change” on page 116
Audio Setup/Both Channels/Ch1 and Ch2 Fixed Delay	Chapter 7, “Fixed Delay” on page 100

Audio-Follows-Video

Topic	Location
Audio Setup/Both Channels/Ch1 and Ch2-Aud Follows Vid	Chapter 7, “Aud Follows Vid” on page 107

Audio Input Selection

Topic	Location
Front Panel Controls/Audio Input Selection	Chapter 3, “Audio Input Selection” on page 27
Audio Setup/Both Channels/Ch1 and Ch2	Chapter 7, “Channel 1 and/or Channel 2” on page 96
Audio Setup/Both Channels/Ch1 and Ch2/Aud Follows Vid	Chapter 7, “Aud Follows Vid” on page 107

Audio Test Tone Generator

Topic	Location
Front Panel Controls/Audio Input Selection	Chapter 3, “Audio Input Selection” on page 27
Audio Setup/Both Channels/Ch1 and Ch2	Chapter 7, “Channel 1 and/or Channel 2” on page 96
Audio Setup/Both Channels/Ch1 and Ch2/Tone Level	Chapter 7, “Tone Level” on page 103
Audio Setup/Ch1 Tone/Freq-L and R	Chapter 7, “Test Freq-L” on page 104

Automatic Proc Amp Setup Mode (“Gimme Bars”)

Topic	Location
Front Panel Controls/Proc Amp Controls	Chapter 3, “Proc Amp Controls and User Keys” on page 32
Video Setup/Self Setup to Bars	Chapter 5, “Self Setup to Bars” on page 61

Bandwidth Limiting

Topic	Location
Noise Reduction/Horizontal Bandwidth	Chapter 9, “Horizontal Bandwidth” on page 142
Noise Reduction/Vertical Bandwidth-Y	Chapter 9, “Vertical Bandwidth-Y” on page 143
Noise Reduction/Vertical Bandwidth-C	Chapter 9, “Vertical Bandwidth-C” on page 144

Bypass Mode

Topic	Location
Front Panel Controls/Mode Selection	Chapter 3, “Mode Selection” on page 30
System Config/Misc Setup/Function Bypass	Chapter 12, “Function Bypass” on page 161
Audio Setup/Both Channels/Ch1 and Ch2/Analog Bypass	Chapter 7, “Analog Bypass” on page 97
Audio Setup/Both Channels/Ch1 and Ch2/AES/EBU	Chapter 7, “AES/EBU” on page 97

Comb Filtering

Topic	Location
Video Setup/3D Comb Decoder	Chapter 5, “3D Comb Decoder” on page 58
Video Setup/Comb Filler Decoder	Chapter 5, “Comb Filter Decoder” on page 59

DigiDuplex Mode

Topic	Location
Video Setup/DigiDuplex Mode	Chapter 5, “DigiDuplex Mode” on page 60
Audio Setup/Both Channels/Ch1 and Ch2/DDPlex Gain-R	Chapter 7, “DDPlex Gain-R” on page 99
Audio Setup/Both Channels/Ch1 and Ch2/DDPlex Gain-L	Chapter 7, “DDPlex Gain-L” on page 99
Audio Setup/Global Audio Config/ DigiDuplex Input	Chapter 7, “DigiDuplex Input” on page 113
Audio Setup/Global Audio Config/ DDPlex AES-EBU Out	Chapter 7, “DDPlex AES/EBU Out” on page 113
DigiDuplex Mode	Appendix E, on page 225

DV Device Control (Option)

Topic	Location
DV Control Menu	Chapter 10, “DV Control Menu (Option)” on page 147
Front Panel Controls/DV Control Mode	Chapter 3, “DV Control Mode” on page 36

Framestore/Linear Keyer

Topic	Location
Keyer Setup Menu	Chapter 8, “Keyer Setup Menu” on page 125
Front Panel Controls/Mode Selection	Chapter 3, “Mode Selection” on page 30
The Uploader Software	Appendix D, “The Uploader Software” on page 213
TSG-Image Grabbing Menu	Chapter 13, “TSG/Image Grabbing” on page 181
System Config/Flash Memory Mgmt Submenu	Chapter 12, “Flash Memory Mgmt” on page 179
System Config/Misc Setup/Key Reload on Reset	Chapter 12, “Key Reload on Reset” on page 167

Genlock Timing

Topic	Location
Timing Setup Menu	Chapter 11, “Timing Setup Menu” on page 149
System Config/Misc Setup/Genlock Changes	Chapter 12, “Genlock Changes” on page 165

GPI Control

Topic	Location
System Config/Misc Setup/GPI-1 Function	Chapter 12, “GPI-1 Function” on page 162
System Config/Misc Setup/GPI-2 Function	Chapter 12, “GPI-2 Function” on page 163
System Config/Misc Setup/GPO Function	Chapter 12, “GPO Function” on page 164

Hot Switch/Trouble Slide

Topic	Location
Video Setup/More Video Settings/ Hot Switch	Chapter 5, “Hot Switch” on page 62
Video Setup/More Video Settings/ Hot Switch Delay	Chapter 5, “Hot Switch Delay” on page 63
Video Setup/More Video Settings/ Trouble Slide	Chapter 5, “Trouble Slide” on page 63
Video Setup/More Video Settings/ Trouble File	Chapter 5, “Trouble File” on page 64

Key Channel Output

Topic	Location
Video Setup/More Video Settings/ Aux Output	Chapter 5, “Aux Output” on page 72

Noise Reduction (Option)

Topic	Location
Front Panel Controls: Mode Selection	Chapter 3, “Mode Selection” on page 30
Noise Reduction Menu	Chapter 9, “Noise Reduction Menu (Option)” on page 137
Video Setup/More Video Settings/ Chroma Pairing Filter	Chapter 5, “Chroma Pairing Filter” on page 74
Video Setup/3D Comb Decoder	Chapter 5, “3D Comb Decoder” on page 58
Video Setup/3D Chroma Motion Bias	Chapter 5, “3D Chroma Motion Bias” on page 59
Video Setup/Comb Filter Decoder	Chapter 5, “Comb Filter Decoder” on page 59

NTSC/PAL Configurations

Topic	Location
System Config/Line Standard (525/625)	Chapter 12, “Line Standard (525/625)” on page 154

Proc Amp

Topic	Location
Front Panel Controls: Proc Amp Controls	Chapter 3, “Proc Amp Controls and User Keys” on page 32
Video Setup Menu	Chapter 5, “Video Setup Menu” on page 53

Remote Control

Topic	Location
Video Connections	Chapter 2, “Video Connections” on page 9
System Config/Remote Control	Chapter 12, “Remote Control” on page 174
Ethernet Control	Appendix F, “Ethernet Control” on page 231

Test Signal Generator

Topic	Location
Front Panel Control/ Mode Selection	Chapter 3, “Mode Selection” on page 30
Video Setup/More Video Settings/ Test Signal Out	Chapter 5, “Test Signal Out” on page 67

Topic	Location
Video Setup/More Video Settings/ TSG	Chapter 5, “TSG” on page 68
The Uploader Software	Appendix D, “The Uploader Software” on page 213
TSG-Image Grabbing/Grab 10-bit Video	Chapter 13, “Grab 10-bit Video” on page 182

Time Base Corrector

Topic	Location
Video Setup/Sync Mode	Chapter 5, “Sync Mode” on page 57

Upgrading the Firmware

Topic	Location
The Uploader Software	Appendix D, “The Uploader Software” on page 213
Ethernet Control	Appendix F, “Ethernet Control” on page 231

Vertical Blanking

Topic	Location
System Config/One Time Video Setup/VITS-Blanking FLd 1	Chapter 12, “VITS/Blanking Fld1” on page 171
System Config/One Time Video Setup/VITS-Blanking FLd 2	Chapter 12, “VITS/Blanking Fld2” on page 172

Video Configuration

Topic	Location
Video Setup Menu	Chapter 5, “Video Setup Menu” on page 53
Front Panel Controls/Proc Amp Controls	Chapter 3, “Proc Amp Controls and User Keys” on page 32

Video Freeze Mode

Topic	Location
Video Setup/More Video Settings/ Strobe Rate	Chapter 5, “Strobe Rate” on page 66
Front Panel Controls: Freeze Controls	Chapter 3, “Freeze Controls” on page 29
Video Setup/More Video Settings/ Freeze Mode	Chapter 5, “Freeze Mode” on page 65
Video Setup/More Video Settings/ Field Select	Chapter 5, “Field Select” on page 66
Audio Setup/Global Audio Config/ Mute In Freeze	Chapter 7, “Mute In Freeze” on page 117

Video Input Selection

Topic	Location
Front Panel Controls/Video Input Selection Menu	Chapter 3, “Video Input Selection” on page 26
Video Setup/More Video Settings/ Input Source	Chapter 5, “Input Source” on page 66
Video Setup/More Video Settings/ CAV-Y Composite	Chapter 5, “CAV-Y Composite” on page 73

Video Strobe Mode

Topic	Location
Front Panel Controls/Freeze Controls	Chapter 3, “Freeze Controls” on page 29
Video Setup/More Video Settings/ Freeze Mode	Chapter 5, “Freeze Mode” on page 65
Video Setup/More Video Settings/ Strobe Rate	Chapter 5, “Strobe Rate” on page 66

VITS Insertion

Topic	Location
System Config/One Time Video Setup/VITS-Blanking Fld1	Chapter 12, “VITS/Blanking Fld1” on page 171
System Config/One Time Video Setup/VITS-Blanking Fld2	Chapter 12, “VITS/Blanking Fld2” on page 172

Voice-Over Mixing

Topic	Location
Audio Setup/Global Audio Config/ Voice-Over Pgm.Level	Chapter 7, “Voice-Over Pgm. Level” on page 118
Audio Setup/Global Audio Config/ Voice-Over Fade	Chapter 7, “Voice-Over Fade” on page 118
Audio Setup/Global Audio Config/ Voice-Over	Chapter 7, “Voice-Over” on page 119

Chapter 5

Video Setup Menu

Overview

The **Video Setup** menu contains the video configuration options that can be changed in the course of normal operation.

Video configuration options that are usually set only during initial integration of the unit (VITS insertion, line standard (525/625), etc.) are found in the **System Config** menu.

Configuration Options

Luma Gain

Description	Adjusts the Luminance Gain
Navigation Path	Video Setup>Luma Gain
Valid Range	-99.99 dB to 6.00 dB (Y/C, SDI, DV) -8.01 dB to 4.04 dB (CAV, Composite)
Default Setting	0.00 dB

While you are setting the Luminance Gain, the display panel also shows the maximum luminance level (in IRE or mV) of the incoming video signal.

Black Level

Description	Adjusts the Black Level
Navigation Path	Video Setup>Black Level
Valid Range	-30.0 IRE to 30.0 IRE (525-line mode) -210.0 mV to 210.0 mV (625-line mode)
Default Settings	0.0 IRE (525-line mode) 0.0 mV(625-line mode)

While you are setting the Black Level, the display panel also shows the minimum luma level of the incoming video signal.

Chroma Gain

Description	Adjusts the Chrominance Gain
Navigation Path	Video Setup>Chroma Gain
Valid Range	-99.99 dB to 6.00 dB (Y/C, SDI, DV, Composite) -8.01 dB to 4.07 dB (CAV)
Default Setting	0.00 dB

While you are setting the Chrominance Gain, the display panel also shows the saturation peak (in%) of the incoming video signal.

Hue Phase

Description	Adjusts the output phase
Navigation Path	Video Setup>Hue Phase
Valid Range	-45.010° to 44.080°
Default Setting	0.000°

Color Balance – Cb

Description	Adjusts the amount of the Y-B component in the processed video
Navigation Path	Video Setup>Color Balance–Cb
Valid Range	-100.0% to 100.0%
Default Setting	0.000°

Color Balance – Cr

Description	Adjusts the amount of the Y-R component in the processed video
Navigation Path	Video Setup>Color Balance–Cr
Valid Range	-100.0% to 100.0%
Default Setting	0.000°

Video AGC

Description	Enables or disables Automatic Gain Control (AGC) for the composite input
Navigation Path	Video Setup>Video AGC
Valid Settings	Disable, Enable
Default Setting	Disable
Related Setting	AGC Bias

AGC Bias

Description	Biases the video AGC targeting
Navigation Path	Video Setup>AGC Bias
Valid Range	-50 to +50 units
Default Setting	0
Related Setting	Video AGC

Normally, the AGC targets the sync tip at -40 IRE, which would result in white at 100 IRE. There are situations where it may be desirable to adjust the targeting (for example, to boost the signal before distribution over an exceptionally long cable run); this setting provides that adjustment.

Input H-Position

Description	Adjusts the Y/C horizontal delay (and thus horizontal position) applied to the input video signal
Navigation Path	Video Setup>Input H-Position
Valid Range	-592 ns to 518 ns
Default Setting	0 ns

Input Y/C Delay

Description	Adjusts the Y/C vertical delay applied to the input video signal
Navigation Path	Video Setup>Input Y/C Delay
Valid Range	-1185 ns to 1111 ns
Default Setting	0 ns

Sync Mode

Description	Specifies whether or not the composite input signal is to be time-base-corrected by the unit's TBC circuitry
Navigation Path	Video Setup>Sync Mode
Valid Settings	Sync, TBC, AutoSwitch
Default Setting	AutoSwitch

In **Sync** mode, the internal TBC is not active, and the TBC LED on the front of the unit is off. The Composite Input must be a stable, RS-170A signal (such as a satellite or live camera feed).

In **TBC** mode, generally used for heterodyned signals from sources such as a VTR, the unit time base corrects the Composite Input signal. The TBC LED on the front of the unit is on.

In **Auto-Switch** mode, the unit senses the incoming composite video signal and selects between **Sync** and **TBC** modes automatically as required. In this mode, the **TBC** LED flashes when the TBC is active.

The TBC is always used for S-Video input, independent of this setting.

3D Comb Decoder

Description	Configures the operation of Leitch's proprietary 12-bit adaptive 3-dimensional comb filter decoder
Navigation Path	Video Setup>3D Comb Decoder
Valid Settings	Disable, Luma, Chroma, Both Y+C
Default Range	Both Y+C (525-line mode) Luma (625-line mode)
Related Settings	Temporal NR-Luma, Temporal NR-Chroma, 3D Chroma Motion Bias

The 3D Comb Decoder option selects between adaptive 2D and adaptive 3D combing, whether to comb luminance, chroma, or both. 3D combing combines information from previous frames in order to eliminate residual subcarrier artifacts such as cross luminance and cross chroma.

3D combing can be utilized even for non-composite input signals. For example, if the component input video source was decoded from composite by a less sophisticated decoder, the 3D comb filter in the DPS-575 can be used to clean up the signal and remove cross luminance and chroma artifacts.

When set to **Disable**, 3D combing is disabled, and adaptive 2D combing is used.

The **Luma** and **Chroma** settings enable 3D adaptive combing on luminance and chrominance respectively, while **Both Y+C** enables 3D adaptive combing on both.

Under normal circumstances, **Both Y+C** is the desirable 3D combing mode. It is not possible, however, to use both Temporal Noise Reduction and 3D combing on the same channel simultaneously. For example, if **Temporal NR-Luma** is enabled, 3D combing of luminance is not possible, so the **3D Comb Decoder** must be disabled or set to **Chroma**. However, this is not a problem; with a sufficient Temporal Noise Reduction setting, there is no benefit to using the 3D comb filter simultaneously.

Setting this option to **Luma** or **Both Y+C** automatically disables **Temporal NR-Luma** (sets it to **3D Comb** mode). Similarly, setting this option to **Chroma** or **Both Y+C** automatically disables **Temporal NR-Chroma** (sets it to **3D Comb** mode).

When **Temporal NR-Chroma** and/or **Temporal NR-Luma** are enabled, this setting automatically changes accordingly (disabling 3D combing on luminance and/or chrominance). *See* Chapter 9 "Noise Reduction Menu (Option)" on page 137 for more information on the Temporal Noise Reduction settings.

3D Chroma Motion Bias

Description	Adjusts the algorithm of the adaptive 3D Comb Decoder to compensate for high-motion, color-intensive footage
Navigation Path	Video Setup>3D Chroma Motion Bias
Valid Settings	Low, Normal, High, Extreme
Default Settings	Normal Low (525-line mode) Low (625-line mode)
Related Setting	3D Comb Decoder, Comb Decoder

The **Normal** setting should be ideal for most applications. If chroma lag is visible in footage that contains color-intensive, high-speed motion, the **Low** setting should be used. The **High** and **Extreme** settings may be useful when processing images with little or no motion to provide the highest level of cross-color reduction.

Comb Filter Decoder

Description	Selects the mode of the Comb Filter Decoder
Navigation Path	Video Setup>3D Comb Decoder
Valid Settings	Notch, Adaptive
Default Setting	Adaptive
Related Settings	3D Comb Decoder, 3D Chroma Motion Bias

The **3D Comb Decoder** option (*see* "3D Comb Decoder" on page 58) specifies whether adaptive combing will be 2D or 3D.

DigiDuplex Mode

Description	Enables or disables DigiDuplex Mode
Navigation Path	Video Setup>DigiDuplex Mode
Valid Settings	Disable, Enable
Default Setting	Disable
Related Settings	DDPlex Gain-R, DDPlex Gain-L, DigiDuplex Input DDPlex AES/EBU Out (all in Audio Setup menu)

When **DigiDuplex Mode** is enabled, the **DigiDuplex** LED on the front panel is lit, and the unit's SDI video input is routed to all analog video outputs, while the selected analog video input is simultaneously synchronized and sent to the SDI output. With an audio-equipped unit, conversion between digital and analog audio is handled in a similar fashion, simultaneously with the video.

The video input front panel controls and menu options specify the analog video input to be synchronized and sent to the SDI output. Thus, SDI is not a valid video input selection while in **DigiDuplex Mode**. If you enable **DigiDuplex Mode** while the currently selected video input is SDI, the video input selection automatically changes to **Comp**.

The audio input front panel controls and menu options specify the audio input (Analog, AES/EBU, SDI, Test Tones, or Mute) to be synchronized and sent to the digital audio outputs (SDI Embedded and/or AES/EBU). Note that in **DigiDuplex Mode**, audio input selection for Channels 1 and 2 is locked together and must have the same input format. The **DigiDuplex Input** option of the **Audio Setup** menu determines which digital input (AES/EBU or SDI) is fed to the analog outputs.

Audio configuration for **DigiDuplex Mode** is controlled through the **Audio Setup** menu (*see* Chapter 7 "Audio Setup Menu" on page 95).

DigiDuplex Mode cannot be enabled when the **Dolby-E (Data)** mode is enabled in the **Audio Setup** menu. If **DigiDuplex Mode** is already enabled, it will be automatically disabled if **Dolby-E (Data) Mode** is then turned on in the **Audio Setup** menu. *See* Appendix E "DigiDuplex Mode" on page 225 for a detailed explanation of **DigiDuplex Mode** and its settings.

Self Setup to Bars

The **Self Setup to Bars** option activates **Automatic Proc Amp Setup** ("Gimme Bars") mode, in which the Luminance Gain, Black Level, Chrominance Gain, and Hue can all be automatically set by the unit based on incoming SMPTE bars.

To use the Gimme Bars automatic setup mode, SMPTE bars (or other 75% bars) must be supplied to the currently selected video input when this option is selected. The four Proc Amp parameters will be automatically adjusted. This is equivalent to pressing and holding the **Luma** front-panel button.

More Video Settings

Hot Switch

Description	Specifies what the unit will do when the selected input video signal is lost
Navigation Path	Video Setup>More Video Settings>Hot Switch
Valid Settings	Off, Freeze, To Black, To Tr. Slide, Go to Comp, Go to S-Video, Go to CAV, Go to SDI
Default Setting	Off
Related Settings	Hot Switch Delay, Trouble File

When the **Hot Switch** setting is off, no action will be taken when the input video signal is lost.

In **Freeze** mode, the outputs will hold the last good field of the input video signal.

In **To Black** mode, when the input video signal is lost, the outputs will hold the last good field of the input video signal for the time specified in **Hot Switch Delay**, after which the outputs will fade to black.

In **To Slide** mode, when the input video signal is lost, the outputs will hold the last good field of the input video signal for the time specified in **Hot Switch Delay,** after which the outputs will fade to a user-specified Trouble Slide.

The trouble slide to be displayed is selected in the **Trouble File** option documented later in this section (*see* Chapter 5 “Video Setup Menu” on page 53).

When this option is set to **Go to Comp, Go to S-Video, Go to CAV,** or **Go to SDI**, the unit will switch to the specified video input (composite, S-video, component, or SDI, respectively) when the input video signal is lost. Once this occurs, the video input selection will *not* switch back to the original video input once video is restored; it must be manually reset.

Hot Switch Delay

Description	Specifies the length of time, after the input video signal is lost, that the outputs will hold the last good field of the input video signal before fading to black or a Trouble Slide (as specified in the Hot Switch option).
Navigation Path	Video Setup>More Video Settings>Hot Switch Delay
Valid Range	10 fields to 3,600 fields
Default Setting	120 fields
Related Setting	Hot Switch

Trouble Slide

Description	Enables or disables the output of the currently selected Trouble Slide
Navigation Path	Video Setup>More Video Settings>Trouble Slide
Valid Settings	Disable, Enable
Default Setting	Disable
Related Setting	Trouble File

Enabling **Trouble Slide** immediately sends the currently selected trouble Slide to all video outputs. The trouble slide to be displayed is selected in the **Trouble File** option documented later in this section. *See* "Trouble File" on page 64.

Trouble File

Description	Selects the image to be output when the Trouble Slide display is enabled (either manually, by GPI trigger, or by the Hot Switch option).
Navigation Path	Video Setup>More Video Settings>Trouble File
Valid Range	<list of test patterns>
Default Setting	<default>
Related Settings	Trouble Slide, Hot Switch

When the **Trouble File** option is selected, the display panel shows a list of available images and indicates which one is currently selected (active). Change the currently selected image by scrolling through the list with the **Control** knob, and then press the **Enter** key to select the desired file. The file is loaded, and you are returned to the **Video Setup** menu. This does not activate the Trouble Slide; it simply loads the file into memory. If the Trouble Slide output is already enabled when a new image is selected, the output is switched to the new image.

These images could have been uploaded to the unit from a PC or grabbed from video from the **TSG/Image Grabbing** menu. *See* Appendix D “The Uploader Software” on page 213 for instructions on uploading new images to the unit, *see* Chapter 12 “System Config Menu” on page 153 for instructions on grabbing images from video.

A standard Trouble Slide, named **<default>**, is always selectable from this list, and consists of Full Field Bars (NTSC) or EBU Bars (PAL) behind the Source ID text specified in the **Source ID** option of the **System Config** menu.

Freeze Mode

Description	Selects which Freeze mode will be applied to the incoming video. The selected mode is activated by the Take button on the front panel of the unit.
Navigation Path	Video Setup>More Video Settings>Freeze Mode
Valid Settings	Frame, Field, Strobe, Film
Default Setting	Field
Related Settings	Field Select, Strobe Rate, Mute in Freeze

Frame mode freezes an entire frame of the incoming video.

Field mode freezes a single field of the incoming video. Select the field to be frozen in the **Field Select** menu option.

Strobe mode strobes the incoming video; the strobe rate is set in the **Strobe Rate** menu option.

Film mode applies a 3:2 pull-down to the incoming video, effectively giving 24 fps output from the video input.

The **Mute In Freeze** audio menu option specifies whether or not audio output is muted while the video is frozen in **Frame** or **Field** mode (*see* Chapter 5 “Audio Setup Menu” on page 95).

Field Select

Description	Selects which field of the incoming video will be frozen when Field Select mode is activated
Navigation Path	Video Setup>More Video Settings>Freeze Select
Valid Range	1, 2, 3, 4
Default Setting	1
Related Setting	Freeze Mode

Strobe Rate

Description	Selects the strobe rate (number of frames per update) applied to the incoming video when Strobe Rate mode is activated.
Navigation Path	Video Setup>More Video Settings>Strobe Rate
Valid Range	1 frame to 255 frames
Default Setting	10 frames
Related Setting	Freeze Mode

Input Source

Description	Selects which video Input Source is active
Navigation Path	Video Setup>More Video Settings>Input Source
Valid Settings	Composite, S-Video, Component, SDI, DV, Option
Default Setting	Composite
Related Setting	Freeze Mode

DV and **Option** settings are only available if the corresponding hardware module is installed.

The corresponding video input LED on the front panel will turn on to match the selection. If no input signal is present on the selected video input, the corresponding LED flashes.

Test Signal Out

Description	Enables or disables the Test Signal Out
Navigation Path	Video Setup>More Video Settings>Test Signal Out
Valid Settings	Disable, Enable
Default Setting	Disable
Related Setting	TSG

Enabling **Test Signal Out** activates the Test Signal Generator, sending the currently selected test pattern to all video outputs. The test pattern to be displayed is selected in the **TSG** option documented later in this section (*see* Chapter 5, "Video Setup Menu" on page 53).

The Test Signal Generator can also be enabled and disabled using the **TSG** button on the front panel of the unit.

When **TSG** mode is active, the LED on the **TSG** button flashes.

TSG

Description	Selects the test pattern to be output when the Test Signal Generator (TSG) is enabled
Navigation Path	Video Setup>More Video Settings>TSG
Valid Range	<list of test patterns>
Default Setting	This option has no default setting.
Related Setting	Test Signal Out

When the **TSG** option is selected, the display panel shows a list of available test patterns and indicates which one is currently selected (active). Change the current pattern by scrolling through the list with the **Control** knob, and pressing the **Enter** button to select a new pattern.

The list will include all built-in test patterns, and additional test patterns uploaded to the unit by the user or grabbed from video. *See* Appendix B "Test Signals" on page 197, for a list of built-in test patterns. The Source ID Slide test pattern consists of Full Field Bars behind the **Source ID** text specified in **Source ID** option of the **System** Config menu. *See* Appendix D "The Uploader Software" on page 213 or Appendix F "Ethernet Control" on page 231 for instructions on uploading new test patterns to the unit. *See* Chapter 13 "TSG/Image Grabbing" on page 181 for instructions on grabbing test signals from video. If the Test Signal Generator is enabled when a new test pattern is selected, that pattern is automatically loaded, and the output is switched to the new pattern.

Output Burst

Description	Controls whether or not color Output Burst is provided in the output video signal
Navigation Path	Video Setup>More Video Settings>Output Burst
Valid Settings	Auto-Yes, Auto-No, Force-Yes, Force-No
Default Setting	Force-Yes

When **Force-Yes** is selected, chroma burst is provided in the output signal, whether it is present in the input signal or not.

When **Force-No** is selected, chroma burst is not provided in the output signal, whether it is present in the input signal or not.

When **Auto-Yes** is first selected, chroma burst is initially provided in the output signal, whether it is present in the input signal or not. When the input signal subsequently changes, the provision of chroma burst automatically follows the input signal. Chroma burst is provided in the output if it is present in the input.

When **Auto-No** is first selected, chroma burst is initially not provided in the output signal, whether it is present in the input signal or not. When the input signal subsequently changes, the provision of chroma burst automatically follows the input signal. Chroma burst is provided in the output if it is present in the input.

SDI Clip

Description	Enables or disables the black clip level of the SDI Clip video outputs
Navigation Path	Video Setup>More Video Settings>SDI Clip
Valid Settings	Yes, No
Default Setting	No

When the **SDI Clip** option is set to **Yes**, all levels below black (digital level 64) are clipped in the SDI output; when set to **No**, digital levels below 64 are allowed.

Composite Clip

Description	Enables or disables the black clip level of the Composite Clip video outputs
Navigation Path	Video Setup>More Video Settings>Composite Clip
Valid Settings	Yes, No
Default Setting	No

When the **Composite Clip** option is set to **Yes**, all levels below black are clipped in the Composite output; when set to **No**, levels above black are allowed.

EDH Detection

Description	Enables or disables the Error Detection (EDH) polling for the SDI data stream
Navigation Path	Video Setup>More Video Settings>EDH Detection
Valid Settings	Enables or disables the Error Detection Handling (EDH) polling for the SDI data stream
Default Setting	Off
Related Setting	EDH Error Count

When the **EDH Detection** setting is off, EDH errors are neither detected nor reported, and the **EDH** LED on the front panel is off.

When this option is set to **Poll On**, EDH errors are detected, and the **EDH** LED flashes.

The actual count of EDH errors is reported in the **EDH Error Count** option detailed later in this section (*see* Chapter 5 “EDH Error Count” on page 71).

EDH Error Count

Description	Reports the EDH Error Count when EDH Detection is enabled.
Navigation Path	Video Setup>More Video Settings>EDH Error Count
Valid Settings	Enables or disables the Error Detection Handling (EDH) polling for the SDI data stream

Turn the control knob to clear the count.

Clamp Speed

Description	Specifies the input video Clamp Speed
Navigation Path	Video Setup>More Video Settings>Clamp Speed
Valid Settings	Normal, Fast
Default Setting	Normal

The **Clamp Speed** option is only applicable when the selected input video source is **Composite** or **Component.**

Normal sets the input video clamp to a 30-line time constant; **Fast** sets the input video clamp to a 3-line time constant.

Aux Output

Description	Specifies whether the Auxiliary Output Red, Green, Blue, and Sync connections on the Multi I/O breakout cable will provide key channel output, or RGB(S) output.
Navigation Path	Video Setup>More Video Settings>Aux Output
Valid Settings	Main, Key
Default Setting	Main
Related Settings	Aux Sync/Comp, Aux Sync Level

When **Main** is selected, the Aux Red, Aux Blue, and Aux Green connections provide RGB output; the Aux Sync connection provides sync (thus forming RGB-S output) or an additional composite output, depending on the current setting of the **Aux Sync/Comp** option detailed later in this section (*see* "Video Setup Menu" on page 53).

When **Key** is selected, the Aux Red, Aux Blue, Aux Green, and Aux Sync connections will provide key channel output (for routing to an external keyer), independent of the current setting of the **Aux Sync/Comp** option.

Aux Sync/Comp

Description	Specifies whether the Aux Sync/Comp connections on the Multi I/O breakout cable will provide sync or composite output
Navigation Path	Video Setup>More Video Settings>Aux Sync/Comp
Valid Settings	RGB+Comp, RGB+Sync
Default Setting	RGB+Comp
Related Settings	Aux Output, Aux Sync Level

When **RGB+Sync** is selected, the Aux Sync connection provides sync, which in combination with the Aux Red, Aux Blue, and Aux Green connections forms RGB-S output.

When **RGB+Comp** is selected, the Aux Sync connection will provide composite output, while the Aux Red, Aux Blue, and Aux Green connections form RGB output.

This setting is ignored when the **Aux Output** option detailed earlier in this section (*see* "Aux Output" on page 72) is set to **Key**.

Aux Sync Level

Description	Selects the level of the Aux Sync Level connection
Navigation Path	Video Setup>More Video Settings>Aux Sync Level
Valid Settings	300 mv, 8 v
Default Setting	300 mv

CAV-Y Composite

Description	Enables the use of the component analog video inputs CAV-Y Composite input as a second composite input source, instead of for component video
Navigation Path	Video Setup>More Video Settings>CAV-Y Composite
Valid Settings	Disable, Enable
Default Setting	Disable

Note

The unit is calibrated based on the CAV-Y In connection being used for component analog video. If the connection is to be used for composite video, a minor adjustment of trimpot IRV2 (CAV-Y) may be desired to attain perfect video level match between inputs.

When the **CAV-Y Composite** option is enabled, the CAV-Y In connection on the rear of the unit functions as a second composite video input. This input is then selected either as **CAV** from the front panel controls or **Component** from the **Input Source** option of the **Video Setup** menu.

When this option is disabled, the CAV-Y In connection functions normally as the luminance input for component video input.

Analog Width

Description	Specifies the number of Analog Width “samples” per video line
Navigation Path	Video Setup>More Video Settings>Analog Width
Valid Settings	Normal (704), Digital (720)
Default Setting	Normal (704)

A standard analog NTSC signal consists of 704 “samples” per line. Setting this option to **720** (common for digital signals) allows information to be stored outside of the normal NTSC width, but may cause problems with some equipment.

Chroma Pairing Filter

Description	Controls the degree of filtering of Chroma Pairing Filter artifacts
Navigation Path	Video Setup>More Video Settings>Chroma Pairing Filter
Valid Settings	Off, Norm, Max
Default Setting	Normal

The **Chroma Pairing Filter** is only available in **625-line** mode [PAL] and is only active when the unit's TBC is active. This option has no effect when the unit is in **525-line** mode or the TBC is not in use.

The **Norm** setting should be ideal for most situations, while the **Max** setting should be used in cases of severe chroma line pairing artifacting.

Note

If you are familiar with the DPS-470 (the predecessor to the DPS-575), you may notice that the **SDI Edge Insertion** option available on the DPS-470 is not configurable on the DPS-575. **SDI Edge Insertion** is present in the DPS-575 and is always enabled. "Blanking-to-setup" level transitions are dynamically added by the unit based on the current input video signal levels. If the input signal lacks setup (for example, super-black), no unnecessary transitions are generated. If the input signal has setup, correctly shaped edges are added to conform with RS-170A specifications (140 ns rise time).

Chapter 6

Menus and Features

Overview

This section provides an overview of the menu structure of the DPS-575 and shows where specific menu selections are located. Detailed explanations of the menus and options appear in subsequent chapters.

Menu Controls

All options and parameters for the DPS-575 are accessed through configuration menus, which appear on the display panel. The DPS-575 menus are organized into eight main functional areas:

- Video Setup
- Audio Setup (on audio-equipped units only)
- Keyer Setup
- Noise Reduction
- DV Control (on units with DV I/O module only)
- Timing Setup
- TSG/Image Grabbing
- System Config

For information about using the menus and submenus, *see* "Navigating Through the Menus" on page 21.

For information about setting the parameters, *see* "Changing Parameters" on page 21.

Video Setup

Main Menu Item	Submenu	
Video Setup	Video Gain	
	Luma Gain	
	Black Level	
	Chroma Gain	
	Hue Phase	
	Color Balance – Cb	
	Color Balance – Cr	
	Video AGC	
	AGC Bias	
	Input H-Position	
	Input Y/C Delay	
	Sync Mode	
	3D Comb Decoder	
	3D Chroma Motion Bias	
	Comb Decoder	
	DigiDuplex Mode	
	Self Setup to Bars	
	More Video Settings	*See* page 78

More Video Settings

Main Menu Item	Submenu	Option
Video Setup	More Video Settings	Hot Switch
		Hot Switch Delay
		Trouble Slide
		Trouble File
		Freeze Mode
		Field Select
		Strobe Rate
		Input Source
		Test Signal Out
		TSG
		Output Burst
		SDI Clip
		EDH Detection
		EDH Error Count
		Clamp Speed
		Aux Output
		Aux Sync/Comp
		Aux Sync Level
		CAV-Y Composite
		Analog Width
		Chroma Pairing Filter

Audio Setup

Main Menu Item	Submenu	Option
Audio Setup	Channel 1	*See* page 79
	Channel 2	*See* page 80
	Both Channels	*See* page 81
	Global Audio Config	*See* page 83

Channel 1

Main Menu Item	Submenu	Option
Audio Setup	Channel 1	Ch1-Input
		Ch1-Analog Bypass
		Ch1-AES/EBU
		Ch1-Gain-R
		Ch1-Gain-L
		Ch1-DDPlex Gain-R
		Ch1-DDPlex Gain-L
		Ch1-Fixed Delay
		Ch1-In Op. Level-R
		Ch1-In Op. Level-L
		Ch1-Headroom-R
		Ch1-Headroom-L
		Ch1-Out Op. Level-R
		Ch1-Out Op. Level-L
		Ch1-Tone Level
		Ch1-Test Freq-L
		Ch1-Test Freq-R
		Ch1-Balanced
		Ch1-Termination
		Ch1-Stereo Mode

Main Menu Item	Submenu	Option
Audio Setup, Cont.	Channel 1	Ch1-Phase Invert L
		Ch1-SDI In
		Ch1-Aud Follows Vid
		Ch1-AFV-Composite
		Ch1-AFV-SVideo
		Ch1-AFV-CAV
		Ch1-AFV-SDI
		Ch1-AFV-DV
		Ch1-AFV-Option
		Ch1-AFV-Option

Channel 2

Main Menu Item	Submenu	Option
Audio Setup	Channel 2	Input
		Ch2-Analog Bypass
		Ch2-AES/EBU
		Ch2-Gain-R
		Ch2-Gain-L
		Ch2-DDPlex Gain-R
		Ch1-DDPlex Gain-L
		Ch2-Fixed Delay
		Ch2-In Op. Level-R
		Ch2-In Op. Level-L
		Ch2-Headroom-R
		Ch2-Headroom-L
		Ch2-Out Op. Level-R
		Ch2-Out Op. Level-L
		Ch2-Tone Level

Main Menu Item	Submenu	Option
Audio Setup, Cont.	Channel 2	Ch2-Test Freq-L
		Ch2-Test Freq-R
		Ch2-Balanced
		Ch2-Termination
		Ch2-Stereo Mode
		Ch2-Phase Invert L
		Ch2-SDI In
		Ch2-Aud Follows Vid
		Ch2-AFV-Composite
		Ch2-AFV-SVideo
		Ch2-AFV-CAV
		Ch2-AFV-SDI
		Ch2-AFV-DV
		Ch2-AFV-Option

Both Channels

Main Menu Item	Submenu	Option
Audio Setup	Both Channels	Ch1-Input
		Ch2-Input
		Ch1-Analog Bypass
		Ch2-Analog Bypass
		Ch1-AES/EBU
		Ch2-AES/EBU
		Ch1-Gain-R
		Ch2-Gain-R
		Ch1-Gain-L
		Ch2-Gain-L
		Ch1-DDPlex Gain-R

Main Menu Item	Submenu	Option
Audio Setup, Cont.	Both Channels	Ch1-DDPlex Gain-L
		Ch2-DDPlex Gain-R
		Ch2-DDPlex Gain-L
		Ch1-Fixed Delay
		Ch2-Fixed Delay
		Ch1-In Op. Level-R
		Ch2-In Op. Level-R
		Ch1-In Op. Level-L
		Ch2-In Op. Level-L
		Ch1-Headroom-R
		Ch2-Headroom-R
		Ch1-Headroom-L
		Ch2-Headroom-L
		Ch1-Out Op. Level-R
		Ch2-Out Op. Level-R
		Ch1-Out Op. Level-L
		Ch2-Out Op. Level-L
		Ch1-Tone Level
		Ch2-Tone Level
		Ch1-Test Freq-L
		Ch2-Test Freq-L
		Ch1-Test Freq-R
		Ch2-Test Freq-R
		Ch1-Balanced
		Ch2-Balanced
		Ch1-Termination
		Ch2-Termination
		Ch1-Stereo Mode

Main Menu Item	Submenu	Option
Audio Setup, Cont.	Both Channels	Ch2-Stereo Mode
		Ch1-Phase Invert L
		Ch2-Phase Invert L
		Ch1-SDI In
		Ch2-SDI In
		Ch1-Aud Follows Vid
		Ch2-Aud Follows Vid
		Ch1-AFV-Composite
		Ch2-AFV-Composite
		Ch1-AFV-SVideo
		Ch2-AFV-SVideo
		Ch1-AFV-CAV
		Ch2-AFV-CAV
		Ch1-AFV-SDI
		Ch2-AFV-SDI
		Ch1-AFV-DV
		Ch2-AFV-DV
		Ch1-AFV-Option
		Ch2-AFV-Option

Global Audio Config

Main Menu Item	Submenu	Option
Audio Setup	Global Audio Config	Auto Track
		Master Mute
		Audio Bypass
		AES Data Grade
		AES Elec. Levels
		AES Source

Main Menu Item	Submenu	Option
Audio Setup, Cont.	Global Audio Config	96 kHz AES Output
		DigiDuplex Input
		DDPlex AES/EBU Out
		SDI Out
		Channel In->Out
		Sample Rate
		SDI Embedding
		SDI L/R De-Embed
		Pitch Change
		Mute In Freeze
		Dolby-E (Data) Mode
		Voice-Over Pgm. Level
		Voice-Over Fade
		Voice-Over
		Bit Width

Audio Limiter (Optional)

Main Menu Item	Submenu	Option
Audio Setup	Audio Limiter	Soft Limit
		Range
		Attack
		Decay

Keyer Setup

Main Menu Item	Submenu
Keyer Setup	Fade Out
	Cut Out
	Fade In
	File
	Settings
	Change Settings

Change Settings

Main Menu Item	Submenu	Option
Keyer Setup	Change Settings	Shift X
		Shift Y
		Fade In Time
		Max Opacity
		Fade Out Time
		Repeat Count
		Frame Rate
		Loop Mode
		Bumper Style
		Save These Settings

Noise Reduction (Option)

Main Menu Item	Submenu
Noise Reduction	Noise Reduction
	Split Screen
	Spatial Filter
	Spatial Filter Mix
	Horizontal Bandwidth
	Vertical Bandwidth-Y
	Vertical Bandwidth-C
	Temporal NR-Luma
	Temporal NR-Chroma

DV Control [option]

Main Menu Item
DV Control

Timing Setup

Main Menu Item	Submenu
Timing Setup	Genlock
	Subcarrier Phase
	Horizontal
	Line Advance
	Vertical

TSG/Image Grabbing

Main Menu Item	Submenu
TSG/Image Grabbing	Grab 10-bit Video
	Grab 8-bit Video
	...grab linear key
	Grab & Apply Luma Key
	Luma Key Gain
	Threshold

System Config

Main Menu Item	Submenu	Option
System Config	Line Standard (525/625)	
	Version Information	
	Warm Reset	
	Reset to Factory Defaults	
	Enable Extra Options	
	Factory Calibration	
	Misc Setup	*See* page 91
	One Time Video Setup	*See* page 92
	Remote Control Setup	*See* page 92
	Flash Memory Mgmt	*See* page 93

Misc Setup

Main Menu Item	Submenu	Option
System Config	Misc Setup	Internal Temp
		Video Delay
		Keylock
		Function Bypass
		GPI-1 Function
		GPI-2 Function
		GPO Function
		Genlock Changes
		VFD Brightness
		LED Brightness
		Idle Timeout
		Idle Cycle Time

Main Menu Item	Submenu	Option
System Config, Cont.	Misc Setup	Key Reload on Reset
		System Password
		Web Password

One Time Video Setup

Main Menu Item	Submenu	Option
System Config	One Time Video Setup	Source ID
		Setup Level (in)
		Setup Level (out)
		Chroma Coring
		VITS/Blanking Fld1
		VITS/Blanking Fld2
		VBI Setup Levels

Remote Control Setup

Main Menu Item	Submenu	Option
System Config	Remote Control Setup	Baud Rate
		Remote Control
		RS-422 Termination
		IP Address
		Netmask
		Gateway
		Machine Name
		DCN Address
		Remote Watch
		Ethernet Address

Flash Memory Mgmt

Main Menu Item	Submenu	Option
System Config	Flash Memory Mgmt	List Files
		Memory Usage
		Backup All Settings
		Restore All Settings

Chapter 7

Audio Setup Menu

Overview

The **Audio Setup** menu is used to configure and control the audio settings of the DPS-575.

The **Channel 1** submenu and **Channel 2** submenu of the **Audio Setup** menu contain the same option settings. They differ only in which channel the settings affect. For example, the **Channel 1** submenu contains the option **Ch1-Input**, while the **Channel 2** submenu contains the option **Ch2-Input**. Both options perform the same function, selecting the audio input for their respective channels. The functions of these options are discussed later in this chapter.

The **Both Channels** submenu is simply a concatenation of the **Channel 1** and **Channel 2** submenu, allowing you access to options for each channel from a single menu. These settings affect the channel specified in the prefix (**Ch1** or **Ch2**) of the options **Ch1-Input** or **Ch2-Input**.

The settings in the **Global Audio Config** submenu affect the audio of *both* Channel 1 and Channel 2 of the DPS-575.

Channel 1 and/or Channel 2

This section provides information on the following submenus in the **Audio Setup** menu: **Channel 1**, **Channel 2**, and **Both Channels**.

Description	Selects which audio input source is active.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Input
Valid Settings	Analog, AES/EBU, SDI, DV, Option, Mute, Test Tones
Default Setting	Analog
Related Setting	96 kHz AES Output

Note

DV and **Option** settings will only be available if the corresponding hardware module is installed.

Mute disables audio output; **Test Tones** outputs audio test tones from the unit. The parameters of the test tones (Level, Frequency) are set in the **Tone Level**, **Test Freq-L**, and **Test Freq-R** options detailed later in this chapter.

If **AFV** (Audio-Follows-Video) mode is enabled, changing the input setting performs a one-time override of **AFV** mode; the next time the video input selection is changed, the audio will again follow it.

The input selection for Channels 1 and 2 cannot be selected independently if **96 kHz AES Output** mode (detailed later in this chapter) is enabled; they must then always be set to the same input source.

When **Dolby-E (Data) Mode** is enabled (*see* "Dolby-E (Data) Mode" section on page 117), the audio input selection for Channel 1 is locked to AES/EBU, and only this channel supports Dolby-E data. SDI Embedded audio cannot be used while the unit is in this mode.

Analog Bypass

Description	Toggles between bypassing and processing the analog audio inputs
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Analog Bypass
Valid Settings	Process, Bypass
Default Setting	Process
Related Setting	96 kHz AES Output

Process mode is the normal mode of operation. In **Bypass** mode, no processing is applied to the analog audio inputs; they are bypassed directly to the analog audio outputs.

The analog audio input is also bypassed when the power to the unit is off.

This setting is overridden by the master **Bypass** button on the front panel of the unit, and the **Function Bypass** option in the **System Config** menu. If either is used to select the master **Bypass** mode, the analog audio input will be bypassed regardless of the setting of this option.

AES/EBU

Description	Toggles between bypassing and processing the AES/EBU audio inputs
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>AES/EBU
Valid Settings	Process, Bypass
Default Setting	Process

Process mode is the normal mode of operation. In **Bypass** mode, no processing is applied to the AES/EBU audio inputs; they are bypassed directly to the AES/EBU audio outputs.

The AES/EBU audio input is also bypassed when the power to the unit is off.

This setting is overridden by the master **Bypass** button on the front panel of the unit, and the **Function Bypass** option in the **System Config** menu. If either is used to select the **Master Bypass** mode, the analog audio input will be bypassed regardless of the setting of this option.

Gain-R

Description	Adjusts the right output audio gain
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Gain-R
Valid Range	-20.0 dB to 20.0 dB
Default Setting	0.0 dB

When **Dolby-E (Data) Mode** (detailed later in this chapter) is enabled, this setting is forced to unity (0.0 dB) for Channel 1.

Gain-L

Description	Adjusts the left output audio gain
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Gain-L
Valid Range	-20.0 dB to 20.0 dB
Default Setting	0.0 dB

When **Dolby-E (Data) Mode** (detailed later in this chapter) is enabled, this setting is forced to unity (0.0 dB) for Channel 1.

DDPlex Gain-R

Description	Adjusts the right audio gain for **DigiDuplex Gain-R** mode. This setting will not be available when **DigiDuplex** mode is not enabled.
Navigation Path	Audio Setup>Channel 1and/or Channel 2>DDPlex Gain-R
Valid Range	-20.0 dB to 20.0 dB
Default Setting	0.0 dB
Related Setting	DigiDuplex Mode (Video Setup menu)

DDPlex Gain-L

Description	Adjusts the left audio gain for DigiDuplex Gain-L mode. This setting will not be available when DigiDuplex Mode is not enabled.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>DDPlex Gain-L
Valid Range	-20.0 dB to 20.0 dB
Default Setting	0.0 dB
Related Setting	DigiDuplex Mode (Video Setup menu)

Fixed Delay

Note

The 96 kHz Sample Rate is used when the audio input selection is set to **AES/EBU** and the **96 kHz AES/EBU Output** option (detailed later in this chapter) is enabled. If the audio input selection is set to anything other than **AES/EBU** and the 96 kHz **AES/EBU** Output option is enabled, the 48 kHz Sample Rate is used (but AES/EBU output is still 96 kHz).

Description	Specifies the Fixed Delay to be added to the audio stream. The valid Fixed Delay range is dependent on the currently selected Sample Rate.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Fixed Delay
Valid Range	0.00 ms to 859 ms (96 kHz sample rate)* 0.00 ms to 1718 ms (48 kHz sample rate) 0.00 ms to 1870.9 ms (44.1 kHz sample rate) 0.00 ms to 2572.5 ms (32 kHz sample rate)
Default Setting	0.00 ms
Related Settings	Auto Track, Pitch Change, Sample Rate, 06 kHz AES/EBU Output

When **Auto Track** is enabled, the total audio delay will be the sum of the Fixed Delay specified here and the amount of Auto Track delay (the automatic delay of the audio data to match the delay of the video data through the Synchronizer).

In Op. Level-R

Description	Selects the right input operating level for the analog audio input
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>In Op. Level-R
Valid Range	+8 dBu, +4 dBu, 0 dBu, -4 dBu, -10 dBu
Default Setting	0 dBu
Related Setting	Headroom-R

The clipping level of the DPS-575 is +24 dBu. Hence, the sum of this setting and Headroom-R cannot exceed +24 dBu. If this setting is changed, the change would cause the +24 dBu maximum to be exceeded; in that case, Headroom-R is automatically adjusted.

In Op. Level-L

Description	Selects the In Op. Level-L operating the analog audio input
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>In Op. Level-L
Valid Settings	+8 dBu, +4 dBu, 0 dBu, -4 dBu, -10 dBu
Default Setting	0 dBu
Related Setting	Headroom-L

The clipping level of the DPS-575 is +24 dBu. Hence, the sum of this setting and Headroom-L cannot exceed +24 dBu. If Headroom-L is changed, the change would cause the +24 dBu maximum to be exceeded; in that case, the setting is automatically adjusted.

Headroom-R

Description	Specifies the Headroom-RQ–the level between the input operating level *(*In Op. Level-R*)* and the maximum input level (at which clipping may occur)
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Headroom-R
Valid Range	0.0 dB to 24.0 dB (In Op. Level-R)
Default Setting	18.0 dB
Related Setting	In Op. Level-R

The clipping level of the DPS-575 is +24 dBu. Hence, the sum of this headroom setting and In Op. Level-R cannot exceed +24 dBu; the unit will not allow a headroom setting that will exceed this maximum. If In Op. Level-R is changed, and the change causes the +24 dBu maximum to be exceeded, this setting is automatically adjusted.

Headroom-L

Description	Specifies Headroom-L–the level between the input operating level (In Op. Level-L) and the maximum input level (at which clipping may occur)
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Headroom-L
Valid Range	0.0 dB to 24.0 dB (In Op. Level-R)
Default Setting	18.0 dB
Related Setting	In Op. Level-L

The clipping level of the DPS-575 is +24 dBu. Hence, the sum of this headroom setting and In Op. Level-L cannot exceed +24 dBu; the unit will not allow a headroom setting that will exceed this maximum. If in Op. Level-L is changed, and the change causes the +24 dBu maximum to be exceeded, this setting is automatically adjusted.

Out Op. Level-R

Description	Selects the operating level (Out Op. Level-R) for the analog audio outputs
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Out Op. Level-R
Valid Settings	+8 dBu, +4 dBu, 0 dBu, -4 dBu, -10 dBu
Default Setting	0 dBu

Out Op. Level-L

Description	Selects the Out Op. Level-L operating level for the analog audio outputs
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Out Op. Level-L
Valid Settings	+8 dBu, +4 dBu, 0 dBu, -4 dBu, -10 dBu
Default Setting	0 dBu

Tone Level

Description	Selects the Tone Level of audio test tones
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Tone Level
Valid Range	38.0 dBFS to 0.0 dBFS
Default Setting	-18.0 dBFS

Audio test tones are generated by the unit when **Test Tones** is selected as the audio input source from the front panel controls or the **Input** option of the **Audio Setup** menu.

Test Freq-L

Description	Selects the frequency of the left audio test tone. The maximum selectable test tone frequency is dependent on the currently selected Sample Rate.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Test Freq-L
Valid Range	100 Hz to 21.5 kHz (48 kHz sample rate) 100 Hz to 20.0 kHz (44.1 kHz sample rate) 100 Hz to 14.5 kHz (32 kHz sample rate)
Default Settings	1000 Hz (Channel 1) 2000 Hz (Channel 2)
Related Setting	Sample Rate

Test Freq-R

Description	Selects the frequency of the right audio test tone. The maximum selectable test tone frequency is dependent on the currently selected Sample Rate.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Test Freq-R
Valid Range	100 Hz to 21.5 kHz (48 kHz sample rate) 100 Hz to 20.0 kHz (44.1 kHz sample rate) 100 Hz to 14.5 kHz (32 kHz sample rate)
Default Settings	2500 Hz (Channel 1) 3000 Hz (Channel 2)
Related Setting	Sample Rate

Balanced

Description	Specifies whether the analog audio inputs are balanced (Yes) or unbalanced (No)
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Balanced
Valid Settings	Yes, No
Default Setting	Yes

Termination

Description	Sets the analog input Termination to 600 Ω (600R) or high-impedance (High-Z)
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Termination
Valid Settings	600R, High-Z
Default Setting	Yes

Stereo Mode

Description	Selects which Stereo Mode will be used for the configuration of the left and right outputs of the channel
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Stereo Mode
Valid Settings	Mono Sum, Stereo, Swap L-R, Mono-L, Mono-R, Mute-L, Mute-R
Default Setting	Stereo

- In **Mono Sum** mode, both the left and right outputs are comprised of the sum of the left and right inputs, divided by 2 (i.e. (L+R)/2).
- **Stereo Mode** routes the left input to the left output and the right input to the right output.
- In **Mono-L** mode, the left input is routed to both outputs.
- In **Mono-R** mode, the right input is routed to both outputs.
- In **Swap L-R** mode, the left and right inputs are reversed to the outputs. That is, the left output is routed from the right input and vice versa.
- **Mute-L** mode routes the right input to the right output and mutes the left output.
- **Mute-R** mode routes the left input to the left output and mutes the right output.

Phase Invert L

Description	When enabled, this mode phase-shifts the left channel by 180° to compensate for incorrect wiring (+ and - reversed) in either the left or right of balanced analog audio connections.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Phase Invert L
Valid Settings	Off, On
Default Setting	Off

SDI In

Description	Selects which two channels of SDI Embedded audio from the incoming SDI video input will be used
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>SDI In
Valid Settings	Ch 1-2, Ch 3-4, Ch 5-6, Ch 7-8, Ch 9-10, Ch 11-12, Ch 13-14, Ch 15-16
Default Settings	Ch 1-2 (for DPS-575 Audio Channel 1) Ch 3-4 (for DPS-575 Audio Channel 2)

Aud Follows Vid

Description	Enables or disables AFV mode. In this mode, each of the selectable video inputs has an audio input selection linked to it. Whenever the video input selection is changed, the audio input selection for the channel automatically changes correspondingly.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Aud Follows Vid
Valid Settings	Off, On
Default Setting	Off
Related Settings	AFV-Composite, AFV-SVideo, AFV-CAV, AFV-SDI, AFV-DV, AFV-Option

AFV mode can be overridden by manually selecting a different audio input (from the front panel or with the input audio menu selection) when **AFV** is enabled. This does not, however, turn **AFV** mode off; the next time the video input selection is changed, the audio will again follow it. **AFV** mode can only be disabled through this setting.

When **AFV** mode is enabled for the channel, the **AFV** LED for the channel on the front panel of the unit will be lit.

The AFV link to each of the video inputs is set through the **AFV-Composite**, **AFV-SVideo**, **AFV-CAV**, **AFV-SDI**, **AFV-DV**, and **AFV-Option** menu options (*see* "AFV Format Options" on page 108).

AFV Format Options

Format options include AFV-Composite, AFV-SVideo, AFV-CAV, AFV-SDI, AFV-DV, and AFV-Option.

DV and **Option** settings will only be available if the corresponding hardware module is installed.

Description	The AFV-<format> options specify which audio input the channel will automatically switch to when the video input selection is changed to that video <format>. For example, the AFV-SDI option specifies which audio input will be switched to when the video input selection is changed to SDI.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>AFVH-<Format>
Valid Settings	Off, Analog, AES-EBU, SDI, DV, Option, Mute, Test Tones, Chan 1 or Chan 2
Default Setting	Off
Related Setting	Aud Follows Vid

If this option is set to **Off**, the audio input selection will *not* change when the video input selection is changed to the specified format; it will remain at its current selection.

Mute disables audio output; **Test Tones** outputs audio test tones from the unit. The parameters of the test tones (Level, Frequency) are set in the **Tone Level**, **Test Freq-L**, and **Test Freq-R** options (*see* "Tone Level" on page 103, and "Test Freq-L and "Test Freq-R" on page 104).

When this option is being set for Channel 1, **Chan 2** will be listed as an option; when this is selected, the audio input selection for Channel 1 will switch to match that of Channel 2 when the video input selection is changed to the specified format. When this option is being set for Channel 2, **Chan 1** will be listed as an option; when this is selected, the audio input selection for Channel 2 will switch to match that of Channel 1 when the video input selection is changed to the specified format. This overrides the swapping of channels with the **Channel In->Out** option.

For example, if **AFV-Composite** is set to **Analog**, the audio input selection for this channel will automatically switch to Analog when the video input selection is changed to **Composite**.

These settings are ignored when **AFV** mode is disabled (i.e. **Aud Follows Vid** is set to **Off**).

Global Audio Config.

Auto Track

Note that the total audio delay will be the sum of the Auto Track delay, and any delay specified in the **Fixed Delay** option detailed earlier in this chapter.

Description	Enables or disables audio Auto Track mode. When Auto Track is enabled, the unit will automatically delay the audio data to match the delay of the video data through the Synchronizer (up to 4 fields).
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Auto Track
Valid Settings	Off, On
Default Setting	On
Related Settings	Fixed Delay, Pitch Change

The **Auto Track** indicator on the front panel of the unit will be lit when this option is enabled.

Master Mute

Description	When enabled, this option mutes all of the audio output channels.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Master Mute
Valid Settings	Off, On
Default Setting	Off

Audio Bypass

Description	Toggles between bypassing and processing the analog and AES/EBU audio inputs
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Audio Bypass
Valid Settings	Process, Bypass
Default Setting	Process

Process mode is the normal mode of operation. In **Bypass** mode, no processing is applied to the analog and AES/EBU audio inputs; they are bypassed directly to the outputs.

The analog and AES/EBU audio inputs are also bypassed when the power to the unit is off.

This setting is overridden by the master **Bypass** key on the front panel of the unit. If the front panel is used to select the master **Bypass** mode, the analog and AES/EBU audio inputs will be bypassed regardless of the setting of this option.

AES Data Grade

Description	Specifies the AES/EBU grade as either professional or consumer, which affects how the channel status bits in the AES data stream are handled
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>AES Data Grade
Valid Settings	Pro, Consumer
Default Setting	Pro

AES Elec. Levels

Description	Specifies the AES/EBU electrical levels as either AES or S/PDIF
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>AES Elec. Levels
Valid Settings	AES, S/PDIF
Default Setting	AES
Related Setting	AES Data Grade

The **AES Data Grade** option may need to be changed in conjunction with this setting to process certain AES data streams properly.

AES Source

Description	Specifies whether the BNC or XLR connections on the optional 774-470A AES/EBU audio breakout cable are used for AES/EBU input
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>AES Source
Valid Settings	BNC, XLR
Default Setting	BNC
Related Setting	AES Data Grade

96 kHz AES Output

Description	Enables or disables 96 kHz AES/EBU output mode
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>96kHz AES Output
Valid Settings	Disable, Enable
Default Setting	Disable
Related Settings	Sample Rate, Input, Fixed Delay

A number of restrictions apply when this option is enabled:

- The **Sample Rate** setting is forced to 48 kHz.
- The audio input source for Channels 1 and 2 cannot be selected independently; they must always have the same input source.
- if the audio input selection is set to **AES/EBU**, the system will use a 96 kHz sampling rate, thus providing 96 kHz input and output. While using this 96 kHz sampling rate, only AES/EBU outputs are active; all other outputs are muted. The use of the 96 kHz sampling rate results in the maximum valid value of the **Fixed Delay** option (*see* "Fixed Delay" on page 100) being reduced.
- If the audio input selection is set to anything other than **AES/EBU**, the system will use the 48 kHz sampling rate, and up-sample to 96 kHz for the AES/EBU output. All other outputs remain at 48 kHz.

DigiDuplex Input

Description	Specifies which digital audio input source (SDI Embedded or AES/EBU) will be transcoded to the analog audio outputs when the unit is in DigiDuplex Mode. If the DDPlex AES/EBU Out option is set to Transcode, this is also the source that will be fed to the AES/EBU outputs
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>DigiDuplex Input
Valid Settings	SDI, AES-EBU
Default Setting	SDI
Related Settings	DigiDuplex Mode (Video Setup menu), DDPlex AES/EBU Input

See Chapter E "DigiDuplex Mode" on page 225 for a detailed explanation of **DigiDuplex Mode** and its settings.

DDPlex AES/EBU Out

Description	Specifies the source for the AES/EBU outputs when the unit is in DigiDuplex Mode
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>DDPlex AES/EBU Out
Valid Settings	Transcode, Sync
Default Setting	Sync
Related Settings	DigiDuplex Input, DigiDuplex Mode (Video Setup Menu)

Caution

If this option is set to **Transcode** and the **SDI Embedding** option has been disabled (thus disabling the embedding of audio into the SDI stream), the selected audio input which has gone through the Synchronizer will not be present on any of the audio outputs.

When this option is set to **Transcode**, the source of the AES/EBU outputs in **DigiDuplex Mode** is the digital audio input that has gone through the transcoder and is also being sent to the analog outputs. This input could be either SDI Embedded or AES/EBU audio, determined by the DigiDuplex Input setting (*see* page 113*)*.

When this option is set to **Sync**, the source of the AES/EBU outputs in **DigiDuplex Mode** is the selected audio input which has gone through the Synchronizer.

See Chapter E "DigiDuplex Mode" on page 225, for a detailed explanation of **DigiDuplex Mode** and its settings.

SDI Out

Description	Selects which four channels of the SDI video output the unit's four audio streams (left and right of Channels 1 and 2) will be embedded into. This setting will be ignored if the SDI Embedding option is off.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>SDI Out
Valid Settings	Ch 1-4, Ch 5-8, Ch 9-12, Ch 13-16
Default Setting	SDI Embedding

Channel In->Out

Description	Configures the routing of the input and output channels of the unit. The output Channels 1 and 2 can be swapped, or one input channel can be routed to both output channels.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Channel In->Out
Valid Settings	1-1 / 2-2, 1-1 / 1-2, 2-1 / 2-2, 1-2 / 2-1
Default Settings	1-1 / 2-2
Related Settings	Aud Follows Vid

- 1-1 / 2-2 routes input Channel 1 to output Channel 1, and input Channel 2 to output Channel 2.
- 1-1 / 1-2 routes input Channel 1 to both output channels.
- 2-1 / 2-2 routes input Channel 2 to both output channels.
- 1-2 / 2-2 routes input Channel 1 to output Channel 2, and input Channel 2 to output Channel 1, thus swapping the output channels.

When one input channel is being routed to both output channels, only that input channel's LED will be lit to indicate the audio input source.

This setting is overridden if **Aud Follows Vid** (detailed earlier in this chapter) is enabled, and the current video input source is AFV-linked to Channel 1 or Channel 2 (which will re-route the channel settings).

Sample Rate

Description	Adjusts the sampling rate of the audio input
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Sample Rate
Valid Settings	48 kHz, 44.1 kHz, 32 kHz
Default Setting	48 kHz
Related Settings	Test Freq-L, Test Freq-R, Fixed Delay, 96 kHz AES Output

As the SDI specification requires 48 kHz audio, this option must be set to **48 kHz** for SDI audio embedding to work. If the Sample Rate is set to a value other than **48 kHz**, SDI and DV inputs will be converted to the specified sample rate (except in **DigiDuplex Mode**), but SDI audio embedding will not function. The Sample Rate is forced to 48 kHz when **96 kHz AES Output** mode (*see* page 115) is enabled.

The **Sample Rate** setting affects the valid range of the **Test Freq-L**, **Test Freq-R**, and **Fixed Delay** options. *See* page 100 and page 104 for more information.

SDI Embedding

Note

SDI embedded audio is not supported when the **Dolby-E (Data) Mode** (*see* page 117) is enabled.

Description	Enables or disables embedding of digital audio into the SDI data stream. When enabled, the channels of the SDI video output into which the audio is embedded are determined by the SDI Out option detailed earlier in this section. *See* "SDI Out" on page 114.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>SDI Embedding
Valid Settings	Off, On
Default Setting	On
Related Setting	SDI Out

SDI L/R De-Embed

Description	Selects between interpretations of the SDI specification for embedded audio to compensate for variations in SDI audio implementation (how left and right are found in the data stream). This setting should be left at the default unless compatibility problems occur.
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>SDI L/R De-Embed
Valid Settings	Separate, Pair
Default Setting	Pair

Pitch Change

Description	Controls the rate of frequency (pitch) change introduced by the system while delaying the audio
Navigation Path	Audio Setup>Channel 1and/or Channel 2>Pitch Change
Valid Settings	Fast, Normal, Slow
Default Setting	Normal
Related Settings	Auto Track, Fixed Delay

The **Slow** setting corresponds to 0.54% (1/64 tone) pitch change for **Auto Track** delay, and 6.67% for Fixed Delay.

The **Normal** setting corresponds to 1% pitch change for **Auto Track** delay, and 10% for **Fixed Delay**.

The **Fast** setting corresponds to 1.5% pitch change for **Auto Track** delay, and 20% for **Fixed Delay**.

Mute In Freeze

Description	Specifies whether or not audio output should be muted when the incoming video is frozen in Frame or Field mode (*see* Chapter 5 "Video Setup Menu" on page 53)
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Mute in Freeze
Valid Settings	On, Off
Default Setting	On
Related Settings	Freeze mode (Video Setup menu)

Dolby-E (Data) Mode

Description	Enables or disables Dolby-E (Data) Mode, which allows Dolby-E compressed data streams to be routed through the DPS-575
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Dolby-E (Data) Mode
Valid Settings	Off, On
Default Setting	Off
Related Settings	Freeze mode (Video Setup menu)

A number of restrictions apply when this option is enabled:

- **DigiDuplex Mode** cannot be enabled when the **Dolby-E (Data) Mode** is enabled. If **DigiDuplex Mode** is already enabled, it will be automatically disabled when **Dolby-E (Data) Mode** is turned on.
- The **Dolby-E (Data)** mode operates only on Channel 1. When **Dolby-E (Data) Mode** is enabled, the audio input selection for Channel 1 automatically switches to **AES/EBU**.
- When **Dolby-E (Data) Mode** is enabled, gain for Channel 1 is forced to unity. That is, the **Ch1-Gain -R** and **Ch1-Gain-L** options (detailed earlier in this chapter) are automatically set to **0.0 dB**, and cannot be changed until **Dolby-E (Data) Mode** is disabled.
- SDI embedded audio is not supported.

Voice-Over Pgm. Level

Description	Specifies the amount to attenuate the program audio on input Channel 1 when Voice-over mixing is active
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Voice-Over Pgm. Level
Valid Settings	-20.0 dB to 0.0 dB
Default Setting	-8 dB
Related Settings	Voice-Over Fade, Voice-Over

See "Voice-Over" on page 119 for a full explanation of voice-over mixing.

Voice-Over Fade

Description	Specifies the duration over which the program audio on input Channel 1 will be ramped down and up to and from the specified Voice-Over Pgm. Level when voice-over mixing is activated and deactivated
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Voice-Over Fade
Valid Settings	0.0 sec to 5.0 sec
Default Setting	2.0 sec
Related Settings	Voice-Over Pgm. Level, Voice-Over

See "Voice-Over" on page 119 for a full explanation of voice-over mixing.

Voice-Over

Description	Activates and deactivates audio voice-over mixing
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Voice-Over
Valid Settings	Off, Active
Default Setting	Off
Related Settings	Voice-Over Pgm. Level, Voice-Over Fade, GPI-1 Function, GPI-2 Function, GPO Function

Voice-over mixing in the DPS-575 allows the program audio on input Channel 1 to be ramped down, mixed with voice-over audio on input Channel 2, and ramped back up upon completion of the voice-over.

When **Voice-Over** is activated, the program audio on input Channel 1 will immediately begin ramping down to the setting of the **Voice-Over Pgm**. **Level** option. The duration of the ramp-down is specified in the **Voice-Over Fade** option. The voice-over audio on Channel 2 is muted during this ramp-down. Once the ramp-down is complete, the program audio on input Channel 1 will be mixed with the voice-over audio on input Channel 2. When the **Voice-Over** option is later set back to **Off** (upon completion of the voice-over), the voice-over audio on Channel 2 is again muted, and the program audio on input Channel 1 will begin ramping back up to its original level.

Note that the gain of the voice-over audio on Channel 2 will not be automatically adjusted. It is recommended that the user adjust the gain of Channel 2 using the **Gain-L** and **Gain-R** options (*see* page 98 for more information) to compensate for the averaging/mixing that is occurring between Channels 1 and 2 during the voice-over. The recommended gain for the voice-over audio on Channel 2 is -0.5, the value specified in **Voice-Over Pgm. Level**. For example, if **Voice-Over Pgm. Level** is set to **6 db**, it is recommended that the user set **Gain-L** and **Gain-R** for Channel 2 to **3 db**.

Voice-over mixing may also be triggered through GPI control. When the **GPI-1 Function** or **GPI-2 Function** options (*see* "System Config Menu" on page 153) are set to **Voice-Over**, the unit's **Audio Voice-Over** mode will be activated by a GPI signal, exactly as if manually enabled. Voice-over mixing remains active while the GPI signal is present. Voice-over mixing is stopped and program audio begins ramping back up upon release of the GPI trigger, similar to setting **Voice-Over** back to **Off**.

When the **GPO Function** option of the **System Config** menu is set to **Voice-Over**, a GPI signal will be continuously output while the audio voice-over mixing is active. This signal will *not* be output during the fade-down and ramp-up of program audio that precede and follow, respectively, voice-over mixing.

Bit Width

Description	Specifies the sample size (bit width) of output audio
Navigation Path	Audio Setup>Channel 1 and/or Channel 2>Bit Width
Valid Settings	24 bits, 20 bits, 16 bits
Default Setting	24 bits

The 24 bits setting should be used unless the audio output from the unit is being sent to 20-bit or 16-bit equipment downstream. In that situation, the 24-bit audio would be truncated by the downstream equipment to its lower bit width, resulting in a higher perceived level of quantization noise. When this option is set to the bit width of the downstream equipment (20 bits or 16 bits), the DPS-575 will dither the audio down to the reduced sample size prior to output, reducing the perceived level of quantization noise.

Audio Limiter (Optional)

Soft Limit

Description	Specifies the audio Soft Limit. Audio that would exceed the Soft Limit is attenuated within the interval specified in the Range option
Navigation Path	Audio Setup>Audio Limiter>Soft Limit
Valid Settings	-51.0 dBFS to 0.0 dBFS, Off
Default Setting	Off
Related Settings	Range, Attack, Decay

The limiter will be activated only after the input audio level remains over the Soft Limit for the duration specified in the **Attack** option. Audio that exceeds the specified Soft Limit for less than the specified Attack time will not activate the limiter.

Once the limiter has been activated, it will remain active until the audio signal has returned below the Soft Limit for the duration specified in the **Decay** option. If the input audio signal returns below the Soft Limit level for less than the specified Decay, the limiter remains active.

If this option is set to the default **Off**, audio limiting will not be applied.

The following diagram shows the transfer function of the Audio Limiter:

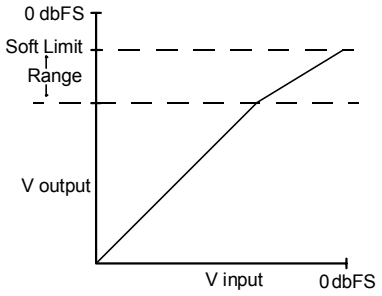


Figure 7-1. Audio Limiter Diagram

Range

Description	Specifies the interval below the specified Soft Limit over which audio is attenuated to conform to the Soft Limit.
Navigation Path	Audio Setup>Audio Limiter>Range
Valid Range	0.0 dB to -51.0 dB
Default Setting	-18.0 dB
Related Setting	Soft Limit

This option is ignored if the **Soft Limit** option is set to **Off**.

Attack

Description	Specifies duration for which the input audio level must remain over the specified Soft Limit before the audio limiter is applied
Navigation Path	Audio Setup>Audio Limiter>Attack
Valid Settings	1 ms to 100 ms
Default Setting	50 ms
Related Setting	Soft Limit

The limiter will be activated only after the input audio level remains over the Soft Limit for the duration specified in the **Attack** option. Audio that exceeds the specified Soft Limit for less than the specified Attack time will not activate the limiter.

Decay

Description	Specifies the duration for which input audio must return below the specified Soft Limit before the audio limiting is deactivated
Navigation Path	Audio Setup>Audio Limiter>Decay
Valid Settings	100 ms to 1000 ms
Default Setting	500 ms
Related Setting	Soft Limit

Once the input audio signal has exceeded the Soft Limit and the limiter has been activated, it will remain active until the audio signal has returned below the Soft Limit for the duration specified in the **Decay** option. If the input audio signal returns below the Soft Limit level for less than the specified Decay, the limiter will remain active.

Chapter 8

Keyer Setup Menu

Overview

Note

Settings related to playback of animations (**Repeat Count**, **Frame Rate**, **Loop Mode**, **Bumper Style**) will only be available if the **Animated Logo Inserter** option is installed. Without the **Animated Logo Inserter** option, the keyer will be limited to the display and keying of still images.

The **Keyer Setup** menu is used to configure and control the unit's linear keyer and digital framestore.

The Uploader Software is used to convert image and animation files into formats usable by the linear keyer, and upload them to the unit. *See* "The Uploader Software" on page 213 for important information about field ordering in graphics and animation files to be used with the keyer.

Fade Out

Description	Fades out the key currently being applied to the video
Navigation Path	Keyer Setup>Fade Out
Related Setting	Fade Out Time

The duration of the fade is determined by the **Fade Out Time** option in the **Change Settings** submenu of the **Keyer Setup** menu. The **Fade Ou**t option is equivalent to pressing the **Keyer** button on the front panel of the unit while a key is currently applied and the **Keyer Setup** menu is displayed. The LED on the **Keyer** button will flash while the key is fading out.

Cut Out

Description	Immediately removes (cuts) the key currently being applied to the video
Navigation Path	Keyer Setup>Cut Out

Fade In

Description	Fades in the currently selected key image or animation
Navigation Path	Keyer Setup>Fade In
Related Settings	Fade In Time, File

The duration of the fade is determined by the **Fade In Time** option in the **Change Settings** submenu of the **Keyer Setup** menu. This is equivalent to pressing the **Keyer** button on the front panel of the unit while the **Keyer Setup** menu is displayed.

If no key file has been previously selected, selecting the **Fade In** option will open the keyer's file selection list (equivalent to the **File** option of the **Keyer Setup** menu), where you can select a file from the still images and animations stored in the unit.

These images could have been uploaded to the unit. (*See* "The Uploader Software" on page 213 or "Ethernet Control" on page 231) grabbed from video from the **TSG/Image Grabbing** menu. *See* Chapter 13 "TSG/Image Grabbing" on page 181 for more information.

The LED on the **Keyer** button will flash while the key is fading in and will be lit while the key is being fully displayed.

File

The **File** option selects the key image or animation to be displayed. Selecting the **File** option displays a list of all image and animation files stored in the unit. To select the image or animation to be keyed, scroll through the list with the **Control** knob, and press the **Enter** button. The file will be loaded, and you will be returned to the **Keyer Setup** menu. This does *not* activate the keyer; it simply loads the file into memory.

These images could have been uploaded to the unit from a PC or grabbed from video from the **TSG/Image Grabbing** menu. *See* Appendix D "The Uploader Software" on page 213 for instructions on grabbing images from video.

Settings

Description	Selects a stored keyer settings profile. Selecting the Settings option displays a list of stored keyer settings profiles.
Navigation Path	Keyer Setup>Settings
Related Setting	Change Settings

To select the profile to be loaded, scroll through the list with the **Control** knob, and press the **Enter** button.

In addition to profiles previously stored by the user, the factory default keyer settings can be recalled.

Change Settings

The **Change Settings** submenu provides configuration options for determining how a key will be changed and displayed.

Shift X

Description	Adjusts the horizontal position of the key over the incoming video
Navigation Path	Keyer Setup>Change Settings>Shift X
Valid Range	0 pels to 718 pels
Default Setting	0 pels

If the key is active (currently being displayed), it will be repositioned in real-time on the live outputs as this value is adjusted.

Shift Y

Description	Adjusts the vertical position of the key over the incoming video
Navigation Path	Keyer Setup>Change Settings>Shift Y
Valid Range	0 lines to 486 lines (525-line mode) 0 lines to 572 lines (625-line mode)
Default Setting	0 lines

If the key is active (currently being displayed), it will be repositioned in real-time on the live outputs as this value is adjusted. Adjustments are in increments of 2.

Fade In Time

Description	Specifies the duration of the fade-in when a key is changed onto the video outputs
Navigation Path	Keyer Setup>Change Settings>Fade In Time
Valid Range	0 to 3,600 fields
Default Setting	60 fields (525-line mode) 50 fields (625-line mode)
Related Settings	Fade In

Max Opacity

Description	Specifies the opacity percentage of a key when it is completely “displayed” (after it has been faded in)
Navigation Path	Keyer Setup>Change Settings>Max Opacity
Valid Range	0% to 100%
Default Setting	100%

Fade Out Time

Description	Specifies the duration of the fade-out when a key is changed to off
Navigation Path	Keyer Setup>Change Settings>Fade Out Time
Valid Range	0 to 3,600 fields
Default Setting	60 fields (525-line mode) 50 fields (625-line mode)
Related Setting	Fade Out

Repeat Count

Description	Specifies the number of times an animated key (.dan file) will be repeated before automatically fading out
Navigation Path	Keyer Setup>Change Settings>Repeat Count
Valid Range	1 to 255 repetitions
Default Setting	2 repetitions
Related Setting	Loop Mode

You may override this setting and manually fade out or cut out the key from the **Keyer Setup** menu, or you may use the **Keyer** front-panel button to fade out the animation. This value has no effect on still image keys, which will be displayed until manually faded or cut out.

This value is ignored if the **Loop Mode** option is set to **Forever**.

Frame Rate

Description	Specifies the speed at which an animated key (.dan file) will be played back
Navigation Path	Keyer Setup>Change Settings>Frame Rate
Valid Settings	Normal, 1/2, 1/3, 1/4, 1/5, 1/6, 1/7
Default Setting	Normal

This option effectively allows the animated key to be played in slow motion.

Loop Mode

Description	Specifies whether an animated key (.dan file) will loop indefinitely until manually stopped by the user, or will loop the number of times specified in the Repeat Count option
Navigation Path	Keyer Setup>Change Settings>Loop Mode
Valid Settings	Repeat, Forever
Default Setting	Repeat
Related Setting	Repeat Count

In **Repeat** mode, the animation will loop the number of times specified in the **Repeat Count** option, and then automatically fade out. You may override the **Repeat Count** and manually fade out or cut out the key from the **Keyer Setup** menu, or use the **Keyer** front-panel button to fade out the animation.

In **Forever** mode, the animation will loop indefinitely until you manually fade or cut out the key from the **Keyer Setup** menu, or use the **Keyer** front-panel button to fade out the animation.

This setting has no effect on still image keys, which will always be displayed until manually faded or cut out.

Bumper Style

Description	Specifies whether an animated key (.dan file) will be playing during fade-in and fade-out, or held on the first and last frame, respectively, during the transition
Navigation Path	Keyer Setup>Change Settings>Bumper Style
Valid Settings	None, Single Frame
Default Setting	None

When the **Bumper Style** is set to **None**, the animation will be playing as it is fading in and out.

When the **Bumper Style** is set to **Single Frame**, the first frame of the animation will be shown and held during the fade-in; the animation will begin playing once fade-in is complete. The last frame of the animation will be held during fade-out (for both manual and automatic fade-out).

Save These Settings

Description	Stores the current keyer settings into the next available settings profile, for later recall with the Settings option of the Keyer Setup menu
Navigation Path	Keyer Setup>Change Settings>Save These Settings
Related Settings	Settings; Flash Memory Mgmt (System Config menu)

The settings will be stored under the name **KeySettings X,** where **X** is the next available free profile number. Settings files can be renamed or deleted from the **Flash Memory Mgmt** option of the **System Config** menu.

Chapter 9

Noise Reduction Menu (Option)

Overview

On units equipped with the NR-575 Noise Reduction and Video Bandwidth Filtering Option, the **Noise Reduction** menu is used to configure and enable the noise reduction features of the DPS-575.

Noise Reduction

Description	Enables or disables the noise reduction features of the unit
Navigation Path	Noise Reduction (Option)>Noise Reduction
Valid Settings	Disable, Enable
Default Setting	Disable

When this setting is enabled, the noise reduction features will follow the configuration specified in the options detailed later in this section. When disabled, no noise reduction options will be applied, regardless of the configuration settings.

Noise reduction can also be enabled and disabled using the **N/R** button on the front panel of the unit.

The light on the **N/R** button on the front panel of the unit will be on when noise reduction is enabled.

Split Screen

Description	Splits the video output image in half (between video with and without noise reduction applied), providing a visual reference for adjusting noise reduction settings
Navigation Path	Noise Reduction>Split Screen
Valid Settings	Off, On, Auto
Default Setting	Off

When this option is set to **Off**, the output video is not split, and the currently enabled noise reduction settings are applied to the entire output image.

When this option is set to **On**, the output video image is split in half. The left half of the screen shows the video with the currently enabled noise reduction settings applied; the right half of the screen shows the video with no noise reduction applied.

When this option is to set **Auto**, the output video image is split while a noise reduction setting is being adjusted; when no adjustment is being actively made, the output video is not split, and the currently enabled noise reduction settings are applied to the entire output image.

This option is ignored if the **Noise Reduction** option is set to **Disabled**.

Spatial Filter

Description	Controls the strength of the spatial noise reduction filter
Navigation Path	Noise Reduction>Spatial Filter
Valid Settings	Off, On, Max
Default Setting	Off
Related Setting	Spatial Filter Mix

When this option is set to **Off**, no spatial noise reduction is applied.

When this option is set to **Max**, the spatial noise reduction filter examines all 8 pixels adjacent to each target pixel, plus the target pixel itself.

When this option is set to **On**, the spatial noise reduction filter examines 5 pixels for its calculations.

This option is ignored if the **Noise Reduction** option is set to **Disabled**.

Spatial Filter Mix

Description	Controls the weighting in the output of the results of the spatial noise reduction filter vs. the original input
Navigation Path	Noise Reduction>Spatial Filter Mix
Valid Settings	Min, 1 to 6, Max
Default Setting	Max
Related Setting	Spatial Filter

When this option is set to **Max**, the output is based entirely on the results of the spatial noise reduction filter.

When this option is set to **Min**, the output is based entirely on the original input.

When this option is set to a middle value (such as 3 or 4), the output is roughly the average of the original input, and the results of the Spatial noise reduction filter.

This option is ignored if the **Noise Reduction** option is set to **Disabled**.

Horizontal Bandwidth

Description	Adjusts the horizontal setting of the 2D digital bandwidth filtering
Navigation Path	Noise Reduction>Horizontal Bandwidth
Valid Settings	Min, 1 to 15, Max
Default Setting	Max
Related Settings	Vertical Bandwidth-Y, Vertical Bandwidth-C

Digital bandwidth filtering is particularly useful when the output will be fed to a downstream digital device such as an MPEG encoder.

This option is ignored if the **Noise Reduction** option is set to **Disabled**.

Vertical Bandwidth-Y

Description	Adjusts the degree of the digital vertical bandwidth filtering on the luminance of the signal
Navigation Path	Noise Reduction>Vertical Bandwidth-Y
Valid Settings	Min, 1 to 7, Max
Default Setting	Max
Related Settings	Horizontal Bandwidth, Vertical Bandwidth-C

Digital bandwidth filtering is particularly useful when the output will be fed to a downstream digital device such as an MPEG encoder.

This option is ignored if the **Noise Reduction** option is set to **Disabled**.

Vertical Bandwidth-C

Description	Adjusts the degree of the digital vertical bandwidth filtering on the chrominance of the signal
Navigation Path	Noise Reduction>Vertical Bandwidth-C
Valid Settings	Min, 1 to 7, Max
Default Setting	Max
Related Settings	Horizontal Bandwidth, Vertical Bandwidth-Y

Digital bandwidth filtering is particularly useful when the output will be fed to a downstream digital device such as an MPEG encoder.

This option is ignored if the **Noise Reduction** option is set to **Disabled**.

Temporal NR-Luma

Description	Enables and controls the strength of the luminance temporal noise reduction
Navigation Path	Noise Reduction>Temporal NR-Luma
Valid Settings	Comb-3D, Min, 2 to 15, Max
Default Setting	Comb-3D
Related Settings	3D Comb Decoder, Temporal NR-Chroma

When this option is set to **Comb-3D**, luminance temporal noise reduction is disabled, allowing the use of the 3D comb filter decoder on luminance.

The other valid settings control the averaging effect of previous frames on the output, for example, how heavily the output is weighted towards past frames vs. the current frame being processed.

When this option is set to **Min**, the output is based almost entirely on the current frame being processed. When this option is set to **Max**, the output is based almost entirely on information from past frames, creating an undesirable shadowing effect.

It is not possible to use both Temporal Noise Reduction and 3D combing on the same channel simultaneously. (For example, if **Temporal NR-Luma** is enabled, 3D combing of luminance is not possible, so the 3D comb decoder must be disabled or set to **Chroma**.) This is not a problem; with a sufficient **Temporal Noise Reduction** setting, there would be no benefit to using the 3D comb filter simultaneously.

Setting this option to any value other than **Comb-3D** automatically disables 3D combing of luminance in the **3D Comb Decoder** option.

This setting will be automatically disabled (set to **Comb-3D**) if you enable 3D combing on luminance (by setting **3D Comb Decoder** to **Luma** or **Both Y+C**).

This option is ignored if the **Noise Reduction** option is set to **Disabled**.

Temporal NR-Chroma

Description	Enables and controls the strength of the chrominance temporal noise reduction
Navigation Path	Noise Reduction>Temporal NR-Chroma
Valid Settings	Comb-3D, Min, 2 to 15, Max
Default Setting	Comb-3D
Related Settings	3D Comb Decoder, Temporal NR-Chroma

When this option is set to **Comb-3D**, chrominance temporal noise reduction is disabled, allowing the use of the 3D comb filter decoder on chrominance.

The other valid settings control the averaging effect of previous frames on the output, for example, how heavily the output is weighted towards past frames vs. the current frame being processed.

When this option is set to **Min**, the output is based almost entirely on the current frame being processed. When this option is set to **Max**, the output is based almost entirely on information from past frames, creating an undesirable shadowing effect.

It is not possible to use both Temporal Noise Reduction and 3D combing on the same channel simultaneously. (For example, if **Temporal NR-Chroma** is enabled, 3D combing of chrominance is not possible, so the 3D comb decoder must be disabled or set to **Luma**.) This is not a problem; with a sufficient Temporal Noise Reduction setting, there would be no benefit to using the 3D comb filter simultaneously.

Setting this option to any value other than **Comb-3D** automatically disable 3D combing of chrominance in the **3D Comb Decoder** option.

This setting will be automatically disabled (set to **Comb-3D**) if you enable 3D combing on chrominance (by setting **3D Comb Decoder** to **Chroma** or **Both Y+C**).

This option is ignored if the **Noise Reduction** option is set to **Disabled**.

Chapter 10

DV Control Menu (Option)

Overview

On units with the DVM-4010 DV I/O module installed, selecting **DV Control** from the **Main** menu puts the unit into **DV Control** mode. In **DV Control** mode, you can control transport of a DV device (such as a deck or camcorder) connected to the DPS-575 by IEEE-1394 (Firewire) from the front panel.

DV Control

Key	Function
Luma	Stop
Black	Rewind/Scrub Backward
Chroma	Play
Hue	Fast Forward/Scrub Forward
Memory	Record (used in conjunction with Play)
Option	Pause
Default	Toggle the Control knob between Jog mode and Shuttle mode

When **DV Control** is selected, the display will change to show the current time code of the DV device, as well as the transport status (such as Play, Stop). While in **DV** mode, the normal functionality of the front panel controls is replaced by DV device control.

On the front panel of the unit, standard representations of transport controls appear below many of the buttons. The buttons used for DV device control are as follows:

The **Control** knob functions as a jog or shuttle controller, depending on the currently selected mode.

To exit **DV Control** mode and return to normal operation, press the **Exit** button.

Chapter 11

Timing Setup Menu

Overview

The **Timing Setup** menu is used to time the unit to an external Genlock source. Note that changes to these options will not be available if the **Genlock Changes** setting in the **System Config** menu is disabled.

Genlock

Description	Determines whether the unit will use an external Genlock source or its own internal crystal for timing
Navigation Path	Timing Setup>Genlock
Valid Settings	Auto, Internal
Default Setting	Auto

If the unit is configured to **Auto Genlock** mode, it will use the timing of a connected stable Genlock source, and the **Genlock** indicator of the unit will be lit. If no Genlock source is present, the unit will automatically switch to using its own internal crystal for timing, and this indicator will flash.

If the unit is configured to **Internal Genlock** mode, it will operate on its own internal crystal, and the **Genlock** indicator will be unlit.

Sub Carrier Phase

Description	Adjusts the sub carrier Genlock timing, with 0.176° resolution
Navigation Path	Timing Setup>Sub Carrier Phase
Valid Range	0.000° to 360.000°
Default Setting	0.000° provides 0 SCH in NTSC or PAL

Horizontal

Description	Adjusts the horizontal position Genlock timing with 4.630 ns resolution
Navigation Path	Timing Setup>Horizontal
Valid Range	-4.741 µs to 4.736 µs
Default Setting	0.000 ns

This menu will appear if external genlock is provided; otherwise, it will not appear.

Line Advance

Description	Adjusts the vertical position Genlock timing, by 1 line
Navigation Path	Timing Setup>Line Advance
Valid Setting	Normal one line only
Default Setting	Normal

This menu will appear if external genlock is provided; otherwise, it will not appear.

Vertical

Description	Adjusts the vertical position Genlock timing by up to 1 frame
Navigation Path	Timing Setup>Vertical
Valid Range	0 to 524 lines (NTSC) 0 to 624 lines (PAL)
Default Setting	0 lines

This menu will appear if external genlock is provided; otherwise, it will not appear.

Chapter 12

System Config Menu

Overview

The **System Config** menu is used for configuration of the DPS-575. Settings in the **System Config** menu are generally used for initial setup of the unit, not in regular operation.

Line Standard (525/625)

The **Line Standard** submenu allows you to select between 525-line (NTSC) and 625-line (PAL) standards.

Current

The **Current** field displays the line standard currently in use:

- 525 lines: 525-line standard, user-specified.
- 625 lines: 625-line standard, user-specified.
- Auto (525): 525-line standard, auto-detected.
- Auto (625): 625-line standard, auto-detected.

Switch to 525

This option is only available when the DPS-575 is currently running in **525-line** mode (either user-specified or automatically detected). Selecting this option disables line standard auto-switching and switches the unit to **525-line** mode.

Switch to 625

This option is only available when the DPS-575 is currently running in **625-line** mode (either user-specified or automatically detected). Selecting this option disables line standard auto-switching and switches the unit to **625-line** mode.

Disable Autoswitch / Switch to Auto

This option enables or disables line standard auto-switching. When line standard auto-switching is enabled, the unit will automatically switch line standards based on the current input signal, and the **Current** field will report **Auto (XXX)**, where **XXX** is the detected line standard.

When line standard auto-switching is disabled, the unit will remain in the currently selected line standard, regardless of the video input.

Version Information

The **Version Information** submenu reports the serial number of the unit and the version numbers (or dates) of the firmware and field-programmable gate arrays of the unit, as well as any installed option modules. The version numbers of the following are reported:

- Flash Firmware (with checksum)
- Video FPGA 525
- Video FPGA 625
- Audio FPGA
- DV-Gear
- Audio H/W
- Option Card
- HTML Files
- Boot EPROM
- Extra Options

Warm Reset

The output video signals will be briefly interrupted (no output/sync) during the reset.

The **Warm Reset** option resets the DPS-575.

Reset to Factory Defaults

If you confirm the factory reset, all configuration options will be reset to factory defaults. All saved settings presets will be lost.

The **Reset to Factory Defaults** option performs a factory reset by clearing the unit's non-volatile memory.

You will be asked to cancel or confirm the factory reset.

Enable Extra Options

The **Enable Extra** option enables additional options that you have purchased for the DPS-575. An unlock code, consisting of eight hexadecimal digits, will be provided to you when you purchase the option. Once the option is installed into the unit, this unlock code must be entered here to enable the option.

Press the **Enter** button to cycle through the digit positions (1 to 8) to be modified. Use the **Control** knob to select a new digit for that position. Press the **Exit** button to store the unlock code. An error message will appear if the unlock code is invalid.

Factory Calibration

Caution

Do not enter this menu unless instructed to do so by Leitch Technical Support. Modification of calibration parameters will affect video performance, and may degrade operation of the unit.

The **Factory Calibration** option adjusts the calibration of the DPS-575.

Misc Setup

Internal Temp

The **Internal Temp** field reports the internal temperature of the unit, in Celsius.

Video Delay

The **Video Delay** field reports the current measured video delay in microseconds (ms).

Keylock

Description	Enables the Keylock feature of the unit, which disables front panel controls
Navigation Path	System Config>Misc Setup>Internal Temp
Valid Settings	Normal, Enable
Default Setting	Normal

This option enables the **Keylock** feature of the unit, which disables front panel controls.

This feature should be used only when the DPS-575 is being controlled remotely. If this option is not activated (for example in **Normal** mode), then it is possible for a local user to modify the remote user's settings from the front panel. When enabled, this option disables front-panel access, so all control must be done remotely.

To return to **Normal** mode, press and hold the **Enter** and **Exit** front-panel buttons simultaneously, or change the **Keylock** setting from the remote controller.

Function Bypass

Description	Toggles between the master Process and Bypass modes
Navigation Path	System Config>Misc Setup>Function Bypass
Valid Settings	Process, Bypass
Default Setting	Process

Process mode is the normal mode of operation. In **Bypass** mode, no processing is applied to the Composite In video signal; it is passed directly to Composite Out. Similarly, in **Bypass** mode, no processing is applied to the analog and AES/EBU audio inputs; they are routed directly to the outputs.

This is equivalent to the use of the **Bypass** button on the front panel. The light on the **Bypass** button flashes while the unit is in master **Bypass** mode.

Composite In and the analog and AES/EBU audio inputs are also bypassed when the power to the unit is off.

The **Function Bypass** option can override the **Analog Bypass** and **AES/EBU** bypass options in the **Audio Setup** menu. If **Function Bypass** is enabled (set to **Bypass**), the analog and AES/EBU audio inputs are bypassed, regardless of their setting in the **Audio Setup** menu.

GPI-1 Function

Description	Selects which function should be triggered when a GPI pulse is received on the GPI-1 connection of the Multi I/O breakout cable
Navigation Path	System Config>Misc Setup>GPI-1 Function
Valid Settings	Disabled, Freeze, Keyer, Trouble Slide, User 1, Voice-Over
Default Setting	Disabled

When the **GPI-1 Function** is set to **Disabled**, no action will be taken on receipt of a GPI pulse.

When set to **Freeze**, the currently selected **Freeze Mode** (*see* "Freeze Mode" on page 65) will be applied to the incoming video while a GPI signal is present, similar to pressing the **Take** button on the front panel of the unit. The live video feed will be resumed when the GPI trigger is released.

When set to **Keyer**, the unit's linear keyer will turn on and remain active while a GPI signal is present. The keyer will turn off upon release of the GPI trigger.

When set to **Trouble Slide**, the currently selected Trouble Slide is displayed on the outputs while a GPI signal is present. Use the **Trouble File** option of the **Video Setup** menu to select the Trouble Slide to be displayed. The Trouble Slide is removed from the display upon release of the GPI trigger.

When set to **User 1**, an incoming GPI pulse is equivalent to pressing the user-programmable **User 1** key on the front panel of the unit. In this manner, the unit can be configured to select almost any function on an incoming GPI pulse. *See* "User-Programmable Buttons" on page 37 and Chapter 3 "Operation–Front Panel Controls" on page 17 for details on assigning a function to the **User 1** key.

For example, if the **User 1** key is assigned to the **AGC Bias** function, and the **GPI-1 Function** option is set to **User 1**, the first incoming GPI pulse takes the user to the AGC Bias adjustment screen; each subsequent GPI pulse will cycle through the allowed adjustment values.

When set to **Voice-Over**, the unit's audio **Voice-Over** mode (*see* Chapter 7 "Audio Setup Menu" on page 95) will be activated by a GPI signal. When the GPI signal is first received, program audio begins fading down; then voice-over mixing begins. Voice-over mixing continues while the GPI signal is present. Voice-over mixing is stopped and program audio begins ramping back up upon release of the GPI trigger. This **GPI** option is similar to activating and deactivating the **Voice-Over** option of the **Global Audio Config** submenu.

GPI input can be contact closure to ground or TTL signal (0 to 5 volts maximum).

GPI-2 Function

Description	Selects which function should be triggered when a GPI pulse is received on the GPI-2 connection of the Multi I/O breakout cable
Navigation Path	System Config>Misc Setup>GPI-2 Function
Valid Settings	Disabled, Freeze, Keyer, Trouble Slide, User 2, Voice-Over
Default Setting	Disabled

When the GPI-2 Function is set to **Disabled**, no action will be taken on receipt of a GPI pulse.

When set to **Freeze,** the currently selected **Freeze Mode** (*see* "Freeze Mode" on page 65) will be applied to the incoming video while a GPI signal is present, similar to pressing the **Take** button on the front panel of the unit. The live video feed will be resumed when the GPI trigger is released.

When set to **Keyer Off**, the unit's linear keyer will be turned off upon receipt of a GPI pulse.

When set to **Trouble Slide**, the currently selected Trouble Slide is displayed on the outputs while a GPI signal is present. Use the **Trouble File** option of the **Video Setup** to select the Trouble Slide to be displayed. The Trouble Slide is removed from the display upon release of the GPI trigger.

When set to **User 2**, an incoming GPI pulse is equivalent to pressing the user-programmable **User 2** key on the front panel of the unit. In this manner, the unit can be configured to select almost any function on an incoming GPI pulse. *See* the section on "User-Programmable Buttons" on page 37 in Chapter 3, and "Operation–Front Panel Controls" on page 17 for details on assigning a function to the **User 2** key.

For example, if the **User 2** key is assigned to the **AGC Bia**s function, and the **GPI-2 Function** option is set to **User 2**, the first incoming GPI pulse takes the user to the AGC Bias adjustment screen; each subsequent GPI pulse will cycle through the allowed adjustment values.

When set to **Voice-Over** the unit's audio **Voice-Over** mode (*see* Chapter 7 "Audio Setup Menu" on page 95) will be activated by a GPI signal. When the GPI signal is first received, program audio begins fading down; then voice-over mixing begins. Voice-over mixing continues while the GPI signal is present. Voice-over mixing is stopped and program audio begins ramping back up upon release of the GPI trigger. This **GPI** option is similar to activating and deactivating the **Voice-Over** option of the **Global Audio Config** submenu.

GPI input can be contact closure to ground or TTL signal (0 to 5 volts maximum).

GPO Function

Description	Selects the functionality of the GPI Output/Audio Delay Pulse connection of the Multi I/O breakout cable
Navigation Path	System Config>Misc Setup>GPO Function
Valid Settings	Audio Pulse, Bad Input, Keyer Active, SDI Input, Voice-Over
Default Setting	Audio Pulse

When the **GPO Function** is set to **Audio Pulse**, a pulse will be sent on this output at a regular interval (approximately every two frames).

When set to **Bad Input**, a signal will be continuously output when no valid video signal is present on the currently selected video input.

When set to **Keyer Active**, a signal will be continuously output when the unit's linear keyer is active.

When set to **SDI Input**, a signal will be continuously output when the unit's input video selection is set to **SDI**.

When set to **Voice-Over**, a signal will be continuously output while the audio voice-over mixing is active. This signal will *not* be output during the fade-down and ramp-up of program audio that precede and follow, respectively, voice-over mixing.

"Active" output is TTL-compatible, 5 volts/20 mA maximum.

Genlock Changes

Description	Enables or disables the ability of the operator to make changes to the Genlock timing settings found in the Timing Setup menu
Navigation Path	System Config>Misc Setup>Genlock Changes
Valid Settings	Enabled, Disabled
Default Setting	Enabled

When the **Genlock Changes** setting is disabled, changes cannot be made to the unit's genlock timing options.

VFD Brightness

Description	Adjusts the brightness level of the Vacuum Fluorescent Display (VFD) panel on the front of the unit
Navigation Path	System Config>Misc Setup>Genlock Changes
Valid Range	1 to 15
Default Setting	7

LED Brightness

Description	Adjusts the brightness level of indicator LEDs on the front of the unit
Navigation Path	System Config>Misc Setup>LED Brightness
Valid Range	0 to 15
Default Setting	7

Idle Timeout

Description	Adjusts the duration of time the unit waits before returning the display to the idle screen
Navigation Path	System Config>Misc Setup>Idle Timeout
Valid Range	10 to 2500 sec
Default Setting	300 sec

When the display has been left at another setting, for example, if you adjust a parameter and leave the display on the parameter setting screen, the unit will return to the idle screen after the delay specified in this option. Any key press or turn of the **Control** knob starts the delay time again.

Idle Cycle Time

Description	Adjusts the frequency at which information on the idle screen is refreshed
Navigation Path	System Config>Misc Setup>Idle Cycle Time
Valid Range	10 ms to 2500 ms
Default Setting	50 ms

The **Idle Cycle Time** setting specifies the amount of time between each refresh.

Key Reload on Reset

Description	Specifies whether or not a key image or animation that has been loaded into memory for use with the linear keyer will be automatically reloaded when the unit is next powered up or reset
Navigation Path	System Config>Misc Setup>Key Reload on Reset
Valid Settings	On, Off
Default Setting	On

When the **Key Reload on Reset** option is on, the previously loaded key image or animation will be automatically reloaded when the unit is powered up or reset. The keyer will also be returned to the same state (**Active** or **Off**) it was in prior to power down/reset. When this setting is **Off**, no image or animation will be loaded when the unit is powered up or reset (thus resulting in a faster startup time), and the keyer will be turned off.

System Password

Description	Specifies system password. The password can be up to eight characters, digits, or symbols long.
Navigation Path	System Config>Misc Setup>System Password
Valid Settings	Characters (A to Z), Digits(0-9), Symbols
Default Setting	Disabled

Rotate the **Control** knob to any character, digit, or symbol and press the **Enter** button to select the desired character. Repeat this process until a maximum of eight characters is selected for the system password. Press the **Exit** button to save the system password.

To remove the system password, turn the **Control** knob to the left to display the blank character, and press the **Enter** button. Repeat this process until all characters have been removed. Press the **Exit** button to return to the **System Config** menu**.**

Web Password

Description	Specifies Web password. The password can be up to eight characters, digits, or symbols long
Navigation Path	System Config>Misc Setup>Web Password
Valid Settings	Characters (A to Z), Digits(0-9), Symbols
Default Setting	Disabled

Rotate the **Control** knob to any character, digit, or symbol and press the **Enter** button to select the desired character. Repeat this process until a maximum of eight characters is selected for the Web password. Press the **Exit** button to save the Web password.

To remove the Web password, turn the **Control** Knob to the left to display the blank character, and press the **Enter** button. Repeat this process until all characters have been removed. Press the **Exit** button to return to the **System Config** menu**.**

One Time Video Setup

Source ID

Description	Specifies the Source ID text. The text can be up to 23 characters long, and is set by using the Enter key and Control knob.
Navigation Path	System Config>One Time Video Setup>Source ID

Press the **Enter** key to cycle through which character position (1 to 23) is to be modified. Use the **Control** knob to select a new character for that position. Two consecutive spaces are not allowed; if you attempt to move to the next character position after a space, you will be returned to the first character position.

Press the **Exit** key to store the new Source ID.

Setup Level (in)

Description	Specifies whether or not to add setup in the video input. This setting is not applicable in the 625-line mode (PAL).
Navigation Path	System Config>One Time Video Setup>Setup Level (in)
Valid Settings	With, Without
Default Setting	With

Setup VBI (in)

Description	Specifies whether or not the input video signal includes setup. This setting is not applicable in 625-line mode (PAL).
Navigation Path	System Config>One Time Video Setup>Setup VBI (in)
Valid Settings	With, Without
Default Setting	With

Setup Level (out)

Description	Specifies whether or not setup should be included in the video output. This setting is not applicable in 625-line mode (PAL)
Navigation Path	System Config>One Time Video Setup>Setup Level (out)
Valid Settings	Add, No Setup
Default Setting	Add

VITS/Blanking Fld1

Description	Specifies blanking and Vertical Interval Test Signal insertion options for Field 1 of the video
Navigation Path	System Config>One Time Video Setup>VITS/Blanking Fld1
Related Settings	Source ID, VITS/Blanking Fld2

In **525-line** mode (NTSC), the first 9 lines of **Field** 1 are always blanked. The **Narrow Blanking** option sets lines 10 through 20 of Field 1 to **Notch**, so they are unchanged from the input. **Wide Blanking** sets lines 10 through 20 of Field 1 to **Blank**, so they are blanked. **Enable Source ID** inserts the text specified in the **Source ID** option into lines 10 through 20.

In **625-line** mode (PAL), the first 5 lines of Field 1 are always blanked. The **Narrow Blanking** option sets lines 6 through 22 of Field 1 to **Notch**, so they are unchanged from the input. **Wide Blanking** sets lines 6 through 22 of Field 1 to **Blank**, so they are blanked. **Enable Source ID** inserts the text specified in the **Source ID** option into lines 6 through 22.

These options can be overridden on a line-by-line basis with the remaining settings of this option. Each of lines 10 through 22 can be individually configured. Each of lines 10 through 20 can be set to:

- **Blank**: The line will be blanked.
- **Notch***:* The line will be sampled from the input video and then passed through a notch filter before output. This mode assumes that color information may be present in the line.
- **Data***:* The line will be sampled from the input video and output without any processing. This mode should be used for high-speed signals that may be corrupted by filtering.
- **Source ID**: The text specified in the **Source ID** option is inserted.
- **Vertical Interval Test Signal**

In **625-line** mode, lines 21 and 22 can each be set to any of the above values. In **525-line** mode, lines 21 and 22 can each be set to either **Notch** or **Blank**.

VITS/Blanking Fld2

Description	Specifies blanking and Vertical Interval Test Signal insertion options for Field 2 of the video
Navigation Path	System Config>One Time Video Setup>VITS/Blanking Fld2
Related Settings	Source ID, VITS/Blanking Fld1

In **525-line** mode (NTSC), lines 1 through 8 of Field 2 are always blanked. The **Narrow Blanking** option sets lines 9 through 19 of Field 2 to **Notch**, so they are unchanged from the input. **Wide Blanking** sets lines 10 through 19 of Field 2 to **Blank,** so they are blanked. **Enable Source ID** inserts the text specified in the **Source ID** option into lines 10 through 19. Line 9 of Field 2 is always set to **Notch**.

In **625-line** mode (PAL), lines 314 through 318 are always blanked. The **Narrow Blanking** option sets lines 319 through 335 to **Notch**, so they are unchanged from the input. **Wide Blanking** sets lines 320 through 335 to **Blank**, so they are blanked. **Enable Source ID** inserts the text specified in the **Source ID** option into lines 320 through 335. Line 319 is always set to **Bypass.**

These options can be overridden on a line-by-line basis with the remaining settings of this option. Each of lines 10 through 21 (**525-line** mode) or 320 through 335 (**625-line** mode) can be individually configured. Each of lines 10 through 19 (320 through 335 in **625-line** mode) can be set to:

- **Blank***:* The line will be blanked.
- **Notch***:* The line will be sampled from the input video and then passed through a notch filter before output. This mode assumes that color information may be present in the line.
- **Data***:* The line will be sampled from the input video and output without any processing. This mode should be used for high-speed signals that may be corrupted by filtering.
- **Source ID***:* The text specified in the **Source ID** option is inserted.
- **Vertical Interval Test Signal**

In **525-line** mode, lines 20 and 21 can each be set to either **Notch** or **Blank**.

VBI Setup Levels

Note

Valid for Fld1, Line 10 to Fld1, Line 20.
Also valid For Fld2, Line 9 To Fld2, Line 19.

Description	Specifies whether or not to add setup to all fields and line numbers
Navigation Path	System Config>One Time Video Setup>VBI Setup Levels
Valid Settings	Add Setup, No Setup
Default Setting	Add Setup

Remote Control Setup

Baud Rate

Description	Specifies the data rate for serial remote control. This setting must match the data rate of the remote controller.
Navigation Path	System Config>Remote Control Setup>Baud Rate
Valid Settings	9600 bps, 38,400 bps
Default Setting	9600 bps

Remote Control

Description	Future use. Not currently implemented.
Navigation Path	System Config>Remote Control Setup>Remote Control
Valid Settings	RS-232, RS-422
Default Setting	RS-232

RS-422 Termination

Description	Specifies the termination of the RS-422 serial port: 120Ω (120R) or high-impedance (Hi-Z)
Navigation Path	System Config>Remote Control Setup>RS-422 Termination
Valid Settings	Hi-Z, 120R
Default Setting	Hi-Z

IP Address

Description	Specifies the IP address of the unit on a TCP/IP network. The IP address is used when the unit is to be controlled via the 10BaseT Ethernet port
Navigation Path	System Config>Remote Control Setup>IP Address
Default Setting	10.0.XX.YY where XXYY is the unit serial number
Related Settings	Netmask, Gateway

The IP Address must be set to be consistent with your existing TCP/IP network and the remote machine that will be controlling the unit. Your network administrator can provide you with an appropriate IP Address to use.

IP Addresses are represented as four numbers (each from 0 to 255), separated by periods (for example, 10.0.0.1).

To set the **IP Address** option, use the **Enter** key and **Control** knob. Press to cycle the **Enter** key through the four numeric components of the IP Address being modified; the **Control** knob sets the value of that numeric component, from 0 to 255. Press the **Exit** key to store the IP Address.

Netmask

Description	Specifies the subnet mask of the unit on a TCP/IP network
Navigation Path	System Config>Remote Control Setup>Netmask
Valid Settings	128.0.0.0 to 255.255.255.240
Default Settings	255.255.0.0
Related Settings	IP Address, Gateway

The subnet mask is used when the unit is to be controlled via the 10BaseT Ethernet port, and is represented as four numbers separated by periods (for example, 255.240.0.0).

The subnet mask must be set to be consistent with your existing TCP/IP network and the remote machine that will be controlling the unit. Your network administrator can provide you with an appropriate subnet mask to use.

Subnet mask settings are often represented as hexidecimal digits, for example 0xFFFF0000. Translation of this notation is straightforward, as each pair of hexidecimal digits is converted to its decimal equivalent (FF = 255, F0 = 240, etc.). Thus, 0xFFFFF000 is equal to 255.255.240.0.

Gateway

Description	Specifies the IP Address of the network Gateway for the unit on a TCP/IP network
Navigation Path	System Config>Remote Control Setup>Gateway
Default Setting	0.0.0.0
Related Settings	IP Address, Netmask

The **Gateway** setting is used when the unit is to be controlled via the 10BaseT Ethernet port.

The Gateway Address must be set to be consistent with your existing TCP/IP network and the remote machine that will be controlling the unit. Your network administrator can provide you with the Gateway IP Address to use.

Gateway IP Addresses are represented as four numbers (each from 0 to 255), separated by periods (for example, 10.0.0.1).

Using a Gateway IP Address of 0.0.0.0 disables the use of the default Gateway.

To set the **Gateway** option, use the **Enter** key and **Control** knob. Press the **Enter** key to cycle through the four numeric components of the Gateway IP Address being modified; the **Control** knob sets the value of that numeric component, from 0 to 255. Press the **Exit** key to store the Gateway IP Address.

Machine Name

Description	Specifies the name of the unit, which will appear to remote controllers and remote networks
Navigation Path	System Config>Remote Control Setup>Machine Name
Default Setting	No-name
Related Settings	IP Address, Netmask

The **Machine Name** option allows the unit to be visually recognized by name, rather than by an address number on a remote station.

The name can be up to 23 characters long and is set by using the **Enter** key and **Control** knob.

Press the **Enter** key to cycle through which character position (1 to 23) is to be modified; the **Control** knob selects a new character for that position. Two consecutive spaces are not allowed; if you attempt to move to the next character position after a space, you will be returned to the first character position.

Press the **Exit** key to store the new **Machine Name**.

DCN Address

Description	Reports the address at which the unit will be found on a DCN network (Digital Coaxial Network)
Navigation Path	System Config>Remote Control Setup>DCN Address

The **DCN Address** is set at the factory and cannot be changed by the operator.

Remote Watch

Description	Enables or disables visual feedback, on the display panel, of commands executed by remote control
Navigation Path	System Config>Remote Control Setup>Remote Watch

When the **Remote Watch** setting is disabled, commands executed by a remote controller (such as the DPS RC-575) are not visually reported on the front panel of the DPS-575.

When this setting is enabled and the unit is at the idle screen, any commands executed by a remote controller are shown visually on the front panel of the unit.

Ethernet Address

Description	Reports the Ethernet Media Access Control (MAC) address of the unit. This address may be needed in some network configurations.
Navigation Path	System Config>Remote Control Setup>Ethernet Address

The **Ethernet Address** is set at the factory and cannot be changed by the operator.

Flash Memory Mgmt

The **Flash Memory Mgmt** submenu provides backup, restore, and file management of the unit's flash memory. From this menu, stored files (images, animations, keyer settings, etc.) can be deleted and renamed, and configuration settings can be backed up.

List Files

The **List Files** option displays a list of all user files stored in the unit's flash memory, including still images, animations, user-defined test patterns, keyer settings profiles, and configuration backup profiles.

File management (including renaming and deleting) of these files can be done by first selecting the file to manipulate. Scroll through the list with the **Control** knob, and press the **Enter** key to select the highlighted file.

Information about the selected file will then be shown, including the file name, size, and internal type code. Press **Exit** to return to the file listing, or select one of the two file management options: **Delete This File** or **Rename This File**.

Delete This File will remove the file from the unit's flash memory, making its memory space available for additional files.

Rename This File will change the file name. The new name can be up to 23 characters long and is set by using the **Enter** key and **Control** knob. Press the **Enter** key to cycle through which character position (1 to 23) is to be modified; the **Control** knob selects a new character for that position. Two consecutive spaces are not allowed; if you attempt to move to the next character position after a space, you will be returned to the first character position. Press the **Exit** key to store the new file name.

Memory Usage

The **Memory Usage** option reports the amount of flash memory installed in the unit, currently in use, available for file upload, and fragmented (unusable).

Backup All Settings

The **Backup All Settings** option saves all current configuration parameters and settings into a file in flash memory.

The settings are stored under the name **NVBackupX,** where **X** is the next available free settings profile number. Settings files can be renamed or deleted from the **List Files** option (*see* "List Files" on page 179).

Restore All Settings

Caution

All current configuration settings will be overwritten by those in the stored profile.

The **Restore All Settings** option recalls configuration parameters and settings from a stored settings profile. Select this option to display a list of stored settings profiles. Scroll through the list with the **Control** knob, and press the **Enter** key to select the desired profile.

Chapter 13

TSG/Image Grabbing

Overview

The **TSG/Image Grabbing** menu is used to capture frames from video for use as test patterns or keyed still images.

Grab 10-bit Video

Description	Captures a 10-bit frame from video for use as a test pattern in the Test Signal Generator
Navigation Path	System Config>TSG/Image Grabbing>Grab 10-bit Video
Related Setting	Flash Memory Mgmt (System Config menu)

When the **Grab 10-bit Video** option is selected, a frame is grabbed from the currently selected input video signal. While the frame is grabbed, the video output is briefly frozen before resuming live operation.

The captured frame is saved as a file named **Grabbed.** This file must be renamed in the **Flash Memory Mgmt** option of the **System Config** menu or else it will be overwritten by the next video grab.

Grab 8-bit Video

Description	Captures an 8-bit frame from video for use with the unit's linear keyer
Navigation Path	System Config>TSG/Image Grabbing>Grab 8-bit Video
Related Settings	Flash Memory Mgmt (System Config menu), Grab Linear Key

When option is selected, a frame is grabbed from the currently selected input the **Grab 8-bit Video** signal. While the frame is grabbed, the video output will be briefly frozen; then live operation is resumed.

When used by itself, this option creates a still image file that will be output full-screen by the keyer. The **Grab Linear Key** option *(see* "Grab Linear Key" on page 184) can be used in conjunction to add a key channel, thus creating a file that will be keyed over the incoming video. The **Grab 8-bit Video** option captures the fill (the "content" of the keyed image); the **Grab Linear Key** option is then used immediately afterward to grab an incoming key channel. (The key channel can be captured from a separate input, or the connections of the currently selected video input must be changed to provide the key signal.)

The captured frame is saved as a file named **Grabbed.** This file must be renamed in the **Flash Memory Mgmt** option of the **System Config** menu or else it will be overwritten by the next video grab. The file should not be renamed until the **Grab Linear Key** option has been applied if a key channel is desired.

Grab Linear Key

Description	Captures a linear key to be applied to the 8-bit video image just captured
Navigation Path	System Config>TSG/Image Grabbing>Grab Linear Key
Related Settings	Flash Memory Mgmt (System Config menu), Grab 8-bit Video

The **Grab Linear Key** option is used only in conjunction with the **Grab 8-bit Video** option (*see* "Grab 8-bit Video" on page 183).

When this option is selected, a frame is grabbed from the currently selected input video signal, which must contain the key channel to be applied to the captured image. (The key channel can be captured from a separate input than that of the image, or the connections of the currently selected video input must be changed to provide the key signal.)

The key channel is incorporated into the image file named **Grabbed.** This file must then be renamed in the **Flash Memory Mgmt** option of the **System Config** menu or else it will be overwritten by the next video grab.

Grab & Apply Luma Key

Description	Captures an 8-bit frame from video for use with the unit's linear keyer, with its key channel defined by the current settings of the Luma Key Gain and Threshold options (*see* "Luma Key Gain" on page 186 and "Threshold" on page 187)
Navigation Path	System Config>TSG/Image Grabbing>Grab & Apply Luma Key
Related Settings	Flash Memory Mgmt (System Config menu), Luma Key Gain, Threshold

When the **Grab + Apply Luma Key** option is selected, a frame is grabbed from the currently selected input video signal. While the frame is grabbed, the video output is briefly frozen, then resumes live operation. The settings of the **Luma Key Gain** and **Threshold** options are used to define the key channel for the image from a luminance key, thus creating a file that will be keyed over the incoming video by the linear keyer. The settings of the **Luma Key Gain** and **Threshold** options must be specified prior to the use of the **Grab & Apply Luma Key** function.

The captured frame is saved as a file named **Grabbed.** This file must be renamed in the **Flash Memory Mgmt** option of the **System Config** menu or else it will be overwritten by the next video grab.

Luma Key Gain

Description	Adjusts the gain of the luminance key used to define the key channel in the Grab & Apply Luma Key option (*see* "Grab & Apply Luma Key" on page 185)
Navigation Path	System Config>TSG/Image Grabbing>Luma Key
Valid Settings	Hard Key, 1% to 100%
Default Setting	Hard Key
Related Settings	Grab & Apply Luma Key, Threshold

Threshold

Description	Adjusts the threshold of the luminance key used to define the key channel in the Grab & Apply Luma Key option (*see* "Grab & Apply Luma Key" on page 185)
Navigation Path	System Config>TSG/Image Grabbing>Threshold
Valid Range	0.8 IRE to 99.9 IRE (525-line mode) 5.3 mV to 699.3 mV (625-line mode)
Default Settings	7.5 IRE (525-line mode) 52.5 mV (625-line mode)
Related Settings	Grab & Apply Luma Key, Luma Key Gain

Appendix A

Specifications

Video Specifications

Inputs

Item	Specification
Composite Video (BNC)	Vp-p, 75Ω
Serial Digital SDI (BNC)	75Ω, Auto EQ to 984 ft. (300 m) (With Reclocked and Buffered BNC Output)
Component Analog Video (BNC)	Y: 1Vp-p, 75Ω R-Y, B-Y: 0.7Vp-p, 75Ω
S-Video (4P Mini-DIN)	Y: 1Vp-p, 75Ω C (Burst Level) 286 mV (NTSC), 300 mV (PAL)
DV I/O Option (6-pin Molex)	EEE-1394
Genlock Ref. (BNC Loop)	1Vp-p, 75Ω

Outputs

Note

These connectors are located on the supplied breakout cable. +RGB port can alternately provide additional composite video output or framestore alpha channel for use with external keyers.

Item	Specification
Composite Video (BNC x 2)	1Vp-p, 75Ω
Serial Digital SDI (BNC x 2)	75Ω
Component Analog Video (BNC)	Y: 1Vp-p, 75Ω R-Y, B-Y: 0.7Vp-p, 75Ω
S-Video (4P Mini-DIN) (*See* "Note")	Y: 1Vp-p, 75Ω C (Burst Level): 286 mV (NTSC), 300 mV (PAL)
RGB/RGBS Analog Video (BNC) (*See* "Note")	Y: 1Vp-p, 75Ω Sync: 300 mV or 8p-p (selectable)
DV I/O Option (6-pin Molex)	IEEE-1394

Signal Processing

Item	Specification
ADC/DAC and Composite	Encoding/Decoding: 12-bit Component YUV Pipeline: 10-bit Synchronizing Range: Infinite

Frequency Response

Item	Specification
Synchronizer Mode	+/– 0.25 dB (0 – 5.5 MHz –1 dB (5.5 – 5.75 MHz)
TBC Mode	3 dB (0 – 4.2 MHz, Notch at 3.58/4.43 MHz)

Signal to Noise

Item	Specification
TSG/SDI Input Modes	>75 dB Luminance Weighted
Synchronizer Mode	>70 dB Luminance Weighted
TBC Mode	>62.7 dB Luminance Weighted
Differential Phase	<1° (Modulated Ramp)
Differential Gain	<1% (Modulated Ramp)
K-Factor (2T)	<0.5% (2T Pulse)
Luminance Jitter (TBC Mode)	<15 nS

Processor Controls

Item	Specification
Video Level	+/– 3 dB
Setup Level	+/– 3 IRE
Chroma Level	+/– 6 dB
Hue Phase	+/– 45°
Horizontal Genlock Timing	0 to 63.5 µs
Subcarrier Genlock Timing	360°
Y/C Horizontal Delay Adj	–592 ns/+ 518 ns
Test Signal Generator Mode	Select from over 30 10-bit test patterns (available at all outputs)
VITS / VIRS Inserter	Source ID or any test pattern can be inserted into any VBI line. (Different lines may contain different patterns.)

Remote Control

Note

These connectors are located on the supplied breakout cable. +RGB port can alternately provide additional composite video output or framestore alpha channel for use with external keyers.

Item	Specification
Serial Remote Port (DB-9F)	RS-232/RS-422 Levels at 9,600/38,400 bps
Ethernet	10-Base-T
GPI Input (RCA x2) (*See* "Note")	TTL or Contact Closure
GPI Output/Audio Sync Pulse (BNC) (*See* "Note")	TTL Pulse
Serial Remote (BNC)	DCN

Audio Specifications

Analog Inputs

Item	Specification
Number of Inputs	2 Stereo Channels (Balanced or Unbalanced)
Resolution	24-bit
Input Impedance	600Ω or 18kΩ
Input Operating Levels	+8, +4, 0, -4 or 10 dBu 600Ω or 18kΩ
Maximum Input Level	+24 dBu
Input Sampling Rate	32 kHz, 44.1 kHz, 48 kHz
Connection	Removable Barrier Strip

AES / EBU Inputs

Item	Specification
Number of Inputs	2 AES/EBU Stereo Streams
Resolution	24-bit, 96 kHz
Input Type (Menu Selectable)	AES3-1992 Balanced XLR or Unbalanced BNC (AES Data on Coax SMPTE 276)
Input Termination	110Ω Balanced or 75Ω Unbalanced
Connection	XLR and BNC (*See* "Note")
Channel Status Information	Professional, S/PDIF

Note

These connectors are located on the supplied breakout cable.

SDI Embedded Inputs

Item	Specification
Number of Inputs	2 Stereo AES/EBU Channels
Resolution	20-bit
Sampling Rate	48 kHz Synchronous
Channel Status Format	AES3-1992 (Professional Mode)
Connection	BNC (via SDI Video Input)
Auxiliary Audio Input Stream	Uploaded WAV files can replace or be mixed with real-time processed audio streams.

Analog Inputs

Item	Specification
Number of Outputs	2 Stereo Channels (Balanced or Unbalanced)
Resolution	24-bit
Output Operating Levels	+8, +4, 0, -4 or -10 dBu
Maximum Output Level	+24 dBu (-23 dBu into 600Ω)
Connection	Removable Barrier Strip

AES/EBU Outputs

Item	Specification
Number of Outputs	AES/EBU Stereo Streams
Resolution	20-bit
Output Type	AES3-1992 Balanced XLR or Unbalanced BNC (AES Data on Coax SMPTE 296)
Impedance	110 W (Transformer Isolated) or 75Ω
Connection	XLR and BNC (*See* "Note")

Note

These connectors are located on the supplied breakout cable.

SDI Embedded Outputs

Item	Specification
Number of Outputs	2 Stereo Channels (Balanced or Unbalanced)
Channel Status Format	AES3-1992 (Professional Mode)
Connection	BNC (via SDI Video Output)

Miscellaneous Specifications

Item	Specification
Processing	24-bit Audio System
Sampling Frequencies	32 kHz, 44.1 kHz, 48 kHz, 96 kHz
Maximum Total Delay	1.75 seconds at 48 kHz
Delay Resolution	<1 ms
Frequency Response	50 Hz to 20 kHz, +/Q0.05 dB
THD+N	<0.005% (typical at +21 dBu, 1 kHz)
Total Dynamic Range	>90 dB
Signal-to-Noise Ratio	>70 dB (Full-Scale Output)
Channel Separation	>85 dB
Audio Test Tone Generators (x4)	100 Hz to 20 kHz, in 100Hz steps; 0 dBFS–38 dBFS levels
Maximum Inrush Current	38 A

General Specifications

Item	Specification
Size (W x H x D)	7 in. x 1-3/4 in. x 20 in. (43.2 cm x 4.4 cm x 50.8 cm)
Power Requirements	70 W, 100-240 VAC, 50/60 H

Appendix B

Test Signals

DPS-575 (NTSC mode)

The following test signals are available with the DPS-575 (NTSC mode):

- SMPTE Bars
- EIA Bars
- Full Field Bars
- Bars/Reverse
- Bars/Red
- Bars 100%
- Super Black
- Black
- Gray
- White
- Luma Ramp
- Modulated Ramp
- Luma 5-Step
- Modulated 5-Step
- Shallow Ramp
- Multiburst-60IRE
- Luma Sweep 5.5Mhz
- Shallow Ramp
- Multiburst-60IRE

- Luma Sweep 5.5 Mhz
- Chroma Sweep
- Pulse and Bar
- NTC7 Composite
- NTC7 Combination
- VIRS
- Cross Hatch
- SIN(X)X
- Red Field
- Timing Bowtie
- Matrix-1
- Matrix-2
- FF Bounce
- 90% Bounce
- Pluge
- Cross Hatch
- SDI EQ Test
- SDI PLL Test
- Zone Plate
- Digital Ramp
- Edge Markers
- Random Bits
- Source ID Slide

DPS-575 (PAL mode)

The following test signals are available with the DPS-575 (PAL mode):

- Bars 100%
- Bars/Red 100%
- EBU Bars
- EBU Bars/Red
- Multiburst 5.0 MHz
- Multiburst 5.8 MHz
- Multiburst 420 MHz
- Pulse & Bar 2410t
- Pulse & Bar 248t
- Pulse & Bar 2t
- Luma Ramp
- Modulated Ramp
- Luma 5-Step
- Luma 10-Step
- Modulated 5–Step
- Timing Bowtie
- Valid Ramp
- Shallow Ramp
- Multipulse 5.8 MHz
- Shallow Ramps
- SIN(X)/X
- Luma Sweep 5.5 MHz
- Chroma Sweep 2.5 MHz
- VITS 17
- VITS 18
- VITS 19
- VITS 20
- VITS 330
- VITS 331

- VIRS
- Black
- Gray
- White
- Cross Hatch
- Red Field 75%
- Red Field 100%
- Matrix 1
- FF Bounce
- 90% Bounce
- Ramp 100%
- Ramp 120%
- Shallow Ramp
- UBM Ramp
- SDI EQ Test
- SDI PLL Test
- Zone Plate
- Digital Ramp
- Edge Markers
- Random BIts
- Source ID Slide
- Red Field

Appendix C

Installation of Hardware Options

Overview

If you have purchased hardware option boards (such as the DV I/O Audio Synchronizer module, and Animated Logo option) separately from the DPS-575, you will need to install them. The following instructions guide you through installing these options safely and correctly.

Depending on which upgrade option you have purchased, you may be required to enter an unlock code to enable the new option. *See* "Enable Extra Options" on page 158 for details. The DV I/O option, the Audio Synchronizer option, and the Animated Logo option *do not* require an unlock code.

Precautions

WARNING: Static Electricity!

Static electricity from your body can damage your hardware option boards or the DPS-575. Even though you may not notice it, static electricity is being generated every time you move. Usually, it is too small to cause a spark, but it can still cause damage to sensitive electronic components.

- To prevent this damage, you should handle the option board carefully.
- Do not take the option board out of its protective bag until you are ready to install it.
- Do not carry the board around unless it is in its protective bag.
- Avoid wearing wool or polyester clothing while installing the option. These fabrics generate more static electricity than cotton garments.
- Before touching the option board, you should discharge any static electricity from your body by first touching the grounded metal chassis of the DPS-575 (the unit must be plugged in to be grounded).

Starting the Installation

Note

If you have a unit that has the Audio Synchronizer module installed, you must remove the Audio board temporarily to install the DVM-5010 I/O option board. *See* "Removal of Audio Synchronizer Module (AS-575)" on page 209, and "Installation of Audio Synchronizer Module (AS-575)" on page 206 before proceeding.

1. Confirm that the DPS-575 is turned off and that the power cord is disconnected from the rear panel.

   Note that with the power cord disconnected, the unit is no longer grounded, so be cautious about static electricity.

2. Use a Phillips screwdriver to remove the 14 retaining screws, and lift off the top cover from the DPS-575.

   Keep the screws, as they will be needed to replace the top cover.

Installation of DVM-5010 I/O Option Board (DVM-5010)

Note

These standoffs may be pre-installed on the main board of your unit.

1. Remove the four screws from the main board of the unit, Screws are designated with an asterisk (*) in the following diagram:

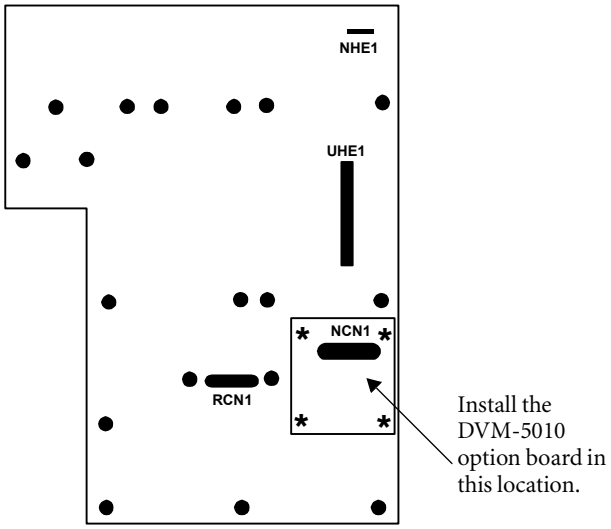


Figure C-1. Top View of DPS-575 Main Board

The rectangle indicates the position into which the DVM-5010 I/O option board will be installed.

2. Replace the indicated screws with the standoffs (Part #762-575).
3. Remove the DVM-5010 I/O option board from its protective bag.
4. Connect one end of the supplied cable (Part #774-140) to the NHE1 connector on the main board (*see* Figure C-1 above for the location of this connector).

   Connect the other end of the cable to connector CN603 on the DVM-5010 I/O option board.

Note

The connectors are keyed, so the cable can only fit in the correct orientation.

5. Inspect the connectors on the DV I/O option and main board to ensure that all pins are straight, and then align the CN605 connector on the bottom of the DVM-5010 I/O option board with connector NCN1 on the main board (*see* Figure C-1 and Figure C-2 for

positioning). Gently press the DVM-5010 I/O option board onto the connector. Be sure to apply pressure evenly across the connector to prevent the pins from bending or breaking.

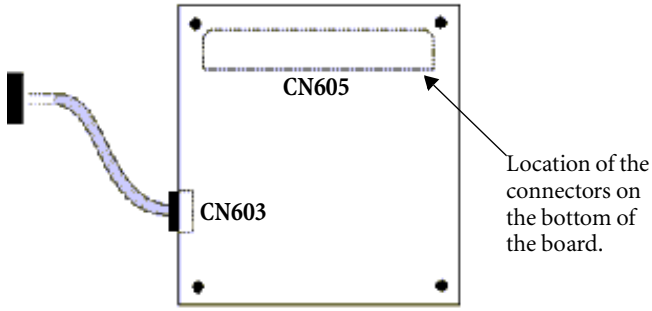


Figure C-2. Top View of DVM 5010 I/O Option Board

6. Use the supplied screws (Part #751-010) to secure the DVM-5010 I/O option board to the standoffs in the main board.

Installation of Audio Synchronizer Module (AS-575)

Note

These standoffs may be pre-installed on the main board of your unit.

1. There are four screws that must be removed from the main board of the unit and replaced with the four supplied standoffs (Part # 762-170).

   These screws are designated with an asterisk (*) in the following diagram:

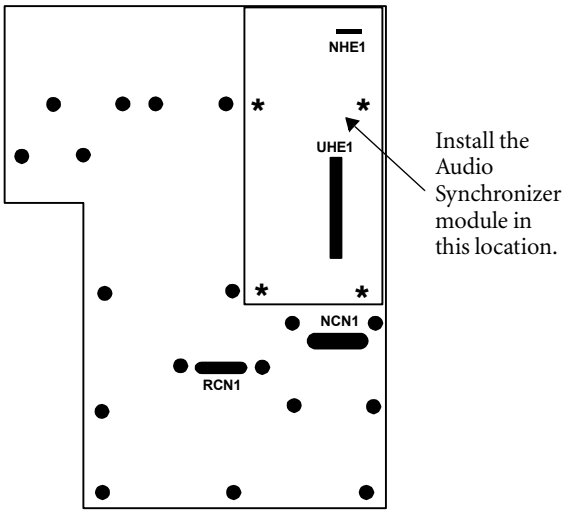


Figure C-3. Top View of DPS-575 Main Board

   The rectangle indicates the position into which the Audio Synchronizer module will be installed.

2. Replace the indicated screws with the standoffs.
3. On the rear of the unit, there is a cover plate where the AES/EBU DB25 connector will be placed.

   Remove the two screws holding this plate in place, and remove the plate.
4. Remove the included aluminum shield and the Audio Synchronizer module from their protective bag.
5. Place the aluminum shield onto the standoffs. Line up the holes in the shield as closely as possible with the standoffs.

6. If the terminal blocks for analog audio (Part #722-184) are plugged into their mounting connectors on the Audio Synchronizer module, remove them.
7. Align the DB25 connector on the Audio Synchronizer module with the cutout for it on the rear of the unit.
8. Inspect the connectors on the Audio Synchronizer module and main board to ensure that all pins are straight. With the shield sitting on the standoffs, gently press connector J1 on the Audio Synchronizer module onto the UHE1 connector on the main board. (*See* Figure C-1 on page 204 and Figure C-3 on page 206 for positioning).

   Be sure to apply pressure evenly across the connector to prevent the pins from bending or breaking.

Caution

It is imperative that all pins of the connectors on both the main board and the Audio board are lined up properly, both side-to-side and front-to-back. If the connectors are not properly aligned, damage will occur to the module when the unit is powered up.

When properly aligned front-to-back, the analog audio terminal block mounting connectors will be flush with the rear of the chassis. This does *not* guarantee proper pin alignment; alignment *must* be checked visually prior to powering up the unit.

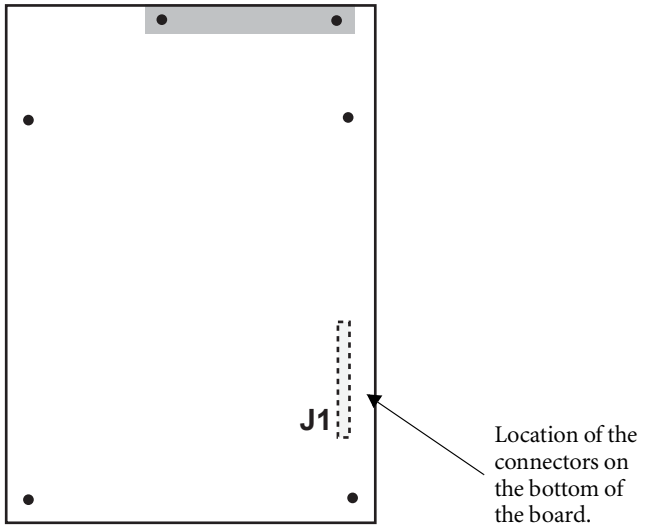


Figure C-4. Top View of Audio Synchronizer Module

9. Use the supplied screws (Part #751-057) to secure the Audio Synchronizer module and the metal shield to the standoffs in the main board.

10. Use the two supplied jackscrews (Part #762-142) to secure the DB25 connector to the chassis of the unit.
11. Plug the analog audio terminal blocks back into their mounting connectors on the Audio Synchronizer module.

Removal of Audio Synchronizer Module (AS-575)

If you must remove the Audio Synchronizer module from the unit (for example, to install the DVM-5010 I/O option board), follow this procedure:

1. Remove the two jackscrews that secure the DB25 connector on the Audio Synchronizer module to the chassis of the unit.
2. Remove the terminal blocks for analog audio if they are plugged into the mounting connectors on the Audio Synchronizer module.
3. Remove the four screws that secure the Audio Synchronizer module. *See* Figure C-3 in the "Installation of Audio Synchronizer Module (AS-575)" on page 206 to locate the correct screws.
4. Gently lift the Audio Synchronizer module from its connector to disconnect it from the main board.

   Be sure to lift the board off evenly to prevent the connector pins from bending or breaking. Inspect the connectors on the Audio Synchronizer module and main board to ensure that all pins are straight.
5. Once the connector is completely free, you can pull the audio board out to free it from the back panel.
6. Be sure to store the board in a protective bag to protect it from static electricity.

Installation of Animated Logo Option Board (AL-575)

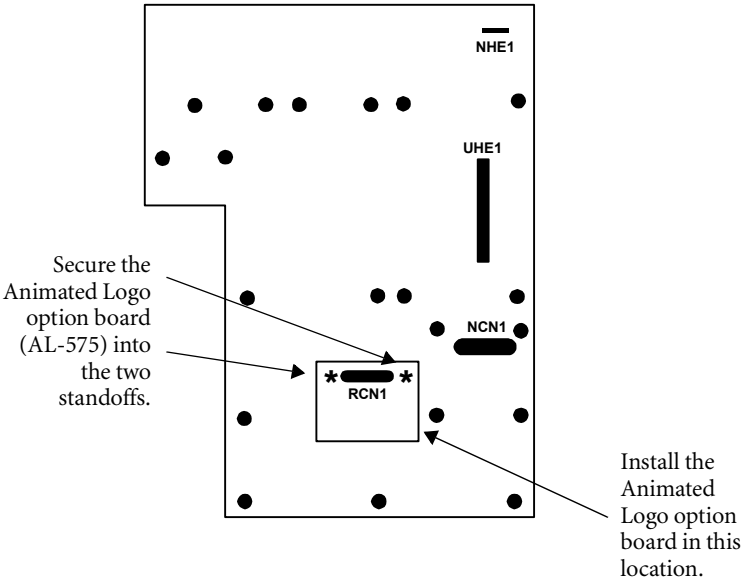


Figure C-5. Top View of DPS-575 Main Board

1. Remove the Animated Logo option board from its protective bag.
2. Inspect the connectors on the Animated Logo option and main board to ensure that all pins are straight.
3. Align the ACN1 connector on the bottom of the Animated Logo option board with connector RCN1 on the main board (*see* Figure C-1 on page 204 and Figure C-6 for positioning).
4. Gently press the Animated Logo option board onto the connector. Be sure to apply pressure evenly across the connector to prevent the pins from bending or breaking

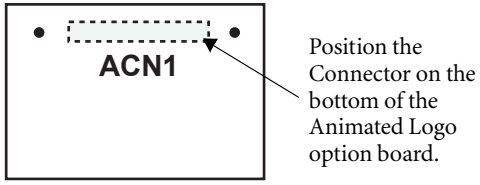


Figure C-6. Top View of Animated Logo Option Board

5. Use the supplied screws (Part # 751-010) to secure the Animated Logo option board to the standoffs in the main board.

Completing the Installation

To complete the installation of the hardware options:

1. Replace the top cover, and use the original 14 screws to secure the top cover.
2. Plug the power cord back in.

Appendix D

The Uploader Software

Overview

Note

Be sure to check the Leitch web site (www.Leitch.com) frequently for updates to the Uploader software, and for updated firmware for the unit.

The Uploader software, which runs on Microsoft® Windows® 95, 98, and Windows NT® 4, is used to perform firmware upgrades to the DP-575, and to transfer video stills and animations to the unit from the PC.

This section assumes that you have a working knowledge of the Windows operating system, and that either the RS-232/422 port of the DPS-575 unit is connected via a serial cable to one of the RS-232 serial ports on your PC, or the DPS-575 is networked via the Ethernet port to your PC (use a cross-over network cable if connecting the DPS-575 directly to the PC).

Software Installation

To install the Uploader software, follow these steps:

1. If you have downloaded the Uploader software from the Leitch web site, unZIP the file into a directory on your hard drive. (The ZIP file format is a compressed format commonly used for file distribution; utilities to decompress ZIP files are readily available on the web).
2. Open the directory where the unzipped files are now located (or open the CD-ROM containing the Uploader software), and double-click the **Setup** icon. The installer will run.
3. Follow the on-screen instructions to install the software. You may accept the default location for the software installation or select a different directory.

   The software is copied to the appropriate location, and you are prompted when installation is complete.

Starting the Software

To start the Uploader software, select it from the **Programs** menu of the Windows **Start** button.

Click **Start > Programs > DPS > Uploader.** You can run the program from here or create a shortcut to it on your desktop.

Using the Software

Uploader software has two modes of operation:

- **Upload File** mode is used to transfer files to the DPS-575.
- **File Conversion** mode is used to convert still image files and animations into formats that can be later uploaded.

The first time you run the Uploader software, you will need to set your serial port or Ethernet configuration in the Connection Type section.

For serial connections, select the serial port on your computer to which you have connected the DPS-575.

For Ethernet connections, enter the IP Address of the DPS-575 (*see* "System Config Menu" on page 153 for information about setting the IP Address of the DPS-575.

Once you have configured your connection type, click the **Save Settings** button; your configuration will then be remembered whenever you run the software.

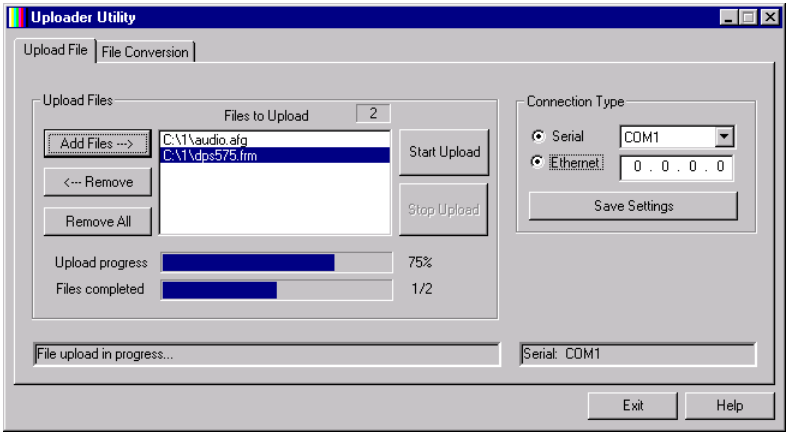


Figure D-1. Uploader Utility Dialog Box

The following file types can be uploaded directly to the DPS-575. The unit recognizes file types based on their filename extension (.ext). For example, with the filename **filename.ext,** the following types are recognized, where .ext is one of the following:

Extension	File Type
.afg	Audio FPGA upgrade file
.vf5	Video FPGA upgrade file (525-line/NTSC)
.vf6	Video FPGA upgrade file (625-line/PAL)
.frm	Firmware upgrade file
.htdb	Fast-Forward/Scrub Forward
.dst	8-bit video still image file
.dts	10-bit test pattern file
.dan	TAnimation file

Note

If you have downloaded upgrade files from the Leitch web site, you will have to unZIP them before they can be uploaded to the unit. *See* "Software Installation" on page 214 for more information.

The number of files that can be transferred to the DPS-575 is contingent on the amount of free memory available in the unit. As the files are stored in a compressed form, file sizes will vary from image to image. For example, a file that consists of solid black will compress easily and take up less memory in the unit than a complicated image.

Upgrading Firmware

If the unit's memory is almost full, when upgrading the firmware of the unit (.afg, .vf5, .vf6, or .frm files), you may have to delete the existing firmware files from the unit before uploading the new ones. This is a safety mechanism of the firmware upgrade process — old firmware is not deleted from the unit until it is confirmed that the new firmware file has been received successfully in its entirety. As a result, uploading firmware requires there to be sufficient free space to store the new firmware files as well as the old ones; once the n

In cases where available memory is limited and there are multiple firmware files to be uploaded, it is advantageous to upload them one at a time (instead of as a batch); deletion of old firmware files is done only after all files in a batch are uploaded, so a batch upload would require enough free memory to store all new files.

To delete old firmware files prior to uploading new ones, use the **Flash Memory Mgmt** option of the **System Config** menu (*see* Chapter 12 "System Config Menu" on page 153 for details) to delete individual files, or the **Erase Firmware Power-Up** Key (*see* Chapter 3 "Erase Firmware" on page 39).

If you have image files to transfer to the unit that are not in one of the above recognized formats, you need to convert them first using the **File Conversion** mode of the Uploader software (*see* "Converting Files" on page 219).

Uploading Files

To upload files to the DPS-575, ensure that the unit is powered on and that the serial port settings of the Uploader software are correctly set for the connection between the PC and the unit.

Build a list of files to be uploaded by using the following buttons:

- **Add Files:** Click this button to bring up a standard Windows file requester to select files to upload. Use the **Files of Type** pull-down list to choose between browsing for firmware files and image/animation files. Select the files you wish to add to the list and click **Open**.
- **Remove:** Click on a file in the list of files to be uploaded, and then click the **Remove** button to delete it from the list.
- **Remove All:** Click this button to clear the list of files to be uploaded.
- Once all your files have been added to the upload list, click the **Start Upload** button to begin the transfer.

First, the software tries to establish a connection with the DPS-575. During this time, a button labeled **Cancel Connection Attempt** appears. Click this button if you want to abort the upload attempt. Use of this button may be necessary if the software is unable to establish a connection to the unit. If a connection cannot be established, the **Connection Type** may be set to the wrong serial port, or there may be a physical connection problem with the serial cabling.

Once a connection has been established, all indicators on the DPS-575 light up, and the display panel shows the progress of the transfer of the files. A progress status bar in the Uploader software shows similar information. If there is insufficient memory in the unit to receive the new files, a corresponding message is displayed, and the Upload aborts.

During the transfer of files, you may click the **Stop Upload** button to abort the upload process. Do not stop the upload process by any other means (such as by powering down the unit) as this may leave corrupt files in the unit.

Once all selected files are uploaded, a dialog box informs you of completion and the number of files transferred successfully.

Converting Files

Prior to uploading to the DPS-575, still image files, test patterns, and animation image sequences must be converted into the .dst, .dts and .dan file formats recognized by the unit. Click the **File Conversion** tab in the Uploader software to bring up an interface to allow you to perform this conversion. This access can also be used to convert from DPS .dst and .dts files back to standard Windows file formats or DPS Hollywood files.

The conversion utility supports the standard Windows file formats .jpg, .bmp, .tga, and .tif. It also supports 8-bit and 10-bit .yuv files from the DPS Hollywood.

Single still image files in the above formats are converted to 8-bit .dst files (for use with the linear keyer) or 10-bit .dts files (for use with the Test Signal Generator) for the DPS-575.

When converting to .dst, any alpha channel information stored in the source file will be used for the DPS-575 keyer. If a source image is too large (greater than 720 x 486 NTSC or 720 x 576 PAL), it is cropped. If a source image is *smaller* than the screen size, the unused area is treated as transparent by the keyer. If a 10-bit Hollywood .yuv file is converted to .dst, it is down-sampled to 8-bit, and the extra resolution is lost.

When converting to .dts, any alpha channel information in the source file is lost. You may convert 8-bit image formats such as .bmp to 10-bit .dts files for use as test signals, but no additional resolution is gained. Ideally, 10-bit Hollywood .yuv files should be used as the source of .dts files for maximum quality.

Animation files for the DPS-575 (.dan files) are created from a numbered sequence of image files, all of which must be stored in the same directory. For example, **anim0001.tga, anim0002.tga**, and **anim0003.tga** would be converted into an animation file named **anim.dan**. At least one leading zero is required in the naming convention of image sequences (**i.e. anim1.tga, anim2.tga, anim3.tga** is not a valid sequence). When selecting the source files to be built into an animation, it is important to add only the *first* image of the sequence into the **Files to Convert** list. In the above example, only **anim0001.tga** would be selected for conversion; the rest of the sequence would be converted automatically.

Still image files with a filename ending in a number (such as **image0003.tga**) are assumed to be part of an image sequence and are converted to .dan animation files. All other still image files are converted to .dst stills.

The following table summarizes the source formats recognized by the conversion utility, and the formats to which each can be converted:

Source	Destination
.tga (single image)	.dst, .dts
.tga (numbered image)	.dan
.bmp (single image)	.dst, .dts
.jpg (single image)	.dst, .dts
.jpg (numbered image)	.dan
.tif (single image)	.dst, .dts
.yuv (single image)	.dan
.dts	.tga, .bmp, .tif, .jpg, .yuv
.dst	.tga, .bmp, .tif, .jpg, .yuv

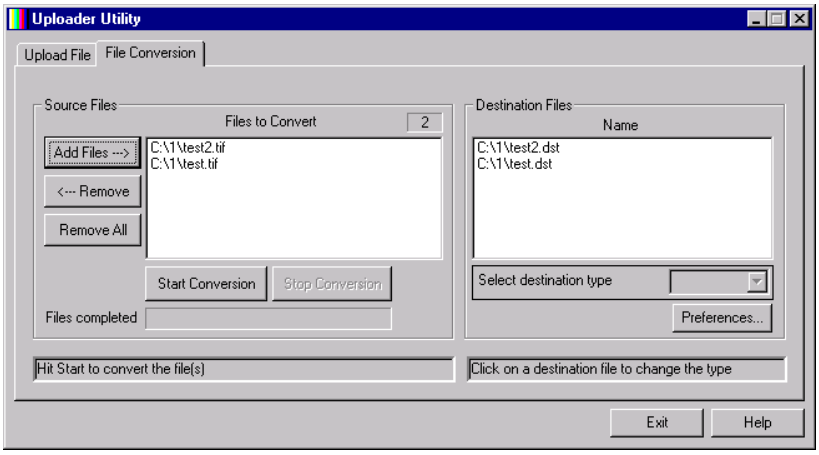


Figure D-2. Uploader Utility Dialog Box

To convert between file formats, first build a list of files to be converted by using the following buttons:

- **Add Files:** Click this button to bring up a standard Window file requester, for selecting which files to convert.Use the **Files of Type** pulldown list to choose between browsing for standard Windows file formats, and DPS image files. Select the files you wish to add to the list, and click **Open**. You can use the **Add Files** button multiple times, to add files from multiple distinct locations to the list.

  Remember that when converting a sequence of frames into an animation file, add only the first source frame to the conversion list.
- **Remove:** Click on a file in the list of files to be converted, then click
- **Remove** button to delete it from the list.
- **Remove All:** Click this button to clear the list of files to be converted.

By default, image files are converted to .dst files for use with the keyer. This default can be changed in the **Preferences** window. To change the destination file type of an individual file, click that file in the **Destination Files** window; the **Select Destination Type** drop-down box becomes active, and you can choose which output file format you want.

When converting from DPS .dst or .dts image files back into standard Windows file formats, the default output file format is .bmp. This default can be changed (to .dts test signals) in the **Preferences** window. To change the destination file type of an individual file, click that file in the **Destination File**s window; the **Select Destination Type** drop-down box becomes active, and you can choose which output file format you want.

If there are more files in the conversion lists than will fit in the window, a scroll bar will appear, allowing you to scroll through the list.

Once all of your desired files have been added to the conversion list, click the **Start Conversion** button to begin processing. Converted files are saved into the same directory as the source images.

During the conversion process, you may click the **Stop Conversion** button to abort the process after the current file has completed.

Note

Scrolling the **Source Files** window does not automatically scroll the **Destination Files** window with it; simply click on one of the files, and the other window will jump to the corresponding file.

Field Ordering in Stills and Animations

The graphics files that are uploaded to the DPS-575 are originally stored in standard graphics file formats. These file formats do not distinguish between fields or otherwise deal with interlace. Industry convention is to treat each “row” of the file as a separate “line” of video on alternating fields. All of the odd rows will end up in one field and the even rows in the other field.

For still images, this convention works fine, and it doesn't matter which row ends up in which field. Any parts of the image that are only one row tall will appear to flicker at the field rate (60Hz). Graphics software intended to produce graphics files for video applications will perform some vertical filtering to avoid this situation. On the computer screen (which is not interlaced), the image may look “soft” as a result.

On the DPS-575 in **NTSC** mode, the first row of the graphics file will be put into Field 2, and the second into Field 1. Thus, over the entire height, the even rows (if you start counting from zero on the first row) will be in Field 2, and the odd rows will be shown in Field 1. On the DPS-575 in **PAL** mode, however, the opposite is true. For still images, this detail doesn't matter. However, for animations. it is critically important.

Original Graphics File		NTSC		PAL	
Row #	Image	Field	Image	Field	Image
0	--- X ---	2	--- X ---	1	--- X ---
1	-- X - X --	1	-- X - X --	2	-- X - X --
2	- X --- X -	2	- X --- X -	1	- X --- X -
3	X ----- X	1	X ----- X	2	X ----- X
4	- X --- X -	2	- X --- X -	1	- X --- X -
5	-- X - X --	1	-- X - X --	2	-- X - X --
6	--- X ---	2	--- X ---	1	--- X ---

Figure D-3. Field Ordering in NTSC and PAL

A smooth animation requires motion blur. To show this blur as it would be captured by a real video camera, the animation must be rendered as separate fields, at 30 frames per second (60 fields per second) for NTSC (most animation software does not support the precise frame rate of 29.97 Fps). Most animation software is aware of broadcast video and can do this very easily. If your software is more primitive, you could render

your sequence at 60 frames per second, and then take the even lines of the even frames and the odd lines of the odd frames to make a new sequence that is 30 frames per second (with two fields per frame). In rendering for PAL, you would do the same, but at 25 frames per second or 50 fields per second.

Field 2 comes out after Field 1 in time, and that is how they get their names. Therefore, for an NTSC animation, you should have Field 1 (the first field in time) starting on the second row of the graphics file (and on the following odd lines). However, for a PAL animation, the opposite is true: Field 1 should be the first row of your graphics file (and subsequent even lines). Since an animation intended for PAL or NTSC will normally be rendered with a particular frame rate in mind (either 30 or 25), this is not a serious restriction.

Most animation software (for example 3D Studio Max or LightWave 3D) has a software control for determining field dominance, which you must select before rendering to match these requirements.

Maximum Animation Sequence Length and Frame Size

The maximum length of an animation sequence is a function of the size of the individual frames. Each frame of the animation is "integer-tiled" across a buffer that is 720 pixels wide (one video line),and 846 lines tall. To be integer-tiled means that only an integer number of tiles is allowed horizontally or vertically, and any leftover (fractional) space will be wasted. So, for example, an 80 x 60 frame will fit exactly 720/80 = 9 times across, and 846/60 = 14 times vertically. You can have a sequence as long as 126 frames (9 x 14). If your image is 81 x 62, however, only 8 will fit across and 13 down, giving you a total of just 104 frames.

The DPS-575 allows any size of frame, as long as it fits into memory. You could have an image 720 pixels wide by 16 lines tall and animate it over 52 frames. It is in your best interest to choose a frame size that is an integer fraction of the line width (720) to reduce wasted buffer memory.

The following table gives examples of the maximum sequence length for various frame sizes:

Frame Size		No. of Tiles		
Width	**Height**	**X**	**Y**	**Max No. of Frames**
80	60	9	14	126
81	62	8	13	104
200	200	3	4	12
720	16	1	52	52
720	486	1	1	1
720	576	1	1	1
40	30	18	28	504

It is not possible to calculate animation file sizes exactly (for example, the amount of memory needed to store a particular sequence) in advance because there is a loss-less compression step and the resulting size will vary depending on the content of the animation file. Without the compression, each pixel would require 3 bytes. Therefore, the 80 x 60 examples above would take, at most, 1.7 MB (plus a bit of overhead).

Appendix E

DigiDuplex Mode

What is DigiDuplex?

The exclusive **DigiDuplex™ Mode** of the DPS-575 provides bi-directional connectivity between analog and digital devices.

In **DigiDuplex Mode**, the unit's SDI video input is routed to all analog video outputs, while the selected analog video input is simultaneously synchronized and sent to the SDI output.

With audio-equipped units, conversion between digital and analog audio is handled in similar fashion, simultaneously with the video. Either the AES/EBU or SDI audio input is transcoded to the analog audio outputs (and, if desired, the AES/EBU outputs), while a separately selected audio input (analog, AES/EBU, SDI, Test Tones, or Mute) is synchronized and sent to the digital audio outputs (SDI Embedded and/or AES/EBU.

DigiDuplex Mode is enabled and disabled with the **DigiDuplex Mode** option of the **Video Setup** menu.

DigiDuplex Mode cannot be enabled when the **Dolby-E** (**Data**) **Mode** is enabled in the **Audio Setup** menu. If **DigiDuplex Mode** is already enabled, it will be automatically disabled if **Dolby-E** (**Data**) **Mode** is then selected in the **Audio Setup** menu.

Controlling the DigiDuplex Signal Path

Video

The signal path in **DigiDuplex Mode** for video can best be visualized through flow diagrams. The signal path is as follows:

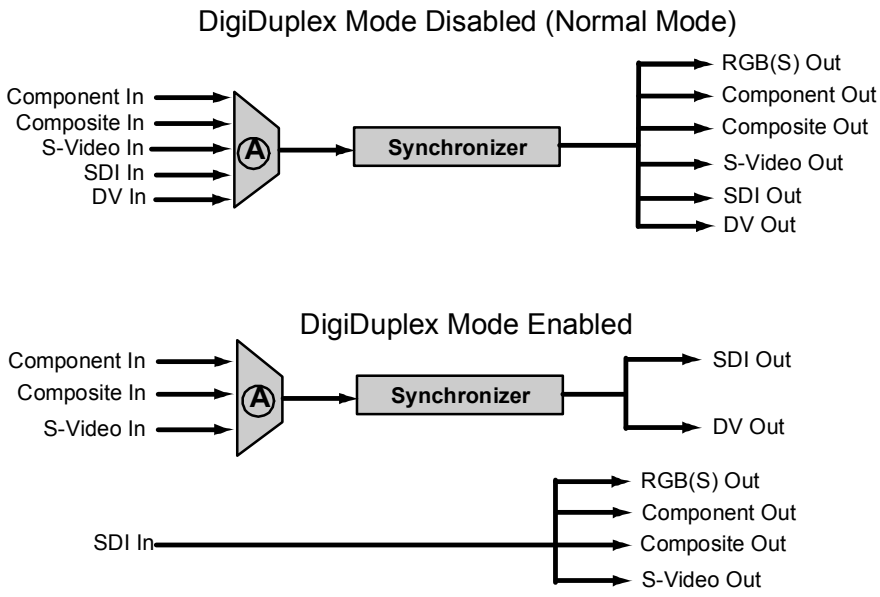


Figure E-1. DigiDuplex Modes (Video)

Note

DV input is not available in **DigiDuplex Mode**.

With **DigiDuplex Mode** disabled, the video input selection front panel controls or **Input Source** option of the **Video Setup** menu is used to select the desired analog video input (A), which will be synchronized and sent to all video outputs.

With **DigiDuplex Mode** enabled, the audio input selection front panel controls or **Input Source** option of the **Video Setup** menu is used to select the analog video input (A), which will be synchronized and sent to the SDI output (and the DV output if the optional DV I/O module is installed). The SDI input is transcoded and sent to all analog video outputs.

Audio

The signal path in **DigiDuplex Mode** for audio can best be visualized through flow diagrams. The audio signal path is as follows:

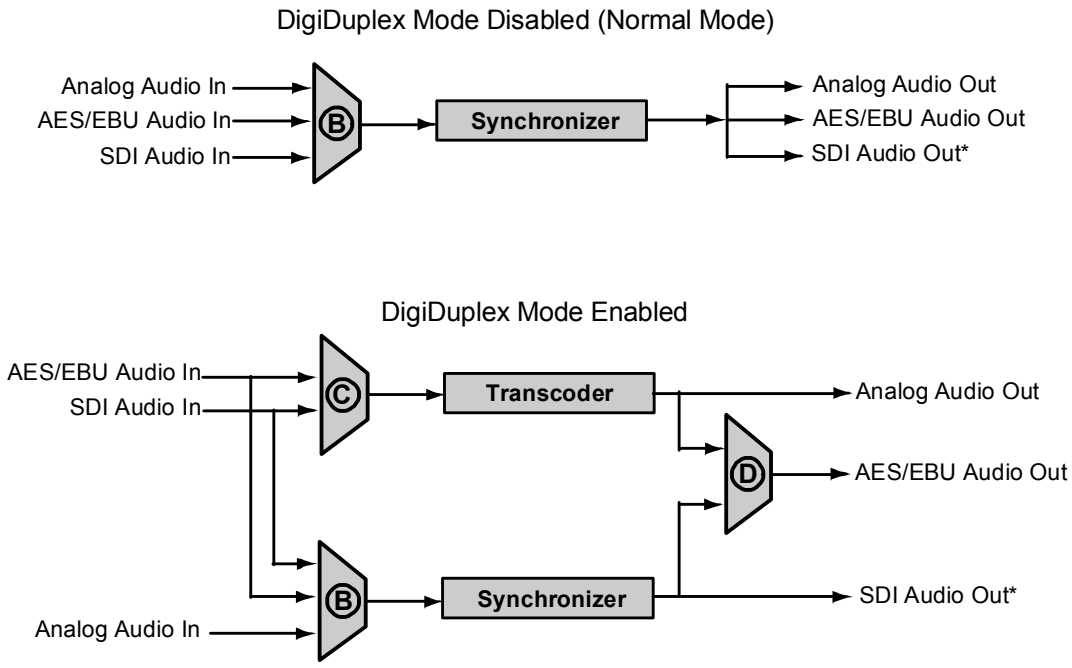


Figure E-2. DigiDuplex Modes (Audio)

Note

*If the **SDI Embedding** option of the **Audio Setup** menu is disabled, SDI Audio Out will not be available. When **SDI Embedding** is disabled and the **DDPlex AES/EBU Out** option is set to use the transcoder as the source, the output of the Audio Synchronizer will not be present on any of the outputs. Only the transcoded digital audio will be available (at the analog and AES/EBU audio options). *V Input is not available in **DigiDuplex Mode**.

With **DigiDuplex Mode** disabled, the audio input selection front panel controls or **Input** option of the **Audio Setup** menu is used to select the audio input (B), which will be synchronized and sent to the SDI output. In addition to the input formats, **Test Tones** and **Mute** are valid selections as the audio input source.

With **DigiDuplex Mode** enabled, the audio input selection front panel controls or **Input** option of the **Audio Setup** menu is used to select the audio input (B), which will be synchronized and sent to the SDI output. In addition to the input formats, **Test Tones** and **Mute** are valid selections as the audio input source.

In the **DigiDuplex Mode**, audio input selections for Channels 1 and 2 are locked together and must have the same input format.

The **DigiDuplex Input** option (C) of the **Audio Setup** menu selects which digital audio input source (SDI Embedded or AES/EBU) will be transcoded to the analog audio outputs. The **DDPlex AES/EBU Out** option (D) of the **Audio Setup** menu determines whether the AES/EBU audio output is fed from the Synchronizer or transcoder.

Configuration Example

The following example represents one possible application of **DigiDuplex Mode**—interfacing an analog video tape recorder with a digital routing system. In this example, the video routing system handles SDI video, while the audio routing system uses AES/EBU audio. The VTR uses component analog video with analog audio.

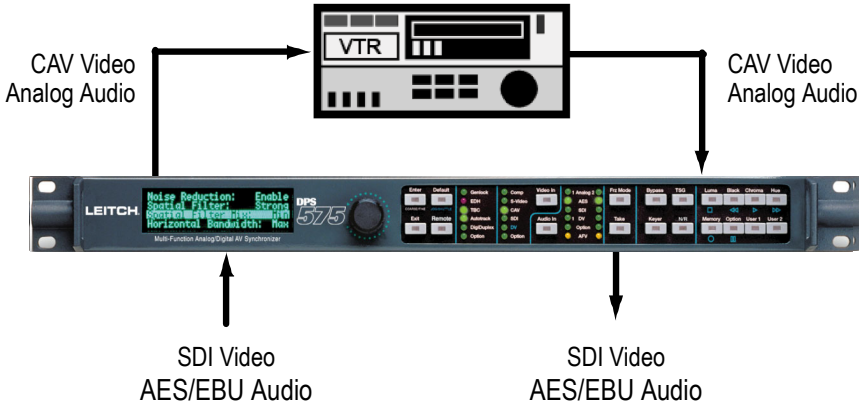


Figure E-3. Interfacing an Analog VTR with a Digital Routing System

The following configuration settings are in this example:

Input Source	Video Setup menu	Component
Input	Audio Setup menu	Analog
DigiDuplex Mode	Video Setup menu	On
DigiDuplex Input	Audio Setup menu	AES/EBU
DDPlex AES/EBU Out	Audio Setup menu	Sync

With these settings, the signal paths through the DPS-575 will be as follows:

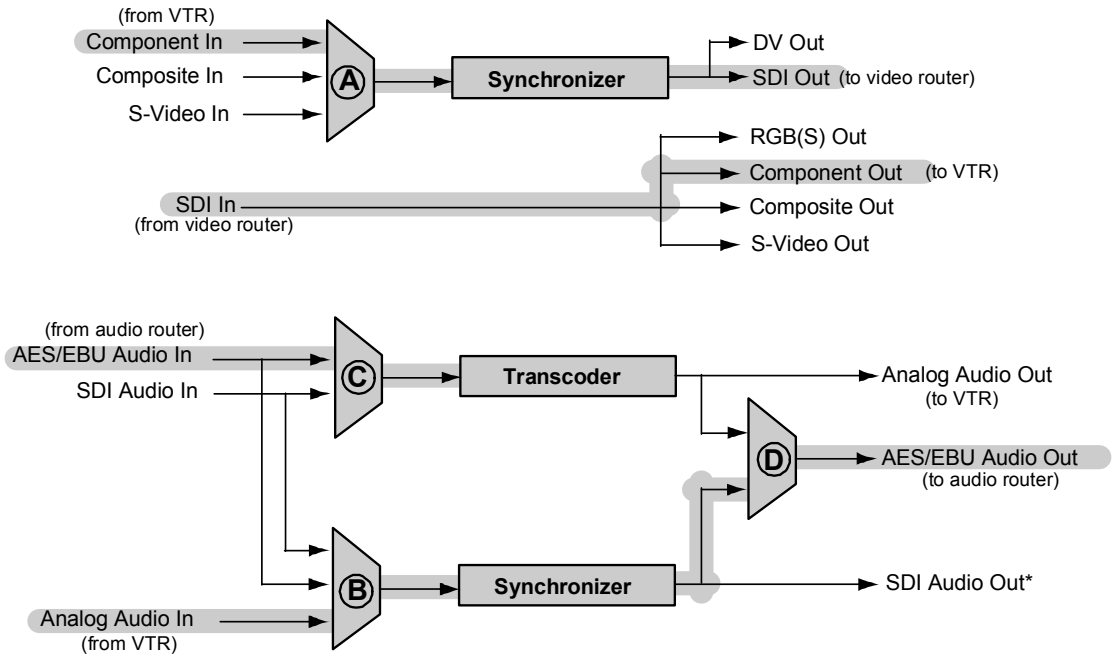


Figure E-4. Signal Paths Through DPS-575

Note

*If the **SDI Embedding** option of the **Audio Setup** menu is disabled, SDI Audio Out will not be available. When **SDI Embedding** is disabled and the **DDPlex AES/EBU Out** option is set to use the transcoder as the source, the output of the Audio Synchronizer will not be present on any of the outputs. Only the transcoded digital audio will be available (at the analog and AES/EBU audio options). *V Input is not available in **DigiDuplex Mode**.

As Figure E-4 shows, the component analog video and analog audio from the VTR are synchronized and sent to the digital routing system as SDI video and AES/EBU audio, respectively. Simultaneously, the SDI video and AES/EBU audio from the routing system are transcoded and sent to the component video and analog audio inputs of the VTR.

Appendix F

Ethernet Control

Configuring Ethernet Control

The 10BaseT Ethernet connector, labeled Ethernet on the rear of the unit, is used to connect the DPS-575 to a TCP/IP-based network for remote control and status monitoring through web-browsing software.

To utilize Ethernet control of the DPS-575, the unit must be configured for your network. Three networking parameters, found in the **Remote Control Setup** submenu of the **System Config** menu, must be configured for your network:

- IP Address
- Netmask
- Gateway

Your network administrator can provide you with appropriate settings. If you are setting up a new, dedicated network for the DPS-575 unit, the default IP Address of 10.0.XX.YY (where XX.YY is the internal serial number in each DPS-575 unit) should be adequate; the controlling computer would then have another address in this range (such as 10.0.0.100). *See* Chapter 12 "System Config Menu" on page 153 for more details.

You should also specify a **Machine Name**; this option is found in the same submenu. The **Machine Name** will be used to reference the DPS-575 unit by remote control devices such as the RC-575 or additional DPS-575.

Note

Do not exceed 48 units on the same subnet.
Do not exceed three web browsers on the same subnet.

Web Browser Control

Once the networking parameters of the DPS-575 have been configured and it is connected to the Ethernet network, the unit can be controlled through standard web browsing software (for example, Netscape Navigator or Microsoft® Internet Explorer).

To access the DPS-575, start the web browsing software on your computer as normal.

In the **Address**, **Location**, or **URL** field of your web browser (the name depends on the browser), type `http://` followed by the **IP Address** of the DPS-575 you are trying to control. For example, if the DPS-575 is configured with the IP Address 10.0.0.1, you would enter the following location into your web browser:

```
http://10.0.0.1
```

The browser then displays the **DPS-575 Web Server Control** interface.

Device Control

Click the **Device Control** from the main **Web Server Control** interface to present the DPS-575 menu structure for selecting and setting options. These menus mirror those accessible through the front panel of the unit.

The menu listings will display available options and their current settings.

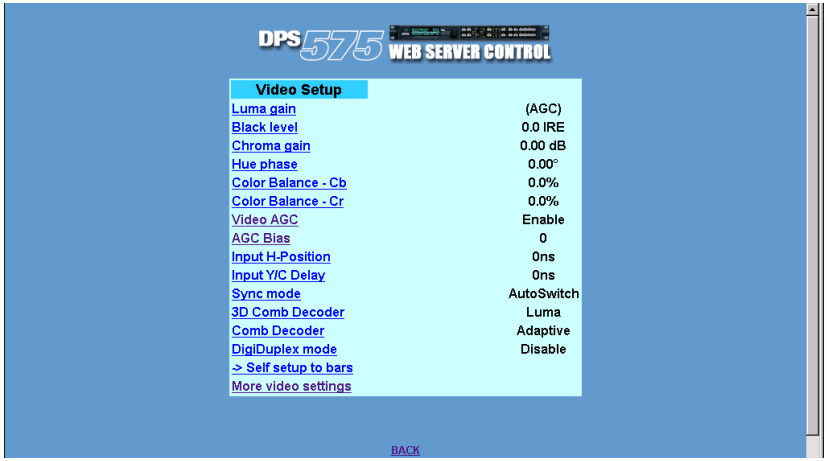


Figure F-1. DPS-575 Web Server Control Interface

Click on a menu item to bring up the **Changing Control Value** screen, and modify the value of the option.

The **Changing Control Value** screen shows the minimum, maximum, and default values for the selected option. Click on any of these three values to set the option.

For options with discrete values, such as **3D Comb Decoder** in the **Video Setup** menu, all of the discrete values are displayed. Click one of the values to set the option for that value.

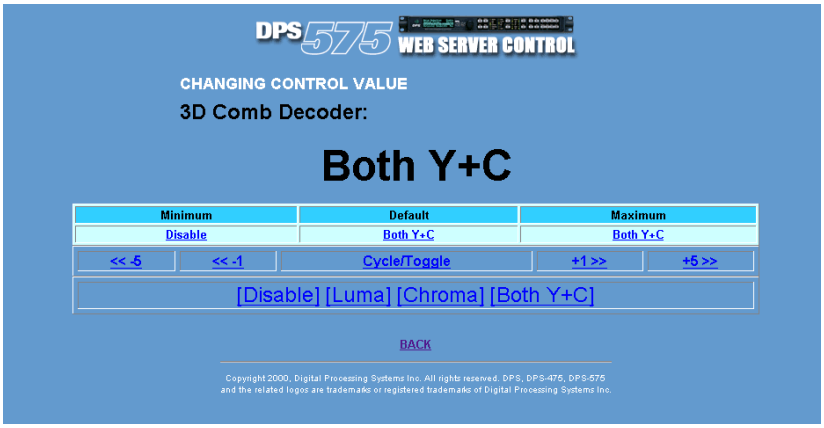


Figure F-2. Changing Control Value

Click the **Cycle/Toggle** button to cycle through the valid values, or in the case where there are only two possible values (such as Disable and Enable), to toggle between them.

For options with a numerical range of valid values (such as **Luma Gain** in the **Video Setup** menu), numeric adjustment buttons allow the value to be increased or decreased in fine or coarse increments.

Confidence Monitoring

Click **Confidence Monitoring** from the main **Web Server Control** interface to bring up the information and status screen for confidence monitoring of the unit.

This area is still under development. In the future, an extensive array of status information for both video and audio will be presented on this screen.

Currently, this option allows you to capture a still from the video output of the unit and download it to your computer in .BMP format in one of four sizes (ranging from full-screen to "postage-stamp" size).

Note

VITS patterns active in the unit will be disabled during the image grab. Furthermore, if the image is grabbed while the unit is displaying a test pattern (i.e. the Test Signal Generator is active), the video output will flash while the TSG image is downloaded.

Flash File System

Click **Flash File System** from the main **Web Server Control** interface to present a list of the files currently stored in the DPS-575.

Note

While your web browser will allow you to rename the file during the download, you should not change the file extension. If you are running the Microsoft Windows operating system, you can use the File Conversion feature of the Uploader software to convert it to a standard graphics file format for use with an image editing application once you have transferred a still image or test pattern to your computer. *See* Appendix D, "The Uploader Software" on page 213 for more information.

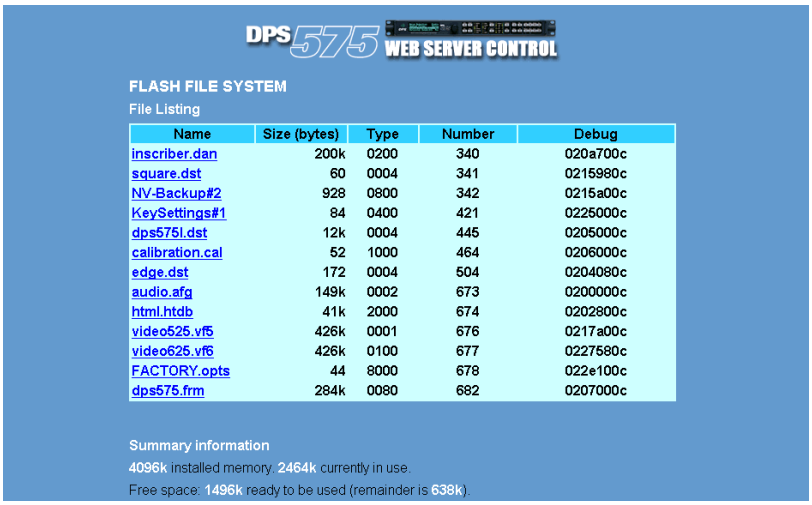


Figure F-3. DPS-575 Web Server Control interface

Click a filename in this list to activate your web browser's download function and transfer the file from the DPS-575 to the computer.

Upload File to Unit

Note

After uploading firmware files (.afg, .vf5, .vf6, or .frm files), the unit must be reset (either with the **Reset** button, or by power cycling).

Click **Upload File to Unit** from the main **Web Server Control** interface to upload firmware upgrades, video stills and animations to the DPS-575. *See* Appendix D, "The Uploader Software" on page 213 for a list of file types uploadable to the unit.

If you are running the Microsoft Windows operating system and you have image files that you wish to transfer to the unit that are not in a supported format, you will have to convert them first using the **File Conversion** mode of the Uploader software. *See* Appendix D, "The Uploader Software" on page 213.

Note that if you have downloaded upgrade files from the Leitch web site, you will have to unZIP them before they can be uploaded to the unit. (The ZIP file format is a compressed format commonly used for file distribution; utilities to uncompress ZIP files are readily available on the web).

Type the complete filename (including the directory path) into the **File to Upload** requester, or click the **Browse** button to browse your drives and select the desired file. Click the **Start Upload** button to transfer the specified file to the DPS-575. You will be notified upon completion of the upload.

Upgrading Firmware

Note

You must reset the DPS-575 unit after performing a firmware upgrade. To do this, simply turn the unit off and on.

When upgrading the firmware of the unit (.afg, .vf5, .vf6, or .frm files), it may be necessary to delete the existing firmware files from the unit before uploading the new ones if the unit's memory is almost full. This is a safety mechanism of the firmware upgrade process — old firmware is not deleted from the unit until it is confirmed that the new firmware file has been received successfully in its entirety. As a result, uploading firmware requires sufficient free space to store the new firmware files as well as the old ones. Once the new firmware files are validated, the old firmware files will be deleted.

To delete old firmware files prior to uploading new ones, use the **Flash Memory Mgmt** option of the **System Config** menu (*see* Chapter 12 "System Config Menu" on page 153 for details) to delete individual files, or the **Erase Firmware Power-Up** Key (*see* Chapter 3 "Operation–Front Panel Controls" on page 17 to delete all firmware files.

Other Machines on this Network

Click **Other Machines on this Network** from the main **Web Server Control** interface to display a list of other DPS-575 units present on the same Ethernet network as the unit you are currently controlling, including their Machine Name, IP Address, and DCN Address.

Click on one of the machines in this list to switch control to that specified machine, just as if you had entered its IP address in the **Address**, **Location**, or **URL** field of your web browser.

Warm Reset

Caution

The output video signals will briefly be interrupted (no output/ sync) during the reset.

Warm Reset allows you to remotely rest the DPS-575 after loading a file through the HTTP server, for example, firmware or HTML file upgrades.

CCS-DPS-575 Gateway Options

Overview

Note

Gateway Requirements: DPS-575 Firmware Version 2.0 or H2.0. PILOT Software Version 2.3 or higher.

The DPS-575 product line allows control and monitoring from CCS Applications and CCS-Protocol Gateways. The control and monitoring capabilities will match those provided from the local control panel on the DPS-575 unit or RC-575 remote control panel where possible. The CCS-DPS-575 Gateway will provide control and monitoring capability via a specific CCS graphical user interface (GUI) application known as PILOT for the majority of the DPS-575 functions.

The DPS-575 reports alarm status through the CCS control system using the CCS-DPS-575 Gateway.

The control system communications and methods used will be 100% compatible with existing (or in development) CCS products (i.e. CCS-Router, NEO, Genesis, etc.) but must be capable of co-existing in a system using existing DPS-575 control panels.

Figure F-4. CCS-DPS-575 Gateway - Front Panel View

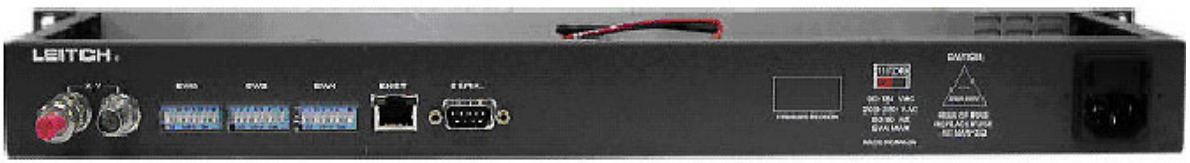


Figure F-5. CCS-DPS-575 Gateway - Rear Panel View

CCS-DPS-575 Gateway Features

- A single Ethernet port to support 10baseT networks
- 2 x BNC connectors for Leitch “X-Y” input/ output loop through connection (not utilized on this Gateway)
- DB-9 interface port for RS232/ RS422 control (not utilized on this Gateway)
- 3 banks of 8-position dip switches for protocol configuration (future use)
- Total no. of DPS-575 units supported by a single Gateway: est. 10 - 20 units
- Auto-switching power supply, 100 – 240 VAC, 50/ 60Hz with fuse protection
- Continuous power on (no on/off switch)
- Front panel power status LED indicator
- Rack-mountable

CCS Pilot Features

The Windows-based Pilot software provides control of the DPS-575 via a Windows-based Personal Computer and enables you to accomplish these tasks:

- Discover remote CCS devices dynamically on your CCS network without knowing their IP addresses.
- Build custom hierarchical views of the distributed network for each network user, using icons, colored text, and other visual information.
- Design, model, and test your CCS system.
- Set up user accounts and groups with different access rights to CCS devices and their control parameters.
- Centrally navigate, control, and monitor CCS devices over a local- or wide-area network.
- Set alarms to signal visual, auditory, or e-mail alerts when CCS devices go off-line or malfunction.
- Transfer software upgrades to CCS devices.
- Quickly diagnose and correct problems with the CCS network or devices.
- Monitor the integrity of video signals throughout a facility.
- Pilot has enhanced communications capabilities, connection reliability, and fault recovery.

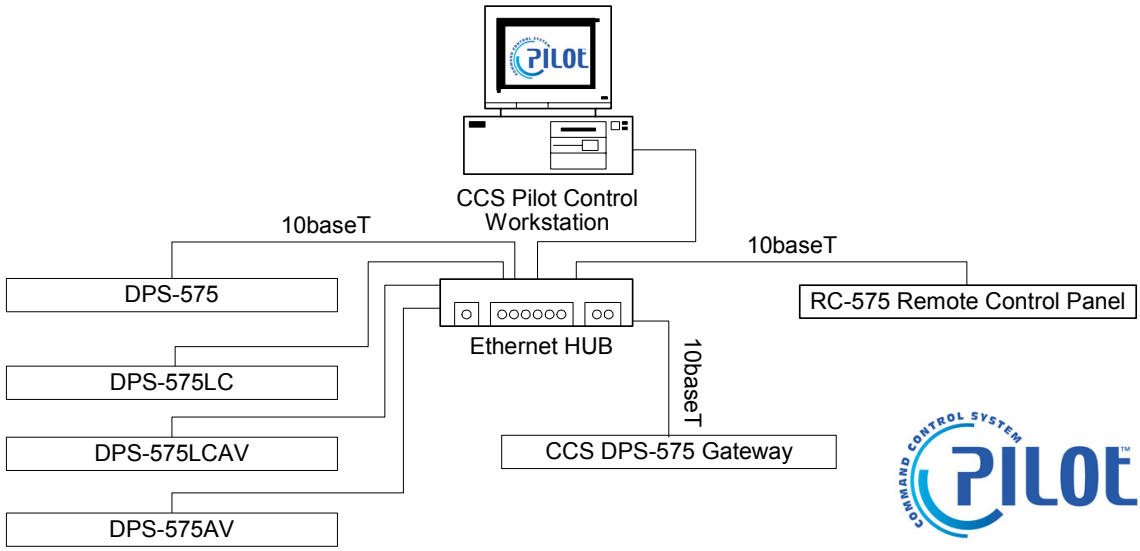


Figure F-6. Network Configuration Diagram

Appendix G

Cable Pinouts

Video Cable

The following are the cable pinouts for the Multi I/O Connector (DB-15M) video cable (Part # 774-753):

Pin Number on the DB-15M	Connection Type	Description
1	Gnd	Ground
2	BNC	Aux Blue
3	Gnd	Ground
4	S-Video	S-Video Chroma (C)
5	RCA	GPI In 1
6	BNC	Red
7	Gnd	Ground
8	BNC	Aux Sync/Comp. Out
9	Gnd	Ground
10	BNC	Audio Delay/GPI Out
11	BNC	Aux Green
12	Gnd	Ground
13	S-Video	S-Video Luma (Y)
14	Gnd	Ground
15	RCA	GPI In 2

Audio Cable (Standard)

The following are the cable pinouts for the standard AES/EBU (DB-25M) audio cable (Part # 774-755) included with the DPS-575AV:

Pin Number on the DB-25M	Connection Type	Description
1	NC	
2	NC	
3	NC	
4	NC	
5	NC	
6	NC	
7	NC	
8	NC	
9	NC	
10	NC	
11	NC	
12	NC	
13	NC	
14	BNC – Shield	AES2 Out (–)
15	NC	
16	BNC – Center	AES2 Out (+)
17	BNC – Shield	AES2 In (–)
18	NC	
19	BNC – Center	AES2 In (+)
20	BNC – Shield	AES1 Out (–)
21	NC	
22	BNC – Center	AES1 Out (+)
23	BNC – Shield	AES1 In (–)
24	NC	
25	BNC – Center	AES1 In (+)

Audio Cable (Optional)

The following are the cable pinouts for the optional AES/EBU DB-25M audio cable with XLR and BNC connectors (Part # 774-470A):

Pin Number on the DB-25M	Connection Type	Description
1	NC	
2	XLR-1	Shield
3	XLR-3	AES2 Out (–)
4	XLR-2	AES2 Out (+)
5	XLR-1	Shield
6	XLR-3	AES2 In (–)
7	XLR-2	AES2 In (+)
8	XLR-1	Shield
9	XLR-3	AES1 Out (–)
10	XLR-2	AES1 Out (+)
11	XLR-1	Shield
12	XLR-3	AES1 In (–)
13	XLR-2	AES1 In (+)
14	BNC – Shield	AES2 Out (–)
15	NC	
16	BNC – Center	AES2 Out (+)
17	BNC – Shield	AES2 In (–)
18	NC	
19	BNC – Center	AES2 In (+)
20	BNC – Shield	AES1 Out (–)
21	NC	
22	BNC – Center	AES1 Out (+)
23	BNC – Shield	AES1 In (–)
24	NC	
25	BNC – Center	AES1 In (+)

Warranty

Leitch Incorporated ("Leitch") warrants to each original end-user purchaser or licensee (each, a "Customer") of hardware or software products manufactured by Leitch (each, a "Product"), or of non-warranty repair or other services provided by Leitch ("Services"), that each such Product and all such Services will be free from defects in materials and workmanship that adversely affect the Product's performance or the Services' intended purpose for a period (the "Warranty Period") of:

- One year for server hardware Products;
- Two years for non-server, and Desktop hardware Products;
- Ninety days for parts, assemblies and supplies to support hardware Products previously sold to Customers;
- Ninety days for media of software licensed separately from Leitch hardware Products, and encoding created by Leitch as physically affixed on or embedded in such media;
- The same period as the hardware Product warranty for media of software licensed as an integral part of any Leitch hardware Product, and encoding created by Leitch as physically affixed on or embedded in such media
- Ninety days for Services.

Please refer to the current "Leitch Limited Warranty Policy" for a complete description of the warranty provided, including important exclusions and limitations as well as procedures for obtaining warranty service.

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Email: Service@Leitch.com

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