Dolby

Model DP567

Dolby Digital
Two-Channel Audio Encoder

User's Manual

Issue 2 Part No. 91520

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FCC

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

Canada

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

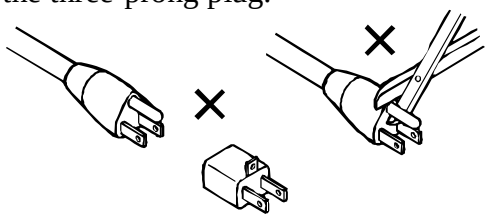
UL

Troubleshooting must be performed by trained technicians. Do not attempt to service this equipment unless you are qualified to do so.

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

Exposed portions of the power supply are electrically "hot". In order to reduce the risk of electrical shock, the power cord MUST be disconnected when the cover of this equipment is removed.

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



UK

As the colours of the cores in the mains lead may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The core which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter **E** or by the earth symbol ⏚ or coloured green or green and yellow.
- The core which is coloured blue must be connected to the terminal which is marked with the letter **N** or coloured black.
- The core which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

IEC Notices

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

IMPORTANT SAFETY NOTICE

This unit complies with the safety standard IEC65. To ensure safe operation and to guard against potential shock hazard or risk of fire, the following **must** be observed:

GB

- o If the unit has a **voltage selector**, ensure that it is set to the correct mains voltage for your **supply**. If there is no voltage selector, ensure that your supply is in the correct range for the input requirement of the unit
- o Ensure **fuses** fitted are the **correct rating and type** as marked on the unit.
- o The unit **must be earthed** by connecting to a correctly wired and **earthed** power outlet.
- o The **power cord** supplied with this unit must be wired as follows:

Live—Brown Neutral—Blue Earth—Green/Yellow

IMPORTANT – NOTE DE SECURITE

Ce materiel est conforme à la norme IEC65. Pour vous assurer d'un fonctionnement sans danger et de prévenir tout choc électrique ou tout risque d'incendie, veillez à observer les recommandations suivantes.

F

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

Phase—Brun Neutre—Bleu Terre—Vert/Jaune

WICHTIGER SICHERHEITSHINWEIS

Dieses Gerät entspricht der Sicherheitsnorm IEC65. Für das sichere Funktionieren des Gerätes und zur Unfallverhütung (elektrischer Schlag, Feuer) sind die folgenden Regeln unbedingt einzuhalten:

D

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

Phase—braun Nulleiter—blau Erde—grün/gelb

NORME DI SICUREZZA – IMPORTANTE

Questa apparecchiatura è stata costruita in accordo alle norme di sicurezza IEC 65. Per una perfetta sicurezza ed al fine di evitare eventuali rischi di scossa êlettrica o d'incendio vanno osservate le seguenti misure di sicurezza:

I

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

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

AVISO IMPORTANTE DE SEGURIDAD

Esta unidad cumple con la norma de seguridad IEC65. Para asegurarse un funcionamiento seguro y prevenir cualquier posible peligro de descarga o riesgo de incendio, se han de observar las siguientes precauciones:

E

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

Vivo—Marrón Neutro—Azul Tierra—Verde/Amarillo

VIKTIGA SÄKERHETSÅTGÄRDER!

Denna enhet uppfyller säkerhetsstandard IEC65. För att garantera säkerheten och gardera mot eventuell elchock eller brandrisk, måste följande observeras:

S

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

Fas—Brun Neutral—Blå Jord—Grön/Gul

BELANGRIJK VEILIGHEIDS-VOORSCHRIFT:

Deze unit voldoet aan de IEC65 veiligheids-standaards. Voor een veilig gebruik en om het gevaar van electrische schokken en het risico van brand te vermijden, dienen de volgende regels in acht te worden genomen:

NL

- o Controleer of de spanningscaroussel op het juiste Voltage staat.
- o Gebruik alleen zekeringen van de aangegeven typen en waarden.
- o Aansluiting van de unit alleen aan een geaarde wandcontactdoos.

Fase—Bruin Nul—Blauw Aarde—Groen/Geel

Chapter 1
Introduction

Thank you for purchasing the Dolby Model DP567 Dolby Digital (AC-3) Two-Channel Encoder. The DP567 combines ease and flexibility of operation with the high performance and quality for which all Dolby products are known.

1.1 About This Manual

This User's Manual has been prepared specifically to help you get the most from the DP567, and includes the proper steps to follow before operating the DP567 in order to take advantage of all of its features. We suggest that you keep this manual readily available for reference. Two additional manuals, *Dolby Digital Broadcast Implementation Guidelines* (Part No. 91549) and *Dolby Digital Professional Encoding Manual* (Part No. 91535) provide in-depth operational details for specific applications. Contact your dealer or Dolby Laboratories for availability.

Advanced Television Systems Committee (*ATSC*) specifications are often referenced in this manual to explain methods of standardization applied to the DP567. You can find a link to the *ATSC A/52 Annex B* specification under "Technical Information" at our website, www.dolby.com, or you can link directly to: www.atsc.org and select **standards**.

Conventions

The DP567 User's Manual employs the following conventions:

- The term AC-3 in figures and tables refers to Dolby Digital.
- "Warning" and "Note" annotations contain important information specific to the text that it follows.

  Examples:

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

NOTE: *Both audio pins of the XLRs (pins 2 and 3) must be connected; neither may be left open.*

- The DP567 buttons are represented by bold-faced capital letters enclosed in brackets.
- Example:

  Press the **[ENTER]** button.

- Menu selections shown in the liquid crystal display (LCD) of the DP567 are represented as follows:

  In the body of the text, they are written in bold-face type:

  Digital Input
  In figures, a frame surrounds the text:

1.2 About the Dolby Model DP567

The DP567 is a two-channel audio encoder unit that provides high-quality encoding of Dolby Digital (AC-3) signals for broadcast and other audio/video applications. By providing a convenient and straightforward path for adding Dolby Digital capability, it is easily integrated into new and existing broadcast facilities, including HDTV broadcast stations. The combination of digital and analog inputs allows local encoding of any mono or stereo audio signal, while the pass-through feature allows pre-encoded audio bitstreams (including Dolby Digital 5.1–channel surround sound signals) to be passed through the system to the end user. To maintain compatibility with existing surround broadcasting systems, the DP567 preserves pre-encoded Dolby Surround signals in the stereo coding mode. For a system block diagram on DP567 processing, please see ***Appendix A***.

The DP567 is suitable for use in any application where high quality one- or two-channel Dolby Digital encoding is required. The DP567 supports all one- and two-channel Dolby Digital audio coding modes at sample rates of 32, 44.1, and 48 kHz.

For greater flexibility, full control of the DP567 encoding mode is provided through both the front panel and remote interfaces. This allows the encoder to operate as a full-featured stand-alone unit or as part of a larger automated broadcast facility. Remote control can be implemented through a remote serial interface accessed via a rear-panel connector or front-panel connector. To prevent local changes to encoding parameters, front-panel access is locked out when the remote mode is active.

Front-panel status information is provided through a two-line by 16-character liquid crystal display (LCD) and discrete LED indicators for key system functions. Rear-panel input level trimmers are provided for the analog inputs, together with calibration LEDs. In addition, the DP567 provides a digitally generated test signal for system alignment and diagnostics which can be activated from either the front panel or the remote control.

For simplified operation, the DP567 provides 32 factory-default and user-definable presets. The user-definable presets allow common encoding configurations to be saved so they can be quickly recalled at any time.

Other features include built-in sample rate conversion providing multiple clock synchronization options for a variety of applications, SMPTE time code synchronization, an adjustable coding delay, and an autodetect feature that allows automatic detection of pre-encoded bitstreams.

The DP567 offers a number of connectors for input and output signals used to communicate status and other information. Other input connectors include an AES/EBU digital input that accepts either PCM or pre-encoded audio signals, including 5.1–channel signals, and a dedicated AES/EBU reference signal input, which may be used either as a clock reference input or as an input for the bitstream multiplexing feature. The DP567 also provides input connectors (with loop-through) for both LTC and VITC SMPTE time code that can control encode start and stop times, as well as provide audio time stamping of the Dolby Digital output bitstream.

1.3 Features

- Multiple data rates (56–640 kb/s)
- One- or two-channel encoding (mono, dual mono, stereo)
- Multiple sample rates (32, 44.1, 48 kHz)
- Analog inputs with 20-bit A/D conversion
- Digital AES/EBU coaxial input with loop-through output
- Reference AES/EBU coaxial input with loop-through output
- Dual AES/EBU coaxial outputs
- Built-in sample-rate converter
- Internal or external clock reference
- RS-232 port for auxiliary data with selectable data rates
- Front-panel RS-232 port for remote control
- Rear-panel SMPTE 207M port for remote control
- Download capability for software upgrades
- LTC and VITC SMPTE time code inputs for start/stop control and time stamping
- General purpose input/output (GP I/O) ports for status and control
- User-adjustable encoding delay with TTL input port for video delay compensation
- Automatic detection and pass-through of pre-encoded bitstreams
- Bitstream multiplexing capability with reference input
- Front-panel user interface with alphanumeric LCD display
- Factory default and user-definable preset modes
- Front-panel channel activity and status LEDs
- Built-in test tone generator
- Hot standby capability for system reliability

1.4 Dolby Digital (AC-3)

Dolby Digital (AC-3) is a perceptual audio coding algorithm that takes advantage of auditory masking and both intra- and inter-channel redundancy to enable the efficient storage and transmission of high-quality digital audio.

Conceived as a multichannel coding system, Dolby Digital was first introduced in 1992 for cinema sound. Due to its combination of audio quality, bandwidth efficiency, and flexibility, it has since become available on laser disc, a mandated audio format for DVD-Video worldwide, and the audio standard for ATSC digital broadcast TV and SCTE digital cable TV. Dolby Digital is also increasingly popular for applications such as DVB and other satellite systems.

Dolby Digital allows the number of channels and bit rates to be tailored to particular applications, such as 5.1 channels at 384 to 448 kb/s for consumer surround sound formats and two channels at 192 kb/s for stereo programs. Additional features include the ability of consumer decoders to downmix multichannel bitstreams for mono, stereo and Dolby Surround playback, ensuring full compatibility under a wide variety of listening conditions.

Chapter 2
Pre-Installation

2.1 Unpacking

Before unpacking the DP567, inspect the outer carton for shipping damage. If the carton shows damage, inspect the unit in those areas.
Several accessories are provided with the unit. These may include:

- Rack screws and washers
- Power cord
- BNC 75-ohm terminators, used on Digital, Ref, and VITC inputs (Part No. 79114)
- Spare fuse 1A (Part. No. 56016)
- Spare fuse, 2A, used on the internal power supply (Part No. 56017)
- Hex wrench (for access to inside of unit)
- Alignment tool ("pot tweaker")

2.2 Inspection

Carefully remove the unit from its carton, remove the plastic wrapping, and place on a flat surface.
If there are no signs of damage, proceed to "Fusing Information" below.

2.3 Fusing Information

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

The DP567 uses a universal switching power supply that handles the full range of nominal mains voltages between 90 Vac and 264 Vac and any frequency between 50 Hz and 60 Hz.

2.3.1 Main Fuse

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

Check Main Fuse

WARNING*: The power to the DP567 must be off when the following steps are performed. Ensure that the main power cable to the unit is not connected to a power source.*

1. With a small flat-blade screwdriver, open the fuse compartment door in the AC power input housing as shown in Figure 2-1.

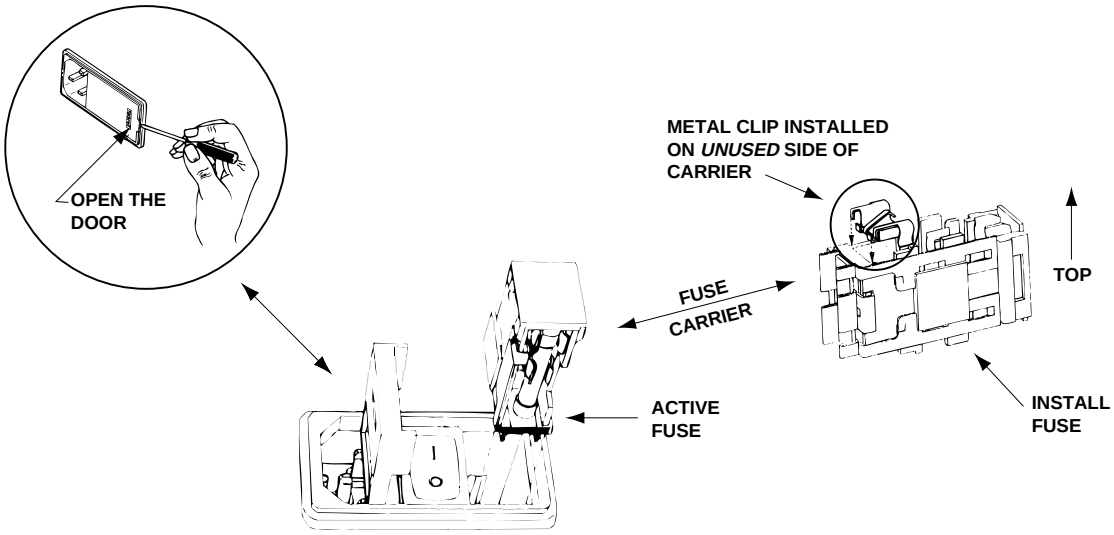


Figure 2 - 1. Check main fuse.

2. Check that the fuse in the active (lower) fuse carrier is of the correct rating. The fuse carrier must be inserted into the compartment with the orientation as shown. *Do not force the carrier into the compartment. Damage will result.*
3. Snap the fuse-compartment door closed.

2.3.2 Internal Fuse

The switching power supply contains a separate fuse. Most fault conditions should be protected by the main fuse. The internal fuse rating is:

2 Amp, 250V, 20 mm, fast-blow (all operating voltages)

2.4 Configuring Jumper Settings

The Model DP567 allows you to choose options that are configured by internal jumpers. Factory default settings are shown in *Figure 2-2*.

2.4.1 Removing the Top Cover

To gain access to these jumpers, remove the top cover of the unit as follows:

WARNING*: The power to the DP567 must be off when the following steps are performed. Ensure that the main power cable to the unit is not connected to a power source.*

1. Remove the 12 screws securing the top cover to the chassis (use the supplied hex wrench to remove the three screws on the upper front panel). The three washerless screws should be reserved for connection at the top of the front panel when re-assembling the unit.

NOTE*: The front panel is attached to the chassis by means of three screws at the lower end of the front panel. Do not remove these screws.*

4. Gently lift the top cover upward and towards the rear. Carefully set aside.
5. Reverse the above procedure when re-assembling the unit.

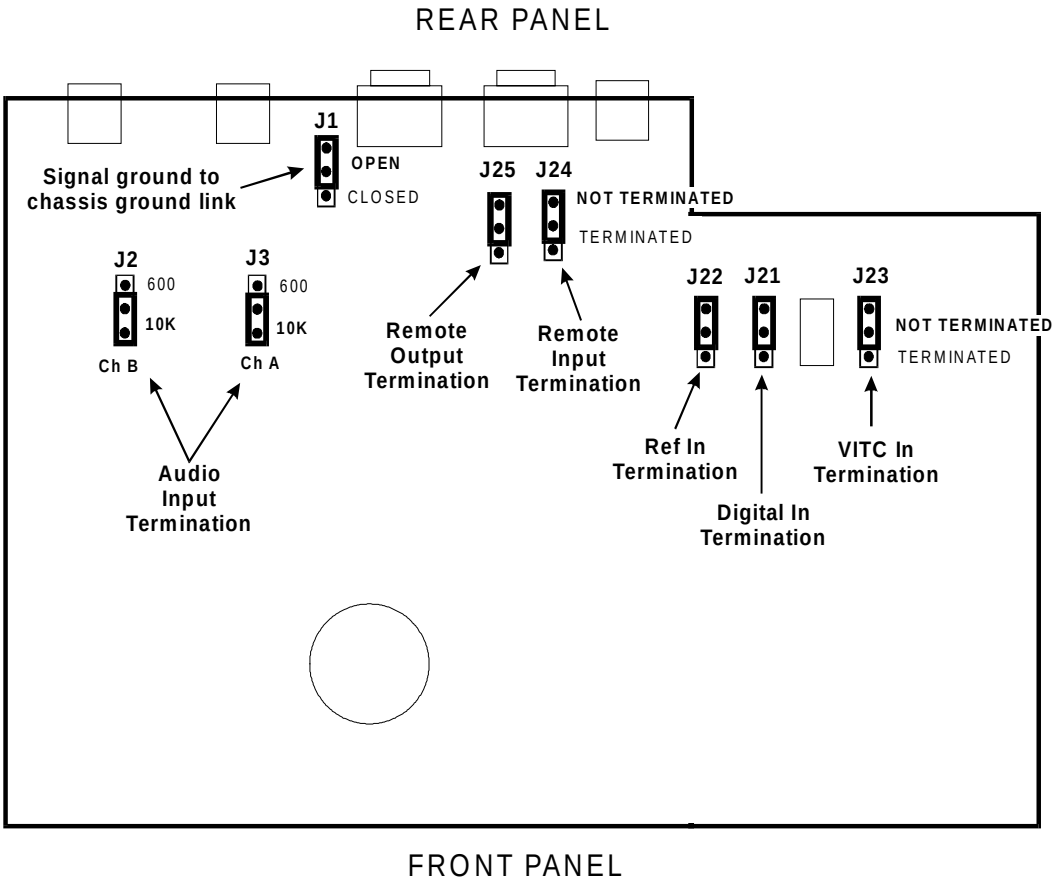


Figure 2 - 2. DP567 motherboard
Default positions of the jumpers are shown in boldface type.

2.4.2 Digital In / Ref In / VITC Input Termination

Digital In, **Ref In**, and **VITC In** inputs each have a pair of BNC connectors (internally connected) that allow pass-through connection of their respective signals to multiple DP567 units.
Conformance to AES-3ID-1995 and SMPTE 276M requires a line termination of 75 ohms for each of these signals. When multiple units are used, termination should be made at the end of the signal line—that is, the last unit in the chain. The use of BNC terminators at the spare input connectors of the rear panel (external termination) is recommended, although internal jumpers are provided as an alternative method for input termination. *Note that only one method of termination should be used for each signal.*

- External Termination *(recommended method)*

  Connect each BNC terminator to one of the spare input connectors on the final (or only) unit in the signal chain. BNC terminators are provided in the accessory packet.
- Internal Termination

  As an alternative, internal jumpers J21, J22, and J23 are provided for selecting 75-ohm termination for each input. Move each jumper of the final (or only) unit in the signal chain to the terminated position (towards the front of unit). The factory default condition for each jumper is **NOT TERMINATED**.

2.4.3 Remote Data Termination J24/J25 [NOT TERMINATED]

The rear-panel **Remote** connector provides a balanced, asynchronous data interface with electrical and mechanical conformance to SMPTE 207M. This interface supports the interconnection of multiple units via a common cable. To maintain signal integrity, cable termination is recommended.
The DP567 provides two internal jumpers for **Remote** signal termination. Jumper J24 corresponds to the data input and jumper J25 corresponds to the data output of the remote connector. When enabled, each jumper connects 124 ohms of termination resistance across the corresponding signal lines. The factory default for both jumpers is **NOT TERMINATED**.
Typically, when multiple units are used, termination should be made at the end of the signal line—that is, the last unit in the chain. Move jumper J24 and/or jumper J25 toward the front of the unit to enable termination. As an alternative, termination resistance can be incorporated directly into the external cable assembly.

2.4.4 Analog Audio Input Termination J2/J3 [10k ohms]

Leave jumpers J2/J3 in the default **10k** position, if you are using an analog audio source designed to drive loads with high input impedance.
Move the jumpers to the 600-ohm position (towards the rear of the unit) if you are using the unit with an audio source that requires a 600-ohm load.

2.4.5 Signal Ground-to-Chassis Link J24 [OPEN]

It is normal practice to connect signal ground to power-line ground for safety and other reasons. In most systems, minimum induced hum is obtained when this connection is made at only one piece of equipment in the audio chain.
To minimize the addition of circulating ground currents in a particular installation, the default setting for this jumper link is **OPEN**. Note that there is always a 1k ohm resistor across the link so that the audio ground is never totally isolated from the chassis ground.
To connect audio ground directly to chassis ground in the DP567, move jumper J1 to the **CLOSED** position (move jumper towards the front of the unit).

CAUTION*: The chassis is always connected to the ground pin of the power line cord. For safety reasons this ground wire MUST NEVER be disconnected.*

Chapter 3
Installation and Level Calibration

3.1 Mounting

The DP567 occupies a 1–U (1 ¾" x 19") rack mount and can be positioned in any orientation. Ensure adequate ventilation, and do not mount the unit directly above any heat-generating equipment. The unit operates within specifications up to a maximum ambient temperature of 45º C (113º F). Note that the ambient temperature inside a poorly ventilated rack may be considerably higher than that in a room.

3.2 Audio Connections

NOTE: *Detailed connector and pinout specifications are in* ***Appendix B****. See Figure 3-1 for connectors located on the rear panel.*

3.2.1 Digital Audio Input (Digital In)

Connect an AES/EBU formatted signal to the DP567 **Digital In** BNC input using 75-ohm shielded cable. Confirm that the appropriate signal termination has been made (see ***Section 2.4.2*** for **Digital In** input termination). Signal levels should conform to AES-3ID-1995 and SMPTE 276M specifications.
When using the **Digital In** connector,

- the loop-through connection must also be in use, or
- an external 75-ohm terminator must be attached to the **Digital In** loop-through connection (unless the internal termination resistor has been enabled).

3.2.2 Analog Audio Input (Analog In)

Connect analog inputs **Ch A** and/or **Ch B** with XLR female connectors.

NOTE*: When operating in single channel audio coding modes, only audio from Channel A is used.*

AES and IEC convention requires XLR Pin 2 to be "high/hot" and Pin 3 to be "low/cold." To maintain international standardization, we recommend that the AES and IEC standards be followed.

In an installation where the audio source is unbalanced, avoid ground loops by using two-conductor shielded cables in the same manner as you would for balanced circuits. The conversion from a balanced to an unbalanced circuit should be made only at the source end of the cable (not at the DP567) by connecting the low side wire to ground.

Both audio pins of the XLRs (pins 2 and 3) must always be connected; neither may be left open.

3.2.3 Main Digital Output (Main Out)

Connect to the **Main Out** BNC output using a 75-ohm shielded cable with matching line termination. Encoded output data appears as an AES/EBU signal formatted in accordance with the *ATSC A/52 Annex B specification*, and signal levels are in conformance with AES-3ID-1995 and SMPTE 276M specifications. Nominal output impedance is 75 ohms.

3.2.4 Switched Digital Output (Switched Out)

Connect the **Switched Out** BNC connector as an alternate audio output. During normal system operation, the output signal of this connector is identical to that of the **Main Out** connector. In the event of a system fault, power failure, or receipt of the Bypass command, the **Switched Out** connector that is internally connected to the **Bypass In** input connector will provide "hot" (immediate) standby capability for the primary unit with minimum external connections.

3.2.5 Bypass Digital Input (Bypass In)

If the DP567 is operating as the primary encoder in a "hot" standby configuration, connect the **Bypass In** input to the **Main Out** connector of the secondary (standby) encoder. In case of a system fault, power failure, or activation of the **Bypass Mode** parameter, the **Bypass In** connector will be internally connected to the **Switched Out** connector.

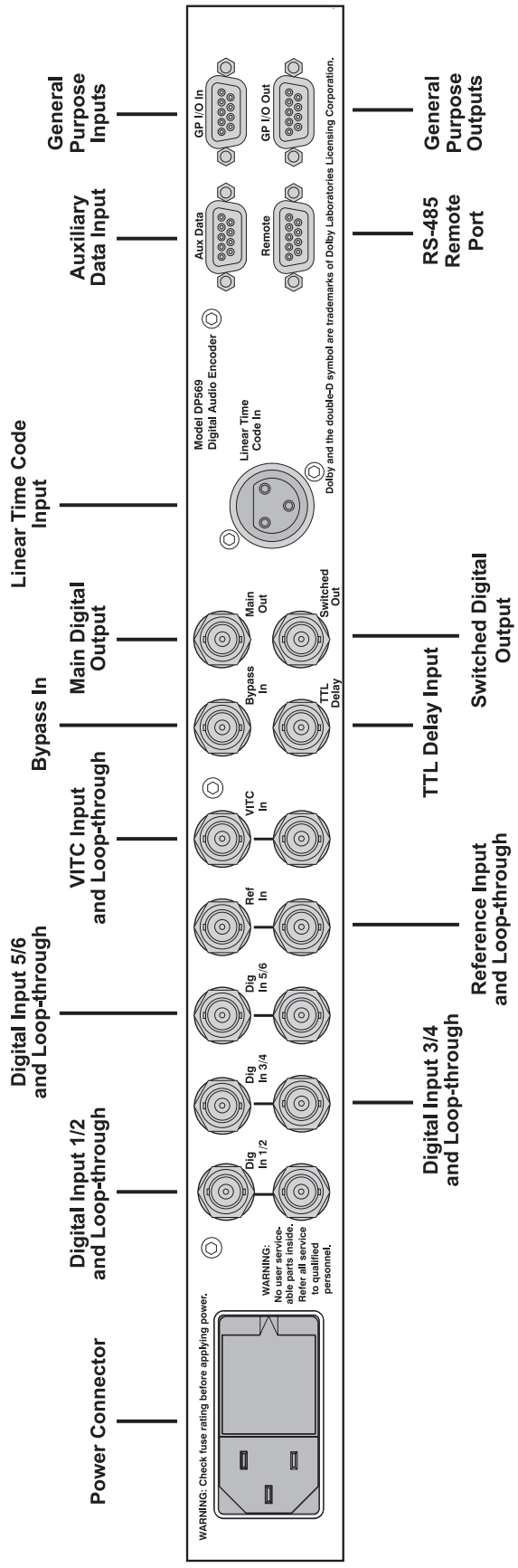


Figure 3 -1. Rear panel.

3.3 Reference / Time Code / Delay Connections

3.3.1 Reference Input (Ref In)

Connect to the **Ref In** BNC input using a 75-ohm shielded cable when using a dedicated AES/EBU clock reference signal or when using the bitstream multiplex feature. Both professional and consumer-formatted input bitstreams are accepted. When used only as a clock source, the received data is ignored and may be in any format. When **Ref In** is used for the multiplex function, the input must contain pre-encoded bitstreams in a format consistent with *ATSC* and/or *IEC 1937* specifications. Confirm that the appropriate signal termination has been made (see ***Section 2.4.2*** for **Ref In** input termination). Signal levels should conform to AES-3ID-1995 and SMPTE 276M specifications.
When using the **Ref In** connector,

- the loop-through connection must also be in use, or
- an external 75-ohm terminator must be attached to the **Ref In** loop-through connection (unless the internal termination resistor has been enabled).

3.3.2 Vertical Interval Time Code Input (VITC In)

If using SMPTE vertical interval time code (VITC), connect the composite video signal to the **VITC In** BNC input using a 75-ohm shielded cable. Confirm that the appropriate signal termination has been made (see ***Section 2.4.2*** for **VITC In** input termination).

When using the **VITC In** connector,

- the loop-through connection must also be in use, or
- an external 75-ohm terminator must be attached to the VITC In loop-through connection (unless the internal termination resistor has been enabled).

3.3.3 Linear Time Code Input (Linear Time Code In)

Connect the **Linear Time Code In** input if you decide to use SMPTE linear time code (LTC).
AES and IEC convention requires XLR Pin 2 to be "high/hot" and Pin 3 to be "low/cold." To maintain international standardization, we recommend that the AES and IEC standards be followed.
In an installation where the audio source is unbalanced, avoid ground loops by using two-conductor shielded cables in the same manner as you would for balanced circuits. The conversion from a balanced to an unbalanced circuit should be made only at the source end of the cable (not at the DP567) by connecting the low side wire to ground. *Note that both audio pins of the XLRs (pins 2 and 3) must always be connected. Neither may be left open.*

3.3.4 TTL Delay Input (TTL Delay)

If the encoding delay of the DP567 is being controlled remotely, make connections to the **TTL Delay** BNC input connector. This port accepts a TTL level signal with an active high-pulse width that corresponds to the desired delay. It may be driven by a video frame sync or related equipment to automatically match the DP567 encoding delay with an associated video delay.

3.4 Data / Control / Status Connections

3.4.1 Auxiliary Data (Aux Data)

If required, connect an auxiliary data cable to the 9-pin **Aux Data** D connector. This connector follows the interface specifications of EIA standard RS-232, with a minimum two-wire connection (half-duplex). The auxiliary data channel supports a 10-bit asynchronous serial data format (1 start bit, 1 stop bit, 8 data bits, no parity) at a data rate specified by the user. Under RS-232, the Model DP567 is categorized as a DCE (Data Communications Equipment) device, and is typically connected to data terminal equipment (DTE).

3.4.2 Remote Control

Serial remote control of the DP567 can be accomplished through either the front-panel mini-DIN Remote connector, or by the rear-panel 9-pin Remote D connector. The front and rear remote ports cannot be active at the same time. When a properly configured cable is attached to the front-panel connector, remote operation via the rear-panel connector is disabled.
Either remote port is active only when the **Remote** mode or **Download** mode has been enabled. When active, the port operates at available baud rates of 9.6, 19.2, and 38.4 kb/s, which are defined by the **Remote Baud Rate** parameter in **Setup** (please see ***Section 5***, ***Advanced Operation***).

Front Panel

The front-panel connector conforms to the electrical specifications of EIA standard RS-232, with a minimum two-wire connection (half-duplex). The 8-pin mini-DIN connector is configured with a pinout that allows direct connection to PC serial ports with commercially available modem cables (please refer to ***Appendix B.12*** for pinout information). Note that Pin 8 of the connector must be externally connected to Pin 4 (ground) to enable the front-panel remote function. This connection is normally included within commercial cable sets.

Rear Panel

The rear-panel RS-485 connector conforms to the electrical and mechanical specifications of SMPTE standard 207M. This is a balanced asynchronous interface specification that provides for the interconnection of multiple devices over a common bus (see ***Appendix B.11*** for pinout information). Confirm that signal termination jumpers J24 and J25 are set as desired (see ***Section 2.4.3***, ***Remote Data Termination J24/J25***).

3.4.3 GP I/O Control Inputs (GP I/O In)

If required, connect input signals to the 9-pin D connector **GP I/O In** for the direct control of eight specific DP567 functions by an external device. If no connection is made, input signal levels default to a high level (5 volts).
Functions are selected by grounding the corresponding pin. The following functions are provided (see ***Appendix B.13*** for detailed information):

Pin	Function
1	Bypass
2	Autodetect (Input Format)
3	Pre-encoded (Input Format)
4	PCM (Input Format)
5	User Preset 1
6	User Preset 2
7	User Preset 3
8	User Preset 4
9	(Ground)

Pin 1: Bypass Control

When the GP I/O control input for **Bypass** is active (grounded), the bypass function will be enabled, independent of the setting of the **Bypass Mode** parameter (see ***Section 4.3.5***). Note that if active GP I/O control of the bypass function is desired, the **Bypass Mode** parameter must be set to *Disabled*.

Pins 2-4: Input Formats

When the GP I/O control inputs for **Autodetect**, **Pre-encoded**, or **PCM** are asserted (high to low transition), the corresponding **Input Format** will be selected. GP I/O modification of **Input Format** is equivalent to changing the **Input Format** parameter directly in the front-panel **Setup** menu, and the same limitations apply. In particular, if the selected **GP I/O Input Format** is not allowed due to conflicts with other parameters (for example, the **Input Source** or **Clock Source**), the **Input Format** selection will be *ignored.*

***NOTE**: Two input formats cannot be active at the same time. GP I/O input formats are active in the order of selection—or more specifically, when each is asserted (high to low transition).*

Pins 5-8: User Presets

When a GP I/O control input for a user preset is asserted (high to low transition), the corresponding preset is immediately recalled. GP I/O preset selection is equivalent to recalling the preset directly from the corresponding front-panel preset button.

Preset parameters may be subsequently modified even if the GP I/O input remains in a low state.
Asserting the GP I/O control input for **Bypass** overrides the recalled **Bypass Mode** setting contained in a user preset.

NOTE: *The state previous to the user preset selection cannot subsequently be recalled.*

3.4.4 GP I/O Status Outputs (GP I/O Out)

If required, connect the 9-pin D connector **GP I/O Out** to remotely monitor the status of eight specific DP567 functions. The following status indications are available (detailed information is provided in ***Appendix B.14***):

Pin	Function
1	Fault
2	Lock
3	Pass-through
4	Encoding
5	User Preset 1
6	User Preset 2
7	User Preset 3
8	User Preset 4
9	(Ground)

Pin 1: Fault

This output corresponds to the front-panel "Fault" LED. When a power supply or internal hardware fault is detected, the "Fault" LED illuminates and the "Fault" output signal goes low. When no fault is detected, the LED does not illuminate and the output signal remains high.

Pin 2: Lock

This output reports the status of both the selected **Input Source** and **Clock Source**. A high level on this signal indicates that both sources are "valid" (i.e., locked and stable). A high level does not always guarantee a valid output, only that the input state is valid. A low level indicates one or both sources are "not valid", and as a result, the DP567 will not produce a valid output.

Pin 3: Pass-through

This output reflects the status of **Pass-through** mode. A high level indicates that **Pass-through** is not active. A low level indicates that **Pass-through** is active. Note that this output does *not* reflect the state of the **Input Format** parameter or the corresponding GP I/O control input signal (Pre-encoded), but rather the actual *processing state* of the DP567. The GP I/O status output for **Pass-through** can be active when a pre-encoded bitstream is being received and passed through to the DP567 output during *Pass-through* or *Autodetect* mode (to enable these modes please see **Sections 4.3.2** ***Operational Modes*** and **4.3.3** ***Autodetect Mode***).

Pin 4: Encoding

This output reflects the state of the Dolby Digital (AC-3) encoding process. A high level indicates that the Dolby Digital encoding process is not active. A low level indicates that the Dolby Digital encoding process is active (this includes test tone modes).
As with **Pass-through**, mentioned above, this output reflects the actual *processing* state of the DP567. The Dolby Digital encode function may be active only when a PCM bitstream is being received, encoded, and sent to the DP567 output during the *PCM* or *Autodetect* mode (to enable these modes please see ***Section 4.3.2***, ***Operational Modes***).

NOTE*: The combination of the Pass-through and Encoding outputs indicates the DP567 output status. A low level on either means that the DP567 is producing a valid encoded output signal. A high level means the DP567 is not producing a valid encoded output. (Output status does not apply to the switched output when the* ***Bypass*** *mode is active.)*

Pin 5-8: User Presets

These outputs are directly tied to the respective front-panel preset LEDs. An active preset state causes the corresponding preset LED to illuminate and the corresponding output signal to be low. When a preset state is not active, the preset LED does not illuminate and the corresponding output signal is high. These status outputs (and LEDs) indicate the *internal processing state*, not the GP I/O control inputs of the user presets.

3.5 Power

When you are confident that you have observed all safety information provisions provided at the beginning of this manual, connect the main power cable to the unit to turn on the power to the DP567.
Upon power-up, the DP567 enters a self-test sequence. Several screens including the software revision level appear, then the default encoder status screen is displayed. The power-up sequence will attempt to restore the previous operational state of the DP567. If the last operational state is corrupted or unavailable, the DP567 restores the factory default state.

3.5.1 Power On States

Depending upon which button you press while the DP567 powers up, the unit can enter other power on states—that is, the condition or mode of the DP567 after power is applied. The power on states include restoring factory defaults and entering the **Download** mode.

To restore factory defaults:

Press [**ENTER**] as soon as power is supplied to the unit, and continue depressing the key until the factory reset menu appears. Restoring factory default settings overrides the last operational state, if present, and resets all DP567 parameters to a default state, including parameters not normally saved with preset modes. ***Note that any user-created presets will be erased by this operation.*** The resume or restore operation occurs only if the diagnostic test sequence successfully passes.

To enable the Firmware Download mode:

Press [**SETUP**] as soon as power is supplied to the unit, and continue depressing the key until the download screen appears. The download rate is fixed at 38.4 kb/s. **Download** mode can also be enabled from the front-panel menus. See ***Appendix E, Software Downloading Procedure***, and ***Section 5.2.7***, ***Operating Mode Control***, for further details.

3.6 Level Calibration of Analog Inputs

Analog input gains in the DP567 are adjustable by means of the gain controls on the rear panel (see *Figure 3-2*). Each gain control is associated with a pair of LEDs that glow with equal brightness in the presence of a reference tone 20 dB below digital full-scale. The adjustment range will accommodate reference tones over the range -16 to +4 dBu*.

The appropriate reference level depends on your equipment and application. To avoid overload of the DP567, the peaks of the program must not exceed 20 dB above this reference tone. In many installations, a suitable tone is already available.

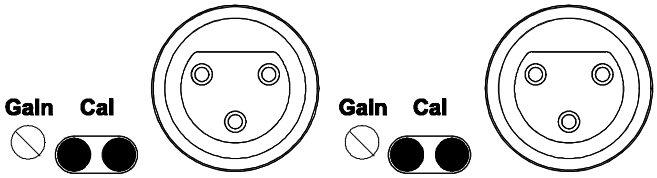


Figure 3-2. Rear-panel Gain controls and Cal LEDs used for level calibration.

To calibrate the DP567:

1. Feed a test tone from your analog source at a convenient frequency (typically 400 or 1000 Hz) and an appropriate reference level.
2. Adjust the gain controls (with an alignment tool or "tweaker") so that the pair of "**Cal**" LEDs for each channel glow equally. If the signal level is too low, only the left LED of the pair will illuminate. If the signal level is too high, only the right LED of the pair will illuminate.

***NOTE**: If your source delivers a tone intended to be 18 dB below digital full-scale (EBU practice) instead, temporarily attenuate the reference tone entering the DP567 by 2 dB before performing the gain adjustment.*

* 0 dBu = 0.775 V rms irrespective of impedance

Chapter 4
Operation

4.1 Front Panel

The Model DP567 front-panel interface consists of a two line alphanumeric liquid crystal display (LCD), a set of user-input buttons, a set of dedicated LED status indicators, and a remote port. Please see *Figure 4-1* on the following page for the front-panel illustration.

(1) LCD Screen

The LCD screen displays one of the available **Status** or **Setup** menu options. The **Status** menu provides status information on the current DP567 operating state, and the **Setup** menu allows you to modify various encoding parameters. For **Status** menu screens, please see ***Section 4.3***, ***Status Mode***. For operation of the **Setup** menu, please see ***Section 5***, ***Advanced Operation***.

(2) Navigation Buttons

Press the Navigation buttons to move through the **Status** menu or to change parameters in the **Setup** menu.

Arrow buttons: [↑] [↓] [←] [→]

All arrow buttons scroll through the **Status** and **Setup** menus.

However, in some cases during **Setup**, the arrow buttons can also function in the following ways:

[↑] [↓]: Scrolls through the alphabet or numbers "0" through "9".

[←] [→]: Moves cursor left or right.

[ENTER]: Enables the next level in menu hierarchy or selects a currently displayed option.

[ESC]: Returns to a previous level in menu hierarchy or aborts the current operation.

[SETUP]: Enables the **Setup** mode.

[**SHIFT**]: Enables an alternate function or mode. Alternate functions are noted above or below a navigation button: *Remote*, *Delete*, *Insert*, *Contrast*, and *Status*.

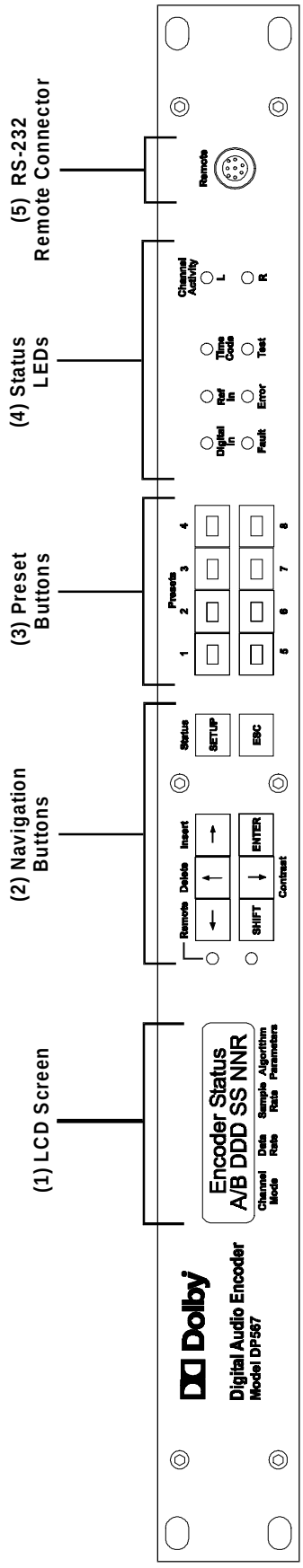


Figure 4 - 1. Front panel.

Navigation buttons (*continued*)

When [**SHIFT**] is enabled, the "Shift" LED will illuminate (*Figure 4-2*). To disable it, press [**SHIFT**] again or activate another function.

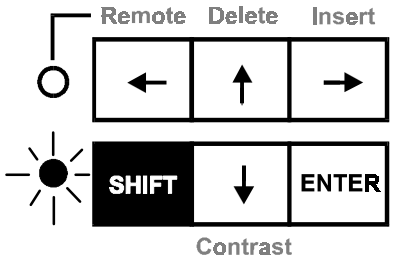


Figure 4 - 2. When Shift is enabled the LED illuminates.

The following functions are available when you press [**SHIFT**] ***first:***

Remote: **[SHIFT]** + [←] enables the **Remote** mode.

Delete: **[SHIFT]** + [↑] deletes character field at a current cursor location during certain **Setup** modes.

Contrast: **[SHIFT]** + [↓] enables LCD contrast adjustment.

Insert: **[SHIFT]** + [→] inserts new character field at a current cursor location during certain **Setup** modes.

Status: **[SHIFT]** + **[SETUP]** enables **Status** mode.

(3) Preset Buttons

Eight front-panel buttons (with integrated status LEDs) are dedicated for preset functions. Each button is designated a specific preset number, "1" through "8". These buttons are active only in the **Local** mode, but their status LEDs are active in both **Local** and **Remote** modes. A preset is recalled when one of the preset buttons is pressed during **Local** mode. See ***Section 4.2.6***, ***Preset Mode*** for additional information.

(4) Status LEDs

The dedicated front-panel status LEDs are operational in both the **Local** and **Remote** modes. Further details for specific LEDs can be found in relevant DP567 operation sections.

LED	Description	
REMOTE	**Green:**	*Remote* mode is enabled. No communication errors have been detected with the remote link.
	Red:	*Remote* mode is enabled. A communication error has been detected with the remote link.
	Off:	*Local* mode is active and the remote inputs are disabled.
SHIFT	**Yellow:**	[**SHIFT**] button has been pressed. Alternate function is enabled, i.e., the alternate function of the next button pressed will be executed.
	Off:	Alternate function is not enabled.
DIGITAL IN	**Green:**	Digital input is enabled. DP567 is locked to and receiving a valid digital input signal.
	Red:	Digital input is enabled but the input signal is not valid.
	Off:	Digital input is not enabled and the analog inputs are active.
FAULT	**Off:**	Power supply and processor statuses are functioning properly.
	Red:	Power supply or processor/memory fault.
REF IN	**Green:**	Reference input is enabled. DP567 is locked to and receiving a valid reference input signal.
	Red:	Reference input is enabled but the input signal is not valid.
	Off:	Reference input is disabled.
ERROR	**Off:**	No operational errors are detected.
	Red:	One or more operational errors are detected and the DP567 output is not valid.
TIME CODE	**Green:**	LTC or VITC time code input source is enabled. DP567 is locked to and receiving a valid time code input signal.
	Red:	LTC or VITC time code input source is enabled but the input signal is not valid.
	Off:	Time code inputs are disabled.
TEST	**Red:**	Internal test tone generation is active. Input signals are not being processed.
	Off:	Internal test tone generation is not active.
L **(Left Channel)**	*Left Channel (Ch A) input signal status:*	
	Off:	Channel input not present or signal level < -45 dBFS
	Green:	Channel present with signal level > -45 dBFS and < -30 dBFS
	Yellow:	Signal level > -30 dBFS and < -0.1 dBFS
	Red:	Signal level > -0.1 dBFS (clipped)
R **(Right Channel)**	*Right Channel (Ch B) input signal status:*	
	Off:	Channel input not present or signal level < -45 dBFS
	Green:	Channel present with signal level > -45 dBFS and < -30 dBFS
	Yellow:	Signal level > -30 dBFS and < -0.1 dBFS
	Red:	Signal level > -0.1 dBFS (clipped)

(5) Remote Connector

The front-panel RS-232 port is active only when a connector is physically attached to the port and the **Remote** mode or **Download** mode is enabled (please see the following section ***Local/Remote Mode***). When connected, commands received from this port override any data sent to the rear-panel remote connector. The front-panel "Remote" LED displays limited status information for this port. ***Section 5***, ***Advanced Operation***, provides a description of the **Download** mode. *Please note that this mode does not use the same remote protocol as the **Remote** mode.*

4.2 Basic Operation

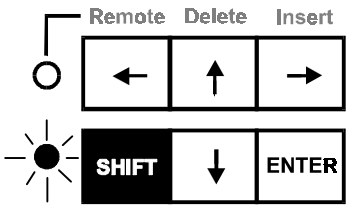
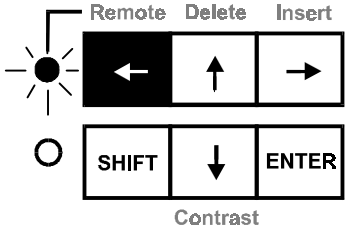
The DP567 operational status is characterized by several modes where more than one can be active at a time. This section describes the basic operating modes that are encountered during normal DP567 operation.

4.2.1 Local/Remote Mode

The DP567 normally operates in the **Local** mode which means that operation of the DP567 is confined to the front-panel controls of the unit. You can also operate the DP567 from a remote location by connecting the front- or rear-panel port and enabling the **Remote** mode.

When the **Remote** mode is active, the interface operates at a rate specified by the **Remote Baud Rate**. Available rates are 9.6, 19.2, and 38.4 kb/s. The default bit rate after a factory reset (as described in ***Section 3.5***, ***Power***) is 38.4 kb/s. The DP567 only responds to commands specified for the current unit address and only valid commands are executed.

To enable the Remote mode:

	Press [**SHIFT**].
	Next, press the [←] button. The "Remote" LED (located next to the [←] button) will illuminate. The front-panel display immediately changes to the default Remote display, discarding any previous configuration state.

Repeating the above step toggles the function between **Remote** and **Local** modes.

The following front-panel functions are active during the **Remote** mode:

- All front-panel status LEDs. This includes the LEDs on the front-panel preset buttons, although the buttons themselves are not active.
- All GP I/O connections (both input and output).

The **Remote** mode remains active whether or not controlling devices are attached to the remote ports and whether or not commands are being received. Note that commands from the front-panel remote port override any commands received from the rear-panel port.

4.2.2 Operational Modes

The status of the Dolby Digital encoding process can be characterized by one of four operational modes or states: Encoding, Pass-through, Test Tone, and Off. These modes can be modified in the **Setup** menu (***See Section 5***, ***Advanced Operation***).

Encoding Mode

The **Encoding** mode allows the DP567 to internally encode a valid PCM input to the main digital output either as a single bitstream or as part of a multiplexed bitstream. A valid clock source must be present when this mode is enabled.

The main digital output is the primary DP567 output source. The output signal at the **Main Out** port will always be an AES/EBU signal with valid encoded audio signals in a format consistent with *ATSC specifications* (as indicated by the **Output Format** in **Setup**), or the output audio data will be zero-valued in the case of an invalid operating condition.

The DP567 never outputs a PCM signal in both channels (except for the zero-valued case), but one channel may be linear PCM if a professional 16-bit output mode is selected in **Setup**. For more information on encoding states, please see ***Section 5.2.3***, ***Encoder Control***.

To enable Encoding:

1. Press the [**SETUP**] button to enter the **Main Setup** menu.
2. Find **Encoder Control** using the arrow buttons to scroll through the **Main Setup** menu. Press [**ENTER**] to select **Encoder Control**.
3. Use the arrow buttons to find **Encoder State** and press [**ENTER**].
4. Scroll through **Encoder State** to find *Encode*. A flashing cursor indicates that you may select this option.

   Other **Encoder State** selections include: *Stop* and *Time Code Ctrl*. For further detail on **Encoder State**, please refer to ***Section 5.2.3, Encoder Control***.
5. Press [**ENTER**] to save your selection as the default.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Pass-through Mode

The **Pass-through** mode allows the DP567 to process pre-encoded inputs to the main digital output either as a single bitstream or as part of a multiplexed bitstream. A valid clock source must be present when this mode is enabled.

To enable the Pass-through mode:

1. Press the [**SETUP**] button to enter the **Main Setup** menu.
2. Find **I/O Control** using the arrow buttons to scroll through the **Main Setup** menu. Press [**ENTER**] to select **I/O Control**.
3. Use the arrow buttons to find **Input Format** and press [**ENTER**].
4. Find *Pre-encoded* by pressing the arrow buttons to scroll through the **Input Format** menu. A flashing cursor indicates that you may select this option.
5. Press [**ENTER**] to save your selection as the default.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Test Tone Mode

In the **Test Tone** mode, the input to the encoding process is an internally generated test signal and not the currently selected input signal. Enabling the **Test Tone** mode does not guarantee that a valid test tone will be produced at the output of the DP567. Dolby Digital encoding must also be active, which requires that the selected clock source be valid. See ***Section 5.2.7***, ***Operating Mode Control***, for detailed information on the **Test Tone** mode.

To enable Test Tone:

1. Press the [**SETUP**] button to enter the **Main Setup** menu.
2. Find **Operating Mode** using the arrow buttons to scroll through the **Main Setup** menu. Press [**ENTER**] to select **Operating Mode**.
3. Find **Test Tone** using the arrow buttons.
4. Press [**ENTER**] to select **Test Tone**. The current default is shown on the LCD.
5. Use the arrow buttons to select the desired Test Tone: *-20 dBFS*, *-18 dBFS*, *Silence*, *Disabled*. A flashing cursor indicates that you may select this option.
6. Press [**ENTER**] to save your selection as the new default.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Off Mode

The **Off** mode is characterized by the following:

- The Encoding, Pass-through, and Test Tone modes are not active, and
- an encoded bitstream is not present at the main output,
- or a pass-through bitstream is not present in the DP567 main digital output.

In the **Off** mode, the DP567 will continue to generate a valid AES/EBU output data stream with zero-valued audio data.

NOTE*: A multiplexed input source may be present at the output if the* ***Multiplex Mode*** *is active in* ***Setup****.*

The **Off** mode can result from any of the following:

- The encoding process was manually disabled through the **Encoder State** in **Setup** (See ***Section 5.2.3***, ***Encoder Control,*** for additional information).
- Improper operating conditions (e.g., invalid input signal).
- Lack of a pre-encoded input when the Pass-through input format is selected.
- An out of range time code, if **Time Code Control** is active.

4.2.3 Autodetect Mode

The **Autodetect** mode searches for pre-encoded bitstreams on the **Digital In** input source and automatically directs the internal encoding process to either encode PCM audio data or pass-through pre-encoded data directly to the output of the DP567. While in this mode, the DP567 continually monitors the bitstream input so that only valid encoded frames are passed through.

The **Autodetect** feature is intended to identify pre-encoded bitstreams that are consistent with bitstreams described in the *ATSC specification* or the consumer format described in the *IEC1937 specification*. Any bitstream not consistent with the *ATSC specification* will be interpreted as PCM data.

To enable the Autodetect mode:

1. Press the [**SETUP**] button to enter the **Main Setup** menu.
2. Find **I/O Control** using the arrow buttons to scroll through the **Main Setup** menu. Press [**ENTER**] to select **I/O Control**.
3. Find **Input Format** using the arrow buttons to scroll through the **I/O Control** menu.
4. Press [**ENTER**] to select **Input Format**. The current default is shown on the LCD.
5. Use the arrow buttons to select *Autodetect*. A flashing cursor indicates that you may select this option.
6. Press [**ENTER**] to save your selection as the current default.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

4.2.4 Bitstream Multiplex Mode

The bitstream multiplex mode allows multiple-encoded bitstreams to be combined into the main digital output bitstream. This can be performed by enabling the **Multiplex Mode** in **Setup**. When enabled, an internally encoded (or pre-encoded) Dolby Digital bitstream is combined (multiplexed) with other pre-encoded bitstreams contained within the reference input signal. The reference input signal is used as the reference bitstream for the multiplexing operation. The resulting output bitstream will be a copy of the reference bitstream with the internally encoded (or passed-through) bitstream added to it.

When **Multiplex Mode** is active, the DP567 overwrites the contents of the channel selected by the **Output Mode** parameter (to view **Output Mode** settings, see ***Section 5.2.2, Input/Output Control***). If the reference input contains a PCM signal, the DP567 overwrites the selected output channel with the internally encoded (or pre-encoded) bitstream but passes through the reference PCM signal on the opposite channel without modification.

Autodetect and **Pass-through** modes are allowed when **Multiplex Mode** is active. The following options in **Setup** should be selected in order to enable **Multiplex Mode**:

- The **Reference Input** must be selected as the **Clock Source**.
- **Time Code Control** must be disabled.
- The **Output Mode** must be set to either "Pro 16-bit Ch 1" or "Pro 16-bit Ch 2".
- Any bitstreams detected in the **Reference Input** must have been encoded in the "Pro 16-bit" mode, and cannot be present in the same channel selected by **Output Mode**.

If the above restrictions are not followed, the DP567 will indicate an error and encoded signals will not be present at the output.

To enable Multiplex Mode:

1. Press the [**SETUP**] button to enter the **Main Setup** menu.
2. Find **I/O Control** using the arrow buttons to scroll through the **Main Setup** menu. Press [**ENTER**] to select **I/O Control**.
3. Find **Multiplex Mode** using the arrow buttons to scroll through the **I/O Control** menu.
4. Press [**ENTER**] to select **Multiplex Mode**. The current default is shown on the LCD.
5. Use the arrow buttons to select *Enable*. A flashing cursor indicates that you may select this option.
6. Press [**ENTER**] to save your selection as the default.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

4.2.5 Bypass Mode

In case of a system fault or power failure, the **Bypass In** connector will be internally routed to the **Switched Out** connector. In addition, the **Bypass Mode** parameter can be used to directly enable this function. **Bypass In** is typically connected to the output of a secondary or standby unit (*Figure 4-3*), and will accept any valid digital format. This mode does not affect other internal DP567 processing, i.e., Dolby Digital encoding and other processes will continue. Please note that when **Bypass Mode** is enabled, the **Main Out** output may still contain valid output signals. When **Bypass Mode** is disabled, the main output signal is routed directly to the **Switched Out** output. (For the menu structure of **Bypass Mode** in **Setup,** please see ***Section 5.2.2***, ***Input/Output Control***).

Bypass Mode can be enabled from the DP567 front-panel user interface or via the remote interface. In addition, a dedicated rear-panel GP I/O connection can be used to directly activate the bypass function, overriding the internal settings of the **Bypass Mode** parameter.

NOTE*: No front-panel status information is available for the* ***Bypass In*** *input.*

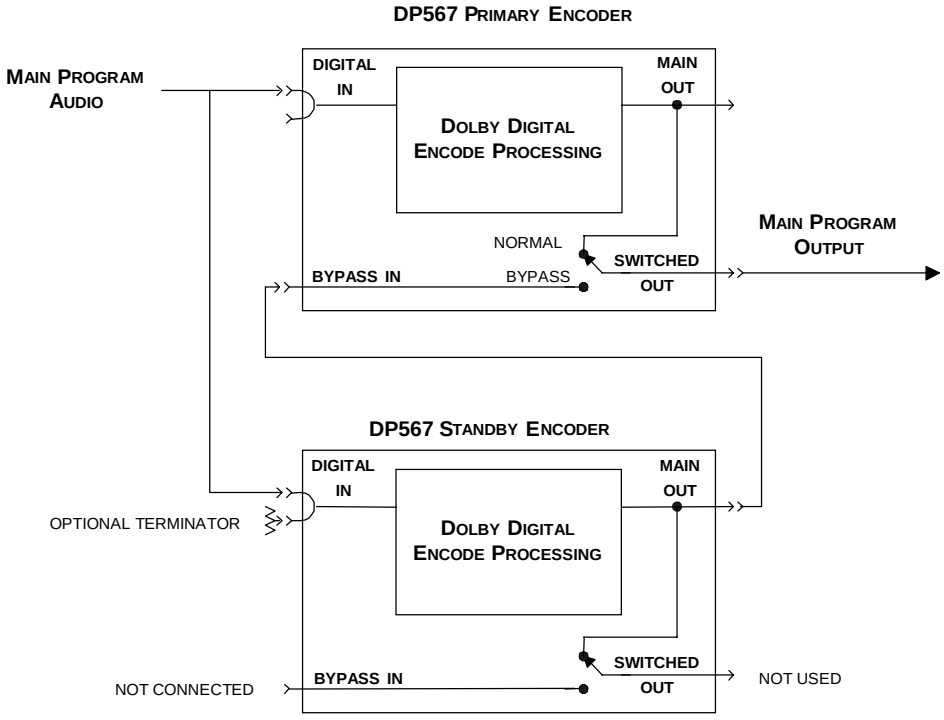


Figure 4 - 3. Signal routing when a standby encoder is connected.

To enable Bypass Mode:

1. Press the [**SETUP**] button to enter the **Main Setup** menu.
2. Find **I/O Control** using the arrow buttons to scroll through the **Main Setup** menu. Press [**ENTER**] to select **I/O Control**.

To enable Bypass Mode (continued)

3. Find **Bypass Mode** using the arrow buttons to scroll through the **I/O Control** menu.
4. Press [**ENTER**] to select **Bypass Mode**. The current default is shown on the LCD.
5. Use the arrow buttons to enable or disable **Bypass Mode**.
6. Press [**ENTER**] to save your selection as the new default.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

4.2.6 Preset Mode

The **Preset** mode allows you to save or quickly recall specific operational settings from the **Setup** menu or via the remote interface when the **Remote** mode is active. Thirty-two preset selections are available:

- Presets 1–28 are user-definable and can be overwritten at any time by the user.
- Presets 29–32 are factory default modes and cannot be overwritten. (Please see ***Appendix C*** for a list of the factory default presets.)

Immediately after a preset is saved or when a preset is recalled, the **Preset** mode is considered *active* and the DP567 will reflect the status of the active preset number:

- The front-panel LCD will show the name of the preset.
- The LEDs of one of the preset buttons will illuminate: [**PRESET 1**] through [**PRESET 8**], when one of the first eight presets is active.
- The rear-panel GP I/O status pins will reflect the state of *Preset 1* through *Preset 4*.

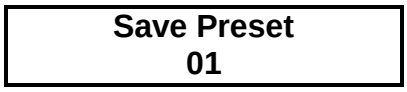
Only one preset can be active at any time. If any parameter is changed, the **Preset** mode will be considered *inactive*. You can recall the preset number at any time from one of the four sources listed:

- Front-panel menu interface
- Remote interface
- Dedicated front-panel preset buttons ([**PRESET 1**] *through* [**PRESET 8**] *only*)
- Dedicated GP I/O input signals ([**PRESET 1**] *through* [**PRESET 4**] *only*)

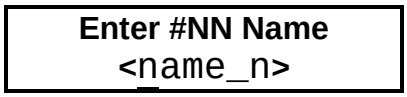
Presets that are recalled from the **Setup** menu or the remote interface can also be recalled with a delay that is based on the time code input (see *Time Code-based Recall* in ***Section 5.2.3***, ***Encoder Control***, for more information).

To create and save a preset:

1. Press the [**SETUP**] button to enter the **Main Setup** menu.
2. Find the **Encoder Control** menu using the arrow buttons to scroll through the **Main Setup** menu. Press [**ENTER**] to select **Encoder Control**.
3. Find **Save Preset** using the arrow buttons to scroll through the **Encoder Control** menu.
4. Press [**ENTER**] to select *Save Preset*. The current default is shown on the LCD.



5. Use the [↑] and [↓] buttons to find the desired preset number. A selection is indicated by a black cursor flashing beneath the first letter of each option.
6. Press [**ENTER**] and you are prompted to give a descriptive name (<name_n>):



NN *represents the currently selected preset number.*
<name_n> *represents the current descriptive name for preset number.*

A descriptive name from one to 16 characters may be entered. An empty field will be saved if no characters are entered.

Note the black cursor flashing beneath the first letter of the second line in the LCD. Use the **[↑]** and **[↓]** buttons to increase or decrease the alphabetical value of the character at the current location. Use the **[→]** and **[←]** buttons to move the flashing black cursor right or left. You may also use [**SHIFT**] + [**INSERT**] or [**SHIFT**] + [**DELETE**] to either insert a new character or delete a character.

7. After specifying the preset name, press [**ENTER**] and you will see the following screen:

To create and save a preset (continued)

8. Press [**ENTER**] (*Yes*). The LCD shows the following:

Preset #NN **Saved**

The preset number is immediately saved and the LCD returns to the **Main Status** screen.

NOTE*: Saving preset settings implies that the* ***Preset*** *mode is currently active. Saving preset modes 1 through 8 affects the state of the front-panel LEDs for these preset modes.*

To recall a preset number:

1. Find **Recall Preset** using the arrow buttons to scroll through the **Encoder Control** menu.
2. Press [**ENTER**] to select **Recall Preset**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired preset number you wish the DP567 to recall. A selection is indicated by a flashing cursor.
4. Press [**ENTER**]. If the **Time Code-based Recall*** mode is not currently enabled, you will be prompted with the following screen:

Recall at Start? **No**

5. Press [**ENTER**] to select *No*, and the LCD will display the following screen:

Preset #NN **Active**

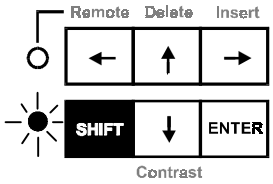
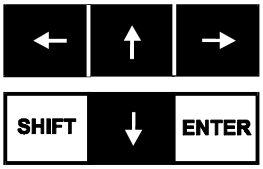
The preset number is immediately recalled, and the LCD display will return to the **Main Status** screen.

* *Time Code-based Recall* or *Delayed Recall* is a special **Recall Preset** state that allows the selected preset to be recalled at a specific time based on the time code input. See ***Recall Preset*** in ***Section 5.2.3*** for further details.

4.3 Status Mode

The **Status** mode is active whenever the DP567 is operating in **Local** mode. This mode enables the display of specific status information on the front-panel LCD screen (more general status information is displayed through the dedicated status LEDs). The **Status** screen can show one of the following states: Main Status, Input Status, Reference, Time Code Type, Time Code Start and Stop Times, Clock Source, and Coding Delay. When operating in **Remote** mode, specific status information is available via the remote interface (general status information continues to be displayed through the dedicated status LEDs).

To enable the Status mode:

	Press [**SHIFT**].
	Next, press the [**SETUP**] button. The **Status** mode is enabled and the LCD will display the **Main Status** screen (described in the following section).
	Press the [↑] or [←] button to navigate up the **Status** menu and press the [↓] or [→] button to scroll down the **Status** menu.

4.3.1 Main Status

After the DP567 completes its power-up sequence, the **Main Status** screen is shown on the LCD. This screen indicates the current operating status of the DP567.

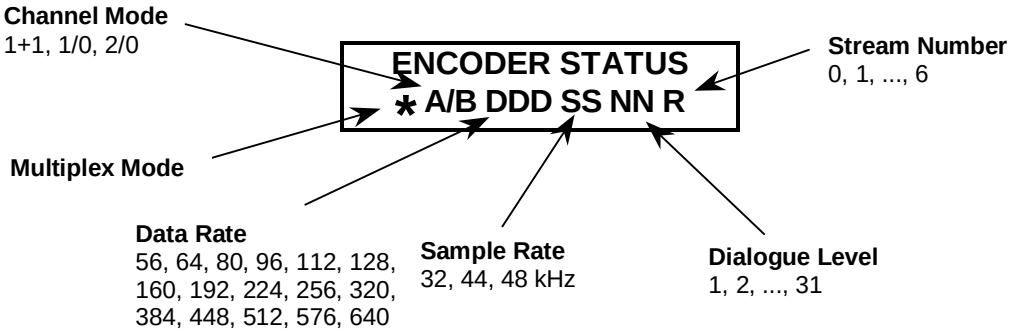


Figure 3-4. Main Status screen.

The following table lists available bitstream audio coding modes (channel mode display A/B in the figure above) for the DP567:

Audio Coding Mode	Encoded Channels
1+1	L, R
1/0	L
2/0	L, R

Line 1 of the LCD can show one of the following:

<Preset Name>	**Preset** mode is active. The user-defined name is displayed (see Section 4.2.6).
or	
Test <Info>	**Test Tone** (or **Silence**) is active. "Info" will show level if tone is active (see Section 5.2.7).
or	
<Unit Name>	**Unit Name** is user-defined (see Section 5.2.7).
or	
ENCODER STATUS	The factory default unit name.

Line 2 can display one of the following messages:

Not Encoding	No output signal present.
or	
Passthrough Mode	**Pass-through** mode is active.
or	
Stopped	Encoding is disabled (manual or time code)
or	
A/B DDD SS NN R	Dolby Digital encoding active. See descriptions on previous page.

4.3.2 Digital Input

After you press the **[↓]** button or the **[→]** button in the **Status** menu, you will see the **Digital Input** status screen. The **Digital Input** status screen displays the current state of the input source. When active, status information for the input source is provided by both the "Digital In" LED and the **Status** menu.

Digital Input **Locked 48 kHz**

The **Digital In** input can function as both an input source and a clock source. Both professional and consumer-formatted inputs containing PCM or pre-encoded bitstreams are accepted.

Line 1 of the LCD can show one the following:

Digital Input	Digital input source is enabled.
or	
Analog Input	Analog input source is enabled.

Line 2 of the LCD can show one of the following:

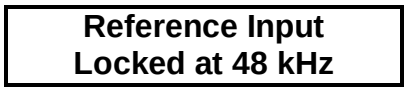
Active	Analog input enabled.
or	
Not Locked	Digital input selected but not locked.
or	
Invalid Input	Digital input selected but not valid.
or	
Stream# 0123456	Pre-encoded input bitstream detected.*
or	
Locked SS kHz EM	Digital input locked, emphasis flag set**.
or	
Locked SS kHz	Digital input is locked, no emphasis.**

* 0123456 *represents the active data stream numbers detected in a pre-encoded input bitstream, i.e., each field active if corresponding data stream is detected. For example, "023...7" indicates data streams 0,2,3, and 6 detected.*

**SS *represents the sample rate of the digital input signal (32, 44.1, 48 kHz, or NA for invalid sample rates).*

4.3.3 Reference Input

Status information on the **Reference Input** is provided by both the "Ref In" LED and the **Status** screen.



The **Reference Input** can function as an input source for the bitstream multiplex function and as a clock source. Both professional and consumer-formatted input bitstreams are accepted. When used for the multiplex function, the input must contain pre-encoded bitstreams in a format consistent with ATSC and/or IEC 1937 specifications. When used only as a clock source, the received data is ignored and may be in any format.

The Reference Input status screen can show one of the following:

Reference Input Disabled	Reference input not enabled.
Or	
Not Locked	Reference enabled but not locked.
Or	
Invalid Input	Reference input not valid.
Or	
Stream# 0123456	Pre-encoded input bitstream detected.*
Or	
Locked at SS kHz	Reference input is locked.**

*0123456 *represents the active data stream numbers detected in a pre-encoded input bitstream, i.e., each field active if corresponding data stream is detected. For example, "0 23..6" indicates data streams 0,2,3, and 6 detected.*

**SS *represents the sample rate of the digital input signal (32, 44.1, 48, or NA for invalid sample rates).*

4.3.4 Time Code Input

Status information on the **Time Code Input** is provided by both the "Time Code" LED and the **Status** screen. The **Time Code Input** status screen displays whether time code is disabled or enabled. If time code is disabled, the LCD will display the following screen:

Time Code In **Disabled**

However, when any time code function is enabled in **Setup**, the **Time Code Input** screen will display the status of the time code format: VITC (Vertical Interval Time Code) or LTC (Linear Time Code), depending on the setting of the **Time Code Input** parameter. For more information on time code parameters in **Setup**, please see ***Section 5.2.2***, ***Input/Output Control***, and ***Section 5.2.3***, ***Encoder Control***.

If time code is enabled, Line 1 of the DP567 front-panel LCD can display:

Time Code VITC	VITC input enabled.
or	
Time Code LTC	LTC input enabled.

and Line 2 of the LCD can display:

Disabled	Time code input disabled.
Not Found	Selected time code input not found.
or	
Invalid Input	Time code input not valid.
or	
HH:MM:SS:FFfps##	Time code input enabled and valid.*

*HH = *hours (00 to 23)*
MM = *minutes (00 to 59)*
SS = *seconds (00 to 59)*
FF = *frames (00 to 29)*
= frames per second (24, 25, 29, or 30)

Note: For a frame rate of 29.97, the fps field displays a value of 29 and the time code field separators change from colons to semicolons.

4.3.5 Time Code Control

When **Time Code** is enabled, the status screen shows the start and stop time (in hours, minutes, seconds, and frames) of the encoding process. **Time Code Control** only applies to the Dolby Digital encoding performed by this unit.

Time Code Control status screen can show one of the following:

Time Code Ctrl Disabled	Time Code Control disabled.
or	
STRT=HH:MM:SS:FF	Time Code Control enabled (Start Time).
STOP=HH:MM:SS:FF	Time Code Control enabled (Stop Time).

4.3.6 Clock Source

The **Clock Source** status screen displays the current reference source for the Dolby Digital encoding process, as well as the clock reference for the DP567 output signal.

Clk Src = Dig In
Locked at 48 kHz

Line 1 of the LCD can display one of the following:

Clk Src = Dig In	Selected clock source is the digital input.
Or	
Clk Src = Ref In	Selected clock source is the reference input.
Or	
Clk Src = Intern	Selected clock source is internal.

Line 2 in the LCD can display one of the following:

Locked at SS kHz	Clock source is valid and stable.*
or	
Not Locked	Clock source not valid or stable.

* SS *represents the sample rate of selected clock source: 32, 44.1, 48, or NA (invalid sample rate).*

4.3.7 Coding Delay

Coding Delay represents the time between receipt of the first sample of a particular frame by the DP567 and the appearance of the first word of the coded output frame in the DP567 output bitstream. The source of **Coding Delay** is also indicated as *internal* or *external,* as configured in the **Setup** menu. (See ***Coding Delay*** in ***Section 5.2.2***, ***Input/Output Control.***)

The Coding Delay status screen can show one of the following messages:

Coding Delay is set to internal.*

or

Coding Delay is set to external.*

**The variable* ddd *represents the current coding delay.*

Chapter 5
Advanced Operation

This section describes specific DP567 setup operations. Advanced operation includes the configuration of parameters and presets in the **Setup** menu and the adjustment of LCD contrast.

5.1 LCD Contrast Adjust

You can adjust the LCD contrast by using the front-panel **Contrast** function within **Local** mode only.

To adjust the contrast on the LCD:

1. Enable **Contrast** by pressing the [**SHIFT**] and [↓] button. You will be prompted with the following message:

Adjust Contrast **ENTER to Exit**

2. Use the [↑] or [←] buttons to increase contrast, and use the [↓] or [→] buttons to decrease contrast.

3. If desired, the original contrast setting can be restored by pressing the [**ESC**] button.

4. Press [**ENTER**] to save the current contrast setting and return to the previous display.

5.2 Setup

The **Setup** menu allows you to control the operation of the Dolby Digital (AC-3) encoding process and to modify certain parameters used to configure the Dolby Digital bitstream.

The menu selections can be categorized as either *control* parameters or *informational* parameters. (See *Table 5-1* for a list of control and informational parameters.) *Control* parameters, such as **Channel Mode** and **Data Rate,** affect the Dolby Digital encoding process and depend upon other parameter settings. This restricts the available options in various operational modes. Error messages are displayed on the LCD screen if modified parameters do not conform to these restrictions.

Informational parameters, such as **Copyright Bit** and **Original Bitstream,** allow you to modify the corresponding parameters in the Dolby Digital bitstream. These parameters are not dependent upon other settings. They can be set to any option in all operational modes.

NOTE*: Dolby Digital parameters apply only to the encoded output and are not applicable when the* ***Pass-through*** *mode is active. However, Dolby Digital parameters can still be changed, even if the* ***Pass-through*** *mode is active.*

Table 5-1. Control and Informational Parameters

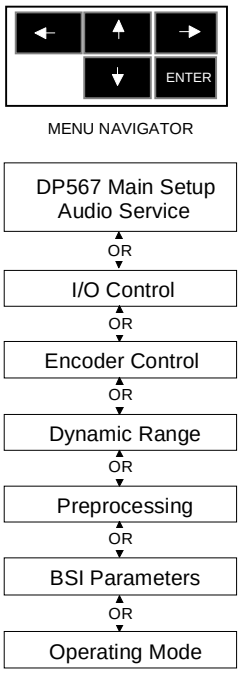
Main Setup Menu	Control Parameters	Informational Parameters
Audio Service	Channel Mode	Bitstream Mode Dialogue Level
Input / Output Control	Input Source Clock Source Input Format Multiplex Mode Coding Delay Auxiliary Data Input Time Code Input Bypass Mode	
Output Format	Output Stream Number Output Mode	Time Stamp Audio Bit
Encoder Control	Recall Preset Save Preset Encoder State Time Code Start Time Time Code Stop Time	
Dynamic Range	Dynamic Range Presets RF Overmodulation Protection	
Preprocessing Options	Lowpass Filter DC Filter Deemphasis	
Bitstream Information		Dolby Surround Mode Copyright Original Bitstream Audio Production Information
Operating Mode	Remote Baud Rate Test Tone Firmware Upgrade	Unit Address Unit Name

Overview of Setup Menu Operation

- To enter the **Setup** menu, press the [**SETUP**] button on the front panel. The LCD displays the **Main Setup** menu.
- Use the [↑] and [↓] buttons on the front panel to scroll through the menu options.

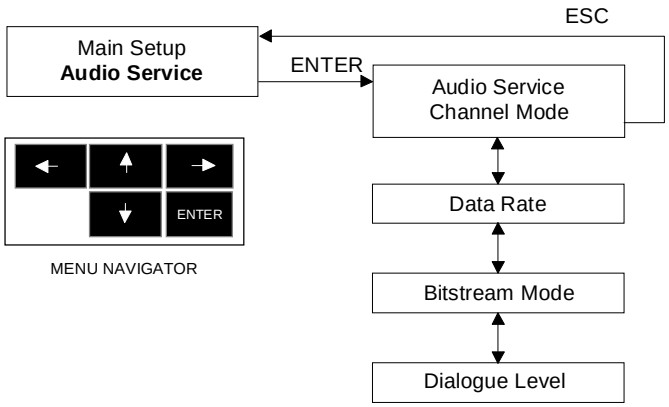
  Press [**ENTER**] at any menu selection to select the corresponding sub-menu or parameter value. Each menu option has several levels of adjustment.

  A black cursor flashing beneath the first letter of the selection indicates that the option can be modified.
- Press [**ESC**] at any time to return to the previous menu level. Pressing [**Setup**] at any level in which changes are not pending (cursor not flashing) returns the LCD screen directly to the **Main Setup** menu.
- Press [**SHIFT**] + [**SETUP**] to return to the **Status** menu.



5.2.1 Audio Service

The **Audio Service** menu contains both *control* and *informational* parameters for the Dolby Digital output bitstream.



To enter the Audio Service menu:

1. Press the [**SETUP**] button to enter the **Main Setup** menu.
2. Scroll through the menu if necessary to find **Audio Service**, then press [**ENTER**]. Use the arrow buttons to scroll through the **Audio Service** menu.

If you press [**ESC**] or [**SETUP**], the DP567 will return to the **Main Setup** menu.

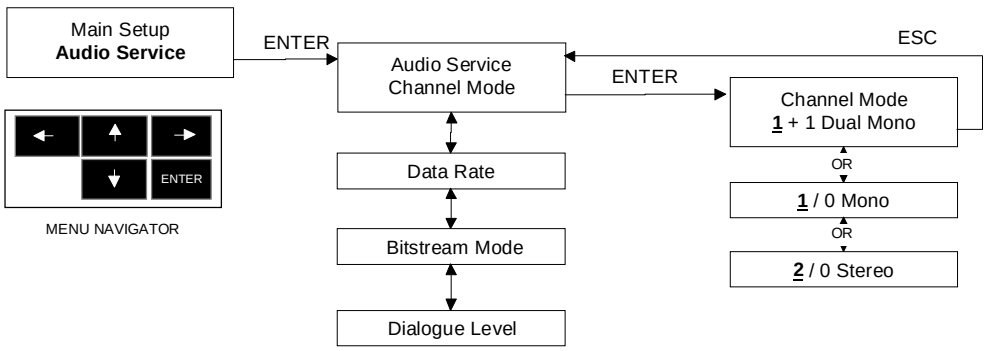
Channel Mode

Channel Mode is a *control* parameter that defines the audio coding mode of the encoded Dolby Digital bitstream. Selection of the **Channel Mode** depends upon the adjustments made to the **Data Rate**, **Sample Rate**, and **Auxiliary Data** parameters (these parameters are explained in the sections that follow).

This parameter defines the number of full-bandwidth audio channels within the encoded bitstream and also indicates the channel format. The audio coding mode is designated as two numbers, A/B, with A indicating the number of front channels, and B indicating the number of rear (surround) channels. The following table lists available modes in the DP567 and defines which input channels are used for encoding based on the selected mode.

In the case of mode 1+1, two completely independent program channels can be sourced from the L and R inputs (dual mono) and encoded into the output bitstream.

Audio Coding Mode	Encoded Channels
1+1 (Dual Mono)	L, R
1/0 (Mono)	L
2/0 (Stereo)	L, R



To define the Channel Mode:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Audio Service*** *menu.*

1. Find **Channel Mode** using the arrow buttons to scroll through the **Audio Service** menu.
2. Press [**ENTER**] to select **Channel Mode**. The currently set default is shown on the LCD.
3. Use the arrow buttons to select your option for **Channel Mode** (see options displayed in the diagram above). A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Error Messages

1. If a new **Channel Mode** is selected but not supported for the current **Data Rate**, the following error message will be displayed briefly (see ***Appendix D***, ***Supported Data Rates and Audio Bandwidths***). **Channel Mode** will then return to its previous setting:

Not Valid: Check Data Rate

2. If a new **Channel Mode** is selected but not supported for the current **Auxiliary Data Input** setting, the following error message will be displayed briefly (see ***Appendix D***, ***Supported Data Rates and Audio Bandwidths***). **Channel Mode** will then return to its previous setting:

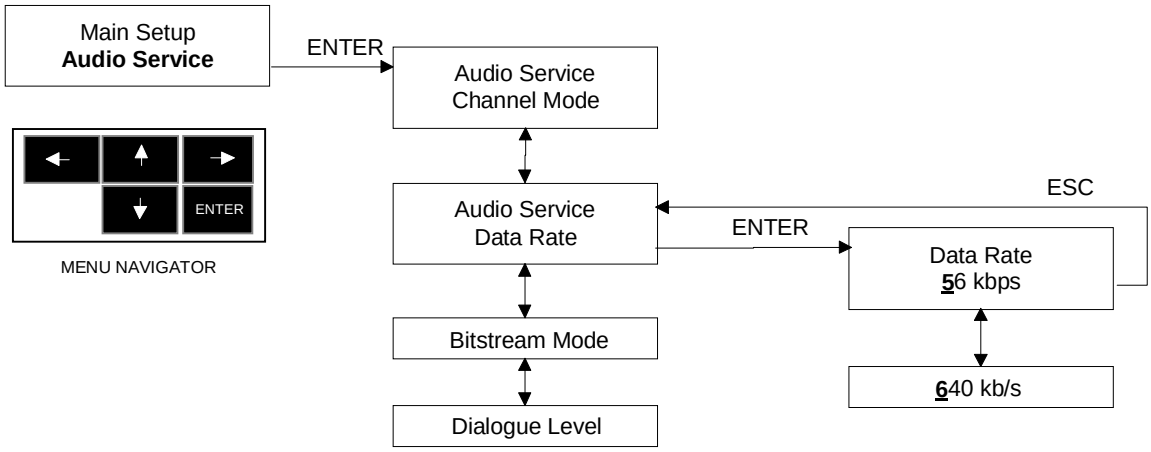
Not Valid: Check Aux Data Input

3. If *1+1 Dual Mono* or *1/0 Mono* is selected and the current **Bitstream Mode** is *Main Srv Karaoke*, or if any selection other than *1/0 Mono* is made and the current **Bitstream Mode** is *Assc Voice Over*, the following error message will be displayed briefly. **Channel Mode** will then return to its previous setting:

Not Valid: Check Bitstream Mode

Data Rate

Data Rate is a *control* parameter that determines the bit rate of the encoded Dolby Digital bitstream. All **Data Rate** options are allowed (56 to 640 kb/s). However, selection of the **Data Rate** is dependent on settings of the **Channel Mode**, **Sample Rate**, and **Auxiliary Data** parameters. Certain low data rates may not be supported in all channel modes. For example, data rates at 56, 64, and 80 kb/s are only supported in "1/0" Channel Mode (*for further explanation, see error messages that follow*).



To define the Data Rate:

NOTE: *If you are not in **Setup** mode, (1) press* [**SETUP**]*, (2) scroll through the **Main Setup** menu and (3) press* [**ENTER**] *when you find the **Audio Service** menu.*

1. Find **Data Rate** using the arrow buttons to scroll through the **Audio Service** menu.
2. Press [**ENTER**] to select **Data Rate**. The current default is shown in the LCD.
3. Use the arrow buttons to select the data rate in kilobits per second (see diagram above). A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE: *To return to the previous menu, press* [**ESC**]. *To return to the **Main Setup** menu, press* [**SETUP**]. *To return to the **Main Status** screen, press* [**SHIFT**] + [**SETUP**].

Error Messages

1. If a new **Data Rate** is selected but not supported for the current **Channel Mode** setting, the following error message will be displayed briefly (see ***Appendix D***, ***Supported Data Rates and Audio Bandwidths***). The **Data Rate** parameter will then return to its previous setting:

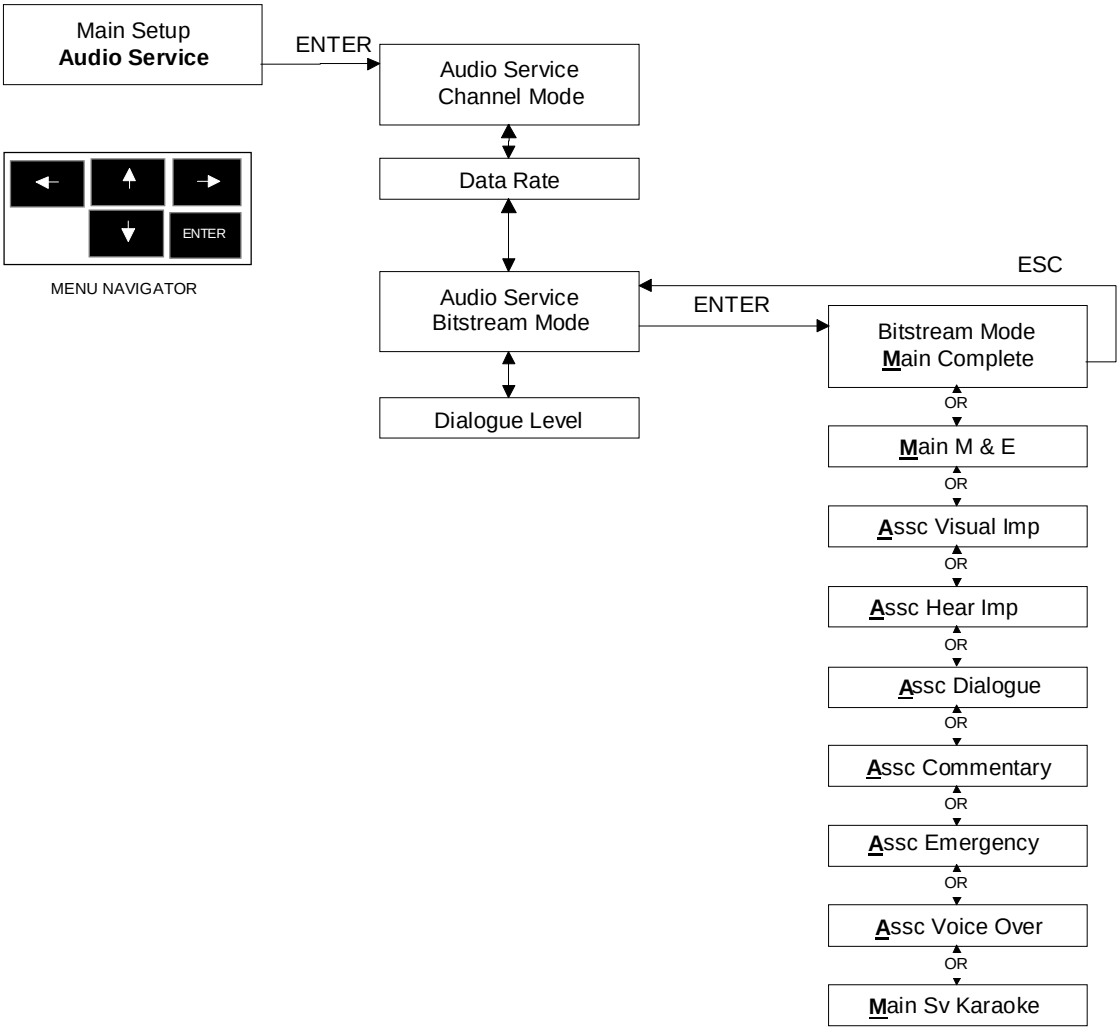
Not Valid: Check Channel Mode

2. If a new **Data Rate** is selected but not supported for the current **Auxiliary Data Input**, the following error message will be displayed briefly (see ***Appendix D***, ***Supported Data Rates and Audio Bandwidths***). The **Data Rate** parameter will then return to its previous setting:

Not Valid: Check Aux Data Input

Bitstream Mode

Bitstream Mode is an *informational* parameter that indicates the data information "service" of the encoded Dolby Digital bitstream. It does not affect internal Dolby Digital encoding.



To select the Bitstream Mode:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Audio Service*** *menu.*

1. Find **Bitstream Mode** using the arrow buttons to scroll through the **Audio Service** menu.
2. Press [**ENTER**] to select **Bitstream Mode**. The current default is shown on the LCD.
3. Use the arrow buttons to choose one of the **Bitstream Mode** selections (see diagram). A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

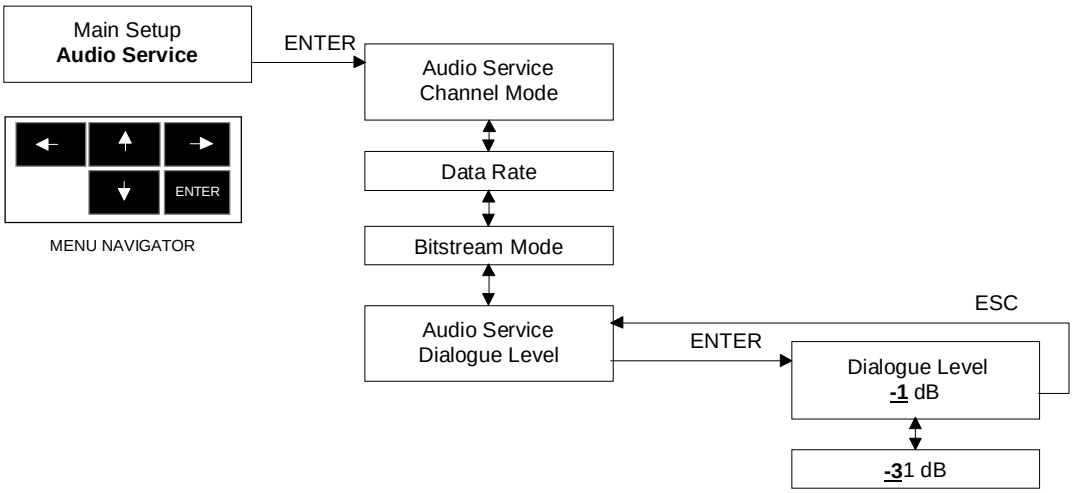
Error Message

1. If *Main Srv Karaoke* is selected and the current **Channel Mode** is *1+1 Dual Mono* or *1/0 Mono*, or if *Assc Voice Over* is selected and the current **Channel Mode** is not *1/0 Mono*, the following error message will be displayed briefly. The **Bitstream Mode** parameter will then return to its previous setting:

Not Valid: Check Channel Mode

Dialogue Level

Dialogue Level is an *informational* parameter that allows you to indicate how much the average dialogue level of the encoded Dolby Digital signal is below digital 100%. Available options on the DP567 range from -1 dB to -31 dB. The default setting for this parameter is –27 dB. Internal Dolby Digital encoding is not affected by this parameter.



To adjust the value of the Dialogue Level:

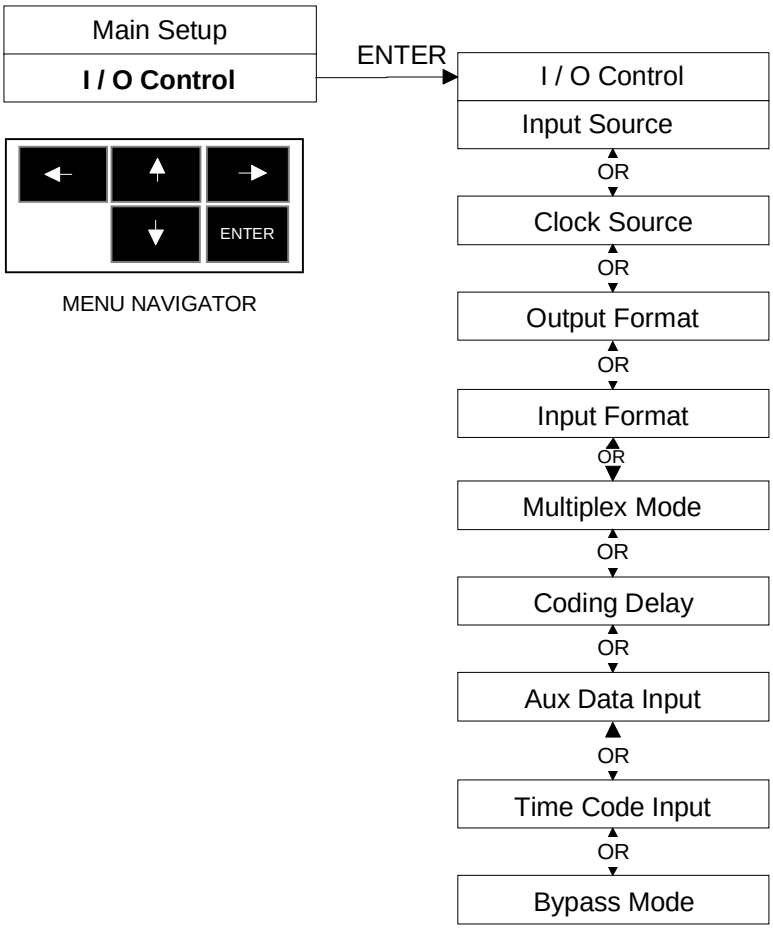
NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Audio Service*** *menu.*

1. Find **Dialogue Level** using the arrow buttons to scroll through the **Audio Service** menu.
2. Press [**ENTER**] to select **Dialogue Level**. The current default is shown on the LCD.
3. Use the arrow buttons to select the value of the **Dialogue Level** (see diagram above for options). A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

5.2.2 Input/Output Control

Input/Output Control provides several menu selections that help you to define types of incoming or outgoing bitstreams, as well as designate specific operations on input and output bitstreams that are being processed by the DP567.



To enter the I/O Control menu:

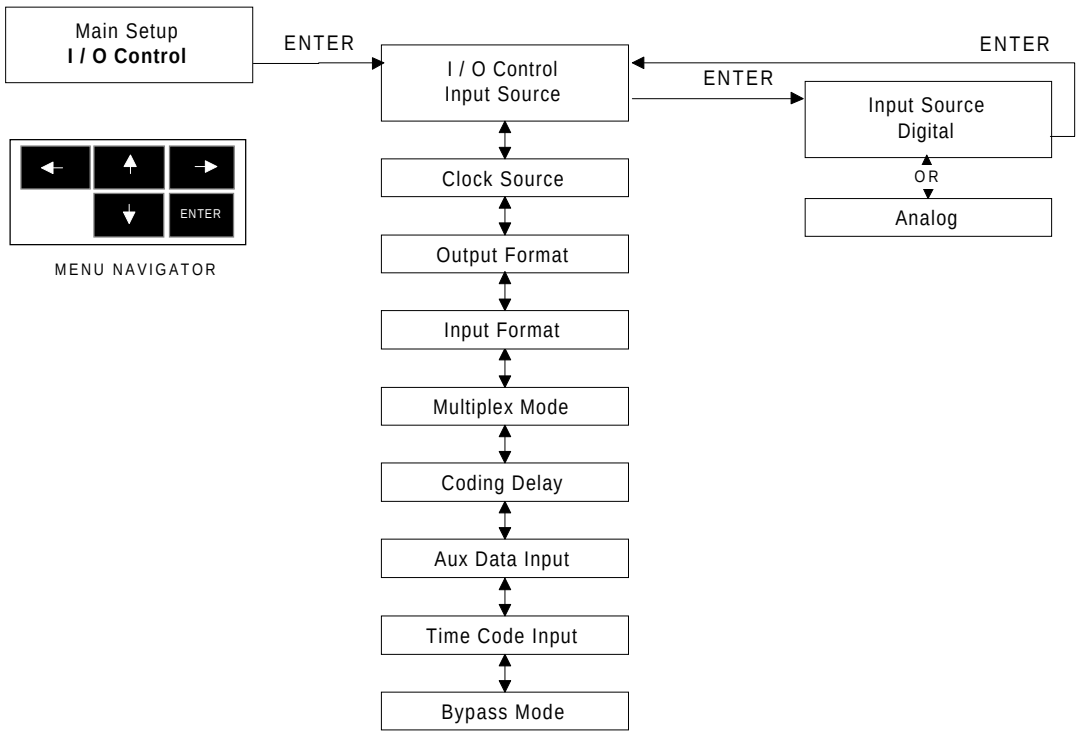
1. Press the [**SETUP**] button to enter the **Main Setup** menu, then use the arrow buttons to scroll to the **I/O Control** menu.
2. Press [**ENTER**] to select **I/O Control**. Use the arrow buttons to scroll through the **I/O Control** menu (see the diagram above for menu selection).

If you press [**ESC**], the DP567 will return to the **Main Setup** menu and display the **I/O Control** menu option. If you press [**SETUP**], the DP567 will return to the top of the **Main Setup** menu, displaying the **Audio Service** menu option.

Input Source

Input Source is a *control* parameter that allows you to select between analog and digital audio input sources. Only one input source can be active at a time.

When *Digital* is chosen as the input source, the **Status** menu and the "Digital In" LED on the front panel indicate the current state of the digital-input source.



NOTE*: Selection of "Digital" automatically enables this input and affects the state of the front-panel "Digital In" LED. Selection of "Analog" automatically disables "Digital" and also affects the state of the front-panel "Digital In" LED.*

To select the Input Source:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***I/O Control*** *menu.*

1. Find **Input Source** using the arrow buttons to scroll through the **I/O Control** menu.
2. Press [**ENTER**] to select **Input Source**. The current default is shown on the LCD.
3. Use the arrow buttons to select either **Input Source**: *Digital* or *Analog*. A flashing cursor indicates that you may select this option.

   When selecting the "Digital" Input Source:
   - The input signal source must be a valid AES/EBU bitstream in order to produce a valid Dolby Digital output bitstream.
   - All clock sources and input formats are available.

   When selecting "Analog" Input Source:
   - The **Input Format** must be set to *PCM*. (See ***Input Format****, pg 5-18*.)
   - Sample rate conversion (SRC) must be enabled by means of the **Clock Source** parameter in **Setup**. (*Please refer to operation of* ***Clock Source*** *in the following section.*)
   - **Autodetect** and **Pass-through** modes must not be active.

4. Press [**ENTER**] to save your selection.

NOTE*: To view the newly selected default, press* [**ESC**] *or press* [**SETUP**] *to return to the* ***Main Setup*** *menu.*

Error Messages

1. If *Analog* is selected but not supported for the current **Clock Source** setting (*Ref In-SRC On*—sample rate conversion (SRC) must be *ON*), the following error message will be displayed briefly. The **Input Source** will then return to its previous setting:

   Not Valid: Check Clock Source

2. If *Analog* is selected but not supported for the current **Input Format** setting (the **Input Format** must be *PCM*), the following error message will be displayed briefly. The **Input Source** will then return to its previous setting:

   Not Valid: Check Input Format

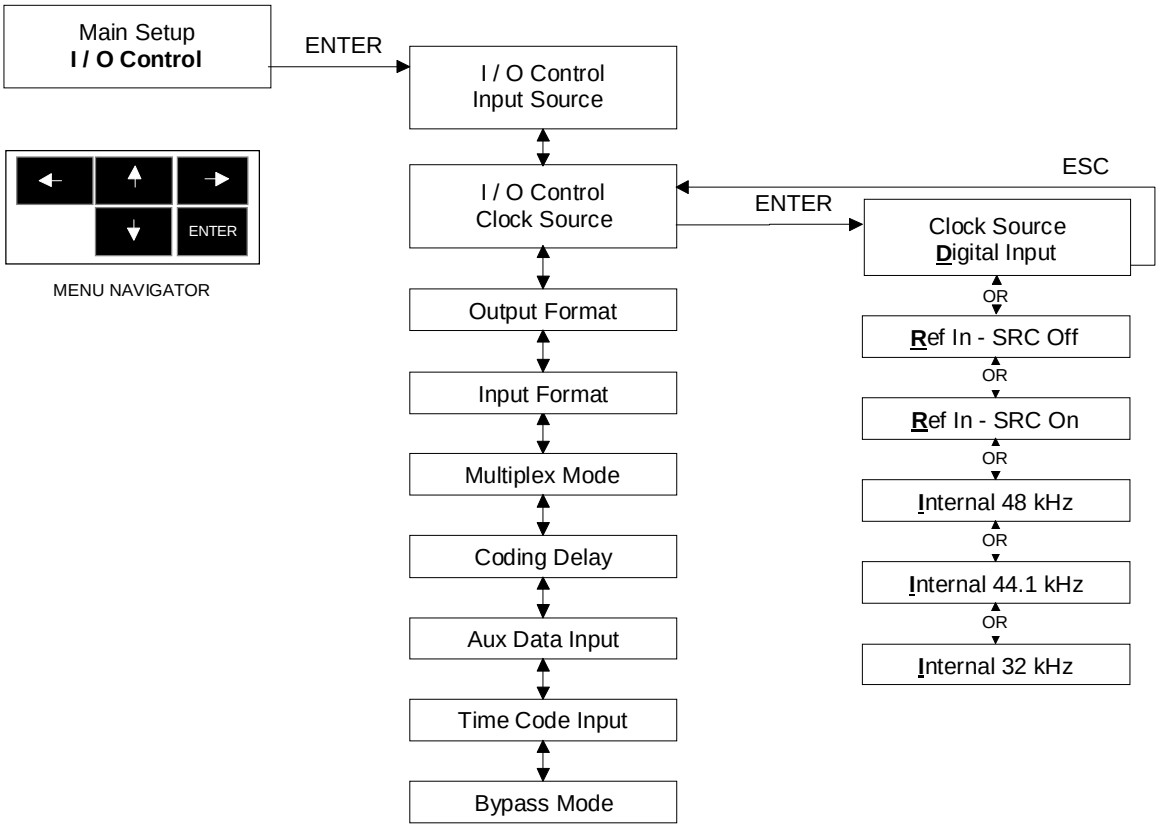
Clock Source

Clock Source is a *control* parameter that specifies the reference clock source for the Dolby Digital encoding process as well as the clock reference for the DP567 output signal. The DP567 will not perform encoding or produce a Dolby Digital output unless the clock source is valid.

You can choose from three types of clock sources:

- *Digital Input*: a valid AES/EBU signal must be present at the Dig In input.
- *Ref In*: a valid AES/EBU signal must be present at the Ref In input.
- *Internal* (48, 44.1, or 32 kHz): always valid when selected.

Dig In is the only input that may function as the **Input Source** and **Clock Source** simultaneously. When *Digital Input* is chosen as the **Clock Source**, the **Status** menu and the "Dig In" LED on the front panel indicate the current state of the digital input source. In addition, the front-panel **Status** menu and the "Ref In" status LED indicate the current state of the reference input when *Ref In* is selected as a **Clock Source**.



NOTE*: Selection of the Reference Input as the clock source automatically enables this input and affects the state of the front-panel "Ref" LED. The clock source setting also controls the state of the internal sample rate conversion. SRC is automatically disabled for the "Digital Input" and "Ref In - SRC Off" settings. SRC is automatically enabled for the "Ref In - SRC On" and Internal clock source settings.*

To select the Clock Source:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***I/O Control*** *menu.*

1. Using the arrow buttons to scroll through the **I/O Control** menu, find **Clock Source**.
2. Press [**ENTER**] to select **Clock Source**. The current default is shown on the LCD.
3. Use the arrow buttons to select the **Clock Source** (see diagram above for selection). A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Error Messages

1. If *Digital Input* or *Ref In-SRC Off* is selected and the current **Input Source** is *Analog*, the following error message will be displayed briefly. The **Clock Source** will then return to its previous setting:

Not Valid: Check Input Source

2. If *Ref In-SRC On* or an *Internal* clock source is selected and the current **Input Format** is not *PCM*, the following error message will be displayed briefly. The **Clock Source** parameter will then return to its previous setting:

Not Valid: Check Input Format

3. If *Digital Input* or an *Internal* clock source is selected, and **Multiplex Mode** is currently enabled, the following error message will be displayed briefly. The **Clock Source** parameter will then return to its previous setting:

Not Valid: Check Multiplex Mode

4. If *Internal 32 kHz* is selected, and the current **Output Mode** is *Pro 16-bit* and the current **Data Rate** is *448 kb/s* or greater, the following error message will be displayed briefly. The **Clock Source** parameter will then return to its previous setting:

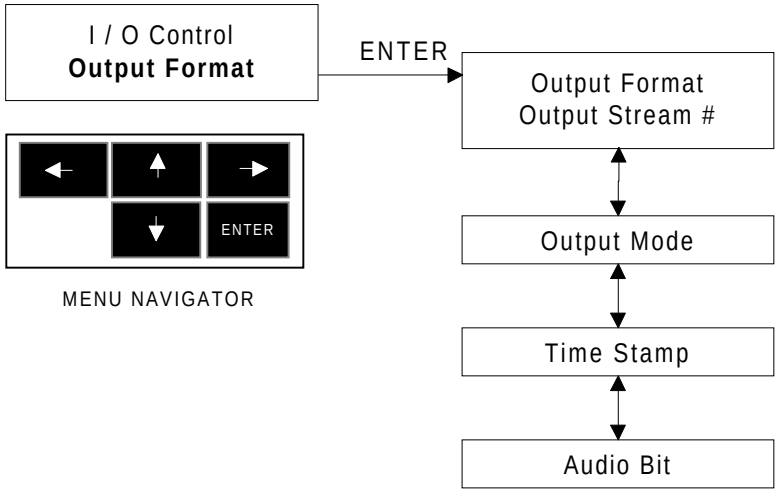
Not Valid: Check Data Rate

5. If *Internal 44.1 kHz* is selected and the current **Coding Delay** is *Internal* with a delay value less than *76 ms*, or if *Internal 32 kHz* is selected and the current **Coding Delay** is *Internal* with a delay value less than *104 ms*, the following error message will be displayed briefly. The **Clock Source** will then return to its previous setting:

Not Valid: Check Coding Delay

Output Format

Output Format parameters allow you to determine the mode of the AES/EBU output bitstream (professional or consumer) and to specify how the encoded data is packed within the bitstream. Formatting of the output bitstream is consistent with *ATSC specifications*.



To select the desired Output Format parameter:

NOTE: *If you are not in **Setup** mode, (1) press* [**SETUP**]*, (2) scroll through the **Main Setup** menu and (3) press* [**ENTER**] *when you find the **I/O Control** menu.*

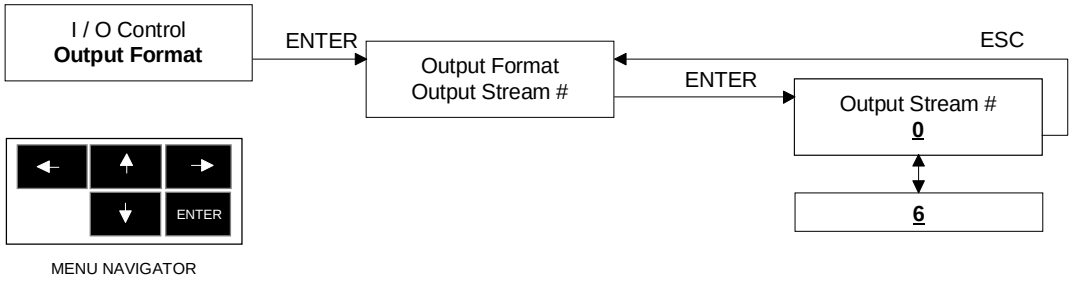
1. Find **Output Format** using the arrow buttons to scroll through the **I/O Control** menu.
2. Press [**ENTER**] to select **Output Format**.
3. Use the arrow buttons to select one of the options shown in the diagram above.
4. Press [**ENTER**] to enable modifications to that parameter. A flashing cursor indicates that you may select this option.
5. Scroll through the choices and press [**ENTER**] to save your selection.

NOTE: *To return to the previous menu, press* [**ESC**]. *To return to the **Main Setup** menu, press* [**SETUP**]. *To return to the **Main Status** screen, press* [**SHIFT**] + [**SETUP**].

Each **Output Format** parameter is described in the following pages. Follow the above procedure to change each parameter.

Output Stream Number

Output Stream Number is a *control* parameter that defines the stream number (0-6) for the Dolby Digital output of the encoding process as defined by *ATSC specifications*. The default **Output Stream Number** is "0".

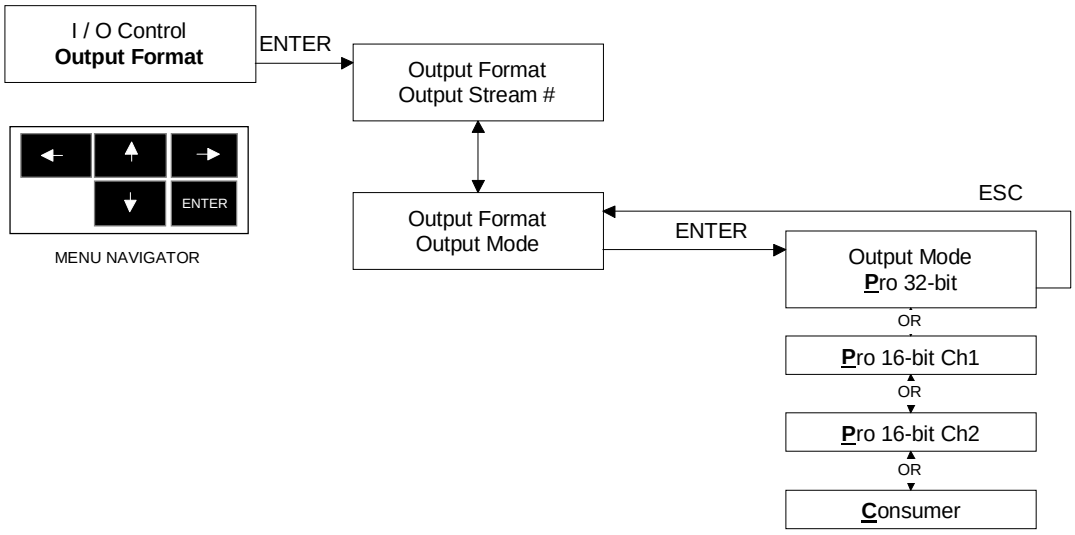


Output Mode

Output Mode is a *control* parameter that defines one of four output data formats:

- *Pro 32-bit* - professional mode 32-bit (Ch 1 and Ch 2) data packing;
- *Pro 16-bit Ch 1* - professional mode 16-bit (Ch 1) data packing;
- *Pro 16-bit Ch 2* - professional mode 16-bit (Ch 2) data packing; or
- *Consumer* mode.

The default parameter for **Output Mode** is *Pro 32-bit*. Both professional and consumer modes implement a specific output format defined by *ATSC specifications*.



If **Multiplex Mode** is currently enabled and the selected **Output Mode** conflicts with the data format received on the **Reference Input**, the DP567 will indicate an error via the front panel **Error** LED and encoded signals will not be present at the output. (See ***Section 4.2.4***, ***Bitstream Multiplex Mode***, for specific restrictions on ***Multiplex Mode*** operation.)

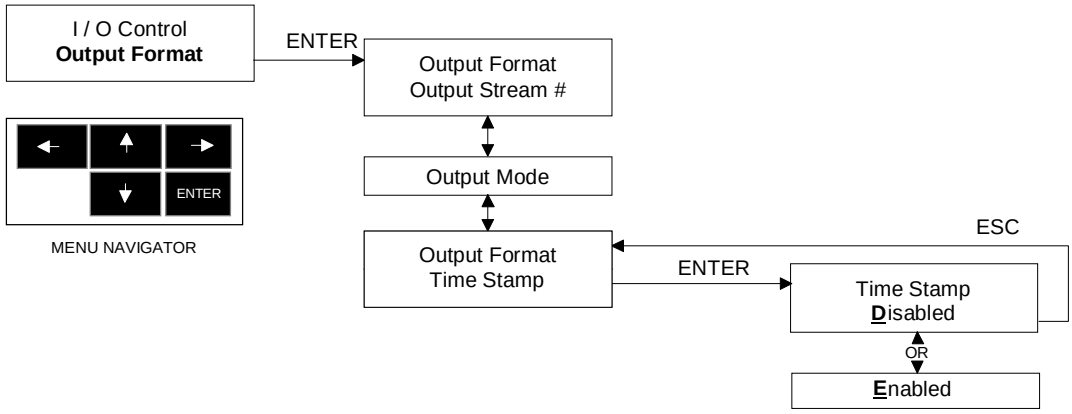
Error Message

1. If *Pro 32-bit* or *Consumer* is selected and **Multiplex Mode** is currently *Enabled*, the following error message will be displayed briefly. The **Output Mode** parameter will then return to its previous setting:

Not Valid: Check Multiplex Mode

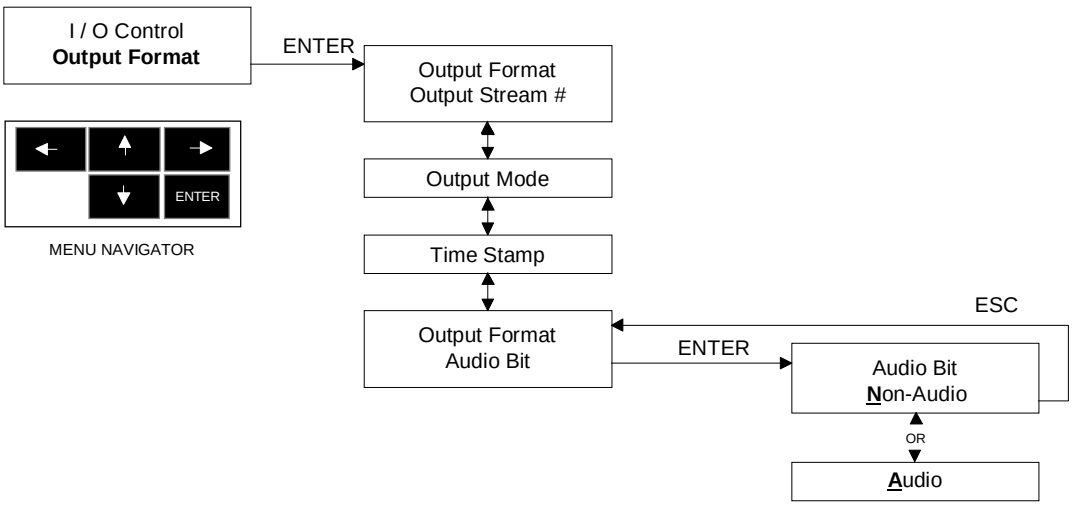
Time Stamp

Time Stamp determines whether the DP567-encoded Dolby Digital bitstream contains associated time code packets in the output bitstream as defined by *ATSC specifications*. The default setting for **Time Stamp** is *Disabled*.



Audio Bit

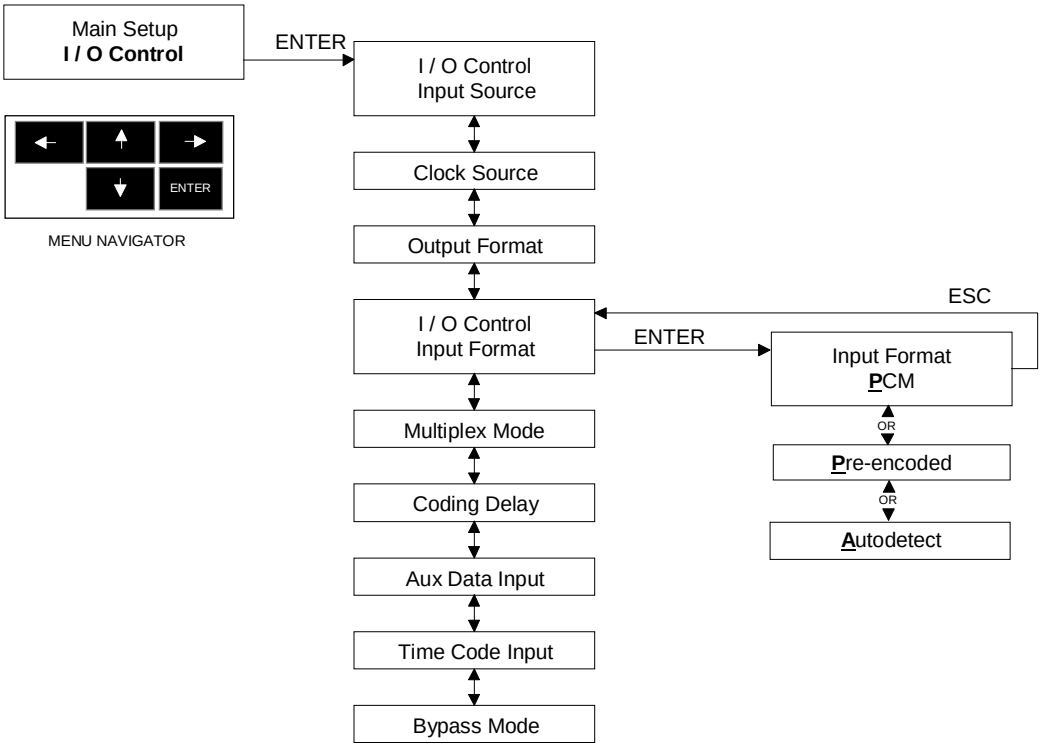
Audio Bit allows you to determine the state of the audio bit in the output bitstream (*Audio* or *Non-Audio*). The default setting for **Audio Bit** is *Non-Audio*.



Input Format

Input Format is a *control* parameter that allows you to choose the format of the data received from the **Input Source** (*Analog or Digital*). Available **Input Format** selections include the following:

- *PCM*: Dolby Digital encoding will be enabled.
- *Pre-encoded*: Pass-through mode will be enabled. Pre-encoded bitstreams move through the unit (unmodified) to the output.
- *Autodetect*: Automatically detects and processes PCM and pre-encoded bitstreams. Invalid bitstreams will be assumed to be PCM data, and encoding will be enabled.



To change the Input Format:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***I/O Control*** *menu.*

1. Find **Input Format** using the arrow buttons to scroll through the **I/O Control** menu.
2. Press [**ENTER**] to select **Input Format**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired **Input Format:** *PCM*, *Pre-encoded*, *Autodetect*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Error Messages

1. If *Pre-encoded* or *Autodetect* is selected and the current **Input Source** is *Analog*, the following error message will be displayed briefly. The **Input Format** parameter will then return to its previous setting:

Not Valid: Check Input Source

2. If *Pre-encoded* or *Autodetect* is selected and the current **Clock Source** is *Ref In-SRC On* or an *Internal* clock source, the following error message will be displayed briefly. The **Input Format** parameter will then return to its previous setting:

Not Valid: Check Clock Source

3. If *Pre-encoded* or *Autodetect* is selected and the current **Encoder State** is set to *Time Code Ctrl*, the following error message will be displayed briefly. The **Input Format** parameter will then return to its previous setting:

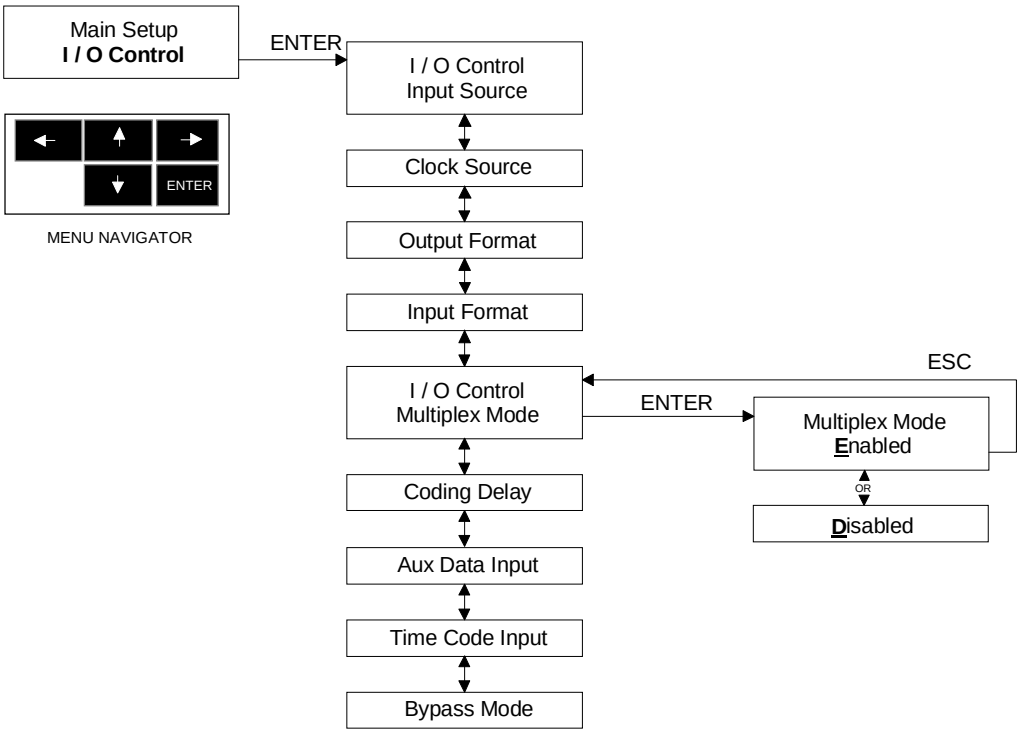
Not Valid: Check Encoder State

4. If *Pre-encoded* or *Autodetect* is selected and the current **Aux Data Input** mode is set to an active data rate, the following error message will be displayed briefly. The **Input Format** parameter will then return to its previous setting:

Not Valid: Check Aux Data Input

Multiplex Mode

Multiplex Mode is a *control* parameter that allows multiple-encoded bitstreams to be combined into a single digital output bitstream. It can be used when a valid input bitstream is being received at the reference input and passed through to the main digital output. Certain improper operating conditions, such as the lack of a valid pre-encoded signal on the reference input, can disable encoding and produce zero-valued output data. (See ***Section 4.2.4***, ***Bitstream Multiplex Mode***, for additional information.)



To enable or disable Multiplex Mode:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***I/O Control*** *menu.*

1. Find **Multiplex Mode** using the arrow buttons to scroll through the **I/O Control** menu.
2. Press [**ENTER**] to select **Multiplex Mode**. The current default is shown on the LCD.
3. Use the arrow buttons to select *Enabled* or *Disabled*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Error Messages

1. If *Enabled* is selected and the current **Clock Source** is not *Ref In – SRC Off*, the following error message will be displayed briefly. The **Multiplex Mode** parameter will then return to its previous setting:

Not Valid: Check Clock Source

2. If *Enabled* is selected and the current **Encoder State** is set to *Time Code Ctrl*, the following error message will be displayed briefly. The **Multiplex Mode** parameter will then return to its previous setting:

Not Valid: Check Encoder State

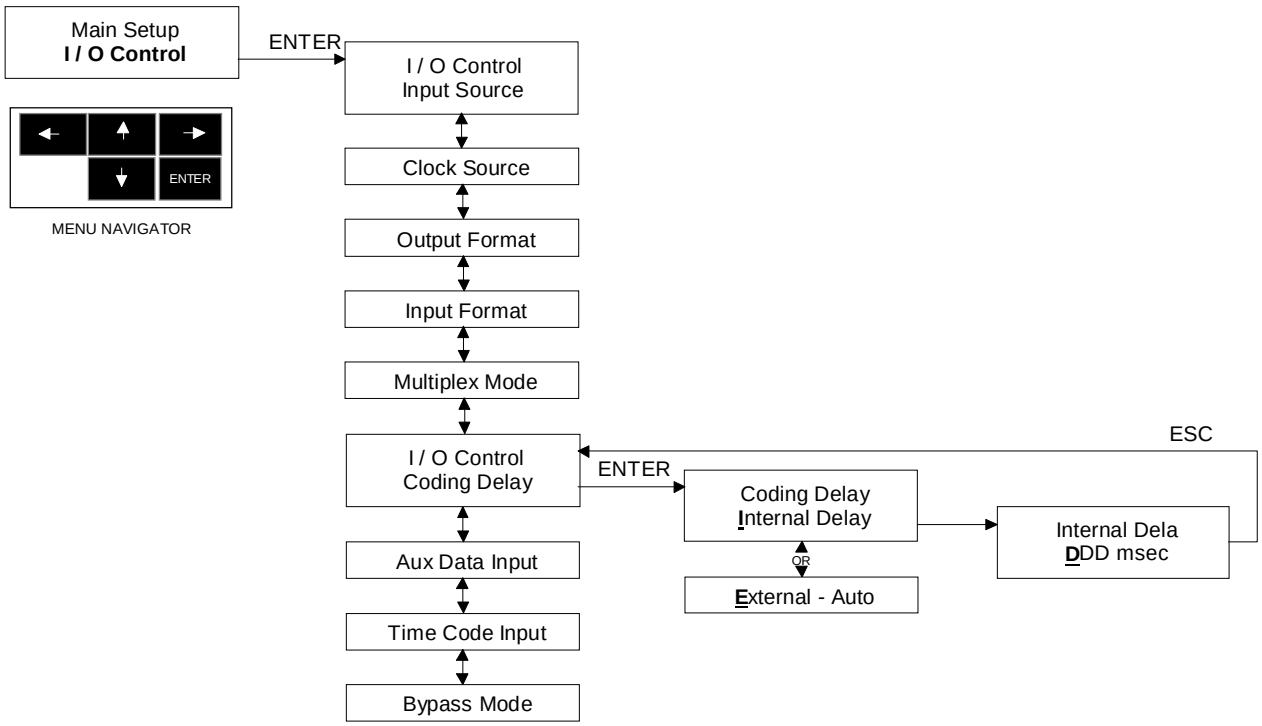
3. If *Enabled* is selected and the current **Output Mode** is *Pro 32-bit* or *Consumer*, the following error message will be displayed briefly. The **Multiplex Mode** parameter will then return to its previous setting:

Not Valid: Check Output Mode

Coding Delay

Encoding delay time can be adjusted by using the **Coding Delay** parameter. **Coding Delay** is a *control* parameter that can be set to one of two modes: *Internal* or *External*. In either case, any changes made to the delay setting will take place immediately by deleting output frames and/or adding gaps to the output bitstream as necessary.

If you choose *Internal*, you can specify the amount of delay in milliseconds. If you choose *External*, the delay is determined automatically from a signal applied to the external TTL delay input connector.



To adjust the Coding Delay:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***I/O Control*** *menu.*

1. Find **Coding Delay** using the arrow buttons to scroll through the **I/O Control** menu.
2. Press [**ENTER**] to select **Coding Delay**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired Coding Delay: *Internal Delay* or *External-Auto*. A flashing cursor indicates that you may select this option.

If you select External-Auto:

Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

If you select Internal Delay:

Use the [↑] and [↓] buttons to increase or decrease the value of the character at the current location. Use the [→] and [←] buttons to move the flashing black cursor right or left. You may also use [**INSERT**] or [**DELETE**] to either insert a new character or delete a character.

Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Error Messages

1. If a new delay value is selected and the new internal coding delay parameter is not in the range "70"–"200", the following error message will be displayed briefly. The **Coding Delay** parameter will then return to the *Internal Delay* menu screen:

Not Valid: Check Out of Range

2. If a new delay value less than 76 ms is selected and the current **Clock Source** is *Internal 44.1 kHz*, or if a new delay value less than 104 ms is selected and the current **Clock Source** is *Internal 32 kHz*, the following error message will be displayed briefly. The **Coding Delay** parameter will then return to the *Internal Delay* menu screen:

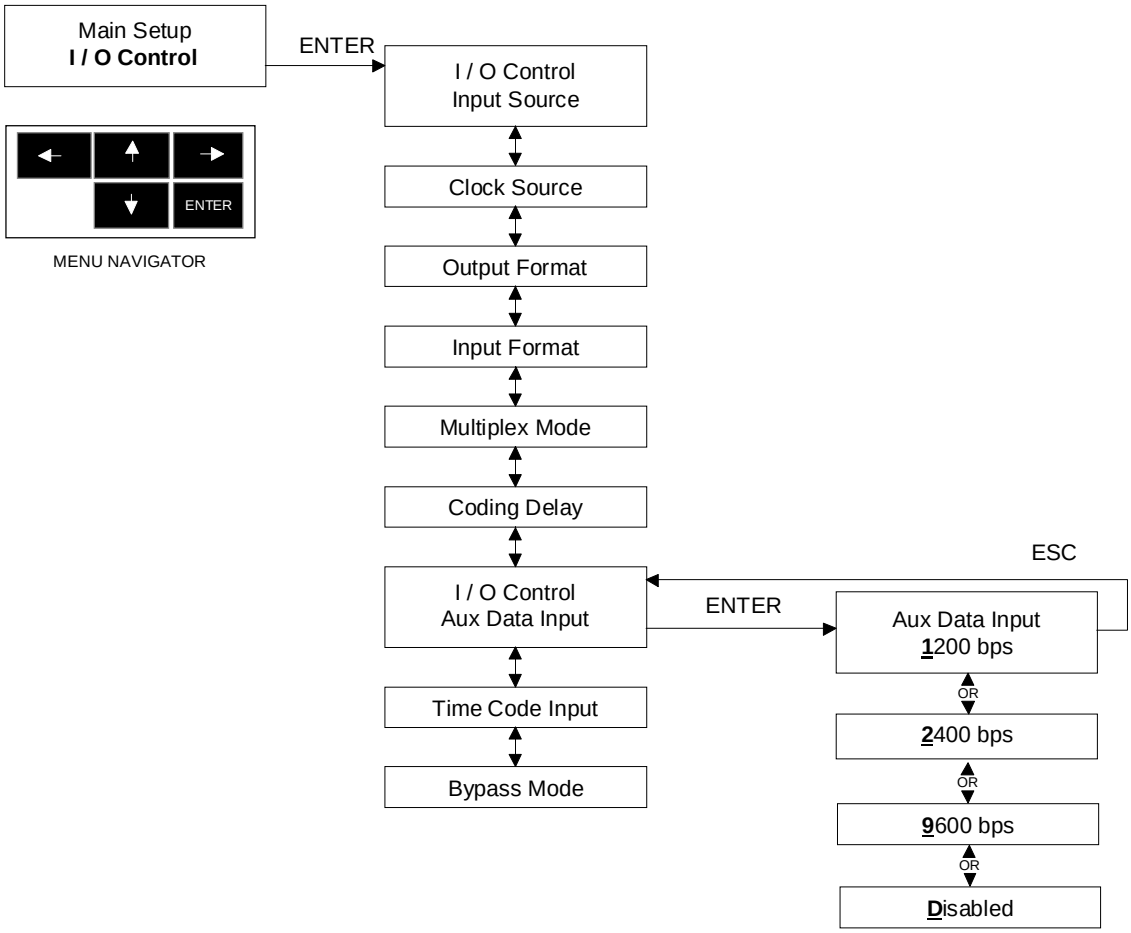
Not Valid: Check Clock Source

Auxiliary Data Input Mode

Auxiliary Data Input mode is a *control* parameter that allows you to indicate whether the auxiliary data field is present in the encoded Dolby Digital bitstream. When present, serial data will be received from the **Aux Data Input** port and added to the auxiliary data field of the output Dolby Digital bitstream.

Three data rates are supported: 1200, 2400, and 9600 bits per second, or the auxiliary data input can be disabled. Since the addition of auxiliary data reduces the number of bits available for audio data, the allowed auxiliary data rates are limited for some Dolby Digital data rates.

Use of the **Aux Data Input** mode is restricted to the PCM input format and cannot be enabled if the *Pre-encoded* or *Autodetect* **Input Format** is selected. **Aux Data Input** may be used when the **Multiplex Mode** is enabled, however the auxiliary data will only be added to a bitstream encoded by the DP567.



To select Auxiliary Data Input Mode:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***I/O Control*** *menu.*

1. Find **Aux Data Input** using the arrow buttons to scroll through the **I/O Control** menu.
2. Press [**ENTER**] to select **Aux Data Input**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired value for **Aux Data Input**. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Error Messages

1. If the data rate for the selected **Aux Data Input** mode is not supported for the current **Channel Mode**, the following error message will be displayed briefly (see ***Appendix D***, ***Supported Data Rates and Audio Bandwidths***). The **Aux Data Input** mode parameter will then return to its previous setting:

Not Valid: Check Channel Mode

2. If the data rate for the selected **Aux Data Input** mode is not supported for the current **Data Rate** setting, the following error message will be displayed briefly (see ***Appendix D***, ***Supported Data Rates and Audio Bandwidths***). The **Aux Data Input** parameter will then return to its previous setting:

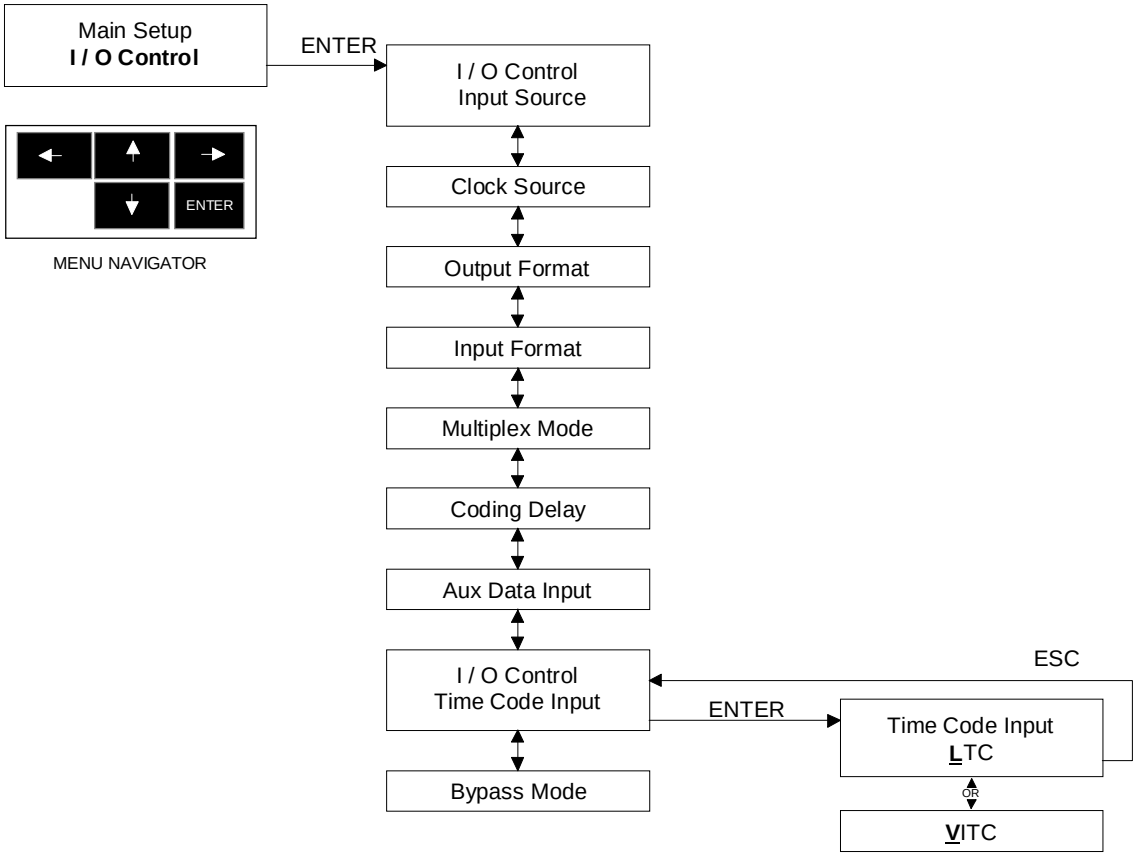
Not Valid: Check Data Rate

3. If an active data rate is selected for the **Aux Data Input** mode and the current **Input Format** is *Pre-encoded* or *Autodetect*, the following error message will be displayed briefly. The **Aux Data Input** mode parameter will then return to its previous setting:

Not Valid: Check Input Format

Time Code Input Source

Time Code Input Source is an *informational* parameter that allows you to select one of two time code inputs for receiving time code signals: LTC or VITC. The front-panel "Time Code" LED reflects the state of the selected time code input when **Time Code** has been enabled. (See ***Section 5.2.3, Encoder Control,*** for time code control information.)



To select the Time Code Input Source:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***I/O Control*** *menu.*

1. Find **Time Code Input** using the arrow buttons to scroll through the **I/O Control** menu.
2. Press [**ENTER**] to select **Time Code Input**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired **Time Code Input:** *LTC* or *VITC*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Bypass Mode

The **Bypass Mode** parameter is typically used to route the output of a secondary (standby) DP567 to the switched audio output of the primary DP567. To enable this function, the *Bypass In* connector of the primary encoder must be linked to the *Main Out* connector of the secondary (standby) encoder. **Bypass Mode** routes the *Bypass In* source directly to the *Switched Output* of the primary DP567. When **Bypass Mode** is disabled, the *Main Output* is routed directly to the *Switched Output***,** unless the bypass function has been otherwise enabled by a system fault, power failure, or direct override from the rear-panel GP I/O Bypass input (*Figure 5-1* and *Figure 5-2*).

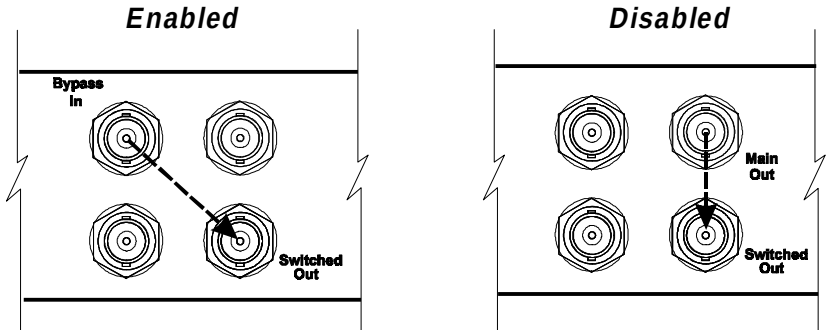


Figure 5 - 1. Bypass Mode *Enabled* or *Disabled*.

Bypass Mode does not affect other internal DP567 processing, i.e., Dolby Digital encoding and other processes will continue and the main audio output may still contain valid output signals even when **Bypass Mode** is enabled.

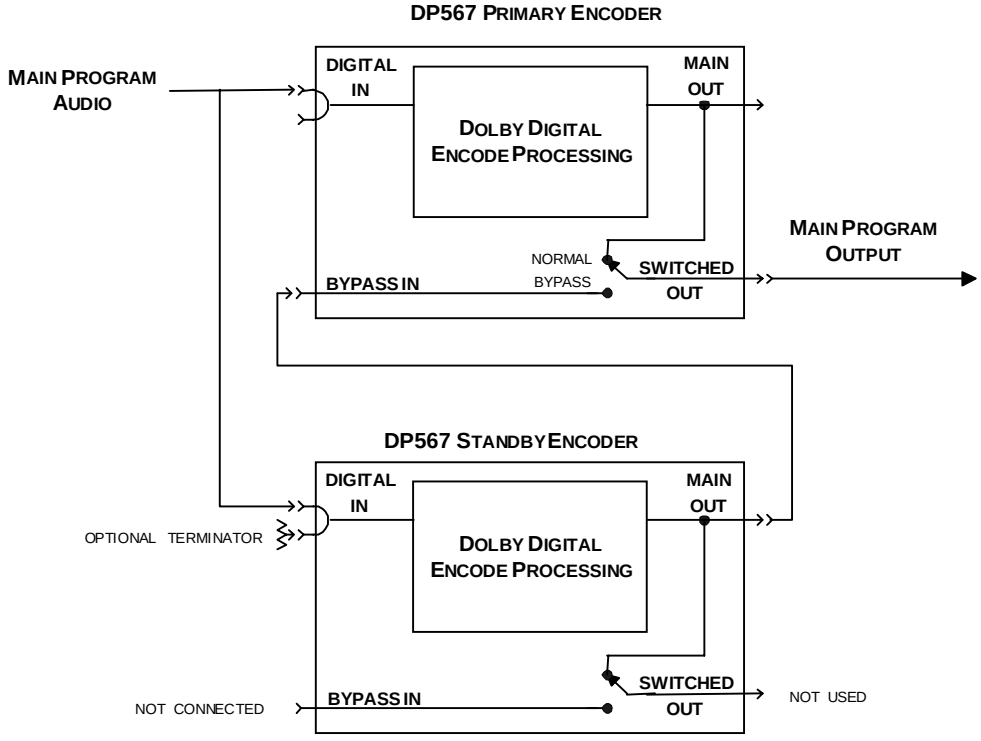
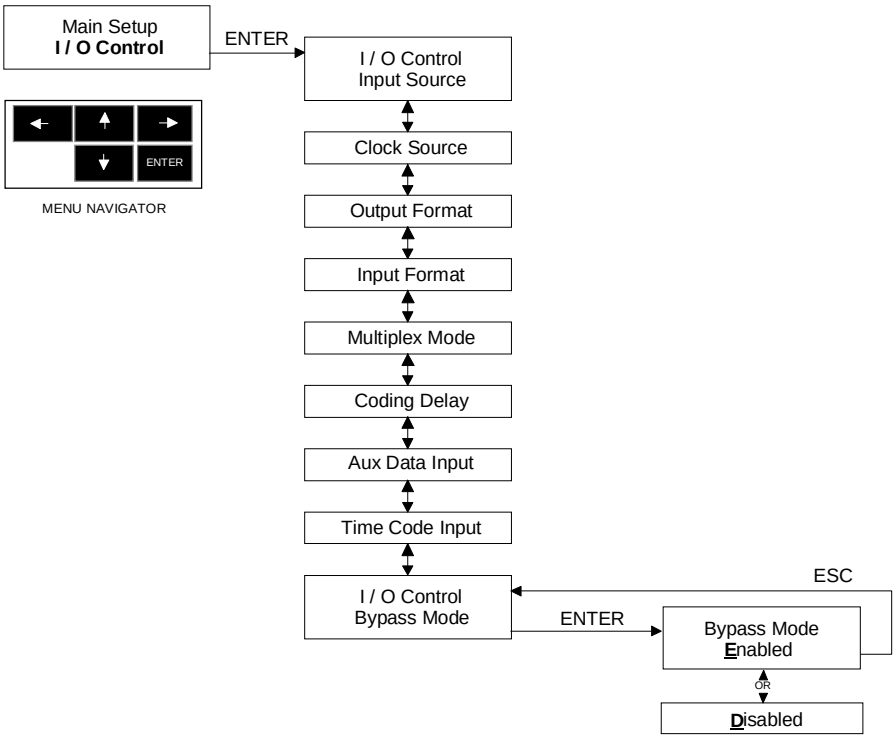


Figure 5 - 2. Signal routing when a standby encoder is connected.

Bypass Mode (continued)

Bypass Mode can be enabled from the DP567 front panel user interface or via the remote interface. In addition, a dedicated rear-panel GP I/O connection can be used to directly activate the bypass function, overriding the internal settings of the **Bypass Mode** parameter. (See **Section 4.2.5**, **Bypass Mode**, for additional **Bypass Mode** information.)



To enable or disable Bypass Mode:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***I/O Control*** *menu.*

1. Find **Bypass Mode** using the arrow buttons to scroll through the **I/O Control** menu.
2. Press [**ENTER**] to select **Bypass Mode**. The current default is shown on the LCD.
3. Use the arrow buttons to select *Enabled* or *Disabled*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

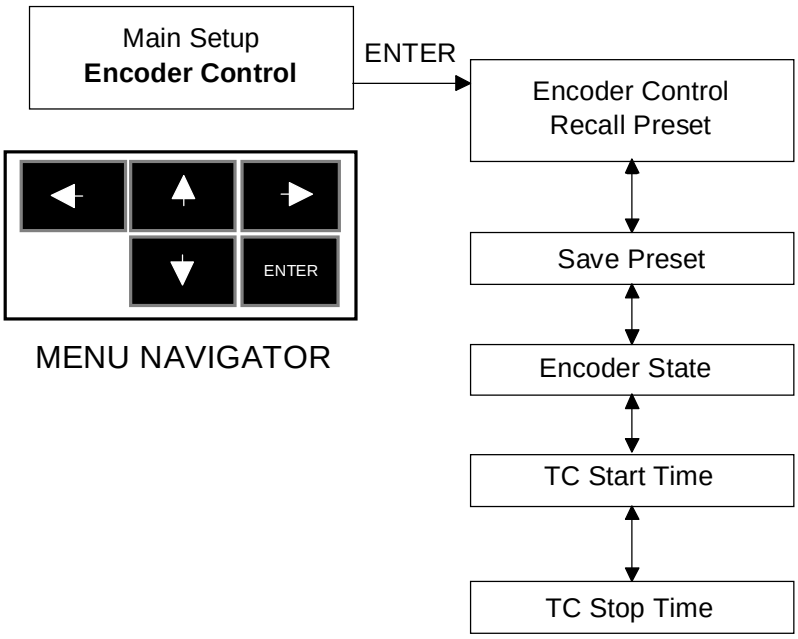
NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Error Message

1. If *Disabled* is selected and the bypass function is currently activated through the rear-panel GP I/O connection, the following error message will be displayed briefly. **Bypass Mode** will then return to its previous setting:

Not Valid: Check GPIO Inputs

5.2.3 Encoder Control



To enter the Encoder Control menu:

1. Press the [**SETUP**] button to enter the **Main Setup** menu, then use the arrow buttons to scroll to the **Encoder Control** menu.
2. Press [**ENTER**] to select **Encoder Control**. Use the arrow buttons to scroll through the **Encoder Control** menu (see the diagram above for menu selection).

If you press [**ESC**], the DP567 will return to the **Main Setup** menu and display the **Encoder Control** menu option. If you press [**SETUP**], the DP567 will return to the top of the **Main Setup** menu, displaying the **Audio Service** menu option.

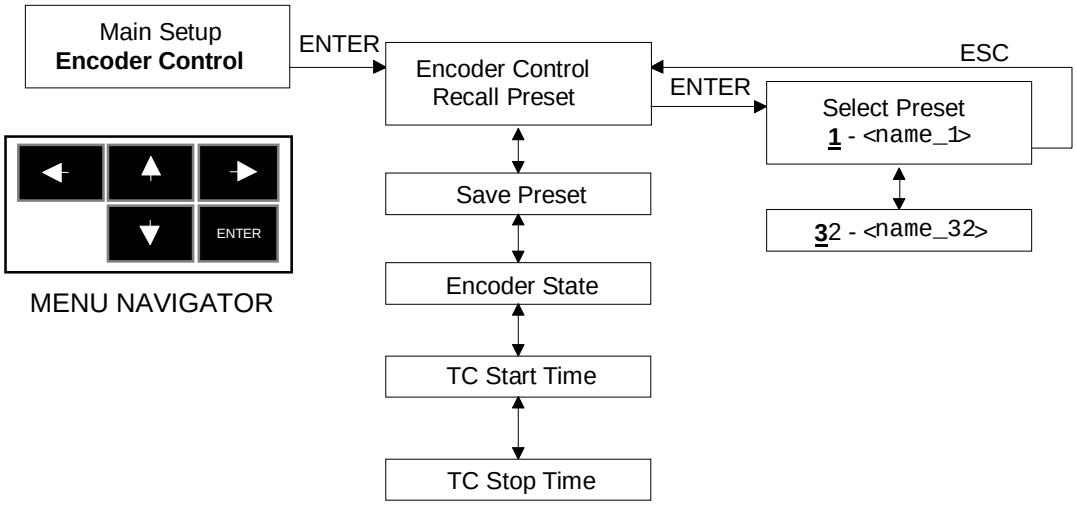
Recall Preset

The preset modes of the DP567, as described in ***Section 4.2.6***, ***Preset Mode***, define a complete set of operational functions that can be quickly recalled without having to change each individual parameter.

A special **Recall Preset** state, *Time Code-based Recall* or *Delayed Recall*, allows the selected preset to be recalled at a specific time, based on the time code input. When *Time Code-based Recall* has been enabled, the selected preset will be considered "pending" until the specified time is reached, and the preset becomes active. The "pending" recall stores the state of the start time code when it is set to pending. Modifications to the start time code parameter before the pending recall has taken place will not affect the pending recall time.

Only one preset can be "pending" at a time and a "pending" recall may be aborted before the preset becomes active. A "pending" preset must become active or be aborted before another preset can be declared pending. Recalling another preset immediately will automatically abort any pending presets.

NOTE: *Time Code-based Recall may not be set if* ***Time Code Control*** *is active.*



<*name_n*> represents the first 13 characters of a descriptive name assigned to a preset function.

NOTE*: If "Recall Preset" is selected and* ***Time Code-based Recall*** *is already active, an alternate menu screen appears. See the following section,* ***Time Code-based Recall****.*

To recall a preset from the menu structure:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Encoder Control*** *menu.*

1. Find **Recall Preset** using the arrow buttons to scroll through the **Encoder Control** menu.
2. Press [**ENTER**] to select **Recall Preset**. The current default is shown on the LCD.
3. Use the arrow buttons to select the preset number you wish to recall. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**]. If the **Time Code-based Recall** mode is not currently enabled, you will be prompted with the following screen:

Recall at Start?
No

NOTE*: If* ***Time Code-based Recall*** *is enabled, skip the following steps and please refer to the following section entitled,* ***Time Code-based Recall****.*

5. Use the arrow buttons to select *No* (factory default) or *Yes* and press [**ENTER**].

If you select NO, the LCD screen will briefly show the following:

Preset #NN
Active

The preset number is immediately recalled and the LCD screen will show the **Main Status** screen.

If you select YES, the LCD screen will briefly show the following:

#NN pending at:
HH:MM:SS:FF:ssss

NN *represents the currently active delayed preset number.*
HH:MM:SS:FF:ssss *represents the current setting for time code start time (see* ***Time Code Start Time****).*

Time Code-based Recall is enabled, and the DP567 automatically returns to the **Main Status** default menu.

NOTE*: Recall of Presets 1 through 8 affects the state of the front-panel LEDs for these presets.*

Time Code-based Recall

If **Recall Preset** is selected and the **Time Code-based Recall** mode is active, the following message will appear on the LCD screen:

```
#NN pending at
HH:MM:SS:FF:ssss
```

NN *represents the currently active delayed preset number.*
HH:MM:SS:FF:ssss *represents the current setting for time code start time (see* ***Time Code Start Time*** *on page 5-36).*

Next, the following message appears on the screen:

```
Abort Preset #NN?
ENTER=Yes  ESC=No
```

If you wish to abort this setting, press [**ENTER**]. The DP567 confirms your selection with the following message, then returns to the **Recall Preset** menu:

```
Preset #NN
Aborted!
```

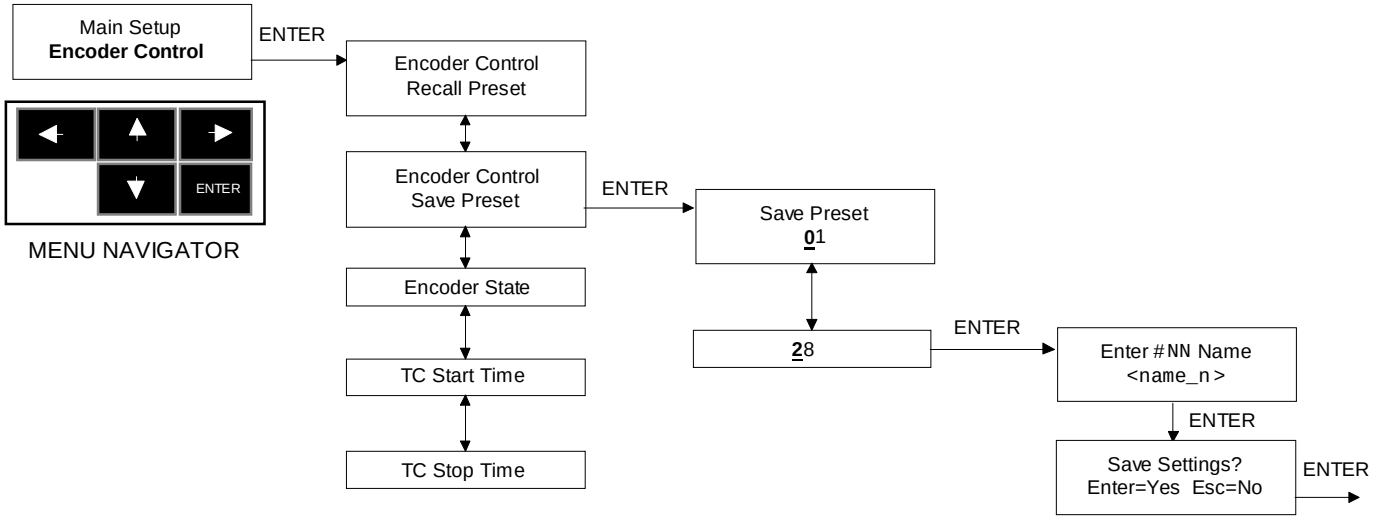
If you do not want to change this setting, press [**ESC**] and the **Recall Preset** menu appears.

Error Message

1. If *Time Code-based Recall* is selected and **Encoder State** is currently set to *Time Code Ctrl*, the following error message will be displayed briefly. The LCD screen will then return to its previous setting:

```
Not Valid:  Check
Encoder State
```

Save Preset



To Save Preset:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Encoder Control*** *menu.*

1. Find **Save Preset** using the arrow buttons to scroll through the **Encoder Control** menu.
2. Press [**ENTER**] to select **Save Preset**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired preset number. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] and you will see the following screen:

Enter #NN Name
<name_n>

NN *represents the currently selected preset number.*
<name_n> *represents the current descriptive name for preset number.*

Use the [↑] and [↓] buttons to increase or decrease the value of the character at the current location. Use the [→] and [←] buttons to move the flashing black cursor right or left. You may also use [**INSERT**] or [**DELETE**] to either insert a new character or delete a character.

Save Preset (continued)

5. After specifying the preset name, press [**ENTER**] and you will see the following screen:

Save Settings? **ENTER=Yes ESC=No**

If you select [**ENTER**] ***(Yes), the LCD screen will show the following:***

Preset #NN **Saved**

The preset number is immediately recalled and the LCD screen will show the **Main Status** screen.

If you select [**ESC**] ***(No), the LCD screen will show the following:***

Preset #NN **Aborted!**

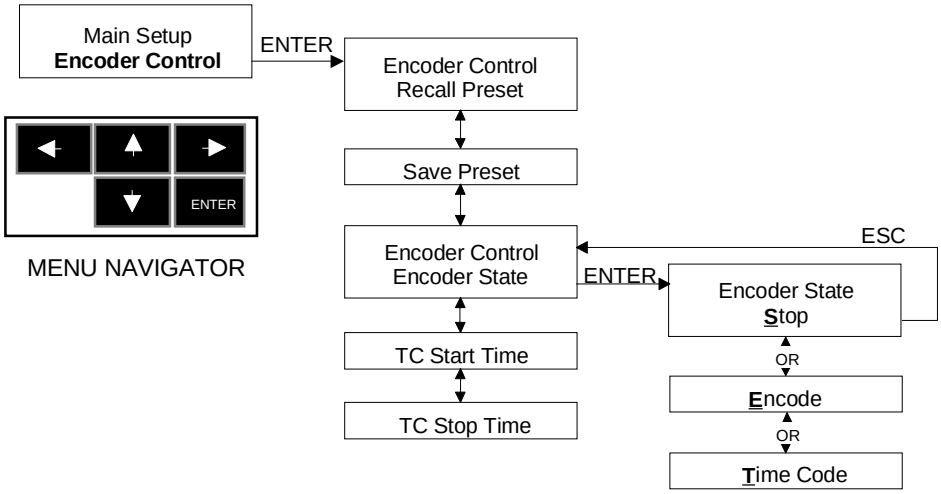
Then, the LCD message will display the **Save Preset** screen.

NOTE*: Saving preset settings implies that preset is currently active. Saving preset modes 1-8 affects the state of the front-panel LEDs for these preset modes.*

Encoder State

Encoder State defines the *requested* state of the Dolby Digital encoding process. Setting Encoder State to *Stop* manually disables the encoding process. Setting this parameter to *Encode* enables encoding to take place. Setting it to *Time Code Ctrl* enables and disables the encoding process automatically based on time code start and stop values. *Time Code Ctrl* can only be entered on the following conditions:

- **Input Format** is set to PCM.
- **Multiplex Mode** is disabled.
- Time code controlled preset recalls are not pending.



NOTE: *"Time Code Ctrl" applies only to the internal Dolby Digital encoding process.*

To define the Encoder State:

NOTE: *If you are not in **Setup** mode, (1) press* [**SETUP**]*, (2) scroll through the **Main Setup** menu and (3) press* [**ENTER**] *when you find the **Encoder Control** menu.*

1. Find **Encoder State** using the arrow buttons to scroll through the **Encoder Control** menu.
2. Press [**ENTER**] to select **Encoder State**. The current default is shown on the LCD.
3. Use the arrow buttons to select the Encoder State: *Encode*, *Stop*, or *Time Code Ctrl*. A flashing cursor indicates that you can select this option.
4. Press [**ENTER**] to save your selection.

NOTE: *To return to the previous menu, press* [**ESC**]. *To return to the **Main Setup** menu, press* [**SETUP**]. *To return to the **Main Status** screen, press* [**SHIFT**] + [**SETUP**].

Error Messages

1. If *Time Code Ctrl* is selected and the current **Input Format** is not *PCM* the following error message will be displayed:

Not Valid: Check Input Format

2. If *Time Code Ctrl* is selected and the current **Multiplex Mode** is set to *Enabled*, the following error message will be displayed:

Not Valid: Check Multiplex Mode

3. If *Time Code Ctrl* is selected and a time code controlled preset recall is currently *pending* the following error message will be displayed:

Not Valid: Preset Recall Pending

Time Code Start and Stop Time

When the **Encoder State** parameter is set to *Time Code Ctrl*, the DP567 is placed in a state in which the internal encoding process begins and ends at specific times. **TC Start Time** enables the DP567 to wait until a specified start time occurs before encoding frames (based on the selected time code input signal). Encoding will continue (assuming all required encoding conditions are met) until **TC Stop Time** is reached. Before the start time and after a stop time, encoded frames will not appear on the DP567 output (adjusting for internal pipeline delays).

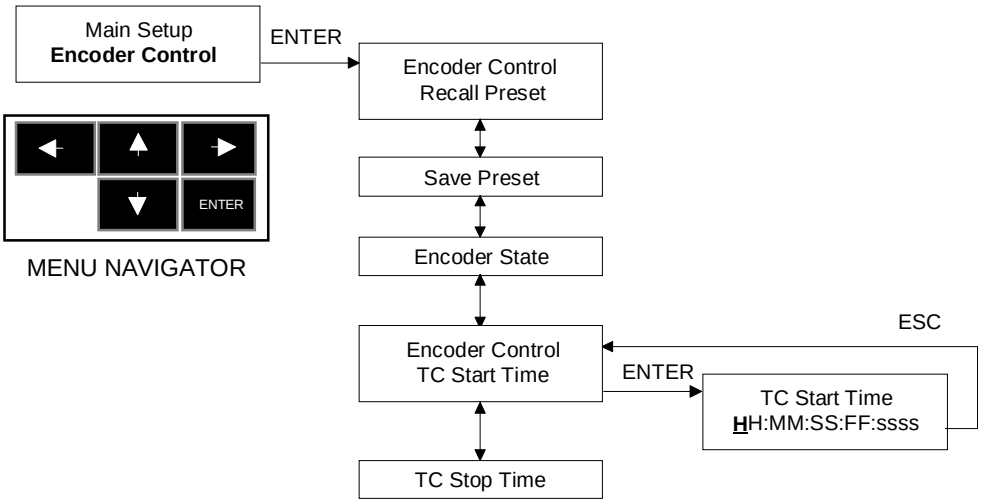
The start and stop times are specified in the format "**HH:MM:SS:FF:ssss":**

HH = hours (00 to 23)
MM = minutes (00 to 59)
SS = seconds (00 to 59)
FF = frames (00 to 29)
ssss = samples (0000 to 1535)

The first sample of the first encoded frame will correspond to the exact sample specified by the start time. The last sample of the last encoded frame cannot be specified arbitrarily, however, since encoding must end at a Dolby Digital frame boundary. For this reason, the samples field of **TC Stop Time** is fixed at a default value of zero, and encoding will actually end at the completion of the first Dolby Digital frame following the specified stop time. At the completion of encoding, the actual value of stop time (including samples) can be copied to the **TC Start Time** parameter by pressing [**INSERT**] ([**SHIFT**] + [→]).

Time Code Start Time

When you enable *Time Code Ctrl* in **Encoder State**, use the **Time Code Start Time** parameter to adjust the specific time for the encoding process to begin.



To adjust the Time Code Start Time:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Encoder Control*** *menu.*

1. Find **TC Start Time** using the arrow buttons to scroll through the **Encoder Control** menu.
2. Press [**ENTER**] to select **TC Start Time**. The current default is shown on the LCD.
3. If you wish to modify the start time, use the [↑] and [↓] buttons to increase or decrease the value of the character at the current location. Use the [→] and [←] buttons to move the flashing black cursor right or left. You may also use [**DELETE**] to reset the start time to zero, or [**INSERT**] to set it to the actual value of stop time.

TC Start Time
HH:MM:SS:FF:ssss

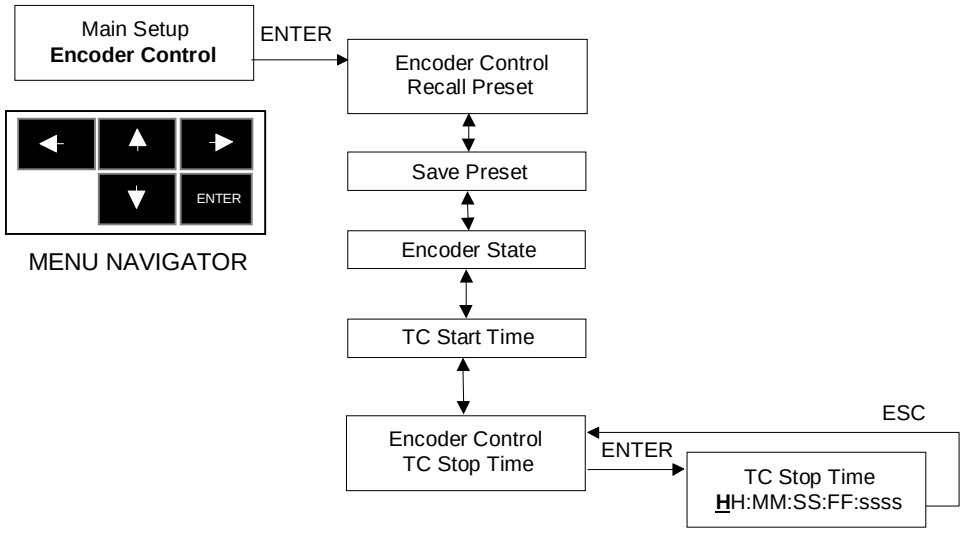
NOTE: *You will see a flashing cursor beneath the first H on the display once you press a navigation button.*

4. Press [**ENTER**] to set the new time code start value as the default.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Time Code Stop Time

When you enable *Time Code Ctrl* in **Encoder State**, use the **Time Code Stop Time** parameter to adjust the specific time for the encoding process to end.



To adjust the Time Code Stop Time:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Encoder Control*** *menu.*

1. Find **TC Stop Time** using the arrow buttons to scroll through the **Encoder Control** menu.
2. Press [**ENTER**] to select **TC Stop Time**. The current default is shown on the LCD.
3. If you wish to modify the stop time, use the [↑] and [↓] buttons to increase or decrease the value of the character at the current location. Use the [→] and [←] buttons to move the flashing black cursor right or left. You may also use [**DELETE**] to reset the stop time to zero.

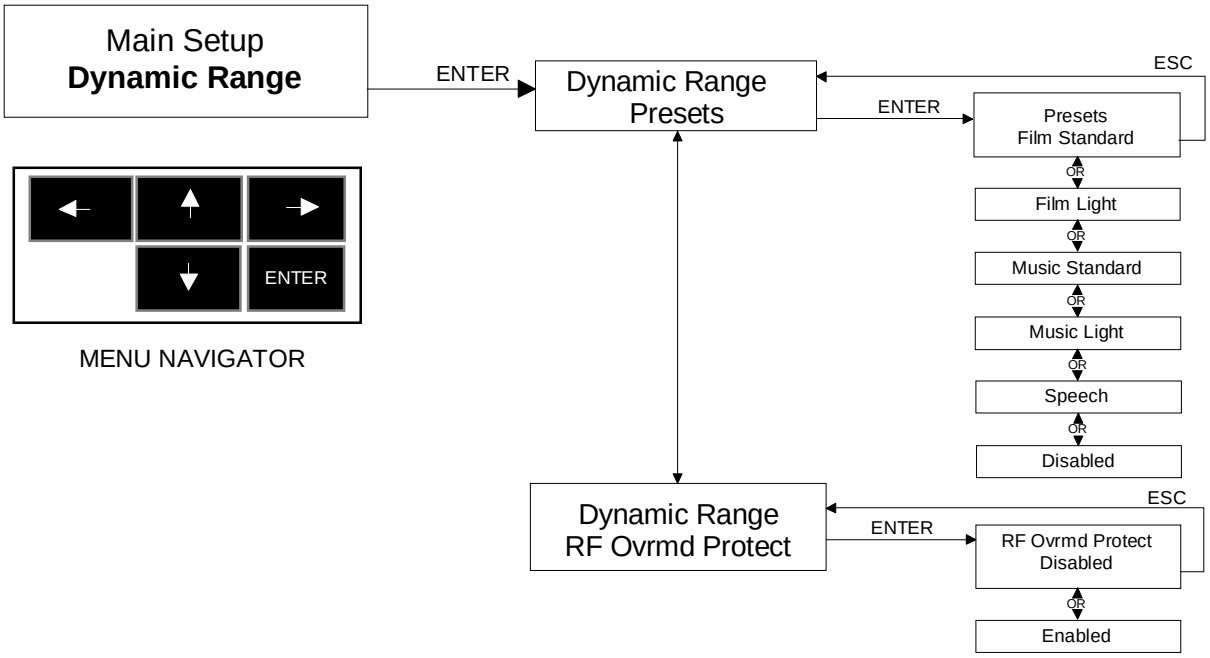
TC Stop Time
HH:MM:SS:FF:0000

NOTE: *You will see a flashing cursor beneath the first "H" on the display once you press an arrow button.*

4. Press [**ENTER**] to set the new time code stop value as the default.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

5.2.4 Dynamic Range Processing



To enter the Dynamic Range menu:

1. Press the [**SETUP**] button to enter the **Main Setup** menu, then use the arrow buttons to scroll to the **Dynamic Range** menu.
2. Press [**ENTER**] to select **Dynamic Range**. Use the arrow buttons to scroll through the **Dynamic Range** menu (see the diagram above for menu selection).

If you press [**ESC**], the DP567 will return to the **Main Setup** menu and display the **Dynamic Range** menu option. If you press [**SETUP**], the DP567 will return to the top of the **Main Setup** menu, displaying the **Audio Service** menu option.

Dynamic Range Presets

The dynamic range **Presets** allow you to select the compression characteristic that will be applied to the encoded Dolby Digital bitstream. The DP567 includes five dynamic range compression modes that correspond to commonly used compression settings.

The following table displays the Dynamic Range Compression settings.

Dynamic Range Preset Mode	Standard Dolby Digital Compression Characteristic
1	Film Standard
2	Film Light
3	Music Standard
4	Music Light
5	Speech

Dynamic Range Presets (continued)

Any mode can be selected at any time. The compression modes apply only to the encoded signal and are not applicable when the **Pass-through** mode is active. However, the compression mode may still be set even when the **Pass-through** mode is active. When in the "1+1" **Channel Mode,** the selected **Dynamic Range Compression** applies to both mono channels. The actual compression applied to each channel, in this case, is independent, however they share the same compressor characteristics.

To select the Dynamic Range Compression mode:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Dynamic Range*** *menu.*

1. Find **Presets** using the arrow buttons to scroll through the **Dynamic Range** menu.
2. Press [**ENTER**] to select **Presets**. The current default is shown on the LCD.
3. Use the arrow buttons to scroll through the available modes (see the diagram above for menu selection). A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

RF Overmodulation Protection

RF Overmodulation Protection allows you to control whether or not the Dolby Digital signal is protected against overmodulation distortion when decoded in RF compression mode and subsequently modulated onto an RF carrier. Typical applications include digital television set-top box systems in which decoded audio and video are combined into a composite RF output signal. Note that this parameter has no effect on Line Out or Custom compression modes. The default setting for **RF Overmodulation Protection** is *Disabled*.

NOTE*: Because the* ***RF Overmodulation Protection*** *feature is capable of introducing a significant amount of signal attenuation in RF compression mode, it is recommended that this parameter only be enabled for applications in which digital television broadcast is anticipated.*

To enable or disable RF Overmodulation Protection:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Dynamic Range*** *menu.*

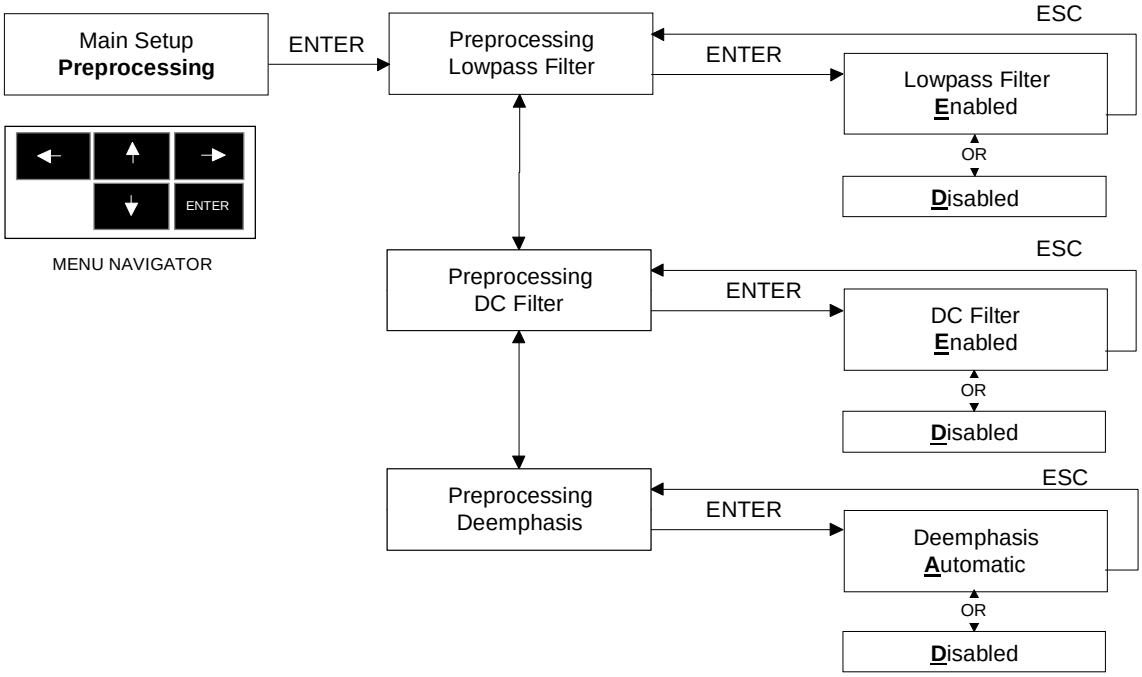
1. Find **RF Ovrmd Protect** using the arrow buttons to scroll through the **Dynamic Range** menu.
2. Press [**ENTER**] to select **RF Ovrmd Protect**. The current default is shown on the LCD.
3. Use the arrow buttons to select *Enabled* or *Disabled*. A flashing cursor indicates that you may select this option.

4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]. *To return to the* ***Main Setup*** *menu, press* [**SETUP**]. *To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

5.2.5 Preprocessing Options

The **Preprocessing Options** contain *control* parameters that allow you to control filters and other signal processing routines that may be applied to input data. These options apply only to the encoded signal and are not applicable when the **Pass-through** mode is active. They can be set, however, when the **Pass-through** mode is active.



To select the Preprocessing menu:

1. Press the [**SETUP**] button to enter the Main Setup menu, then use the arrow buttons to scroll to the **Preprocessing** menu.
2. Press [**ENTER**] to select **Preprocessing**. Use the arrow buttons to scroll through the **Preprocessing** menu (see the diagram above for menu selection).

If you press [**ESC**], the DP567 will return to the **Main Setup** menu and display the **Preprocessing** menu option. If you press [**SETUP**], the DP567 will return to the top of the **Main Setup** menu, displaying the **Audio Service** menu option.

Lowpass Filter

Lowpass Filter allows you to control whether or not a bandwidth limiting low-pass filter is applied to the main input channels before the Dolby Digital encoding process is performed. The default setting for **Lowpass Filter** is *Enabled*.

To enable or disable the Lowpass Filter:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Preprocessing*** *menu.*

1. Find **Lowpass Filter** using the arrow buttons to scroll through **Preprocessing** menu.
2. Press [**ENTER**] to select **Lowpass Filter**. The current default is shown on the LCD.
3. Use the arrow buttons to select *Enabled* or *Disabled*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

DC Filter

DC Filter controls whether or not a DC blocking 3 Hz high-pass filter is applied to the main input channels before the Dolby Digital encoding process is performed. The default setting for **DC Filter** is *Enabled*.

To enable or disable the DC Filter:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Preprocessing*** *menu.*

1. Find **DC Filter** using the arrow buttons to scroll through **Preprocessing** menu.
2. Press [**ENTER**] to select **DC Filter**. The current default is shown on the LCD.
3. Use the arrow buttons to select *Enabled* or *Disabled*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Deemphasis

The **Deemphasis** parameter controls whether or not 50/15 microsecond digital de-emphasis may be applied to the main input channels before the Dolby Digital encoding process is performed. If **Deemphasis** is set to *Disabled*, de-emphasis will never be applied and the emphasis channel status bit of input signals will be ignored. If the parameter is set to *Automatic*, digital de-emphasis will automatically be applied to input signals if the emphasis channel status bit indicates 50/15 microsecond pre-emphasis has been applied. The state of **Deemphasis** and the channel status bit will be ignored whenever pre-encoded bitstreams are being received (**Pass-through** mode is active).

NOTE*: The DP567 does not support digital input signals with CCITT J.17 pre-emphasis. When a digital PCM input is being received in the professional format and the emphasis bit indicates the input has CCITT J.17 pre-emphasis applied, the DP567 will indicate that the input is invalid and encoding will be disabled.*

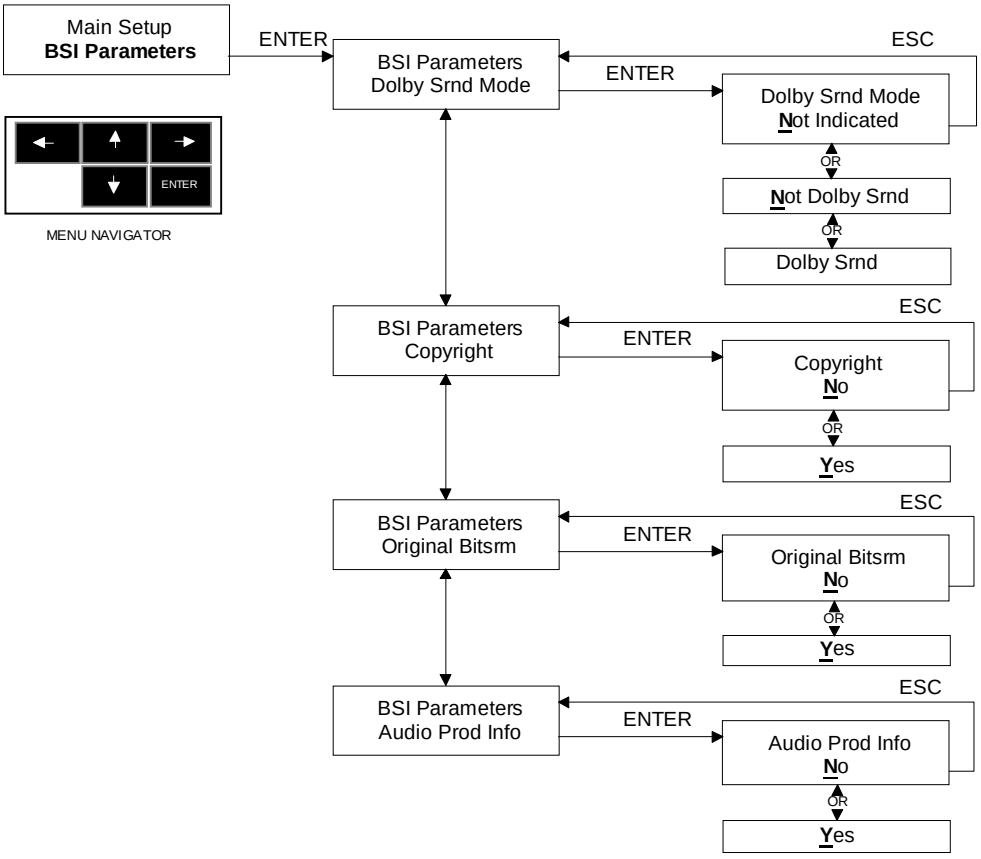
To enable or disable Deemphasis:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Preprocessing*** *menu.*

1. Find **Deemphasis** using the arrow buttons to scroll through **Preprocessing** menu.
2. Press [**ENTER**] to select **Deemphasis**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired **Deemphasis**: *Automatic* or *Disabled*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

5.2.6 Bitstream Information



To enter the Bitstream Information (BSI) menu:

1. Press the [**SETUP**] button to enter the **Main Setup** menu, then use the arrow buttons to scroll to the **BSI Parameters** menu.
2. Press [**ENTER**] to select **BSI Parameters**. Use the arrow buttons to scroll through the **BSI Parameters** menu (see the diagram above for menu selection).

If you press [**ESC**], the DP567 will return to the **Main Setup** menu and display the **BSI Parameters** menu option. If you press [**SETUP**], the DP567 will return to the top of the **Main Setup** menu, displaying the **Audio Service** menu option.

Dolby Surround Mode

Dolby Surround Mode is an *informational* parameter that allows you to indicate when an encoded two-channel Dolby Digital bitstream is conveying a Dolby Surround encoded program. This mode does not affect internal Dolby Digital encoding and is only active in the 2/0 coding mode. The default setting for **Dolby Surround Mode** is *Not Dolby Srnd*.

To select a Dolby Surround mode:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***BSI Parameters*** *menu.*

1. Find **Dolby Srnd Mode** using the arrow buttons to scroll through the **BSI Parameters** menu.
2. Press [**ENTER**] to select **Dolby Srnd Mode**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired Dolby Surround mode: *Not Indicated*, *Not Dolby Srnd*, *Dolby Srnd*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Copyright Bit

Copyright is an *informational* parameter that indicates whether or not the encoded Dolby Digital bitstream is protected by copyright. The default setting for **Copyright Bit** is *Yes*.

To indicate a copyrighted bitstream:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***BSI Parameters*** *menu.*

1. Find **Copyright** using the arrow buttons to scroll through the **BSI Parameters** menu.
2. Press [**ENTER**] to select **Copyright**. The current default is shown on the LCD.
3. Use the arrow buttons to select *No* or *Yes*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Original Bitstream

Original Bitstream is an *informational* parameter that allows you to indicate whether the encoded Dolby Digital bitstream is an original or a copy. The default setting for **Original Bitstream** is *Yes*.

To indicate an Original Bitstream:

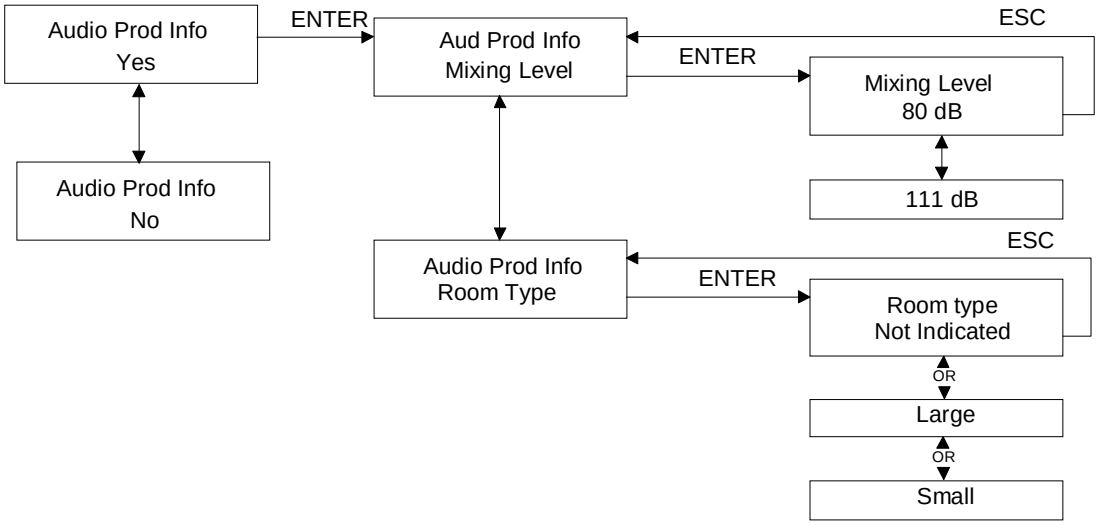
NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***BSI Parameters*** *menu.*

1. Find **Original Bitstrm** using the arrow buttons to scroll through the **BSI Parameters** menu.
2. Press [**ENTER**] to select **Original Bitstrm**. The current default is shown on the LCD.
3. Use the arrow buttons to select *No* or *Yes*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Audio Production Information

Audio Production Information is an *informational* parameter that allows you to choose **Mixing Level** and **Room Type** parameters that will be present in the encoded Dolby Digital bitstream.



To indicate Audio Production Information:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***BSI Parameters*** *menu.*

1. Find **Audio Prod Info** using the arrow buttons to scroll through the **BSI Parameters** menu.
2. Press [**ENTER**] to select **Audio Prod Info**. The current default is shown on the LCD.
3. Use the arrow buttons to select *No* or *Yes*. A flashing cursor indicates that you may select this option.

If you select NO:

4. Press [**ENTER**] to save your selection.

If you select YES:

4. Use the arrow buttons to choose either the **Mixing Level** or **Room Type** parameter. Press [**ENTER**] to make your selection.

When you choose Mixing Level, *you will be prompted with the following screen:*

Mixing Level **80 dB**

Mixing Level indicates the acoustic sound pressure level of the dialogue level during the final audio mixing session of the encoded Dolby Digital bitstream. Use the arrow buttons to increase or decrease the mixing level in decibels. You can select from *80 dB* to *111 dB*. The default setting for **Mixing Level** is *80 dB*.

When you choose Room Type, *you will be prompted with the following screen:*

Room Type **Not Indicated**

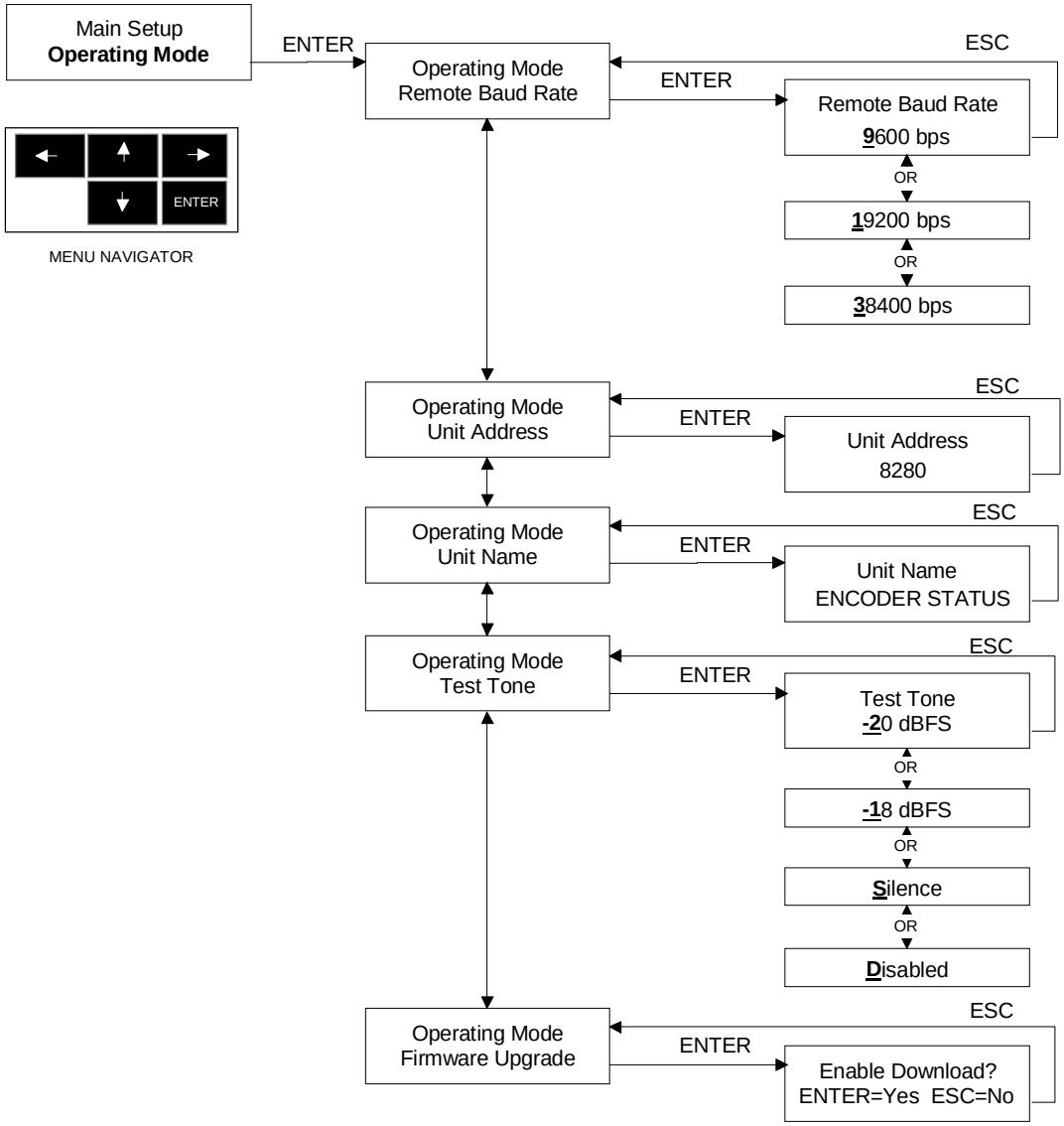
Room Type indicates the type and calibration of the mixing room used for the final audio mixing session of the encoded Dolby Digital bitstream. Use the arrow buttons to choose one of the following options:

- *Not Indicated* (default)
- *Large*
- *Small*

5. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

5.2.7 Operating Mode Control



To enter the Operating Mode menu:

1. Press the [**SETUP**] button to enter the **Main Setup** menu, then use the arrow buttons to scroll to the **Operating Mode** menu.
2. Press [**ENTER**] to select **Operating Mode**. Use the arrow buttons to scroll through the **Operating Mode** menu (see the diagram above for menu selection).

If you press [**ESC**], the DP567 will return to the **Main Setup** menu and display the **Operating Mode** menu option. If you press [**SETUP**], the DP567 will return to the top of the **Main Setup** menu, displaying the **Audio Service** menu option.

Remote Baud Rate

When in **Remote** mode, the DP567 responds to commands from one of the two remote interface ports: the rear-panel RS-422 port or the front-panel RS-232 port. As mentioned earlier, commands received from the front-panel port are equivalent to any commands received at the rear-panel port. Note, however, that the rear-panel RS-422 port will be disabled whenever a connection is made to the front-panel RS-232 port.

The **Remote Baud Rate** parameter controls the rate at which the **Remote** mode will operate. Available rates are *9.6*, *19.2*, and *38.4* kb/s. The DP567 only responds to commands specified for the current *unit address* and only valid commands will be executed (see following section entitled ***Unit Address***).

To select the Remote Baud Rate:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Operating Mode*** *menu.*

1. Find **Remote Baud Rate** using the arrow buttons to scroll through the **Operating Mode** menu.
2. Press [**ENTER**] to select **Remote Baud Rate**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired rate: *9.6 kb/s*, *19.2 kb/s*, or *38.4 kb/s*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Unit Address

Individual units must be assigned to unique addresses in order for a common controller device to control multiple units. The **Unit Address** parameter defines an address for the system. Valid addresses include even numbers within the range "8280 to "FFFE" (hexadecimal), with the third digit constrained to values between "8" and "F" (SMPTE RP113-1992). The system will only respond to remote protocol messages with addresses corresponding to the unit address or to group select commands. Other messages are ignored.

NOTE*: The Unit Address parameter* must *be set via the DP567 user interface. Addresses that may conflict with other devices controlled on the same remote interface are not checked.*

To change the Unit Address:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Operating Mode*** *menu.*

1. Find **Unit Address** using the arrow buttons to scroll through the **Operating Mode** menu.
2. Press [**ENTER**] to select **Unit Address**. The current default is shown on the LCD.
3. Press [**ENTER**] and you will see the following screen:

Unit Address
<unit_addr>

<unit_addr> *represents the current unit address parameter.*

Use the [↑] and [↓] buttons to increase or decrease the value of the character at the current location. Use the [→] and [←] buttons to move the flashing black cursor right or left.

4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Error Message

1. If the modified **Unit Address** is out of range, the following error message will be displayed briefly. The **Unit Address** parameter will then return to its previous setting:

Not Valid: Check Out of Range

Unit Name

In addition to the **Unit Address**, the DP567 includes a 16 character unit description or **Unit Name**. This *informational* parameter is useful in easily identifying particular units when multiple units are being controlled. The unit description may be set or queried via the front-panel or remote interface. In addition, the unit description will be displayed on the default **Status** menu, unless all character locations have been saved as spaces.

To specify the Unit Name:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Operating Mode*** *menu.*

1. Find **Unit Name** using the arrow buttons to scroll through the **Operating Mode** menu.
2. Press [**ENTER**] to select **Unit Name**. The current default is shown on the LCD.
3. Press [**ENTER**] again and you will see the following screen:

Unit Name
<unit_name>

<unit_name> *represents the current descriptive name for the unit.*

Use the [↑] and [↓] buttons to increase or decrease the value of the character at the current location. Use the [→] and [←] buttons to move the flashing black cursor right or left. You may also use [**INSERT**] or [**DELETE**] to either insert a new character or delete a character.

4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Test Tone

When the **Test Tone** is enabled *and* active, the dedicated front-panel "Test" LED will illuminate. The selection of **Test Tone** mode automatically *overrides* the **Input Format** setting. All other settings will remain active, including **Clock Source**.

In **Test Tone** mode, the PCM input signals for all active channels are effectively replaced with the selected test signal. Signal options include sine wave tones at levels of –18 or –20 dBFS, or PCM silence. Tone frequencies as a function of sample rate are 1125 Hz (at 48 kHz), 1033 Hz (at 44.1 kHz), and 750 Hz (at 32 kHz).

In order for a valid output bitstream to be produced, certain other DP567 parameters must be set appropriately and the selected clock source must be valid. Enabling the **Test Tone** mode does not guarantee that a valid test tone will be produced at the output of the DP567. Dolby Digital encoding must also be active, which requires that the selected clock source be valid.

When **Test Tone** mode is active, please note the following interactions with other parameters:

- The test tone may be present in either one or two channels of the encoded Dolby Digital bitstream depending on the **Channel Mode** selected, along with the currently selected **Audio Service** and **BSI Parameters** (**Data Rate, Bitstream Mode**, etc.).
- If **Autodetect** or **Pass-through** mode is selected, the **Test Tone** mode ignores any input signals and codes the test tones according to the internal DP567 settings (*not* the settings of a pre-encoded input).
- If the **Multiplex Mode** is active, it remains active and the encoded test tone is added as a new bitstream (restrictions on **Output Mode** still apply).

The **Test Tone** mode can be enabled or disabled from the front-panel or remote interface at any time by choosing one of the available test tone options. **Test Tone** remains active until disabled through the menu structure or by selection of a preset.

To set the Test Tone:

NOTE*: If you are not in* ***Setup*** *mode, (1) press* [**SETUP**]*, (2) scroll through the* ***Main Setup*** *menu and (3) press* [**ENTER**] *when you find the* ***Operating Mode*** *menu.*

1. Find **Test Tone** using the arrow buttons to scroll through the **Operating Mode** menu.
2. Press [**ENTER**] to select **Test Tone**. The current default is shown on the LCD.
3. Use the arrow buttons to select the desired **Test Tone:** *–20 dBFS*, *–18 dBFS*, *Silence*, *Disabled*. A flashing cursor indicates that you may select this option.
4. Press [**ENTER**] to save your selection.

NOTE*: To return to the previous menu, press* [**ESC**]*. To return to the* ***Main Setup*** *menu, press* [**SETUP**]*. To return to the* ***Main Status*** *screen, press* [**SHIFT**] + [**SETUP**].

Firmware Upgrade

When enabled, the **Firmware Upgrade** option in the **Operating Mode** menu allows new system firmware to be downloaded to the DP567 through either the front- or rear-panel remote ports at a rate defined by the **Remote Baud Rate** parameter.

All operations, except for the remote interface, are stopped when downloading is enabled. The DP567 checks for valid download sequences on the front- or rear-panel remote port. Internal memory will be overwritten only when a complete valid download sequence is received. Invalid sequences will be ignored. If memory has not been overwritten, you can exit the **Firmware Upgrade** mode at any time. (*For information on download procedures for software upgrades, please refer to **Appendix E**, **Software Downloading Procedure***.)

NOTE*: When enabled via the "power-up" sequence as described in **Section 3.5**, **Power**, the download data rate will be fixed at 38.4 kb/s.*

Appendix A
System Block Diagram

The Dolby Digital algorithm and other signal processing operations are implemented within a digital signal processor (DSP), while a dedicated microcontroller (µC) is used to support control and user-interface functions within the DP567.

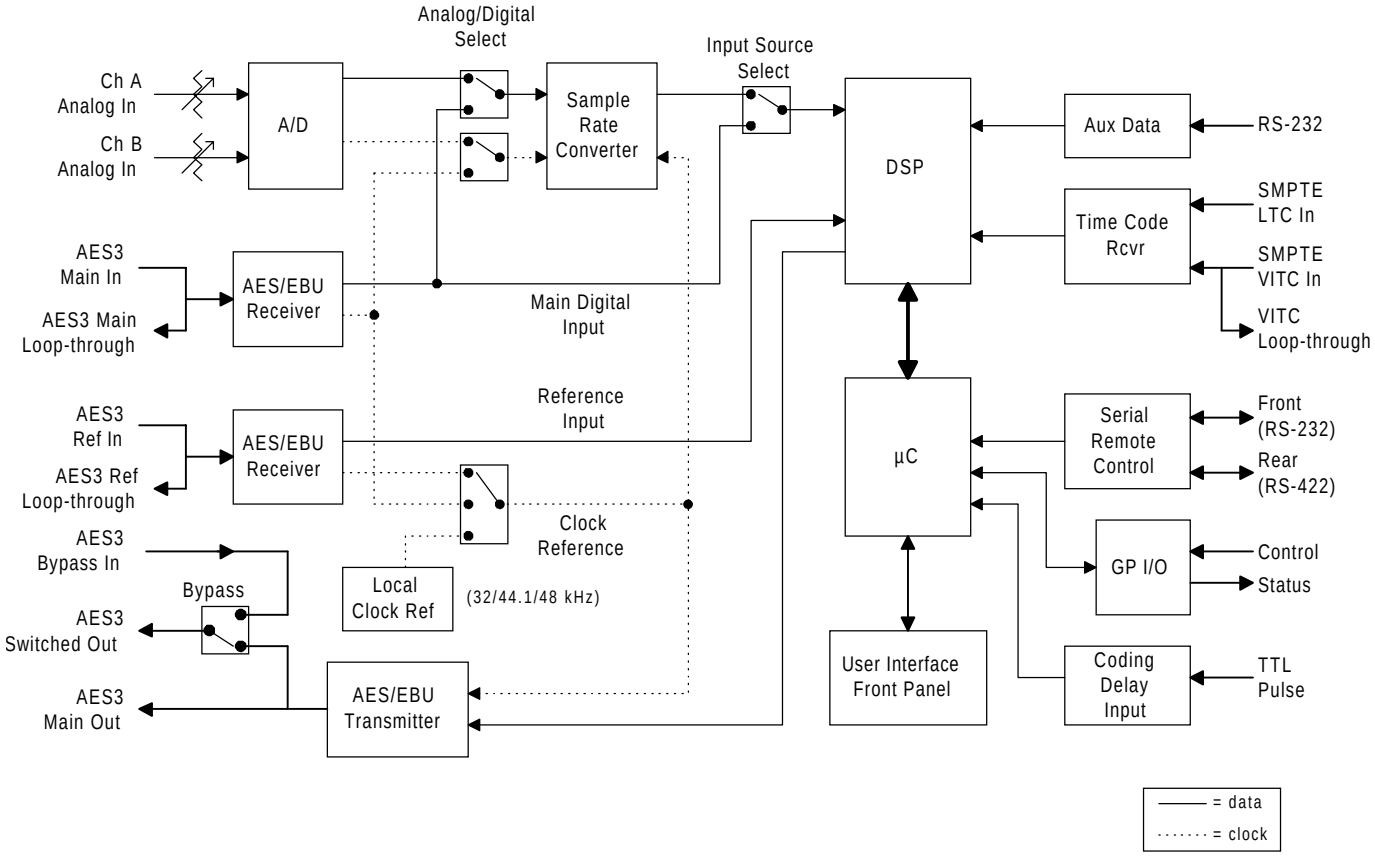


Figure A - 1. DP567 System Block Diagram.

Appendix B
Connector Pinouts

B.1 Analog Audio Input (Analog In)

XLR female connectors

Ch A Input

Pin	Connection
1	Analog signal ground
2	Analog audio +
3	Analog audio -

Ch B Input

Pin	Connection
1	Analog signal ground
2	Analog audio +
3	Analog audio -

B.2 Digital Audio Input (Digital In)

BNC female connectors per AES-3ID-1995

B.3 Reference Digital Input (Ref In)

BNC female connectors per AES-3ID-1995

B.4 Vertical Interval Time Code Input (VITC In)

BNC female connectors, composite video input

B.5 Main Digital Audio Output (Main Out)

BNC female connector per AES-3ID-1995

B.6 Switched Digital Audio Output (Switched Out)

BNC female connector per AES-3ID-1995

B.7 Bypass Digital Audio Input (Bypass In)

BNC female connector per AES-3ID-1995

B.8 Delay Control Input (TTL Delay)

BNC female connector, 5V TTL level active high pulse

B.9 Linear Time Code Input

XLR female connector

Pin	Connection
1	Signal ground
2	LTC In +
3	LTC In -

B.10 Auxiliary Data Serial Port (Aux Data)

DB-9 female connector, electrical specifications per EIA RS-232

Pin	Connection	Comments
1	DCD	Direct connection to DTR, DSR, and CTS
2	RX	Asynchronous data out
3	TX	Asynchronous data in
4	DTR	Direct connection to DCD, DSR, and CTS
5	Ground	
6	DSR	Direct connection to DCD, DTR, and CTS
7	NC	
8	CTS	Direct connection to DCD, DTR, and DSR
9	NC	

B.11 Rear Panel Remote Control Serial Port (Remote)

DB-9 female connector per SMPTE 207M

Pin	Connection	Comments
1	Shield (chassis ground)	
2	TX A	Asynchronous data out -
3	RX B	Asynchronous data in +
4	Ground	
5	NC	
6	Ground	
7	TX B	Asynchronous data out +
8	RX A	Asynchronous data in -
9	Shield (chassis ground)	

B.12 Front Panel Remote Control Serial Port (Remote)

Mini DIN-8 female connector, electrical specifications per EIA RS-232

Pin	Connection	Comments
1	NC	
2	NC	
3	RX	Asynchronous data out
4	Ground	
5	TX	Asynchronous data in
6	NC	
7	NC	
8	Sense	Ground to select front-panel remote port

B.13 General Purpose Control Input Port (GP I/O In)

DB-9 female connector, 5 V CMOS input levels (active low)

Pin	Connection	Comments
1	Bypass	Select Ref input as source for Switched output
2	Autodetect	Autodetect and pass-through valid AC-3 signals
3	Pre-encoded	Force Pass-through mode (no AC-3 encoding)
4	PCM	Force AC-3 encoding (no pass-through mode)
5	User Preset 1	Select user preset mode 1
6	User Preset 2	Select user preset mode 2
7	User Preset 3	Select user preset mode 3
8	User Preset 4	Select user preset mode 4
9	Ground	

B.14 General Purpose Status Output Port (GP I/O Out)

DB-9 female connector, 5 V CMOS output levels (active low)

Pin	Connection	Comments
1	Fault	Power supply or processor/memory fault
2	Lock	Valid input and clock sources present and stable
3	Pass-through	Valid AC-3 input signal being passed through
4	Encoding	AC-3 encoding of input signal active
5	User Preset 1	User preset mode 1 selected and active
6	User Preset 2	User preset mode 2 selected and active
7	User Preset 3	User preset mode 3 selected and active
8	User Preset 4	User preset mode 4 selected and active
9	Ground	

Appendix C
Factory Default Presets

PRESET NUMBER	29	30	31	32
Preset Name	Stereo Music	Stereo Film	Surround Film	Mono Speech
Channel Mode	2/0 Stereo	2/0 Stereo	2/0 Stereo	1/0 Mono
Data Rate	256 kb/s	192 kb/s	192 kb/s	128 kb/s
Bit Stream Mode	Main Complete	Main Complete	Main Complete	Main Complete
Dialog Level	-27 dB	-27 dB	-27 dB	-27 dB
Input Source	Digital	Digital	Digital	Digital
Clock Source	Digital Input	Digital Input	Digital Input	Digital Input
Output Stream #	0	0	0	0
Output Mode	Pro 32-bit	Pro 32-bit	Pro 32-bit	Pro 32-bit
Time Stamp	Disabled	Disabled	Disabled	Disabled
Audio Bit	Non-Audio	Non-Audio	Non-Audio	Non-Audio
Input Format	PCM	PCM	PCM	PCM
Multiplex Mode	Disabled	Disabled	Disabled	Disabled
Coding Delay	Internal	Internal	Internal	Internal
Int Coding Delay	80 msec	80 msec	80 msec	80 msec
Aux Data Input	Disabled	Disabled	Disabled	Disabled
Time Code Input	LTC	LTC	LTC	LTC
Bypass Mode	Disabled	Disabled	Disabled	Disabled
Encoder State	Encode	Encode	Encode	Encode
TC Start Time	00:00:00:00:0000	00:00:00:00:0000	00:00:00:00:0000	00:00:00:00:0000
TC Stop Time	00:00:00:00:0000	00:00:00:00:0000	00:00:00:00:0000	00:00:00:00:0000
Dynamic Range	Music Standard	Film Standard	Film Light	Speech
Lowpass Filter	Enabled	Enabled	Enabled	Enabled
DC Filter	Enabled	Enabled	Enabled	Enabled
Dolby Srnd Mode	Not Dolby Srnd	Not Dolby Srnd	Dolby Srnd	Not Dolby Srnd
Copyright	Yes	Yes	Yes	Yes
Original Bitstream	Yes	Yes	Yes	Yes
Audio Prod Info	No	No	No	No
Mixing Level	80 dB	80 dB	80 dB	80 dB
Room Type	Not Indicated	Not Indicated	Not Indicated	Not Indicated
Remote Baud Rate	38.4 kb/s	38.4 kb/s	38.4 kb/s	38.4 kb/s
Test Tone	Disabled	Disabled	Disabled	Disabled

Appendix D
Supported Data Rates and Audio Bandwidths

NOTE: *This information is included for reference only and is subject to change.*

D.1 Audio Bandwidths

Sample Rate: 48 kHz

Data Rate	1/0 Channel Mode	1+1 Channel Mode	2/0 Channel Mode
56 kb/s	10.2 kHz	not supported	not supported
64 kb/s	11.3 kHz	not supported	not supported
80 kb/s	15.8 kHz	not supported	not supported
96 kb/s	20.3 kHz	not supported	6.8 kHz
112 kb/s	20.3 kHz	10.2 kHz	12.4 kHz
128 kb/s	20.3 kHz	11.3 kHz	13.6 kHz
160 kb/s	20.3 kHz	15.8 kHz	15.8 kHz
192 kb/s	20.3 kHz	20.3 kHz	20.3 kHz
224 kb/s	20.3 kHz	20.3 kHz	20.3 kHz
256 kb/s	20.3 kHz	20.3 kHz	20.3 kHz
320 kb/s	20.3 kHz	20.3 kHz	20.3 kHz
384 kb/s	20.3 kHz	20.3 kHz	20.3 kHz
448 kb/s	20.3 kHz	20.3 kHz	20.3 kHz
512 kb/s	20.3 kHz	20.3 kHz	20.3 kHz
576 kb/s	20.3 kHz	20.3 kHz	20.3 kHz
640 kb/s	20.3 kHz	20.3 kHz	20.3 kHz

Sample Rate: 44.1 kHz

Data Rate	1/0 Channel Mode	1+1 Channel Mode	2/0 Channel Mode
56 kb/s	10.4 kHz	not supported	not supported
64 kb/s	11.4 kHz	not supported	not supported
80 kb/s	15.6 kHz	not supported	not supported
96 kb/s	20.7 kHz	not supported	7.3 kHz
112 kb/s	20.7 kHz	10.4 kHz	12.5 kHz
128 kb/s	20.7 kHz	11.4 kHz	13.5 kHz
160 kb/s	20.7 kHz	15.6 kHz	15.6 kHz
192 kb/s	20.7 kHz	20.7 kHz	20.7 kHz
224 kb/s	20.7 kHz	20.7 kHz	20.7 kHz
256 kb/s	20.7 kHz	20.7 kHz	20.7 kHz
320 kb/s	20.7 kHz	20.7 kHz	20.7 kHz
384 kb/s	20.7 kHz	20.7 kHz	20.7 kHz
448 kb/s	20.7 kHz	20.7 kHz	20.7 kHz
512 kb/s	20.7 kHz	20.7 kHz	20.7 kHz
576 kb/s	20.7 kHz	20.7 kHz	20.7 kHz
640 kb/s	20.7 kHz	20.7 kHz	20.7 kHz

Sample Rate: 32 kHz

Data Rate	1/0 Channel Mode	1+1 Channel Mode	2/0 Channel Mode
56 kb/s	10.6 kHz	not supported	not supported
64 kb/s	11.3 kHz	not supported	not supported
80 kb/s	15.8 kHz	not supported	not supported
96 kb/s	15.8 kHz	not supported	7.6 kHz
112 kb/s	15.8 kHz	10.6 kHz	12.8 kHz
128 kb/s	15.8 kHz	11.3 kHz	13.6 kHz
160 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
192 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
224 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
256 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
320 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
384 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
448 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
512 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
576 kb/s	15.8 kHz	15.8 kHz	15.8 kHz
640 kb/s	15.8 kHz	15.8 kHz	15.8 kHz

D.2 Supported Auxiliary Data Rates

Data Rate	1/0 Channel Mode	1+1 Channel Mode	2/0 Channel Mode
56 kb/s	1200	N/A	N/A
64 kb/s	1200, 2400	N/A	N/A
80 kb/s	1200, 2400	N/A	N/A
96 kb/s	1200, 2400, 9600	N/A	1200
112 kb/s	1200, 2400, 9600	1200	1200
128 kb/s	1200, 2400, 9600	1200, 2400	1200, 2400
160 kb/s	1200, 2400, 9600	1200, 2400	1200, 2400
192 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600
224 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600
256 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600
320 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600
384 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600
448 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600
512 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600
576 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600
640 kb/s	1200, 2400, 9600	1200, 2400, 9600	1200, 2400, 9600

Appendix E
Software Downloading Procedure

If necessary, the Dolby Digital encoding algorithm and user-interface features of the DP567 can be upgraded by using the front-panel serial I/O port and a personal computer.

E.1 Equipment Needed

- Personal computer with an RS-232 port capable of communication at 38400 bps.
- A 9-pin D-Sub to 8-pin mini-DIN cable assembly to connect the computer and DP567.
- Upgrade software from Dolby Laboratories when a new release is made available.

E.2 Software Upgrade

1. Connect the computer to the DP567 front-panel **Remote** connector.
2. Press [**SETUP**] to enter the **Setup** menu.
3. Scroll through the **Setup** menu and select **Operating Mode Control**.
4. Find **Firmware Upgrade** using the arrow buttons to scroll through the **Operating Mode** menu.
5. Press [**ENTER**]. You will see the following screen:

Firmware Upgrade **ENTER=Yes ESC=No**

6. Select [**ENTER**] (YES), the DP567 will reset and the LCD will show the following:

Ready to Load **ESC to Exit**

   The **Download** mode is enabled. At the computer, follow the instructions provided with the software upgrade. When the computer indicates that the software installation is successfully completed, the computer will reboot the DP567. To verify that the proper software is loaded, confirm that the new software revision level is displayed on the LCD during the reboot process or during power-on reset.

To escape Download mode:

Press [**ESC**] (No). The LCD screen will show the following:

Firmware Upgrade **Aborted!**

After about one second, the DP567 will reboot and return to the **Main Status** screen.