START

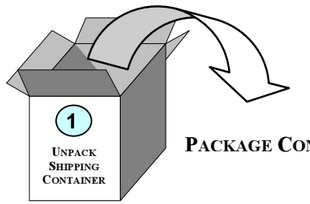
INTEGRITY CS SERIES A2HD510 PROCESSOR

Quick-Start Guide

QuStream PESA FORTELDTV

Step 1 UNPACK THE PROCESSOR RACK UNIT

- Carefully unpack your Integrity CS Unit from shipping container and verify package contents against contents listed below.
- Visually inspect the unit for any signs of damage in shipment or transit.
- If any components are missing or damaged, contact QuStream Customer Service.



PACKAGE CONTENTS:

POWER CORD

COAXIAL JUMPER CABLE

ETHERNET (RJ45) JUMPER CABLE

MATING AUDIO CONNECTORS (ATTACHED TO REAR PANEL AUDIO CONNECTORS)

QUICK START GUIDE

INTEGRITY CS A2HD510 TECH MANUAL

2 **VERIFY ALL ITEMS SHOWN ABOVE ARE INCLUDED WITH UNIT**

If any components are missing or damaged, contact QuStream Customer Service by phone or e-mail.

Customer Service: 1+ (256) 726-9222
Toll Free: (800) 323-7372 (US and Canada)
Fax: 1+ (256) 726-9268
Email: *service@qustream.com*

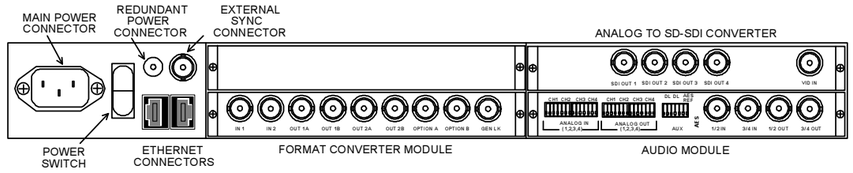
Step 2 GET ACQUAINTED

- The Integrity CS A2HD510 is a self-contained format converter and audio embedder/de-embedder. It accepts an input of composite (NTSC/PAL) analog video and produces outputs of HD-SDI, SD-SDI and option outputs selectable as SD-SDI or composite analog.
- Inputs are provided for both AES and analog audio sources for embedding. De-embedded audio is available as both AES pairs and analog, selectable from any de-embedded channel

Step 2 GET ACQUAINTED (CONT.)

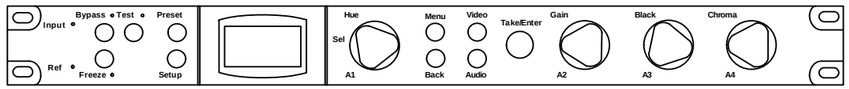
REAR PANEL LAYOUT

- Your Integrity CS A2HD510 is composed of a 1RU rack frame with a power supply and three processing modules, installed in card slots on the rear of the chassis. An illustration of the rear panel layout is shown below.



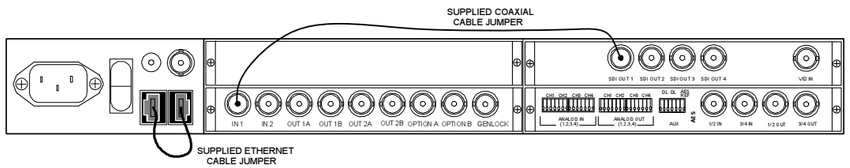
FRONT PANEL LAYOUT

- In most installations, the processor control panel is installed directly to the chassis frame. If your system is equipped with the remote panel option, a blank front panel with status LEDs is attached to the chassis. Whether local or remote, the control panel layout is as shown in the illustration below.



Step 3 INSTALL REAR PANEL JUMPERS

- Your Integrity CS Series processing product requires installation of rear panel jumpers for proper operation. These jumper cables are removed for shipping, but are included in the package with the processor.
- Refer to the following figure, and perform the steps to install these necessary jumper cables prior to use of the processor.



NOTE

Your Integrity CS Processor WILL NOT function unless these connections are completed.

- Locate supplied coaxial cable jumper and supplied Ethernet cable jumper shipped with your Integrity processor.
- Install coaxial jumper between connector labeled SDI OUT 1 on analog to SD-SDI converter module and connector labeled Input (IN) 1 on format converter module. Refer to figure when installing this cable.
- If you are using the LOCAL control panel on the front of the frame to control this unit, install Ethernet cable jumper between the two Ethernet (RJ45) port connectors on rear panel of processor. If you are using a REMOTE control panel over the facility LAN, use an Ethernet switch or hub to provide an active network connection to BOTH rear panel Ethernet ports.

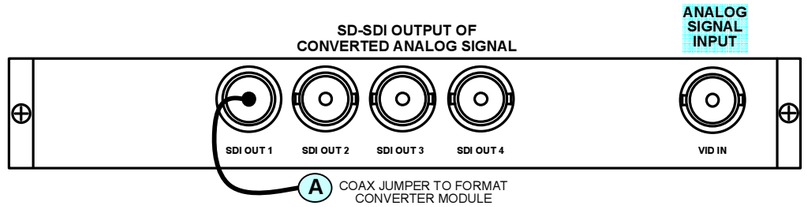
Step 4 MOUNT A2HD510 CHASSIS FRAME

- Considerations for mounting location include proximity to signal sources/destinations, availability of primary power and availability of a source of external sync.
- Mount the chassis frame in an equipment rack and secure frame to rack using four rack mount screws.
- Do not apply power until all external connections are made and verified.

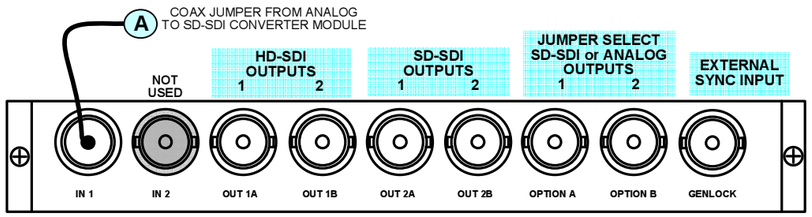
Step 5 VIDEO/AUDIO CONNECTIONS

- Complete video and audio connections to the A2HD510 using the diagrams below as a reference. Highlighted connection points indicate major function connections.

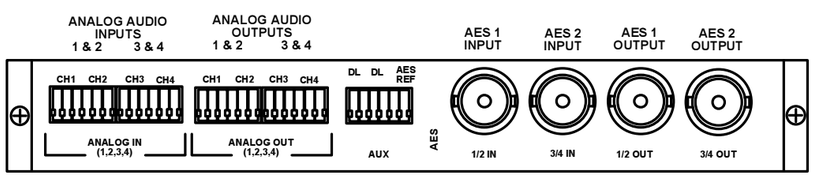
ANALOG TO SD-SDI CONVERTER MODULE CONNECTIONS



FORMAT CONVERTER CONNECTIONS



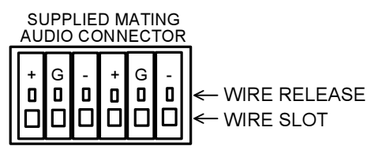
AUDIO MODULE CONNECTIONS



ANALOG AUDIO CONNECTORS

- The illustration and chart identify pin-out for a typical 6-pin analog audio connector.

Pin	Function
+	Positive Audio Signal
G	Shield
-	Negative Audio Signal



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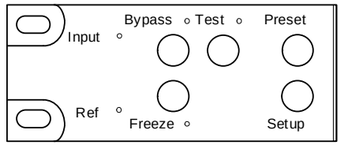
Step 6 INITIAL POWER UP

- Inspect all connections to the processor. Ensure that all cables are installed securely.
- Attach power cord to rear panel main power connector and a source of power.
- Move power switch to the "ON" position.

Step 7 BASIC OPERATION

CONTROL PANEL LAYOUT AND OPERATION

Direct Entry Pushbuttons



- **Test** – Pressing **Test** switches output signal from active video source to a user-selectable test signal. A second pressing cancels test output and returns to video source. The **Test** LED illuminates when test output is active.
- **Freeze** – Pressing **Freeze** freezes video output signal based on a user-selectable freeze frame type. A second pressing cancels freeze output and returns to video source. The **Freeze** LED illuminates when freeze function is active.
- **Setup** – **Setup** causes control panel to access system set-up menu regardless of which menu screen is currently displayed.

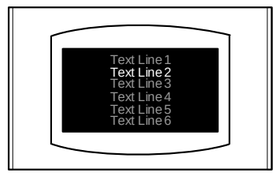
System Status Indicators

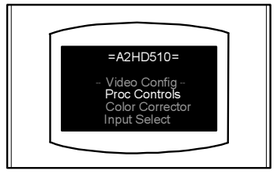
- **Input** – The **Input** LED illuminates if video input signal is lost for any reason.
- **Reference** (Ref) – The **Ref** LED illuminates if genlock reference source is lost for any reason.

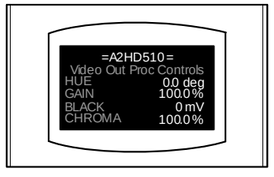
Bypass and Preset

- Bypass and Preset pushbuttons and Bypass LED are not used in current configuration of processor.

Menu Display Screen



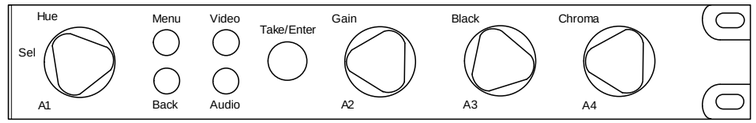




- Menus, operational parameters and system status are displayed on a six line screen, as illustrated.
- Menus are arranged in a tree structure, and in many instances, selecting an item brings up a branch menu with additional entries. Often a menu page has more items than can be shown on the display lines. To navigate these menus, use selector (**SEL**) knob to right of display to scroll through entries until desired entry is highlighted.
- Underscore marks before and after text identify a text entry that describes the function of the menu items below it. Example: **_Video Config_** indicates scroll list under entry contains menu selection options for video configuration function.
- Data entry screens allow changes to operating parameters or adjustments to system settings. Integrity CS menu structure uses a highlighted entry to indicate a selectable function modifiable value. In the example shown here, the value of all four entries are highlighted, and can be changed as desired.

Step 7 BASIC OPERATION (CONT.)

- Values and parameters are modified by selecting new value or selection from a scrolling list of available options, or increasing/decreasing numerical values, by using rotary knobs on control panel. Data entry screens have a maximum of four selectable values or functions, each is software mapped to one control knob, beginning with knob A1 for first selectable entry and continuing in sequence to knob A4 for fourth selectable entry. In this example, HUE vector may be selected by rotating control knob A1, GAIN percentage by rotating knob A2, BLACK level by rotating A3 and CHROMA percentage by rotating A4.
- Pushbuttons and rotary controls located to right of display screen navigate menu screens and select or modify parameters.



Function Select Pushbuttons

- **Menu** – Pressing **Menu** advances to next level of menu tree structure as determined by highlighted menu screen selection.
- **Back** – Pressing **Back** causes previous menu to be recalled.
- **Video** – Pressing **Video** accesses top level video status screen.
- **Audio** – Pressing **Audio** accesses top level audio configuration menu.
- **Take/Enter** – When **Take/Enter** pushbutton is illuminated green, it is "live" and used in the current menu to execute a function or command. Once commands is executed, LED in button extinguishes. **Take/Enter** performs a function only when illuminated green.
- Some menus use Function Pushbuttons to execute commands on screen. Any button press required is prompted on individual menus.

Rotary Controls

- **A1 (Sel)** – The Select (**Sel**) control, also labeled **A1**, scrolls through menu entries on scrollable screens. On data entry screens, **A1** selects commands or values for entry mapped to it.
- **A2 thru A4** – On data entry screens with more than one selectable entry, control knobs **A2 thru A4** are software mapped sequentially to data entry prompts.

SYSTEM INITIALIZATION

- On power-up, a system initialization boot-up procedure commences. Upon completion of initialization, the screen message shown here is displayed.
- Press SETUP to advance to next screen.

PANEL SETUP SCREEN

- Panel Setup options allow operator to check status and change panel operating parameters.
- To initiate operation of A2HD510, use **SEL** knob to highlight **Select Frame/Card** menu entry, as shown to right.
- Press **MENU** to advance to next screen.

Step 7 BASIC OPERATION (CONT.)

SELECT CARD SCREEN

- This screen allows selection of frame or device to control.
- Use **SEL** knob to highlight **A2HD510** menu entry, as shown to right.
- Press **MENU** to advance to next screen.

A2HD510 TOP LEVEL MENU SCREEN

- Top level screen displays status of input and output signals and major/minor alarm status, as shown. From this screen you can branch to main video and audio operation menus.
- Press **MENU** to select main video menu screen.
- Press **AUDIO** to select main audio menu screen.

A2HD510 VIDEO - TOP LEVEL MENU SCREEN

- Video configuration menus and sub-menus are accessed through the Video Config screen, as shown to right.
- Use **SEL** knob to highlight desired menu entry, as shown.
- Press **MENU** to select desired configuration menu screen.

A2HD510 AUDIO - TOP LEVEL MENU SCREEN

- Audio configuration menus and sub-menus are accessed through the Audio Config screen, as shown to right.
- Use **SEL** knob to highlight desired menu entry, as shown.
- Press **MENU** to select desired configuration menu screen.

MENU SCREEN ACCESS CODE

- Certain menus are password protected. When a protected menu is accessed, password entry screen is displayed, as shown at right.
- Use rotary knobs to set four highlighted digits to **0999**, as shown.
- Press **TAKE** to enter password and access desired configuration menu screen.

IN THE EVENT OF TROUBLE

If you have any problems with or questions about your QuStream A2HD510 video processor, contact QuStream Customer Service by phone or e-mail.

Customer Service: 1+ (256) 726-9222
Toll Free: (800) 323-7372 (US and Canada)
Fax: 1+ (256) 726-9268
Email: *service@qustream.com*

Part No. 81-9059-0649-0 Rev. A

INTEGRITY CS SERIES A2HD510 PROCESSOR

Quick-Start Guide

MENU TREE REFERENCE

THIS PORTION OF THE A2HD510 QUICK START GUIDE PROVIDES A LISTING, INDENTED BY LEVEL, OF ALL MAIN AND SUB MENUS AND THE ASSOCIATED COMMANDS FOR VIDEO AND AUDIO CONFIGURATION FUNCTIONS OF THE PROCESSOR.

A2HD510 VIDEO CONFIGURATION

VIDEO CONFIGURATION MENU SCREEN

- Video configuration menus and sub-menus are accessed through the Video Config screen, as shown to right.
- Use **SEL** knob to highlight desired menu entry, as shown.
- Press **MENU** to select desired configuration menu screen.
- Follow menu tree screen and command listings below

Video

--Video Config--

Proc Controls (A1 – Hue, A2 – Gain, A3 – Black, A4 – Chroma)
- Hue (A1 to adjust setting)
- Gain (A2 to adjust setting)
- Black (A3 to adjust setting)
- Chroma (A4 to adjust setting)

Color Corrector
- White Balance
  - Red (A2 to change value)
  - Green (A3 to change value)
  - Blue (A4 to change value)
- Black Balance
  - Red (A2 to change value)
  - Green (A3 to change value)
  - Blue (A4 to change value)
- Gamma Balance
  - Red (A2 to change value)
  - Green (A3 to change value)
  - Blue (A4 to change value)
- Black
  - Blk Stretch (A2 to change value)
  - Blk Lvl (A3 to change value)
- CC Memory Save
  - Mem Bank (A2 to select desired memory location)
  - Press TAKE to save settings to memory location
- CC Memory Recall
  - Mem Bank (A2 to select desired memory location)
  - Press TAKE to recall settings from memory location

Input Sel
- Input Sel
  - Input 1,2 (A1 to select desired setting)
- OnVidLoss
  - Switch Input, Timeout, Black, Freeze, No Action (A2 to select desired setting)

Analog Config
- Proc Controls (A1 – Hue, A2 – Gain, A3 – Black, A4 – Chroma)
  - Hue (A1 to adjust setting)
  - Gain (A2 to adjust setting)
  - Black (A3 to adjust setting)
  - Chroma (A4 to adjust setting)
- Press MENU to advance to next menu screen

Video

--Video Config-- (Cont.)

--Anlg Video Cnfg--
- Video AGC
  - On, Off (A1 to select desired setting)
- H Delay
  - (A1 to change value)
- Video Pos
  - H Video Pos
    - (A1 to change value)
  - V Video Pos
    - (A1 to change value)
- Input Setup (Black)
  - 0.0, 7.5 IRE In (A1 to select desired setting)
- Configure VBI
  - Config Line/Field
    - 10/1, 10/2….22/1, 22/2 (A1 to select desired setting)
  - Signal
    - Luma Only, Pass Input, Blank (A2 to select desired signal type)
  - Comb
    - Off, On (A4 to select desired setting)
- Video Standard
  - Displays current operating video standard: NTSC or PAL
  - Press TAKE to toggle between NTSC and PAL standards

Output

--Output Config--
- Primary Output
  - Format
    - (A1 to select desired video format from listing)
  - Freeze Mode
    - Frame, Field 1, Field 2 (A2 to select desired setting)
  - TAKE to set Aspect Ratios
    - UC-AspRatio
      - (A1 to change value)
    - DC-AspRatio
      - (A1 to select desired setting)
    - DC-AR TrimH
      - (A1 to change value)
    - DC-AR TrimV
      - (A1 to change value)
- Sec Asp Ratio
  - 4X3-Crop, 4X3-Squeeze, 16X9-LBox (A1 to select desired setting)
- HD Config

--HD Config--
- HD CloCap
  - Off, On (A1 to select desired setting)
- HD TimeCode
  - Off, On (A1 to select desired setting)
- HD Legalizer
  - Off, Tight, Nominal, Loose (A1 to select desired setting)

--HD Timing--
- HD H Phase
  - (A1 to change value)
- HD V Phase
  - (A1 to change value)
- HD H Video Pos
  - (A1 to change value)
- HD V Video Pos
  - (A1 to change value)

Video

--Video Config-- (Cont.)

- HD Config

--HD Config--
- HD CloCap
  - Off, On (A1 to select desired setting)
- HD TimeCode
  - Off, On (A1 to select desired setting)
- HD Legalizer
  - Off, Tight, Nominal, Loose (A1 to select desired setting)

--HD Timing--
- HD H Phase
  - (A1 to change value)
- HD V Phase
  - (A1 to change value)
- HD H Video Pos
  - (A1 to change value)
- HD V Video Pos
  - (A1 to change value)
- SD Config

--SD Config--
- SD CloCap
  - Off, On (A1 to select desired setting)
- Translate Timecode
  - Off, On (A1 to select desired setting)
- SD Legalizer
  - RGB
    - Off, Loose, Nominal, Tight (A1 to select desired setting)
  - Enc
    - Off, Loose, Nominal, Tight (A2 to select desired setting)
  - Luma
    - Off, Loose, Nominal, Tight (A3 to select desired setting)

--SD Timing--
- SD H Phase
  - (A1 to change value)
- SD V Phase
  - (A1 to change value)
- SD H Pos
  - (A1 to change value)
- SD V Pos
  - (A1 to change value)
- Genlock Source
  - Frame Connector, Board Connector (A1 to select desired source)
- Frame Rate
  - (A1 to select desired frame rate setting)
- Test Pattern
  - (A1 to select desired test pattern output from listing)
- Encoder Mode
  - On, Test Bars, Off (A1 to select desired setting)

Status and Alarms
- OvrTempThr
  - Over Temperature Alarm Threshold (A1 to change value)
- Error Secs
  - Press TAKE to reset error seconds display

MENU TREE CONTINUED ON NEXT PAGE

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MENU TREE REFERENCE (CONT.)

Video

--Video Config-- (Cont.)

User Reset
Press TAKE to initiate User Reset

Info
Module 1 Info
Displays operational parameters for selected module
Frame Info
Displays operational parameters for chassis frame

Eng Config
Password Prompt Screen
Use A1, A2, A3, A4 to select "0999"
Press TAKE to proceed to Eng Config screens
--Engineering Cnfgs--
Frame Config
Set Frame IP
A1 moves cursor left and right to select digit to change
A2 to change value of highlighted digit
Reboot Frame
Password Prompt Screen
Use A1, A2, A3, A4 to select "0999"
Press TAKE to initiate frame reboot
Status
Status display of frame operating parameters
Press TAKE to refresh
--Module1 Cnfgs--
Vid Processing
DeIntrlc
Field Merging, Temporal, Full Adaptive
(A1 to select desired setting)
Full YUV Gamut
ON, Off (A2 to select desired setting)
Press TAKE to advance to next menu
NoiseReduce
On, Off (A1 to select desired setting)
NR Level
(A1 to change value)
Detail Enh
(A1 to change value)
--Module2 Cnfgs--
Comb Mode
Off, Line Adaptive, Frame Adaptive, Normal
(A1 to select desired setting)
Comb Sensitivity
Frame In-Ph (A1 to change value)
Frame Out-Ph (A2 to change value)
Line In-Ph (A3 to change value)
Line Out-Ph (A4 to change value)

A2HD510 AUDIO CONFIGURATION

AUDIO CONFIGURATION MENU SCREEN

- Audio configuration menus and sub-menus are accessed through the Audio Config screen, as shown to right.
- Use **SEL** knob to highlight desired menu entry, as shown.
- Press **MENU** to select desired configuration menu screen.
- Follow menu tree screen and command listings below

Audio

--Audio Config--

Audio Config (Demb)
Output Sources
Chan (A1 to select channel 1 to 16)
IsSource (A2 to select source from listing)
SumWith (A3 to select source from listing)
SumBalance (A4 to change value)
Chan Lvl-Mute-Ph
Audio Out Level (A1 to select group containing channel to adjust)
(Using Chan 1...4 entry for reference)
Ch 1 (A1 to change value)
Ch 2 (A2 to change value)
Ch 3 (A3 to change value)
Ch 4 (A4 to change value)
Audio Out Mute (Same steps as Audio Out Level, above)
Audio Out Phase (Same steps as Audio Out Level, above)
Bank Lvl-ALC-Lim
Bank Level
Bank 1 (A1 to change value)
Bank 2 (A2 to change value)
Bank 3 (A3 to change value)
Bank 4 (A4 to change value)
ALC
Bank Select 1-4(A1 to select bank)
ALC Enable
Off, On (A2 to select desired setting)
ALC Level (A3 to change value)
ALC Rate (A4 to change value)
Limiter
Bank Select 1-4(A1 to select bank)
Lim Enable
Off, On (A2 to select desired setting)
Lim Level (A3 to change value)
Lim Rate (A4 to change value)
Bank Config
(A1 to assign groups to bank 1)
(A2 to assign groups to bank 2)
(A3 to assign groups to bank 3)
(A4 to assign groups to bank 4)
Lip-Sync
Tracking
Slow, Medium, Fast (A1 to select desired setting)
Add Offset (A2 to change value)

Audio

--Audio Config-- (Cont.)

Tone Gen Freq
Tone Gen 1 (A1 to select desired operating frequency)
Tone Gen 2 (A2 to select desired operating frequency)
Tone Gen 3 (A3 to select desired operating frequency)
Tone Gen 4 (A4 to select desired operating frequency)
Tone Gen Level
Tone Gen 1 (A1 to change value)
Tone Gen 2 (A2 to change value)
Tone Gen 3 (A3 to change value)
Tone Gen 4 (A4 to change value)
Embed Enable
On, Off (A1 to select desired setting)
--Adj Audio Board--
DeEmbed to DAS
None, Grp 1, Grp 2, Grp 3, Grp 4 (A1 to select desired setting)
Embed DAS Audio
None, Grp 1, Grp 2, Grp 3, Grp 4 (A1 to select desired setting)
Audio Config (Ext)
Audio Config (DAS)
--Input Control--
Input Gain A1 A2
Linking
Mono, Stereo (A1 to select desired setting)
Gain A1 (Mono), Gain (Stereo), A2 to change value
Gain A2 (Mono), Balance (Stereo), A3 to change value
Input Gain A3 A4
Linking
Mono, Stereo (A1 to select desired setting)
Gain A3 (Mono), Gain (Stereo), A2 to change value
Gain A4 (Mono), Balance (Stereo), A3 to change value
Input Gain D1 D2
Linking
Mono, Stereo (A1 to select desired setting)
Gain D1 (Mono), Gain (Stereo), A2 to change value
Gain D2 (Mono), Balance (Stereo), A3 to change value
Input Gain D3 D4
Linking
Mono, Stereo (A1 to select desired setting)
Gain D3 (Mono), Gain (Stereo), A2 to change value
Gain D4 (Mono), Balance (Stereo), A3 to change value
Phase/Mute/Bypass
CHANNEL
A1, A2, A3, A4, D1, D2, D1-D2, D3, D4, D3-D4
(A1 to select desired setting)
Phase
Normal, Invert (A2 to select desired setting)
Mute
Off, On (A3 to select desired setting)
Bypass
Off, On (A4 to select desired setting)

MENU TREE CONTINUED ON NEXT PAGE

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MENU TREE REFERENCE (CONT.)

Audio

--Audio Config-- (Cont.)

{Routing Config}

Routing Presets
- Cfg-A, Cfg-B, Follow-VideoIn (A1 to select desired setting)

Dig Source
- Group 1, Group 2, Group 3, Group 4, BNC
  (A1 to select desired setting)

Source
- Output Chan
  A1, A2, A3, A4, D1, D2, D3, D4 (A1 to select desired setting)
- Source
  A1, A2, A3, A4, D1, D2, D3, D4, Tone (A2 to select desired setting)
- Sum With
  A1, A2, A3, A4, D1, D2, D3, D4, Tone (A3 to select desired setting)

{Configuration}

Delay Setup
- CHANNEL
  All, A1, A2, A3, A4, D1, D2, D3, D4 (A1 to select desired setting)
- Tracking
  Internal, None, Ext TTL1, Ext TTL2 (A2 to select desired setting)
- Slew Rate
  Slow, Medium, Fast (A3 to select desired setting)
- Offset (A4 to change value)

Embedding
- Embed to Group
  - Group1, 2, 3, 4, None (A1 to select desired setting)
- Embed Audio Pair
  - Chans 1/2, Chans 3/4, Both (A1 to select desired setting)

Headroom
- Analog 1 (A1 to change value)
- Analog 2 (A2 to change value)
- Analog 3 (A3 to change value)
- Analog 4 (A4 to change value)

Test Tone Config
- CHANNEL
  A1, A2, A3, A4, D1, D2, D3, D4 (A1 to select desired channel)
- Frequency (A2 to change value)
- Level (A3 to change value)

AES Config
- Output Sample Rate
  - 32, 44.1, 48, 96 kHz (A1 to select desired setting)
- Output Word Length
  - 16, 20, 24 bits (A1 to select desired setting)
- Output Sample Ref
  - AES Blk, Video (A1 to desired setting)