7925
Dual HD Downconverter

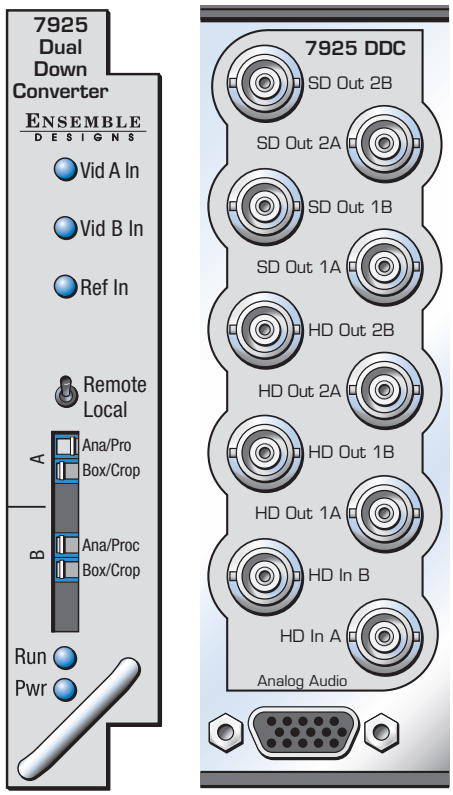
The 7925 module is a two-channel, dual downconverter with HD and SD outputs that can be used in the most demanding broadcast applications. With two downconverters on one module, the 7925 provides high efficiency with excellent picture quality. The downconverted outputs are timeable with respect to the reference input and can feed production switchers and routers.

The 7925 accepts 720p, 1080i, 1080sF and 1080p inputs that are synchronous or asynchronous. If an SD SDI input is received, SD is passed to the output.

Motion-adaptive deinterlacing of the video signal enables all internal processing to occur in progressive.

The 7925 performs automatic color space and gamma conversion to accommodate the differences between HD and SD. The Aspect Ratio Conversion process offers resizing and repositioning with choices for: Letterbox, Anamorphic, Crop and Zoom.

Proc amp controls are provided in the form of Video, Chroma and Pedestal. Video outputs can be timed with respect to the reference input.



Audio Handling

The 7925 supports 16 channels of embedded audio (without the need for any sub module). Embedded audio in the input is safely bypassed around the video processing, delayed to preserve lip sync, and reembedded in the SD SDI output. Any two of those audio channels can be selected for conversion to analog form. These balanced outputs can be used with the composite video output to feed analog equipment, or for signal monitoring. All audio processing and conversion is performed at full 24 bit resolution.

Control

The 7925 can be configured locally or controlled and configured remotely with Avenue Touch Screens, Express Panels, or Avenue PC Software. Alarm generation, configurable user levels, module lock-out, and customizable menus are just some of the tools included in the Avenue Control System.

Metadata

HD closed captioning is carried in data packets in the vertical interval ancillary data space. The 7925 properly translates HD caption data to traditional SD captioning (line 21 or 23) so that closed captioning content is converted transparently between video standards and formats.

Automatic Aspect Ratio Conversion

The 7925 uses AFD (Active Format Description) to mark or identify the aspect ratio of the video content. These flags are read at the input of the module to determine the type of Aspect Ratio Conversion to perform. Subsequently, these flags are properly updated in the output signal to reflect its format and presentation.

Features

- Two HD downconverters on one module
- Accepts asynchronous HD inputs
- Each channel has SD SDI and/or composite outputs
- Reclocked DA'd outputs
- Downconverts 720p, 1080i, 1080sF or 1080p to SD
- Passes SD 525 or 625 if received on input
- Reference input
- Outputs can be locked and timed to reference for use with switchers and routers
- Internal processing in progressive
- Proc Amp and Frame Sync
- Built-in test pattern and tone
- Supports AFD
- Translates HD closed captioning to SD closed captioning
- Passes 16 channels of embedded audio
- 2 channels of analog audio for monitoring
- Auto detection of input standard and frame rate
- Local and remote control

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Serial Digital Input

Number	Two (one per channel)
Signal Type	HD Serial Digital 1.485 Gb/s, SMPTE 274M, 292M or 296M
Impedance	75 Ω, BNC
Return Loss	>15 dB
Max Cable Length	100 meter

Automatic Cable Input Equalization

Standards Supported

1080i 50, 59.94 or 60 Hz, SMPTE 274M -4,5,6
720p 50, 59.94 or 60 Hz, SMPTE 296M -1,2,3
1080p 23.98, 24 or 25 Hz, SMPTE 274M -9,10,11
1080sF 23.98, 24 or 25 Hz, RP211 -14,15,16
525i 59.94, 625i 50

Conversion Directions

Downconversion from
1080i/59.94, 720p/59.94, 1080p/23.98, 1080sF/23.98 to 525 (NTSC), or
1080i/50, 720p/50, 1080p/25, 1080sF/25 to 625 (PAL)

Reference Input

Number	One external (modules BNC) One internal (frame master ref BNC)
Signal Type	PAL or NTSC composite video or Tri-Level Sync
Return Loss	>40 dB (applies to external ref input)

HD Serial Digital Output

Number	Three Ch A has two HD SDI reclocked DA'd outputs and Ch B has one HD SDI reclocked DA'd output
Signal Type	HD Serial Digital 1.485 Gb/s, SMPTE 274M, 292M or 296M SD Serial Digital 270 Mb/s, SMPTE 259M (Both 525 and 625 SD standards)
Impedance	75 Ω
Return Loss	>15 dB
Output DC	None (AC coupled)
Delay	0 for HD outputs

General Specifications

Power Consumption	10 watts
Temperature Range	0 to 40°C ambient (all specs met)
Relative Humidity	0 to 95%, noncondensing
Altitude	0 to 10,000 ft

SD Serial Digital Output

Number	Four max Jumper selectable, BNCs shared with composite outputs Each channel has two SD outputs, selectable as two SD SDI, or two composite, or one SD SDI and one composite
Signal Type	SD Serial Digital 270 Mb/s, SMPTE 259M (Both 525 and 625 SD standards)
Impedance	75 Ω
Return Loss	>15 dB
Output DC	None (AC coupled)
Delay	Adjustable from 1 field to 1 frame

Analog Video Output

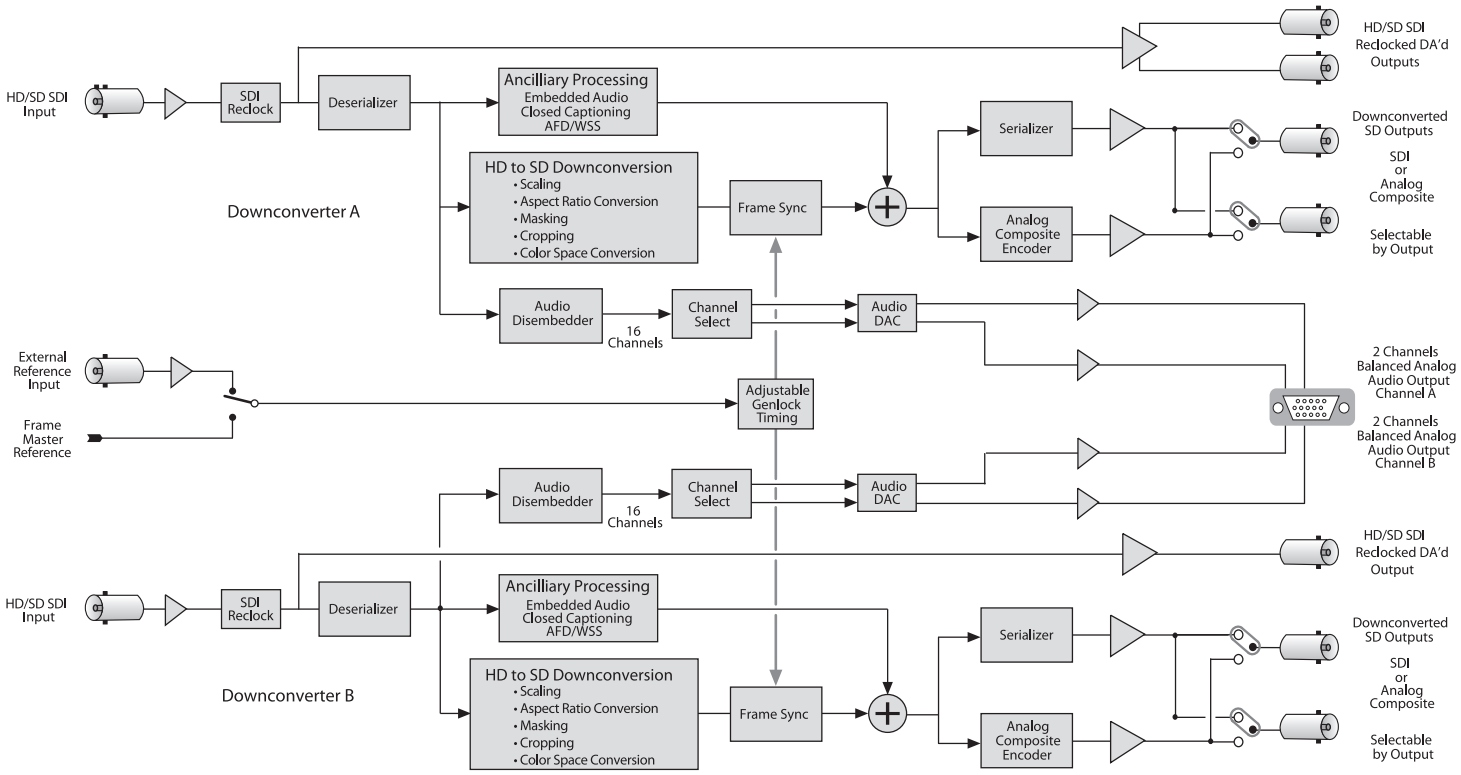
Number	Four max Jumper selectable, BNCs shared with SDI outputs Each channel has two SD outputs, selectable as two SD SDI, or two composite, or one SD SDI and one composite
Signal Type	PAL or NTSC composite
Impedance	75 Ω
Return Loss	>40 dB
Output DC	<50 mV
Resolution	16 bit processing
Signal to Noise	>65 dB
Frequency Response	±0.1 dB, 0 to 5.5 MHz
K Factor	<1%
Differential Phase	<1 degree
Differential Gain	<1%
Delay	Adjustable from 1 field to 1 frame

Analog Audio Output

Number	Two (selectable from sixteen)
Signal Type	Balanced, transformerless
Impedance	30 Ω
Maximum Output Level	24 dBu
Resolution	24 bits, 128 x Oversampled
Reference Level	-10 dBu to +4 dBu
Frequency Response	±0.1 dB, 20 Hz to 20 kHz
Crosstalk	<102 dB
Dynamic Range	>106 dB
Delay	Automatic to match video processing

Embedded Output

Support for all four groups (16 channels) from input to output.
Audio in SD output is delayed appropriately to compensate for conversion.


HD/SD SDI Input
SDI Reclock
Deserializer
Ancilliary Processing
Embedded Audio
Closed Captioning
AFD/WSS
HD to SD Downconversion
• Scaling
• Aspect Ratio Conversion
• Masking
• Cropping
• Color Space Conversion
Frame Sync
Serializer
Analog Composite Encoder
HD/SD SDI Reclocked DA'd Outputs
Downconverted SD Outputs
SDI or Analog Composite
Selectable by Output
Downconverter A
Audio Disembedder
16 Channels
Channel Select
Audio DAC
External Reference Input
Frame Master Reference
Adjustable Genlock Timing
2 Channels Balanced Analog Audio Output Channel A
2 Channels Balanced Analog Audio Output Channel B
HD/SD SDI Reclocked DA'd Output
Downconverter B