

# 7930

## HD Cross Converter

The 7930 module provides cross conversion between HD 1.5 Gb/s formats, processing all popular variations of 1080 and 720, making it simple for every facility to ingest any type of HD signal.

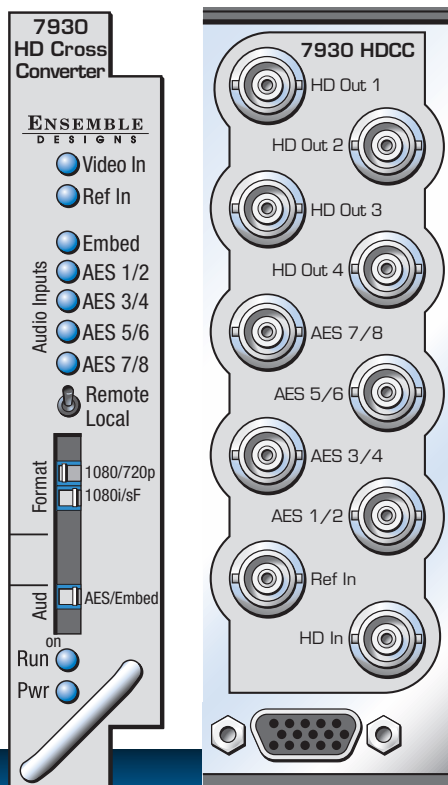
All popular variations of 720p, 1080i, 1080sF and 1080p are supported. The 7930 converts between any HD signals within the 59.94/23.98/29.97 family, within the 50/25 fps family, or within the 60/30 fps family. When converting from 59.94 to 23.98 formats, the 3:2 cadence of any existing film material in the input is automatically detected and backed out.

The 7930 can be configured to continually output your facility's preferred HD format. Just connect any HD signal to the input and the 7930 will cross convert it to the appropriate format for output. And, if the 8415 audio option is installed, the audio will automatically be processed as well.

The 7930 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 7930 converts this caption data transparently between video standards and formats.



### Automatic Aspect Ratio Conversion

The 7930 supports AFD (Active Format Description) to mark or identify the aspect ratio of the video content. These flags are generated at the output of the module, and they are read at the input. This allows the up and downconversion process to adapt automatically to material that is already in letterbox or pillarbox form in order to produce the most appropriate conversion.

### Audio Options

When an audio sub module is installed, audio is automatically delayed as needed to compensate for the video processing in the 7930. For complete audio processing, choose from three different audio sub modules. Sub modules plug onto the 7930 board and do not take up a slot in the frame.

The 8415 is an eight-channel audio sub module with AES I/O that provides management of embedded audio in the processing path, or supports audio embedding/disembedding alongside the video processing elements. Embedded audio is safely bypassed around the video frame store with the lip sync preserved. Level adjustments and channel shuffling are accessed through the built-in audio mixer. The 9670 Automatic Gain Control option can be added to the 8415. All audio processing is performed at full 24 bit resolution.

The 7610 sub module option provides carriage of up to eight channels of embedded audio through the format conversion process. Embedded audio in the input signal is delayed to match the video delay and preserve lip sync. The delayed content is reinserted in the video output. No level adjustment or channel swapping is provided.

### Features

- **HD Cross Converter for 720p, 1080i, 1080sF, 1080p**
- **16 bit processing**
- **All processing performed in progressive**
- **Accepts asynchronous signals**
- **Reference input, output is timeable**
- **Auto detects input standard and frame rate**
- **Proc Amp**
- **Passes closed captioning**
- **Built-in test pattern and tone**
- **Audio Mux/Demux optional**
- **Audio Automatic Gain Control optional**
- **Add audio sub module for delay and processing**

**Serial Digital Input**

Number	One
Signal Type	HD Serial Digital 1.485 Gb/s, SMPTE 274M, 292M or 296M
Impedance	75 $\Omega$
Return Loss	>15 dB
Max Cable Length	100 meters Belden 1694A
Automatic Cable Input Equalization	

**HD 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

**Serial Digital Output**

Number	Four
Signal Type	HD Serial Digital 1.485 Gb/s, SMPTE 274M or 296M
Impedance	75 $\Omega$
Return Loss	>15 dB
Output DC	None (AC coupled)
Delay	Adjustable from 1 field to 1 frame

**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)

**Conversion Directions**

Cross Conversion within frame rate families  
 525 Derived Family: 1080i/59.94, 720p/59.94, 1080p/23.98, and 1080sF/23.98  
 625 Derived Family: 1080i/50, 720p/50, 1080p/25, 1080sF/25

**AES/EBU Digital Inputs (with 8415 sub module option)**

Number	Four (total of eight channels)
Signal Type	AES3id
Connector	Coaxial, 75 $\Omega$
Bit Depth	20 and 24 bit
Sample Rate	30 kHz to 100 kHz (sample rate converted internally to 48 kHz)
Crosstalk	<144 dB
Dynamic Range	>144 dB
Reference Level	-18 or -20 dBFS (selectable)
AC-3, Dolby E	Supported when inputs are synchronous

**Embedded Inputs**

Number	Four AES Streams (from video input) Eight channels from any two of four groups Selectable to any of four groups
Channels	Eight
Bit Depth	20 and 24 bit

**AES/EBU Digital Outputs**

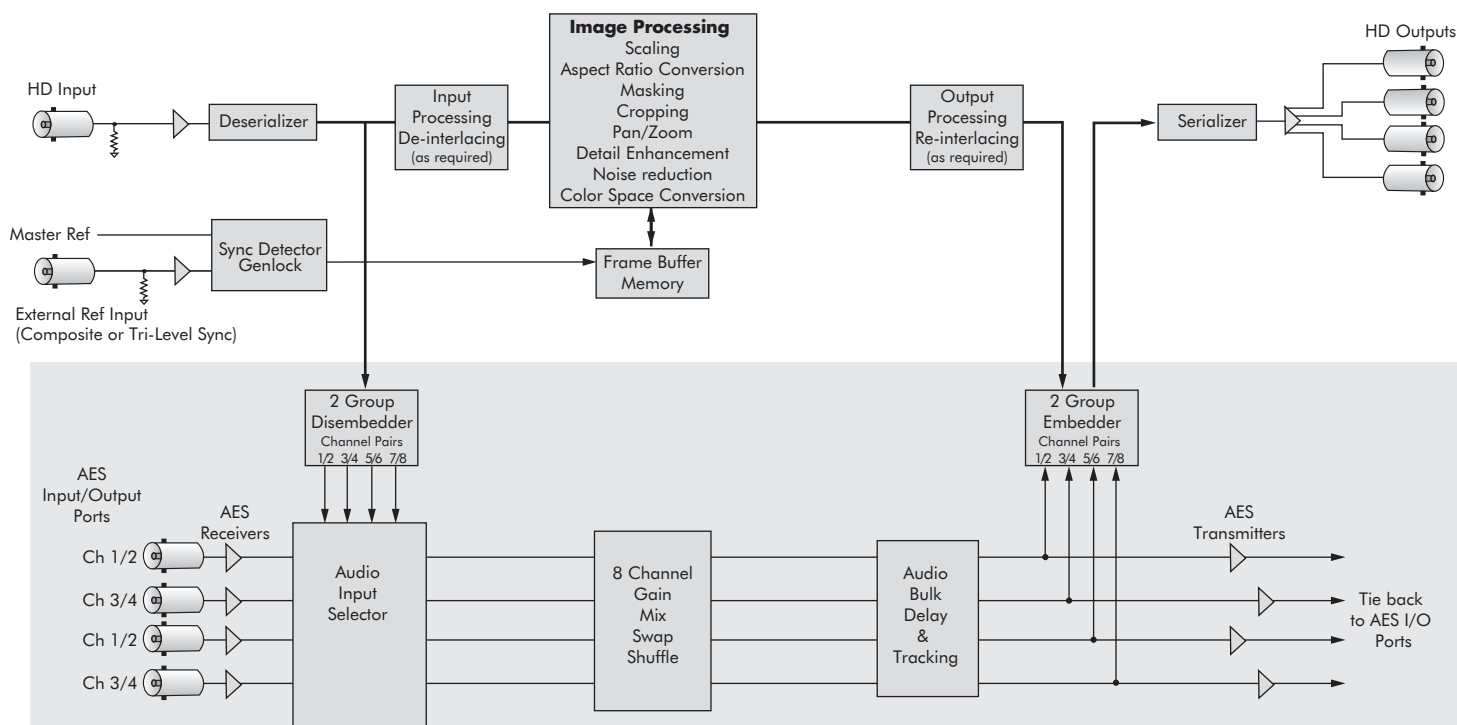
Number	Four (total of 8 channels)
Signal Type	AES3id
Connector	Coaxial, 75 $\Omega$
Bit Depth	20 and 24 bit
Sample Rate	48 kHz Synchronous to Video output
Reference Level	-18 or -20 dBFS (selectable)

**Embedded Output**

Number	Four or two depending on configuration
Group Assign	Cascade or replace any two of four groups
Channels	Eight
Bit Depth	24 bit

**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

**8415 8 Channel Audio Processing Option**