

# HD Prefix CPP1000

Multi-standard high definition compression pre-processor

HD Prefix, a new version of the award-winning SD Prefix, is a digital preprocessor designed to optimize the input signal to HD video compression systems.



HD Prefix (CPP1000) is designed to optimize high definition signals prior to compression. It provides the dual benefits of improved picture quality for the viewer and lower bandwidth usage for the broadcaster.

Its development is based on the highly regarded CPP100/200 Prefix devices, of which more than a thousand are in use in the SD domain, and twenty years experience in HD signal processing.

In HD transmissions, noise, grain and other signal artifacts can cause visible blockiness and "mosquito noise" when the pictures are compressed. This can result in disappointment and complaints by viewers, especially in relation to premium pay channel services.

HD Prefix is the only processor able to handle these problems effectively and economically in all HD and SD standards. Thanks to sophisticated noise and grain management and a uniquely powerful ability to remove unwanted signal elements, the bit-rate needed to compress the unit's output is reduced.

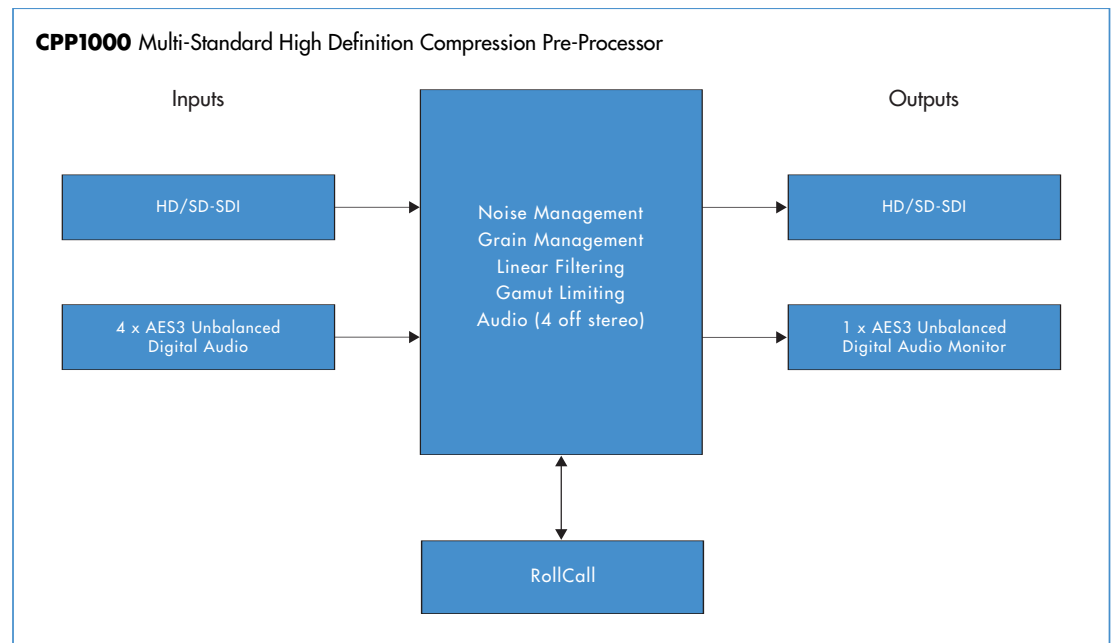
This means that valuable bandwidth can be freed up for additional channels or services. HD Prefix also offers advanced Metadata handling and insertion, including flagging of cuts and 3:2 cadences in order to further maximize encoder efficiency.

Designed for seamless and transparent integration into your system, HD Prefix provides reliable, 24/7 performance wherever picture quality is essential.

## Features

- Noise and grain management filters optimized for compressed signal paths
- Linear filtering
- All High definition and standard definition standards supported
- AES, AC3, Dolby™ E audio supported
- Metadata handling - including: cuts & 3:2 cadence
- Dual redundant PSU's
- Color gamut legalizer 4:4:4 internal processing

CPP1000 Multi-Standard High Definition Compression Pre-Processor



**Full Product List**

Base Model  
 HD Prefix **CPP1000**  
 Multi-standard High Definition  
 Compression Pre-processor

**Features**

**Signal Inputs**

Serial Digital HD 1 x HD SDI input SMPTE 292M\299M (with active loop through) via 2 x BNC connectors.  
 Serial Digital SD 1 x SD SDI input SMPTE 259M-C via a BNC connector.  
 Digital Audio 4 x Audio (AES Unbalanced, AES-3id-1995) via BNC connectors.

**Signal Outputs**

Serial Digital HD 2 x HD SDI outputs SMPTE 292M\299M via BNC connectors.  
 Serial Digital SD 1 x SD SDI output SMPTE 259M-C via a BNC connector.  
 Digital Audio Monitor 1 x Audio (AES Unbalanced) via BNC connector.

**Communications**

Network Control RollCall via BNC connector  
 Remote Interface RS422 via 1 x 9 way D-Type.

**Controls**

Input Select SD/HD SD Input Standard Select 625, 525 or Auto Select  
 HD Input Standard Select 1125(1080) 30i, 30p, 30sf, 29i, 29p, 29sf, 25i, 25p, 25sf, 24p, 24sf, 23p, 23sf 1125(1035) 30i, 29i 750(720) 60p, 59p, 50p, 30p, 29p, 25p, 24p, 23p 750(576) 50p 750(480) 59p or Auto Select  
 Video Bypass On/Off  
 Material Video, Film, 24PsF, Auto  
 2:2 Phase f1/f2, f2/f1, Auto  
 3:2 Phase Auto  
 Linear Filters On/Off  
 Band YH, YV, CH, CV  
 YH Cutoff Off, 32 MHz, 30 MHz, 29 MHz, 28 MHz, 27 MHz, 26 MHz, 25 MHz, 24 MHz, 23 MHz, 22 MHz, 21 MHz, 20 MHz, 19 MHz, 18 MHz, 17 MHz, 16 MHz, 15.5 MHz, 15 MHz, 14.5 MHz, 14 MHz, 13.5 MHz, 13 MHz, 12.5 MHz, 12 MHz, 11 MHz, 10 MHz  
 YH Boost Off, 1 dB, 2 dB, 3 dB, 4.5 dB, 6 dB  
 YV Cutoff 100%, 95%, 90%, 85%, 80%, 75%, 70%, 65%, 60%, 55%, 50%, 45%, 40%, 35%, 30%  
 YV Boost Off, 1 dB, 2 dB, 3 dB, 4.5 dB, 6 dB  
 CH Cutoff 16 MHz, 15 MHz, 14 MHz, 13 MHz, 12 MHz, 11 MHz, 10.5 MHz, 10 MHz, 9.5 MHz, 9 MHz, 8.5 MHz, 8 MHz, 7.5 MHz, 7 MHz, 6 MHz, 5 MHz, 6 MHz, 5.5 MHz, 5 MHz  
 CH Boost Off, 1 dB, 2 dB, 3 dB, 4.5 dB, 6 dB  
 CV Cutoff 100%, 95%, 90%, 85%, 80%, 75%, 70%, 65%, 60%, 55%, 50%, 45%, 40%, 35%, 30%  
 CV Boost Off, 1 dB, 2 dB, 3 dB, 4.5 dB, 6 dB

Recursive On/Off  
 Auto Noise On, 0 to 15 in steps of 1 unit, Off  
 Luma 0 to 31 in steps of 1 unit  
 Chroma 0 to 31 in steps of 1 unit  
 Bias ±7 in steps of 1 unit  
 Weighting White, Uniform, Black  
 View Movement, Difference  
 ProcAmp  
 White Stretch ±0.500 in steps of 0.001  
 Black Stretch ±0.500 in steps of 0.001  
 Chroma Gain 0.5 dB to 2.00 dB in 0.01 dB steps  
 Hue 0 to 359.0° in 0.5° steps  
 Clipper On/Off  
 White Max 940 to 1019 in steps of 1  
 Black Min 4 to 64 in steps of 1  
 White Knee 502 to 940 in steps of 1  
 Black Knee 64 to 502 in steps of 1  
 Legalizer  
 Legalize On/Off  
 View On/Off  
 Fix Luma On/Off  
 Upper 512 to 1019 in steps of 1  
 Lower 4 to 512 in steps of 1  
 Target 64 to 940 in steps of 1  
 SetUp  
 Demo Off  
 Top  
 Bottom  
 Left  
 Right  
 Center  
 Outside  
 TPG On/Off  
 Patterns 75% Bars  
 100% Bars  
 Multiburst  
 Pluge  
 Pulse and Bar  
 Ramp  
 SMPTE Bars  
 Sweep  
 Tartan Bars  
 RollCall Name Unit, Unit ID  
 Audio  
 Enable Group 1, Group 2  
 Type Select PCM, Data  
 Embed (Group 1 and Group 2)  
 Disembed 1/2  
 Disembed 3/4  
 Disembed 5/6  
 Disembed 7/8  
 Disembed 9/10  
 Disembed 11/12  
 Disembed 13/14  
 Disembed 15/16  
 AES BNC 1  
 AES BNC 2  
 AES BNC 3  
 AES BNC 4  
 Tone  
 Mute

<p>Audio Monitor</p>	<p>Group 1 1/2, Group 1 3/4, Group 2 1/2, Group 2 3/4, Tone Mute</p>	<p><b>Mechanical</b></p> <p>Temperature Range Cooling Case Type</p>	<p>0 to 40° C operating 1 Axial fan. Front to rear airflow. 2RU Rack Mounting (with provision for rear support brackets) 483 mm x 530 mm x 95 mm (w x d x h) 14 Kg</p>
<b>Audio Processing Specifications</b>			
<p>Inputs</p>	<p>4 External AES\EBU unbalanced BNC Embedded: Groups 1,2,3 and 4</p>	<p>Dimensions</p>	<p>Weight Assume</p>
<p>Outputs</p>	<p>Embedded: Groups 1 and 2 Audio remapping up to 4 channels Rate conversion for PCM Passes Dolby™-E and Dolby™ AC3 (this must be externally locked to the video input)</p>		
<b>Signal Processing Specifications</b>			
	<p>Noise &amp; Grain Management</p>		
	<p>Linear Filter</p>	<p>Motion adaptive Temporal Recursive filter with advanced spatial fallback Automatic Noise floor measurement Brickwall &amp; h/v aperture correction/boost</p>	
	<p>ProcAmp</p>	<p>White Stretch Black Stretch Chroma Gain Hue</p>	
	<p>Legalizer</p>	<p>Color gamut legalizer 4:4:4 internal processing</p>	
	<p>Clipper</p>	<p>Picture Content Analysis (shot change, film cadence)</p>	
	<p>Utils</p>	<p>User defined and preset memories Internal test pattern generation Split screens for demonstration purposes Transparent VANC &amp; D-VITC processing</p>	
<b>Power</b>			
	<p>Type</p>	<p>Dual redundant power supplies</p>	
	<p>Input Voltage Range</p>	<p>90 V a.c to 250 V a.c 50/60 Hz</p>	
	<p>Consumption</p>	<p>95 W maximum</p>	
	<p>Mains Fuse Rating</p>	<p>6.3 A (T)</p>	

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