

# AVP 2000 Contribution Encoder Configuration Packs



The MediaKind AVP 2000 Contribution Encoder is a high density, multi-functional, platform. It is designed for the evolving requirements of today's broadcasters and network operators. The AVP 2000 supports a comprehensive range of processing options in the form of hot swappable modules.

The platform's modular design allows service providers to upgrade functionality incrementally, avoiding costly upgrades. Already proven as part of MediaKind's deployed 3DTV and 4K UHD TV contribution system, its multi-channel capabilities and variety of I/O options provide the most flexible and configurable solution for high quality content delivery. MPEG-2, MPEG-4 AVC and JPEG 2000 are all supported.

To make it simpler to select the most popular options, a set of four AVP 2000 configuration packs are now available at very attractive fixed prices. The configuration packs provide a hierarchy of functionality starting with the Basic HD, moving to the HD with ASI, the HD 4:2:2 and finally the Premium 4:2:2 pack.

*It is possible to order an AVP 2000 with the specific combination of software and hardware options that you require. Also any hardware or software upgrades can be added once the unit has been delivered, refer to the AVP 2000 data sheet for details.*

## Product Overview

### High Flexibility, Reliability and Serviceability

The MediaKind AVP 2000 Contribution Encoder is designed to address both the need for density with up to six option slots and the need for high resilience by making all the option slots hot swappable and the addition of a dual PSU version of the chassis. A standard IP interface and a wide range of separate I/O options provide interfacing to multiple hybrid networks concurrently. The AVP 2000 allows in-field serviceability, portability and system reconfiguration to address the widest range of C&D applications.

### Highest Compression Performance

The AVP 2000 uses MediaKind's in house video encoding algorithms and deliver best in class video compression performance from very low bit rate to high bit-rate operation.

### Multi-codec

The AVP 2000 can provide MPEG-2, MPEG-4 AVC or even JPEG 2000\* encoding, 4:2:0 8 bit or 4:2:2 10 bit, SD or HD, even UHD TV is possible (using two AVP units).

\* JPEG 2000 encoding requires the addition of a CE-aJ2K encoding module.

### Multi-output

The AVP 2000 provides two IP output ports as standard and can also provide ASI output or G.703 output through the fitting of option modules.

## Basic HD

### AVP 2000 Configuration Pack (AVP2000/CP/HD/BASIC)

- Composite video input
- SD/HD MPEG-2 Encoding
- SD and HD MPEG-4 AVC Encoding
- Analogue audio inputs
- 2 x 2.0 of MPEG-1 Layer II audio encode
- ASI Output (2 outputs) with Remux
- BISS Encryption
- SMPTE 2022 Forward Error Correction

### Six slot single PSU chassis (AVP 2000/BAS/1AC/A)

- Integrated redundant IP outputs.
- Fully functional front panel control including video confidence monitor.

### Encoder Module (CE/HWO/CE-xA/A)

### ASI I/O Module (CE/HWO/ASI/IO/A)

- 3G/HD/SD-SDI video input
- Composite video input
- Analogue audio inputs
- Embedded (SDI) and AES digital audio inputs
- SD MPEG-2 4:2:0 8 Bit video encoding
- SD MPEG-4 4:2:0 8 Bit video encoding
- HD video encoding (AVP/SWO/VP/x/HD)
- 2 stereo pairs of MPEG-1 Layer II audio encoding

## HD 4:2:2

### AVP 2000 Configuration Pack (AVP2000/CP/HD/422)

As BASIC HD but adds:

- 4:2:2 10 bit video encoding. (MPEG-2 & MPEG-4)
- MediaKind's Phase Aligned Audio (1 Group)

As above plus:

- 4:2:2 10 Bit Encoding (AVP/SWO/VP/x/CONT)
- 2 x 2.0 of MPEG-1 Layer II audio encoding (giving 6 in total) (CE/SWO/VP/CONT/AUDIO)
- MediaKind's Phase Aligned Audio (5.1) (CE/SWO/VP/CONT/AUDIO)

## Premium 4:2:2

### AVP 2000 Configuration Pack (AVP2000/CP/PREM/422)

As HD 4:2:2 but adds:

- Dual AC PSU chassis
- 2 more 2.0 of MPEG-1 Layer II audio encode
- Additional Phase Aligned Audio licenses
- 3 stereo pairs Dolby Digital audio encode
- 1080p50/60 license
- Stripe Refresh for Low Latency

As above plus:

**Six slot Dual PSU chassis (AVP 2000/BAS/2ACFL/A)** in place of six slot single PSU chassis (AVP 2000/BAS/1AC/A)

- 2 x 2.0 of MPEG-1 Layer II audio encoding (giving 8 in total) (CE/SWO/VP/CONT/AUDIO)
- Additional Phase Aligned Audio (5.1). (CE/SWO/VP/CONT/AUDIO)
- 3 stereo pairs of Dolby Digital audio encoding (3 x CE/SWO/VP/DOLBY/AC3)
- 1080p50/60 license & Stripe Refresh (AVP/UPS/VP/x/CONT/ADV)

## Feature Matrix

	BASIC HD	HD 4:2:2	PREMIUM 4:2:2
<input checked="" type="checkbox"/> = Included <input type="checkbox"/> = Field upgrade available			
<b>Chassis</b>			
Single AC Power Supply	■	■	
Dual AC Power Supply			■
Hot-Swappable Modules	■	■	■
Built-In Video Confidence Monitor	■	■	■
<b>Baseband Video and Audio Inputs</b>			
Analog Composite CVBS Interface	■	■	■
SD-SDI Interface	■	■	■
HD-SDI Interface	■	■	■
3 Gbps Capable HD-SDI Interface	■	■	■
Discrete Digital Audio Inputs	■	■	■
Analog Audio Inputs	■	■	■
<b>Video Encoding</b>			
MPEG-2 SD 4:2:0 Encoding	■	■	■
MPEG-2 HD 4:2:0 Encoding	■	■	■
MPEG-2 SD 4:2:2 Encoding	□	■	■
MPEG-2 HD 4:2:2 Encoding	□	■	■
MPEG-4 AVC SD 4:2:0 Encoding	■	■	■
MPEG-4 AVC HD 4:2:0 Encoding	■	■	■
MPEG-4 AVC SD 4:2:2 Encoding	□	■	■
MPEG-4 AVC HD 4:2:2 Encoding	□	■	■
MPEG-4 AVC Stripe Refresh (< 100 ms latency)	□	□	■
MPEG-4 AVC HD 4:2:2 1080p 50/60 fps	□	□	□
JPEG 2000 SD 4:2:2 Encoding	□	□	□
JPEG 2000 HD 4:2:2 Encoding	□	□	□

## Audio Encoding

MPEG-1 Layer II Encode (Stereo Pairs)	4 <input type="checkbox"/>	6 <input type="checkbox"/>	8
Dolby® Digital (AC3) Encode (2.0 or 5.1)	<input type="checkbox"/>	<input type="checkbox"/>	3 <input type="checkbox"/>
AAC Encode Encode (2.0 or 5.1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phase Aligned Audio Encode (Groups)	<input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>
Linear PCM Pass-Through	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dolby® Digital (AC3) Pass-Through (2.0 or 5.1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dolby® Digital Plus Pass-Through (2.0 or 5.1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dolby®E Pass-Through (Compressed)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## Encryption

BISS Encryption (Modes 1 and E)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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## Transport Stream Outputs

IP Output	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ASI Output	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SMPTE 2022 FEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.703 Output	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Control

Web Browser Control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Front Panel Control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SNMP Traps and Alarms	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
nCompass Control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## Specifications

### Inputs

<b>Video</b>	<p>3G/HD/SD-SDI serial digital video with EDH error detection and health monitoring</p> <p>Analogue CVBS Input NTSC and PAL (PAL-M not supported)</p> <p>Input Level 800 mV ptp ±10 percent</p> <p>Return loss &gt;15 dB, 10 MHz to 270 MHz</p>
<b>Audio</b>	<p>Up to eight stereo pairs embedded on HD-SDI</p> <p>Up to four stereo pairs via AES EBU (Connector via D-Type to XLR)</p> <p>Supports both balanced (AES3) and unbalanced (AES3id) digital audio inputs</p> <p>48 kHz sampling rate</p> <p>2 x Stereo Analogue Audio inputs (CE-xA only)</p>

\*Optional breakout cables can be ordered separately:-  
 D-Type to balanced XLR breakout cable (VP/CAB/BAL)  
 D-Type to unbalanced BNC breakout cable (VP/CAB/UNBAL)

## Video Encoder

<b>Video Encoder</b>	<p>MPEG-4 AVC Main Profile @ Level 4.0 (1 Mbps to 20 Mbps) (CE/SWO/CE-x/H264)  MPEG-4 AVC High Profile @ Level 4.0 (1 Mbps to 25 Mbps) (CE/SWO/CE-x/264 + CE/SWO/CE-x/HD)  MPEG-4 AVC 4:2:2 Profile @ Level 4.1 (1 Mbps to 80 Mbps) (CE/SWO/CE-x/264 + CE/SWO/CE-x/HD + CE/SWO/CE-x/422)  MPEG-2 Video Main Profile @ Main Level (Base Card)  MPEG-2 Video Main Profile @ High Level (CE/SWO/CE-x/HD)  1 Mbps to 80 Mbps bit-rate range (depends on profile/level supported)  CABAC entropy encoding up to 62.5 Mbps  Manual CABAC switching-point override  Triple pass “Pixel Perfect” fully exhaustive motion estimation  Multiple low latency modes supporting delays down to &lt;100ms* end-to-end delay (when used in conjunction with a RX8200 receiver)</p> <p style="text-align: right;">*Configuration dependent.</p>
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## Audio Encoder

<b>Audio Encoder</b>	Up to 8x stereo audio channel processing
<b>MPEG-1 Layer II encoding standard</b>	Encoding rates from 32 kbps to 384 kbps - up to 8 pair
<b>Dolby® Digital (AC-3)</b>	Pass-through of pre-encoded Dolby Digital, up to 8 streams
<b>Dolby®E pass-through</b>	Up to four streams
<b>Linear PCM pass-through</b>	Up to four independent stereo pairs
<b>Phased Aligned Audio (PAA) (Patent Pending)</b>	Encoding of 6 or 8 audio channels with time synchronous samples

## Ancillary Data

<b>Ancillary Data</b>	<p>SMPTE 334-1 Closed Captions  SMPTE 2016-3 AFD and Bar Data  SMPTE 12-2 Time code extraction and carriage (ETSI TS101 154)  SMPTE 2038 Generic VANC data extraction, up to 2 Mbps</p>
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## IP Transport Stream Interfaces

<b>Output</b>	<p>2x Electrical Ethernet (100/1000BaseT)  Physical port redundancy with active-active and active-standby operation  Multicast streaming</p>
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## Management

<b>Management</b>	2x Electrical Ethernet (100/1000BaseT) SNMP v1/v2/v3, for alarm traps User management via Web browser Fully functional front panel control
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## Physical and Power

<b>Dimensions (H x W x D)</b>	59.69 x 44.20 x 4.45 cm (23.50 x 17.40 x 1.75 inches)
<b>Weight</b>	8.0 kg (17.6 lbs) unpopulated
<b>Input Voltage</b>	100 VAC to 240 VAC 50/60 Hz
<b>Input Power</b>	50 Watt (chassis only) Up to 350 Watt (depending on option modules fitted)

## Environmental Conditions

<b>Operating Temperature</b>	-10°C to +50°C (14°F to 122°F)
<b>Storage Temperature</b>	-40°C to +85°C (-40°F to 185°F)
<b>Relative Operating Humidity</b>	10% to 90% (Non-condensing)

## Compliance

<b>Compliance</b>	CE marked in accordance with EU Low Voltage and EMC Directives
<b>EMC Compliance</b>	EN55022, EN55024, AS/NZS3548, EN61000-3-2, EN61000-3-3 and FCC CFR47 Part 15B Class A
<b>Safety Compliance</b>	EN60950-1, IEC60950-1, UL60950-1 and NRTL listed