

# AVP 2000 CONTRIBUTION ENCODER CONFIGURATION PACKS



The Ericsson AVP 2000 Contribution Encoder is a high density, multi-functional, video processing 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 Ericsson'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 five AVP 2000 configuration packs are now available at very attractive fixed prices. The configuration packs provide a hierarchy of functionality starting with the Basic SD, moving to the Basic HD, then 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 Ericsson 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 Ericsson'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.

<p><b>BASIC SD</b>  <b>AVP 2000 Configuration Pack</b>  (AVP2000/CP/SD/BASIC FAZ 101 0196/128)</p> <ul style="list-style-type: none"> <li>• Composite video input</li> <li>• Analogue audio inputs</li> <li>• ASI Output (2 outputs)</li> </ul>	<ul style="list-style-type: none"> <li>• Six slot single PSU chassis (AVP 2000/BAS/1AC)</li> <li>• Integrated redundant IP outputs.</li> <li>• Fully functional front panel control including video confidence monitor.</li> </ul> <p><b>Encoder Module (CE/HWO/CE-xa)</b>  <b>ASI I/O Module (CE/HWO/ASI/2IN2OUT)</b></p> <ul style="list-style-type: none"> <li>• 3G/HD/SD-SDI video input</li> <li>• Composite video input.</li> <li>• Analogue audio inputs.</li> <li>• Embedded (SDI) and AES digital audio inputs</li> <li>• SD MPEG-2 4:2:0 8 Bit video encoding</li> <li>• SD MPEG-4 4:2:0 8 Bit video encoding</li> <li>• 2 stereo pairs of MPEG-1 Layer II audio encoding</li> <li>• VANC data extraction and support for generic VANC (SMPTE 2038)</li> </ul>
<p><b>BASIC HD</b>  <b>AVP 2000 Configuration Pack</b>  (AVP2000/CP/HD/BASIC FAZ 101 0196/129)  As BASIC SD but adds:</p> <ul style="list-style-type: none"> <li>• HD Video Encoding</li> <li>• BISS Encryption</li> <li>• SMPTE 2022 Forward Error Correction</li> </ul>	<p>As above plus:</p> <ul style="list-style-type: none"> <li>• HD video encoding. (CE/SWO/CE-x/HD)</li> <li>• BISS Encryption (CE-SWO/BISS)</li> <li>• SMPTE 2022 Forward Error Correction (FEC)</li> </ul>
<p><b>HD 4:2:2</b>  <b>AVP 2000 Configuration Pack</b>  (AVP2000/CP/HD/422 FAZ 101 0196/130)  As BASIC HD but adds:</p> <ul style="list-style-type: none"> <li>• 4:2:2 10 bit video encoding. (MPEG-2 &amp; MPEG-4)</li> <li>• 2 additional stereo pair of MPEG-1 Layer II audio encode.</li> <li>• Ericsson's Phase Aligned Audio.(1 Group)</li> </ul>	<p>As above plus:</p> <ul style="list-style-type: none"> <li>• 4:2:2 10 Bit Encoding (CE/SWO/CE-x/422)</li> <li>• additional stereo pair of MPEG-1 Layer II audio encoding (giving 4 in total) ( CE/SWO/M1L2)</li> <li>• Ericsson's Phase Aligned Audio (5.1). (CE/SWO/PAA)</li> </ul>
<p><b>PREMIUM 4:2:2</b>  <b>AVP 2000 Configuration Pack</b>  (AVP2000/CP/PREM/422 FAZ 101 0196/131)  As HD 4:2:2 but adds:</p> <ul style="list-style-type: none"> <li>• Dual AC PSU chassis</li> <li>• 4 more stereo pairs of MPEG-1 Layer II audio encode.</li> <li>• Additional Phase Aligned Audio license.</li> <li>• 3 stereo pairs of Dolby Digital audio encode</li> </ul>	<p>As above plus:</p> <p><b>Six slot Dual PSU chassis (AVP 2000/BAS/2ACFL)</b>  in place of six slot single PSU chassis (AVP 2000/BAS/1AC)</p> <ul style="list-style-type: none"> <li>• 4 additional stereo pair of MPEG-1 Layer II audio encoding (giving 8 in total) ( 5 x CE/SWO/M1L2)</li> <li>• Additional Ericsson's Phase Aligned Audio (5.1). (CE/SWO/PAA)</li> <li>• 3 stereo pairs of Dolby Digital audio encoding (3 x CE/SWO/DOLBY/AC3)</li> </ul>



## ERICSSON

	BASIC SD	BASIC HD	HD 4:2:2	PREMIUM 4:2:2
■ = Included □ = 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	□	□	□	□
<b>AUDIO ENCODING</b>				
MPEG-1 Layer II Encode (Stereo Pairs)	2□	2□	4□	8
Dolby® Digital (AC3) Encode (2.0 or 5.1)	□	□	□	3□
AAC Encode Encode (2.0 or 5.1)	□	□	□	□
Phase Aligned Audio Encode (Groups)	□	□	1□	2
Linear PCM Pass-Through	■	■	■	■
Dolby® Digital (AC3) Pass-Through (2.0 or 5.1)	■	■	■	■
Dolby® Digital Plus Pass-Through (2.0 or 5.1)	■	■	■	■
Dolby®E Pass-Through (Compressed)	■	■	■	■
<b>ENCRYPTION</b>				
BISS Encryption (Modes 1 and E)	□	■	■	■
<b>TRANSPORT STREAM OUTPUTS</b>				
IP Output	■	■	■	■
ASI Output	■	■	■	■
SMPTE 2022 FEC	□	■	■	■
G.703 Output	□	□	□	□
<b>CONTROL</b>				
Web Browser Control	■	■	■	■
Front Panel Control	■	■	■	■
SNMP Traps and Alarms	■	■	■	■
nCompass Control	■	■	■	■

\*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)

## Inputs

### Video

3G/HD/SD-SDI serial digital video with EDH error detection and health monitoring

Analogue CVBS Input NTSC and PAL (PAL-M not supported)

Input Level 800 mV ptp ±10 percent

Return loss >15 dB, 10 MHz to 270 MHz

### Audio

Up to eight stereo pairs embedded on HD-SDI

Up to four stereo pairs via AES EBU (Connector via D-Type to XLR)

Supports both balanced (AES3) and unbalanced (AES3id) digital audio inputs

48 kHz sampling rate

2 x Stereo Analogue Audio inputs [CE-xa only]

## Video Encoder

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 <100ms\* end-to-end delay (when used in conjunction with a RX8200 receiver.)

\*Configuration dependant.

## Audio Encoder

Up to 8x stereo audio channel processing

### MPEG-1 Layer II encoding standard

Encoding rates from 32 kbps to 384 kbps - up to 8 pairs

### Dolby® Digital (AC-3)

Pass-through of pre-encoded Dolby Digital, up to 8 streams

### Dolby®E pass-through

Up to four streams

### Linear PCM pass-through

Up to four independent stereo pairs

### Phased Aligned Audio (PAA) (Patent Pending)

Encoding of 6 or 8 audio channels with time synchronous samples.

## Ancillary Data

SMPT E 334-1 Closed Captions

SMPT E 2016-3 AFD and Bar Data

SMPT E 12-2 Time code extraction and carriage  
(ETSI TS101 154)

SMPT E 2038 Generic VANC data extraction,  
up to 2 Mbps

## IP Transport Stream Interfaces

### Output

2x Electrical Ethernet (100/1000BaseT)

Physical port redundancy with active-active and active-standby operation

Multicast streaming

## Management

2x Electrical Ethernet (100/1000BaseT)

SNMP v1/v2/v3, for alarm traps

User management via Web browser

Fully functional front panel control

## Physical and Power

### Dimensions (H x W x D)

59.69 x 44.20 x 4.45 cm  
(23.50 x 17.40 x 1.75 inches)

### Weight

8.0 kg (17.6 lbs) unpopulated

### Input Voltage

100 VAC to 240 VAC 50/60 Hz

### Input Power

50 Watt (chassis only)

Up to 350 Watt (depending on option modules fitted)

## Environmental Conditions

### Operating Temperature

-10°C to +50°C (14°F to 122°F)

### Storage Temperature

-40°C to +85°C (-40°F to 185°F)

### Relative Operating Humidity

10% to 90% (Non-condensing)

## Compliance

CE marked in accordance with EU Low Voltage and EMC Directives

### EMC Compliance

EN55022, EN55024, AS/NZS3548, EN61000-3-2, EN61000-3-3 and FCC CFR47 Part 15B Class A

### Safety Compliance

EN60950-1, IEC60950-1, UL60950-1 and NRTL listed