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AVP 3000 VOYAGER

The AVP 3000 Voyager is Ericsson's sixth generation DSNG product and is the most flexible and scalable news gathering system on the market, reflecting Ericsson's technology leadership and unique heritage in this segment.

The AVP 3000 Voyager excels in providing maximum flexibility, performance and interoperability while delivering the best return on investment to operators and service providers through the widest range of software upgradeable paths and expansions options.

Based on in-house technology, the AVP 3000 Voyager is built upon a revolutionary modular chassis in a space-saving 1RU form factor with up to six hot swappable option slots. It supports a comprehensive range of processing options, including the multi-codec, multi-format CE-x Series range of encoders. MPEG-2, MPEG-4 AVC and JPEG 2000 are all supported. An integrated satellite modulator offers high order DVB-S/S2/S2X modulation on both IF and L-Band outputs.

AVP 3000 Voyager features a fully functional front panel re-engineered bottom-up to meet the demand of the mobile environment, including ease of operations, quick menu access and effective monitoring. Overall it represents the most advanced DSNG unit on the market, offering broadcasters, operators and service providers the level of integration, flexibility and scalability necessary to future-proof any operational investment during today's technology migration.

PRODUCT OVERVIEW

Outstanding Innovation Delivers the most Flexible Integrated DSNG

Based on two decades of encoder design experience, and a series of SNG world firsts, the AVP 3000 Voyager is a radical new design. Based on Ericsson's in-house technology, the AVP 3000 Voyager targets today's network technology migration with a future-proof modular platform, capable of multi-codec, multi-format and multi-channel operations. Highly flexible, the AVP 3000 Voyager provides a multitude of independent and concurrent output options, including IP, ASI and an integrated DVB-S and DVB-S2 satellite modulator providing high order modulation on IF and L-Band outputs.

Multi-codec

The AVP 3000 Voyager supports the CE-x Series of encoding option modules, a single multi-codec platform enabling the migration to the highest quality MPEG-4 AVC HD 4:2:2 10-bit, while maintaining compatibility with legacy MPEG-2 networks.

Efficient Use of Spectrum

The AVP 3000 Voyager delivers compression efficiencies that allow over 30 percent bandwidth savings compared to MPEG-2 Video at contribution rates. It also supports DVB-S2 and DVB-S2X high order modulation on both IF and L-Band outputs. DVB-S2 gives a 30 % performance gain compared to DVB-S, and DVB-S2X gives up to 20% performance gain compared to DVB-S2.

Scalable, Expandable and Configurable

All modules in the AVP 3000 Voyager are hot swappable to allow on-site servicing, expansion of the unit functionality and easy re-purposing of units for multiple applications.

Software Upgradeability

CE-x Series encoding modules are based on a single, future-proof, hardware platform. This enables system scalability all the way from MPEG-2 SD 4:2:0 operations to the highest quality MPEG-4 AVC HD 4:2:2 10-bit through simple software upgrades. Support for multi-channel operations including 3D and future features such as 1080p50/60 will also be available through a mixture of licenses and software upgrades on the hardware platforms available today.

Fully Functional Front Panel Operations

A new fully-functional front panel provides complete unit control in mobile environments. Its unique ergonomic new design is the result of development based on industry feedback and includes:

- Rotary control for fast item selection and key-pad for easy value insertion
- High-resolution display for video confidence monitoring
- Audio metering
- Quick access menus specifically designed for mobile operations with customizable shortcuts and ample configuration storage

BASE UNIT FEATURES

Chassis

- Six slot single PSU AVP3000/BAS/1AC, FAZ 101 0196/3
- Four slot dual PSU AVP3000/BAS/2AC, FAZ 101 0196/29
- Six slot dual PSU Flying Leads AVP3000/BAS/1ACFL, FAZ 101 0196/34

Base Chassis Includes

- Integrated DVB-S/S2 modulator with IF and L-Band outputs
- Integrated redundant IP outputs
- Fully functional front panel control with highest level of monitoring
- Web browser control

Chassis Platform Capabilities

- MPEG-2 Transport Stream generation
- Multiple concurrent and independent output options
- DVB-S (QPSK), DVB-DSNG* (8PSK, 16QAM) and DVB-S2* (QPSK, 8PSK, 16APSK and 32APSK) modulation
- 1 Msym/s to 66 Msym/s operations*
- Exceptional modulation accuracy and spectral purity
- SMPTE 2022-1/-2 (Pro-MPEG) FEC*
- BISS 1/E* (EBU Tech 3292, May 2002) and RAS encryption
- Ericsson's RAS scrambling scheme available free of charge on all AVP 3000 units though the Satellite modulator only

** Activation through license as shown under software options*

SOFTWARE OPTIONS

SMPTE 2022 Forward Error Correction (FEC)

(CE/SWO/PROFEC, FAZ 101 0119/12)

- SMPTE 2022-1/-2 (Pro-MPEG) FEC on a single SPTS/ MPTS output

BISS Encryption

(CE/SWO/BISS, FAZ 101 0119/9)

- Encryption of output MPEG-2 Transport Stream using Basic Interoperable Scrambling System (BISS) for secure contribution links
- Supports BISS Modes 0, 1 and Mode E (as defined in EBU Tech 3292, May 2002)

DVB-DSNG Modulation

(VOY/SWO/DVBDSNG, FAZ 101 0154/7)

- DVB-DSNG 8PSK and 16QAM modulation

DVB-S2 Modulation

(VOY/SWO/DVBS2, FAZ 101 0154/8)

- DVB-S2 QPSK and 8PSK

(VOY/SWO/DVBS2/HOM, FAZ 101 0154/9)

- Higher order modulation support of DVB-S2 QPSK, 8PSK, 16APSK and 32APSK

DVB-S2X Modulation

(VOY/SWO/DVBS2X, FAZ 101 0196/121)

- DVB-S2X MODCODs and FECs.

High Symbol Rate Modulation

(VOY/SWO/HSYM, FAZ 101 0154/10)

- Enable extended symbol rate range from 45 Msym/s to 66 Msym/s

Remux License

(AVP/SWO/REMUX, FAZ 101 0196/6)

- Provides internal Remux capabilities for up to 2 ASI inputs
- Requires ASI I/O Module

HARDWARE OPTIONS

CE-x Series Encoder Modules

(CE/HWO/CE-x, FAZ 101 0196/10)

(CE/HWO/CE-xA, FAZ 101 0196/12)

- Two slots per module, up to two modules per chassis
- 3G/HD/SD-SDI, video input
- MPEG-2 Video and MPEG-4 AVC encoding capabilities[1]
- 4:2:2 and 4:2:0 Chroma sampling modes
- Up to 10-bit precision resolution[1]
- 1 Mbps up to 80 Mbps video bit-rate[1]
- Embedded (SDI) and AES-EBU audio input
- Up to eight stereo pairs of audio encoding and pass-through
- VANC data extraction and support for generic VANC (SMPTE 2038)
- Analoge input option

[1] Exact capabilities depend on module and licensing; please refer to CE-x Series datasheet for a more detailed description.

CE-x Series Encoder Licenses

(CE/SWO/CE-x/H264, FAZ 101 0196/16)

(CE/SWO/CE-x/HD, FAZ 101 0196/21)

(CE/SWO/CE-x/422, FAZ 101 0196/17)

Not all Encoder licenses listed, please refer to individual datasheets

CE-a Series Encoder Modules

(CE/HWO/CE-a, FAZ 101 0196/11)

- One slot per module. Up to six modules per chassis
- HD/SD-SDI, video input
- MPEG-2 Video and MPEG-4 AVC encoding capabilities[2]
- 4:2:0 chroma sampling mode
- 1 Mbps to 50 Mbps video bit-rate[2]
- Embedded (SDI) and AES-EBU audio input
- Up to eight stereo pairs of audio encoding and pass-through
- VANC data extraction and support for generic VANC (SMPTE 2038)

[2] Exact capabilities depend on module and licensing; please refer to CE-x Series datasheet for a more detailed description.

HARDWARE OPTIONS continued

CE-a Series Encoder Licenses

(CE/SWO/CE-a/H264, FAZ 101 0196/22)

(CE/SWO/CE-a/HD, FAZ 101 0196/20)

Not all Encoder licenses listed, please refer to individual datasheets

CE-aJ2K Series Encoder Modules

(CE/HWO/CE-a/J2K, FAZ 101 0119/79)

- Single slot per module. Up to six modules per chassis depending on configuration
- 3G/HD/SD-SDI, video input
- JPEG 2000 encoding capabilities
- 4:2:2 10-bit operation

CE-aJ2K Series Encoder Licenses

(CE/SWO/CE-a/HDJ2K, FAZ 101 0119/85)

External Synchronisation Module

(CE/HWO/EXTSYNC, FAZ 101 0119/7)

- One slot per module. Up to one module per chassis
- Supports synchronisation of all encoders in the chassis to support single PCR operation
- 10 MHz or HSYNC input

ASI I/O Module

(CE/HWO/ASI/2IN2OUT, FAZ 101 0119/2)

- One slot per module
- 2 x ASI MPEG-2 Transport Stream outputs configured as mirrored or independent
- 2 x ASI inputs for Transport Stream pass-through to SatMod

G703 Module

(CE/HWO/G703, FAZ 101 0119/76)

- One slot per module
- Supports E3 and DS3 output connectivity

GPI/RS-232 Module

(CE/HWO/GPI, FAZ 101 0119/80)

- One slot per module
- Supports GPO relay triggers for “Alarm” and “Failure” modes

NOTE: RS-232 a future option

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SAMPLE CONFIGURATION

SPECIFICATIONS

IP Transport Stream Interfaces

Input

2x Electrical Ethernet (/100/1000BaseT)

Output

2x Electrical Ethernet (100/1000BaseT)

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

Multicast streaming

Satellite Modulator

Base unit supports both 70 MHz IF output and L-band output.

DVB-CID support.

Signal conditioning: EN 300 421 (DVB-S) and option for EN 301 210 (DVB-DSNG) EN302-307 (DVB-S2)

Modulation: QPSK and option for 8PSK, 16QAM, DVB-S2 QPSK, 8PSK, 16APSK, 32APSK DVB-S2X QPSK, 8PSK, 16PSK, 32APSK, 64APSK (Roll Off 0.05, 0.10, 0.15, 0.20, 0.25 0.35)

Symbol Rate: 1 Msym/s to 45 Msym/s (variable in 1 Sym/s increments). Optional extension to 66 Msym/s

FEC rates:

1/2, 2/3, 3/4, 5/6 and 7/8 (DVB-S QPSK)
2/3, 5/6 and 8/9 (DVB-DSNG 8PSK)
3/4 and 7/8 (DVB-DSNG 16QAM)
1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9 and 9/10 (DVB S2 QPSK)
3/5, 2/3, 3/4, 5/6, 8/9 and 9/10 (DVB-S2 8PSK)
2/3, 3/4, 4/5, 5/6, 8/9 and 9/10 (DVB-S2 16APSK)
3/4, 4/5, 5/6, 8/9 and 9/10 (DVB-S2 32APSK)
13/45, 9/20, 11/20 (DVB-S2X QPSK)
23/36, 25/36, 13/18 (DVB-S2X 8PSK)
5/9, 26/45 (DVB-S2X 8APSK-L)
26/45, 3/5, 28/45, 23/36, 25/36, 13/18, 7/9, 77/90 (DVB-S2X 16APSK)
5/9, 8/15, 1/2, 3/5, 2/3 (DVB-S2X 16APSK-L)
2/3 (DVB-S2X 32 APSK-L)
11/15 (DVB-S2X 64 APSK)
32/45, 7/9, 4/5, 5/6 (DVB-S2X 64 APSK-L)

IF Output Option

IF frequency: 50 MHz to 180 MHz (1 kHz steps)
Output power: -30 dBm to +5 dBm (0.1 dB steps)
Monitor output: -30 dB relative to main IF output

L-band Output Option

Frequency: 950 MHz to 2150 MHz (1 kHz steps)
Output power: -40 dBm to +5 dBm (0.1 dB steps)
Monitor output: -30 dB relative to main output
Switchable up-converter power: +15 V and 24 VDC, 500 mA max.
Switchable 10 MHz reference

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 and FCC CFR47 Part 15B Class A

Safety Compliance

EN60950, IE60950

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