

ADVENT

DVE5100

SD & HD Exciter with IP Streaming

5000 SERIES OVERVIEW

Advent's established lightweight, compact, 1U half rack electronics packages are ideally suited for flyaway or vehicle mounted solutions where weight and space are at a premium. The 5000 series of electronics can be packaged in different lightweight, ruggedized canvas flight cases, depending on units selected and system configuration.

- Full range of units available
- SD and HD Digital Video Exciter
- IP Modem
- Multiplexer Router
- BUCS
- Antenna and Drive Control units
- System IRD / Redundancy controllers
- Protection Switches
- L Band over fiber modems
- All units are field upgradeable
- All units have integral web browser facility (where applicable) for RC&M applications
- A comprehensive range of flight case solutions for half-rack and 19" rack units to suit system configuration, i.e. 3U, 4U, 5U
- All units can also be fixed together and mounted in a standard 19" flight case or rack within a vehicle

Benefits

- SD & HD MPEG encoder with integrated L Band modulator
- Integrated HPA controller supporting a wide range of TWTA/SSPA's
- HPA control via L Band cable or direct connection
- SD & HD MPEG-2, 4:2:0/4:2:2 encoding
- L Band monitor
- Integral L Band combiner for external L Band carrier addition
- Carrier Identification (CID) Confirmed operation with SES Zodiac Monitoring system



Digital Video Encoder with Integral Modulator Compact, Lightweight half-width rack unit

- DVB-S QPSK, 8PSK, 16QAM
- DVB-S2, QPSK, 8PSK, 16 & 32APSK
- 70MHz output option
- DVB-T/LMS-T COFDM option for IF output
- 8-audio channels (two-pairs of analogue/AES)
- Dolby E auto aligner and pass through
- BISS/E conditional access
- Low delay MPEG-2/H.264 Encoding (50 mS)
- ASI output only (Encoder) version available
- 19" 1U HD SHF solution available with AUC5000 series
- Remote control via web browser
- SNMP control
- IP Streaming output allowing encapsulation of up to two ASI signals
- IP input with de-capsulation of one of four ASI signals, for multiplexing and/or modulation
- Field upgrade by USB memory stick

Key Features

- Compact half-width 19" x 1U rack mountable unit
- Quarter of the size and one sixth of the weight of competitor's equivalent products
- Designed for contribution flyaway and DSNG vehicle applications where space and weight are critical

Typical Applications

- Event Coverage
- Newsgathering
- Sports coverage
- Maritime Reconnaissance
- Secure SATCOM

RF Parameters

Output Frequency Range:

- L-Band 950 to 1750 MHz step size 1KHz
- 70MHz option

Frequency Stability

- +/- 2 x 10⁻⁸
- 10 MHz reference option

Output Power Level

- L-Band -5/+5 dBm

Gain Adjustments

- 40 dB min

Gain Variation

- +/- 2 dB full band +/- 0.25 dB 24hr @ constant temperature

Spurious

- -70 dBc/4 KHz

L-Band Monitor

- Monitor Level -20 dBc

L-Band Combiner

- Combining ratio 5 dB +/-2

Modulation

- QPSK 1 – 36Ms/s
- 8PSK, 16APSK, 32APSK options, 1-45Ms/s

FEC

- DVB-S QPSK:
 - FEC rates: 1/2, 2/3, 3/4, 5/6, 7/8
- DVB-S 8PSK:
 - FEC rates: 2/3
- DVB-S 16QAM:
 - FEC rates: 3/4
- DVB-S2 QPSK:
 - FEC rates 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
- DVB-S2 8PSK:
 - FEC rates: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
- DVB-S2 16APSK/32APSK:
 - FEC rates: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10

IP Video Traffic Interface

Type

- 10/100/1000 Base-T Ethernet

Protocol

- IEEE 802.3 Ethernet
- Encapsulation for ASI – RTP (RFC 2250), ARP, IPv4, IGMPv2/3, TCP/UDP

FEC

- Pro-MPEG Forum Code of Practice #3 release 2 (CoP3)/ SMPTE 2022-2007 (Columns and Rows)
- 1-7 TS packets per IP packet (configurable) with L&D following the range:
 - L * D < 100
 - 1 < L < 20
 - 4 < D < 20

User Configurable Network & Multicast Parameters

Source IP address:

- IP Subnet mask, Gateway

Destination IP address:

- Unicast & Multicast

UDP Ports:

- User definable

Local MAC address:

- User definable

Video Parameters

Inputs

- HD-SDI/SDI: SMPTE 292M SMPTE 259M/ TU-R BT.656 with embedded audio
- SD version, composite PAL/NTSC
- Video Encoding (MPEG-2)

SD

- 420MP@ML 1.5 – 15Mbits
- 422MP@ML 2 – 50Mbits

HD

- 420MP@HL 8 – 80Mbits
- 422MP@HL 8 – 80Mbits

HD Resolutions

- 1080psf @ 30, 29, 25, 24, 23
- 1080p @ 30, 29, 25, 23
- 1080i @ 60, 59, 50
- 720p @ 60, 50

SD Resolutions

- 480 x 720 NTSC
- 480 x 704 NTSC
- 576 x 720 PAL
- 576 x 704 PAL

Delay (encoding)

- Typically, less than 50ms

Scrambling

- BISS 1 & E Encryption

Data Channel

- RS232 @ 9600/19200/38400 baud

Audio Encoding

- MPEG-1, Layer 2 128kbs – 384kbs/channel (Audio A & B & C)
- SMPTE 302 2.4MB/s linear PCM/ Dolby pass through (Audios A, B, C & D)
- HPA Control Option
- Integrated HPA controller for RS485 serial controlled TWTA/SSPA – Xicom, CPI, e2V, Paradise supported, others to order
- Control via L-Band using AUC5000 series converter or via direct cable connection

Audio Parameters

Inputs

- 2 analogue stereo pairs/4 mono
- 600Ω impedance plus 6 channels embedded in SDI/Linear
- PCM, Dolby E pass through with Dolby E auto-align

Performance

THD

- <0.1% +18 dBm max input level

S/N

- >66 dB RMS

Frequency response

- =20 Hz – 20 KHz +/- 0.5dB
- Crosstalk better than 60 dB

Remote Control

- RS485, 2400 – 9600 baud
- Ethernet/Web browsers/SNMP

Web Browser

- Supporting Internet Explorer 7 & 8, Firefox, Safari and Opera

Connectors

CVBS

- 75Ω BNC female

(HD) SDI

- 75Ω BNC female

ASI IN

- 75Ω BNC female

ASI/70MHz out

- 75Ω BNC female

RF Output & Monitor

- 50Ω N – female

Combiner-In

- 50Ω TNC female

Audio Input

- 15W D type male breakout to 4x XLR provided

Data/Remote/Status/HPA Control

- 15W D type female
- 2x USB for field upgrades

Ethernet/Web Interface

- RJ45 10/100/1000 Base-T

Power

Frequency:

- 47 to 63 Hz @ <60W

Operating voltage:

- 100 to 240 VAC +/- 10%

Physical

Size

- 210mm wide by 350mm deep (8.27" wide by 13.78" deep)
- 1U half-rack width

Weight

- 1.9kg approx. (4 lbs.)

Environmental

Temperature

- Operational
 - 0°C to +50°C (32°F to 122°F)
- Storage
 - -20°C to +70°C (-4°F to 158°F)