

DVE4000 Digital Video Exciter

- The DVE4000 is a combined MPEG encoder, Modulator and Frequency Upconverter available with a number of output frequencies, all contained within a single 1U rack unit.
- Output options of ASI, 70 MHz, L, C, X, Ku and DBS frequencies
- L-band monitor (L and SHF O/P) units
- DSNG (DVB-S) and DVB-T options
- DSNG2 ready
- QPSK, 8PSK 16QAM or 64QAM
- MPEG-2 4:2:0 or 4:2:2 encoding
- 4 audio channels (analogue or embedded SDI)
- BISS conditional access
- Normal or very low delay (typ. 50mS)
- ASI I/P & O/P for re-multiplexing
- Integral colour bar and tone generator for line up purposes



Specification

RF PARAMETERS

Output Frequency Range

ASI, 70 MHz
L-Band / 950 to 1750 MHz
C-Band / 5.85 – 6.65 GHz
Ku-Band / 13.75 – 14.5 GHz
X band / 7.9 – 8.4 GHz
DBS-Band / 17.3 – 18.1 or 17.6 – 18.4 GHz

Frequency Step Size

Synthesised in 1 KHz steps

Frequency Stability

$\pm 2 \times 10^{-8}$

Output Power Level

70 MHz / L-Band -10 dBm,
Option
+10 dBm @ L-band
C / X / Ku / DBS +15 dBm min

Gain Adjustment

40 dB min. in 0.1 dB steps

Off ratio

70 dB

Gain Variation

± 2 dB full band ± 0.25 dB 24Hr @
constant temperature

Phase noise

To IESS 308/309

Spurious

-70 dBc /4 KHz

L-Band monitor

Present on L/C/X/Ku/DBS models

Options

Combining with external signal @ 70 MHz
Combining with external signal @ L-band
50 MHz reference added to L band.

VIDEO PARAMETERS

Inputs

1 composite video: PAL / NTSC

Option

1 SDI; 270 Mb/s (with embedded audio)
ANSI / SMPTE 259M / ITU-R BT.656.

Performance

Diff Gain / Phase

$<1\%$ $<1^\circ$

Signal / Noise

>56 dB

Luminance

Bandwidth 5.5 MHz
Non linearity 1%
 $<1\%$ K K-pulse/ bar
0.05% K Kbar

Chrominance

Non linearity 1%

VIDEO ENCODING

Data Rate

1.0-15 Mbits @ 4:2:0

Delay <200 ms

Option

1.0 - 41 Mbits/s @ 4:2:2

Option

To 50 Mbits/s ASI

Option

Low Delay 50 ms <100 ms

Option

ASI input to multiplex with local encoder

Option

BISS 1 & E Encryption.

MODULATION

DSNG (DVB-S) DSNG-2 READY

QPSK 1.0 – 26.7 Msym/s

Option

QPSK 1.0 – 37.5 Msymb/s

FEC

1/2, 2/3, 3/4, 5/6, 7/8

Option

8PSK / 16QAM / 64QAM

Option

Switchable to DVB-T @ 70 MHz output, 2K
carriers, 1/32, 1/16, 1/8, 1/4 Guard Interval.

Data Channel

RS232 @ 9600 / 19200 / 38400 baud

AUDIO PARAMETERS

Inputs

2 analogue stereo pairs / 4 mono
600 Ω / 20k Ω input impedance
Or 2 dual / 4 mono embedded in SDI
(option)

Option

AES/EBU (2 pairs) inputs

Performance

THD $<0.1\%$ +18 dBm max input level

S/N >66 dB RMS

Frequency Response 20 Hz-18 KHz ± 0.25 dB

Crosstalk >60 dB

Encoding

MPEG-2 128 kbs – 384 kbs / channel
MPEG layer 1
Linear PCM

Remote Control

RS232 / 485 2400 – 9600 baud

Power

Frequency 47 to 63 Hz @ <80 W

Operating Voltage 100 - 240 Vac $\pm 10\%$

Physical

Temperature 0 to +50°C operating

Size 1RU chassis by 550 mm deep

Weight 6.6 Kg approx.

CONNECTORS

Video

75 Ω BNC

RF Output

50 Ω BNC - female @ 70 MHz

50 Ω N - female @ L/C/X/Ku/DBS-Band

Audio input

15W D Female; break out cable to 4 x XLR's

ASI input / output

75 Ω BNC

Data/ Remote/Status

25W D Male