Advanced Broadcasting Electronics

MPEG-2 ENCODERS +COFDM MODULATOR (DVB-T)

DME 1000/T Series

THE HIGH QUALITY, PROFESSIONAL AND REALLY COST-EFFECTIVE SOLUTION

FEATURES

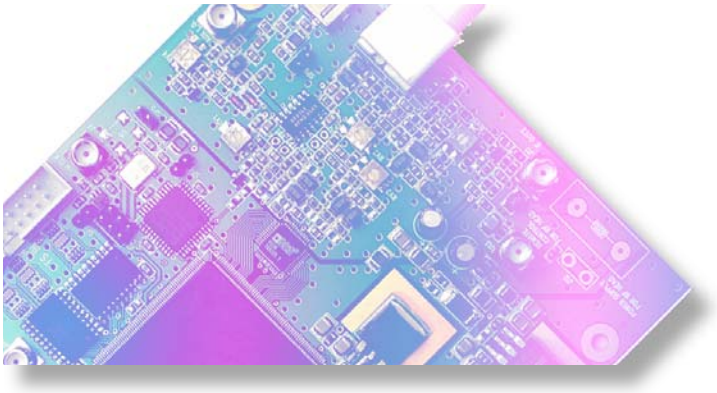
- ✧ 1 to 4 real time MPEG-2 video / dual audio Encoders (Main Profile @ Main Level - 4:2:0) and Multiplexer
- ✧ Full D1 encoding resolution with up to 720 horizontal pixels
- ✧ Optional DVB-ASI or DVB-SPI Transport Stream output
- ✧ User configurable Encoders settings through RS232 port (GOP size and structure, resolution, filters, bit rate, ...) + four easy to recall pre-defined factory settings.
- ✧ Teletext extraction from analog video input and reinsertion in the transport stream (option for models with multiplexer board)
- ✧ COFDM high performances DVB-T modulator (ETSI EN 300 744) - 2K/8K; 6,7MHz and 8 MHz operation; Automatic Transport Stream adaption (with PCR time restamping). Other modulation options: QPSK (DVB-S); QPSK, 8PSK, 16QAM (DVB-DSNG); 16QAM (DVB-C / MMDS)
- ✧ IF 36 MHz output (option: IF 70MHz or frequencies up to 2700 MHz)
- ✧ User-friendly local control with front panel LCD display and keypad
- ✧ RS485/RS232 remote control interface option
- ✧ Stand-Alone Unit 1U high

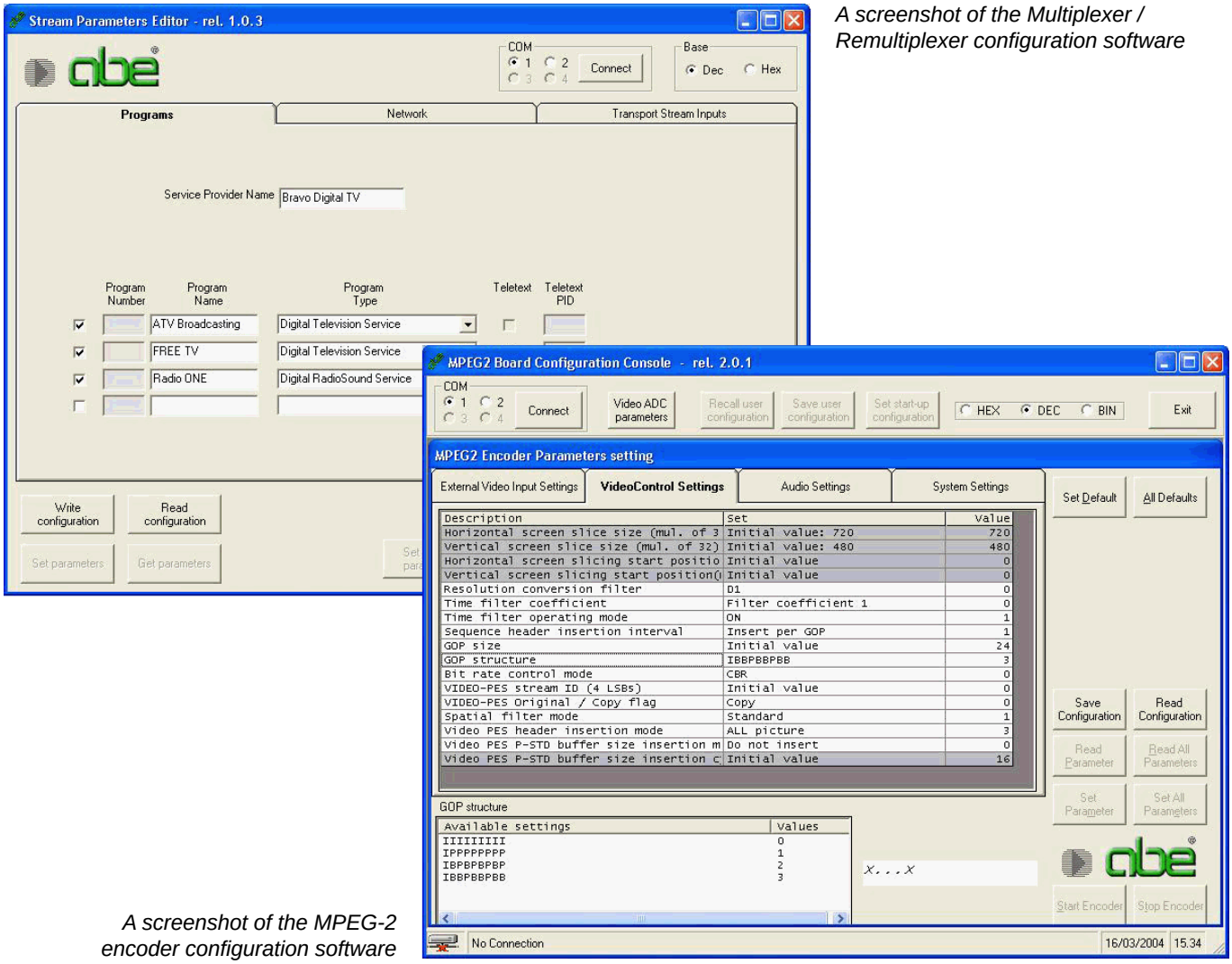
APPLICATIONS

- ✧ Digital terrestrial transmitter encoders + IF Modulator (COFDM/DVB/T)
- ✧ Digital Microwave Link Encoders + IF Modulator (OFDM mobile link)

MPEG-2 Encoder

VIDEO INPUTS	
Video input format	Analogue: Composite PAL / NTSC, Y-C (S - video) Digital: D1 (ITU-R 656) 8 Bit Parallel (internal connector) Option: SDI (Serial Digital Interface with embedded audio or with AES/EBU audio input)
Composite video input	1Vp-p / 75Ω / BNC socket
Composite video filter	Notch or Comb (selectable)
Pre-processing	TBC (Time Base Corrector) Noise Reduction Filter
VIDEO ENCODING	
Standard	ISO / IEC 13818-2 MP@ML (MPEG-2 4:2:0)
Bit rate	Up to 15 Mb/s
Supported resolutions	Full D1, 3/4 D1, 2/3 D1, 1/2 D1, SIF, QSIF
Picture size	Horizontal: up to 720 pixel in 32 pixel steps. Vertical: PAL - up to 576 pixel in 32 pixel steps NTSC - up to 480 pixel in 32 pixel steps
Picture encoding type	I,P,B
GOP Structure	Flexible
AUDIO INPUTS AND ENCODING	
Audio input format	Analogue: Two (mono, stereo, dual, joint stereo) Digital: LR Multiplex Serial (I2S) (internal connector) Option: SDI (Serial Digital Interface with embedded audio or with AES/EBU audio input)
Analogue audio inputs	0dBu (adjustable) / 600Ω balanced / mini-DIN 6 pole
Sampling frequency	32KHz, 44.1 KHz, 48KHz
Encoding standard	ISO / IEC11172-3 (MPEG-1 audio) layer 1/2- compliant
Bit rate	Max. 448Kb/s
STREAM AND INTERFACES	
Stream type	Transport stream
System multiplexing	ISO / IEC 13818-1 (MPEG-2) - PAT and PMT tables
System bit rate	Standard settings: 1.6875 / 3.375 / 6.75 / 13.5 / 27 Mb/s (option: up to 50 Mb/s with synthesized / fixed - special frequency or external clock)
OTHER SPECIFICATIONS	
Pre-settings	N°4 Factory preset + N°4 User configurable (by software, via RS232 port)
Teletext data	Extraction from analogue video input





A screenshot of the Multiplexer / Remultiplexer configuration software

A screenshot of the MPEG-2 encoder configuration software

Multiplexer

MULTIPLEXING	
Tables	Add / modify (NIT, SDT...)
Settings:	fixed or by software via RS232 port
Optional output digital interface	DVB - ASI and / or DVB-SPI (LVDS levels)
Teletext data:	Optional insertion in the transport stream

COFDM Modulator

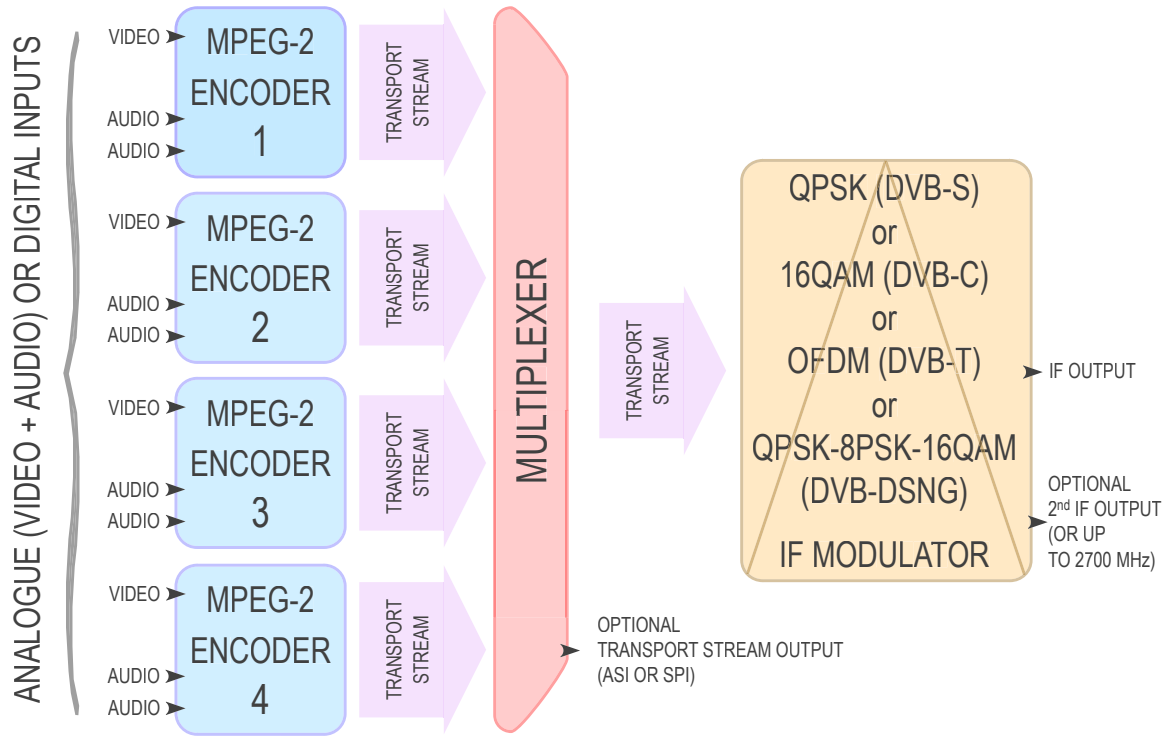
IFFT	2K, 8K selectable
Bandwidth	6, 7, 8 MHz selectable
Guard intervals	1/4, 1/8, 1/16, 1/32 selectable
Code rates	1/2, 2/3, 3/4, 5/6, 7/8 selectable
Data scrambling	Per ETSI EN 300 744
Modulation schemes (constellations)	QPSK, 16QAM, 64QAM selectable
Bit rate	Up to 31,67 Mb/s (according to bandwidth, constellation, guard interval and code rate settings)
Network mode	MFN (options: SFN; hierarchical)

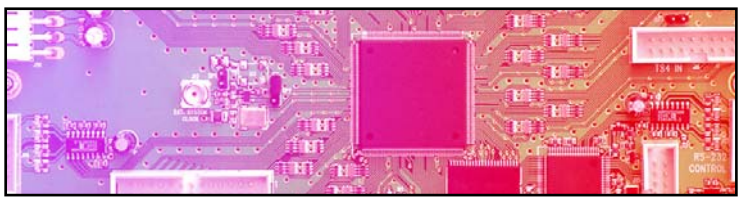
Input digital interface	DVB - ASI MPEG2 Transport Stream (BNC socket) options: DVB - SPI (LVDS levels); 2nd Transport Stream input with near seamless automatic switching
IF output frequency	36MHz ±1MHz in 1Hz steps (option: IF 70MHz or upconverter with output frequency up to 2700 MHz)
Output impedance and connector	50Ω BNC socket (option: 75Ω)
Outer code	Reed Solomon (204, 188, T=8)
Interleaving	Convolutional, I=12
Data scrambling	Per ETS 300 421

General Characteristics

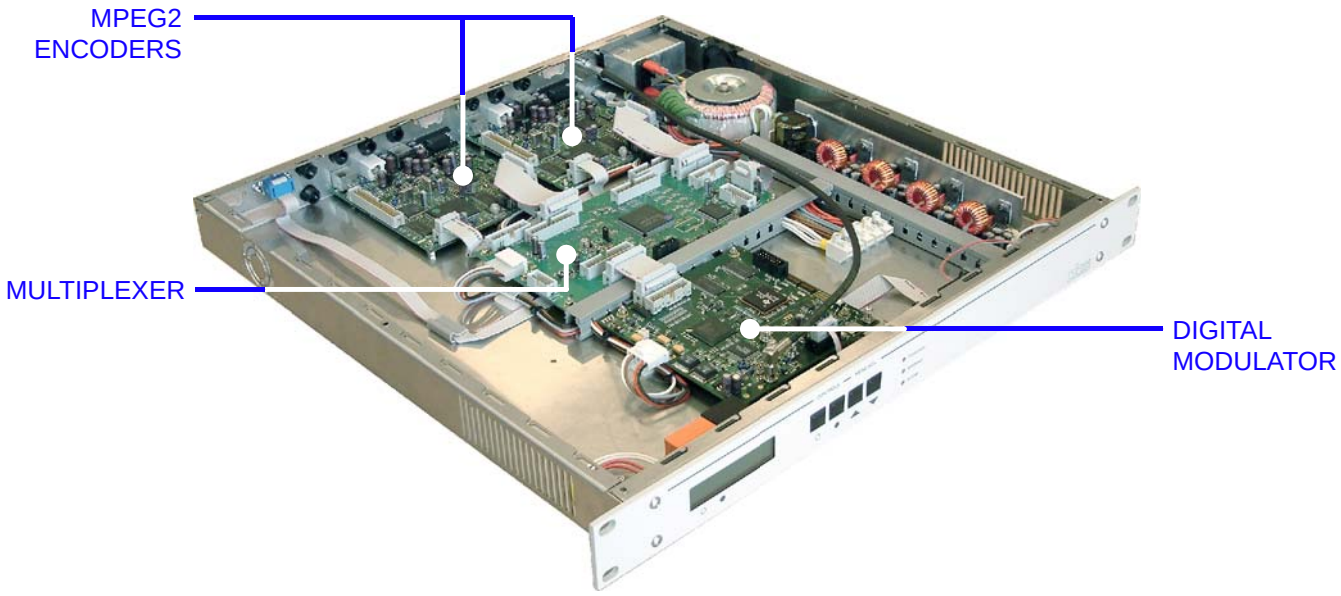
GENERAL SPECIFICATION	
Comunication port	RS 485 (remote control option)
Power Supply	220 Vac ±10% 50/60Hz (different power supplies and tolerances available on request)
Housing	Rack drawer 19" 1U
Operating temperature range	0 to 45°C

DME 1000 SERIES MPEG-2 ENCODERS + DIGITAL MODULATOR GENERAL BLOCK DIAGRAM





DME 1000 SERIES: MPEG2 ENCODERS + DIGITAL MODULATOR



The DME 1000 series can be equipped with 1 or 2 or 3 or 4 MPEG2 encoders, a multiplexer/remultiplexer and a digital modulator (QPSK - DVB-S or QAM - DVB-C or QPSK/8PSK/16QAM - DVB-DSNG or OFDM - DVB-T). In the picture: the model "DME 1002"

Available models in the DME 1000/T series

MODEL	NUMBER OF MPEG-2 ENCODERS	MULTIPLEXER	COFDM MODULATOR (DVB-T)	NOTES
DME 1001-B/T	1		✓	only PAT & PMT tables
DME 1001/T	1	✓	✓	
DME 1002/T	2	✓	✓	
DME 1003/T	3	✓	✓	
DME 1004/T	4	✓	✓	

Available models in other series

DVM1000/T			✓	ASI T.S. input (optional: SPI)
EMX 1001-B	1			ASI T.S. output (optional: SPI) only PAT & PMT tables
EMX 1001	1	✓		ASI T.S. output (optional: SPI)
EMX 1002	2	✓		ASI T.S. output (optional: SPI)
EMX 1003	3	✓		ASI T.S. output (optional: SPI)
EMX 1004	4	✓		ASI T.S. output (optional: SPI)

Other modulator options: QPSK (DVB-S); 16QAM (DVB-C / MMDS); QPSK / 8PSK / 16QAM (DVB - DSNG).

Please consult factory for exact equipment configuration and options

NOTES

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