

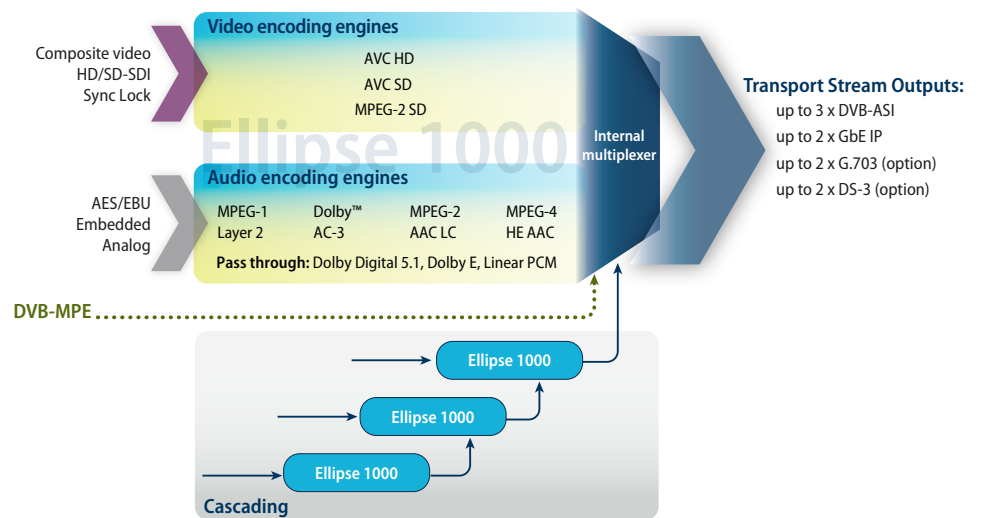
HIGHLIGHTS

- Simultaneous MPEG-4 AVC and MPEG-2 SD encoding
- Upgradeable to MPEG-4 AVC HD
- 4:2:2/4:2:0 encoding profiles for highest video quality (4:2:2 - MPEG-2 only)
- Low-delay mode
- Up to 4 audio stereo channels or 8 mono channels
- Simultaneous outputs via IP, DVB-ASI
- Advanced multiplexing capabilities for cascading and multi-services
- Logo insertion
- Supports wide range of VBI data formats
- Audio and video test pattern generator
- BISS mode 1 & BISS-E
- Management via embedded Web server, External SNMP and local front panel
- Supports SCTE-35 messages insertion
- DVB /ATSC compliance

The Ellipse 1000 encoder is ideal for fixed contribution over IP and legacy ATM/PDH/SDH networks. A professional, high quality encoder, it provides efficient bit-rate utilization for delivery of high quality video. The Ellipse 1000 simultaneously encodes video feeds as MPEG-2 SD 4:2:0/4:2:2 and MPEG-4 AVC SD 4:2:0, providing a smooth and cost-effective migration path from MPEG-2 CBR to MPEG-4 AVC CBR encoding



schemes. It is firmware-upgradeable to MPEG-4 AVC HD as well, making it one of the most versatile encoders available and further extending its migration path. The field-proven, easy-to-use Ellipse 1000 can operate on a cost-efficient standalone basis with no need for external multiplexers or PSI generators.



Ellipse 1000/1000H block diagram

BUSINESS BENEFITS

- **Multi-format video encoder** - Versatile design offers firmware migration path across video codecs and formats, providing operational flexibility, business continuity and reduced CAPEX.
- **Low CAPEX** - The Ellipse 1000H provides optional support for MPEG-4 AVC HD through a firmware upgrade, eliminating the need to purchase an additional encoder when migrating to MPEG-4 AVC HD encoding.
- **Integrated multiplexing** - A single “master” Ellipse 1000 encoder can aggregate up to 50 Mbps of content from “Slave” encoders into a single MPTS output, eliminating the need for external multiplexers.
- **Flexible feeds to diverse networks** - Content can be fed to multiple networks simultaneously by utilizing built-in dual GbE IP and DVB-ASI outputs. G.703/DS-3 outputs are available as a hardware option, and enable simultaneous output of content in all three formats.
- **Stand-alone encoder requires no external devices** - The Ellipse 1000 does not need an external PSI generator or multiplexer. Box count and rack space are reduced.
- **Remote management** - The Ellipse 1000 can be managed from remote locations using intuitive web-based management. It also supports SNMP for integration with the user’s choice of external NMS application.
- **Content protection** - Prevent signal interception with industry standard BISS (Basic Interoperability Scrambling System) scrambling.

TECHNICAL BENEFITS

- **Compact, low power footprint**: The Ellipse 1000 only occupies 1-RU without the need for ventilation space above or below.
- **Video encoding** - The Ellipse 1000 offers quality video encoding at data rates of up to 50 Mbps, utilizing advanced MPEG-2 and MPEG-4 AVC ASIC technologies which offer broadcast video quality. The Ellipse 1000 supports simultaneous content encoding in MPEG-2 and MPEG-4 AVC formats in a variety of standard video resolutions.
- **Audio encoding** - The Ellipse 1000 encoder supports up to four quality stereo audio channels (or up to 8 mono channels) as either embedded/AES or two analog stereo channels inputs. A range of sampling rates, internal SRC (Sample Rate Converter) and an advanced coding scheme insures reliable and high quality audio encoding.
- **Low latency** - In low-delay mode, the Ellipse 1000 enables interaction without awkward pauses. Available for MPEG-2 4:2:0 or 4:2:2 encoding, as well as for the MPEG-4 AVC SD/HD.
- **Versatile outputs** - Dual GbE IP and DVB-ASI outputs enable simultaneous output of content in both transports. Encoded content can be monitored without dedicating valuable outputs to the task. ATM and PDH/SDH output options are available as well to support legacy networks.
- **Resilience against packet loss** - SMPTE 2022 (formerly Pro-MPEG CoP 3) FEC enhances link robustness to minimize packet loss by inserting forward error correction (FEC) packets in the transport stream. These packets are used by the reception device to detect lost packets and recover from losses when they occur.
- **Efficient multicast of multiple services** - For IP output, the Ellipse 1000 supports the creation of multiple SPTS which can be multicast to 16 different ports or IP addresses. A separate PSI is generated for each SPTS. User may choose optional BISS scrambling with a separate scrambling key for each SPTS.
- **SCTE-35 insertions** - The Ellipse 1000 supports the insertion of SCTE-35 messages driven by analog cue-tones permitting stream preparation for ad insertion.

VIDEO SPECIFICATIONS

Video Compression and Bit-Rates	MPEG-2 4:2:0 MP@ML 100Kbps - 15Mbps MPEG-2 4:2:2 P@ML 4Mbps - 50Mbps SD MPEG-4 AVC MP@L3 300 Kbps to 15 Mbps HD MPEG-4 AVC HP@L4 or MP@L4 1 Mbps to 25 Mbps
HD Resolutions	1080i x 1920, 1440, 1280, 960 pixels 720p x 1280, 960 pixels
Formats	1080i-25Hz, 29.97Hz; 720p-50Hz, 59.97Hz
Standard Definition	
Horizontal Resolution	720,704, 640,544, 528, 480, 368, 352 pixels
Vertical Resolution	NTSC-480, 240 lines ; PAL-576, 288 lines
Pre-Processing MPEG-2/MPEG-4	
Scene cut detection	
Analog/digital TBC (Time Base Corrector) to handle raw VTR outputs	
Automatic frame re-sizing	
Motion compensated temporal filter (MPEG-4 AVC SD only)	
Ancillary Data and VBI	CC EIA608 (MPEG-2), WSS, Teletext (WST), VPS, AMOL,TV Guide
MPEG-4 AVC Video in-loop Processing	De-blocking filter

AUDIO SPECIFICATIONS

Number of Channels	Up to 4 digital stereo channels AES/EBU, embedded or 2 analog channels Option to support up to 8 digital channels AES/EBU, embedded or 8 analog channels
Audio Formats	MPEG-1 Layer 2 Dolby Digital™ 2.0 (AC-3) (optional) MPEG-2 AAC LC (optional) MPEG-4 HE-AAC v1, v2 (optional) Dolby Digital 5.1 pass-through Linear audio pass-through (optional) Dolby-E pass-through (optional)
Operating Modes	Joint stereo, single channel, dual channel
Sampling Frequencies	32kHz, 44.1kHz, 48kHz

INPUTS AND OUTPUTS

Video Inputs	
Ellipse 1000	SDI (SMPTE-259M) Composite (PAL/NTSC)
Ellipse 1000H	HD-SDI (SMPTE292M) Support video loop through
Audio Inputs	Four balanced XLR inputs Eight terminal block inputs (optional) Integrated sample rate converter (SRC)
DVB-ASI Input	Built-in multiplexer for encoder cascading Passive loop-through for cascading
Sync Lock	Black burst loop-through
Data	Asynchronous RS232 up to 115Kbaud MPE (Multi Protocol Encapsulation) up to 20Mbps

VIDEO AND AUDIO OUTPUTS

DVB-ASI Output rate	3 x DVB-ASI 350Kbps – 70Mbps
DVB scrambling (optional)	BISS mode 1, BISS-E
DVB-PDH (optional)	
Interface	ATM (AAL-1)
Data rate	DS3, E3
Telecom G.703 (Optional)	Unframed E1, E2, E3 188/204 bit FEC
IP Output	Dual GbE IP output, RJ-45, auto-negotiation, auto MDI/MDIX crossover UDP/RTP TOS, TTL configurable values SMPTE-2022 FEC (optional) Supports M-SPTS (optional)

SYSTEM MANAGEMENT

Remote	Web-based management, SNMP
Local	Graphical easy-to-use front panel with quick access keys and alphanumeric keypad
Software Upgrade	Easy to use FTP (File Transfer Protocol)
Dry contact alarms (GPI)	1 output for various statuses and faults
Presets	Up to 60 different configurations

POWER

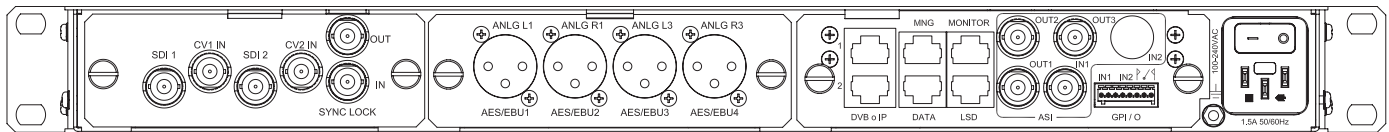
Input Voltage Range	90-260VAC, -48 DC (optional)
Power Consumption	up to 75W

ENVIRONMENTAL

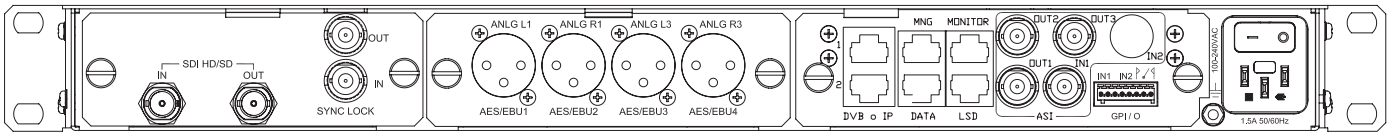
Operating Temperature Range	0°C to +50°C
Storage Temperature Range	-20°C to +70°C
Operating Humidity	85% non-condensing
Electromagnetic Compliance	FCC part 15, EN55022, EN55024
Safety	EN60950
RoHS	Directive 2002/95/EC

PHYSICAL

Dimensions (W x H x D)	17.1" x 1.75" x 19.1" (1-RU) 43.9 cm x 4.4 cm x 48.9 cm
Weight	10 lbs. / 6 kg



Ellipse 1000



Ellipse 1000H