



SDTV MPEG 2 ENCODER & DECODER

SIVAC 1000 is SAPEC's MPEG2 SDTV (ISO/IEC 13818) encoder (MVE)/decoder (MVD) product family for video and audio transmission via DVB, IP and PDH. Encoders and decoders are 1 RU high and are housed into 19" racks.

SIVAC 1000 uses the latest breakthroughs in MPEG-2 compression technology to deliver a high level of integration and minimum encoding delay. The system can work with MP @ ML (**SIVAC 1000**) as well as 422P @ ML (**SIVAC 1200**) profiles, enabling the user to select the compression ratio and link bitrate both for audio and video channels.

SIVAC 1000 directly supports the transmission of multiple programs via PDH, ensuring link scalability and improved bandwidth usage, without requiring additional adaptors or multiplexers.

SIVAC 1000 uses SAPEC exclusive technology the **FastIPsync**® that reduce the delay and deliver a better image quality due to the synchronizations algorithm that adapts dynamically to the IP network condition.

The encoder's bi-directional E3/DS3 (Loopback, Drop-Insert...), DVB-ASI and IP (RTP/UDP) outputs can work simultaneously, thus providing path redundancy to the links.

SIVAC 1000 series supports configuration and alarm display via a web browser and front panel, and also provides an SNMP agent for external monitoring. The equipment can also be managed centrally and simultaneously with SIVAC-NMS management system.

BUSINESS BENEFITS

Latency – The codec solution have less than 140 ms delay in encoding and decoding audio and video in PDH and ASI transmission making it one of the fastest MPEG2 SD encoder on the market.

Reliability – The COP3/FEC function and build-in 1+1 redundancy provides a reliable audio and video signal transport.

Flexibility – The feature to transmit the transport stream by ASI, PDH and IP simultaneous, provide a more secure transmission of audio and video by allowing redundant path.

Lowest power consumption – with only 25w(per unit) it allows an easier electric installation and economy on power consumption.

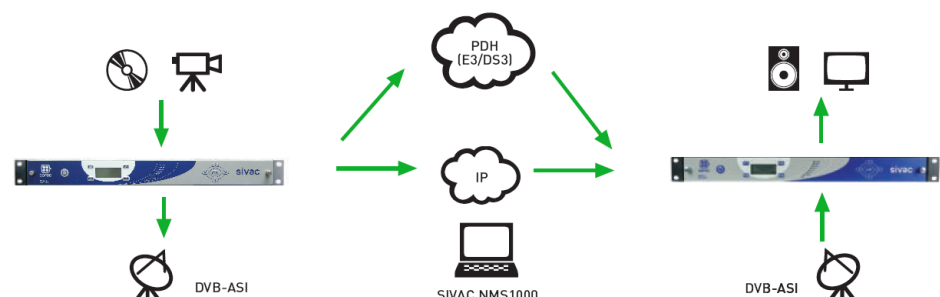
Easy configuration – Equipment has a front panel that facilitates on-site configuration of the equipment easier.

APPLICATIONS

SIVAC 1000 family supports multiple applications in different areas like:

- DIGITAL terrestrial and satellite applications like DVB-T, DVB-S, ATSC, etc.;
- Multi-channel links via PDH;
- Contributions for professional use;
- Video over IP networks;
- Distributions networks via IP, ASI or PDH. Point-to-point transmissions;

TYPICAL APPLICATION



CHARACTERISTICS

- Support the standards:
 - DVB-T
 - DVB-S and
 - ATSC
- Support for SI information services
- Profiles:
 - 422P@ML
 - MP@ML
- Low encoding/decoding delay
- Video inputs:
 - 1xSDI
 - PAL & NTSC Analog input
- Resolutions from 352x576 to 720x576
- Up to 8 analog and/or AES/EBU and/or SDI Embedded audio channels
- Delivery of video blanking interval information: Teletext, VITS,...
- Internal video and audio pattern generator
- Front panel with display and configuration
- Transmission via:
 - DVB-ASI
 - PDH (E3/DS3)
 - IP(RTP/UDP) (SMPTE 2022)
- Remote software upgrading
- Contact-closure alarms
- Multiple management and configuration interfaces:
 - IP interfaces
 - TCP/IP from a web browser
 - SNMP-based alarms
 - Centralized management with SIVAC NMS

TECHNICAL SPECIFICATIONS

SIVAC 1000 MVE encoder

Video input

Digital Inputs	
Number of inputs:	1 x BNC
Formats:	SDI 4:2:2(SMPTE 259M)
Automatic Cable Equalization:	>250m Belden 8281

Analog Inputs	
Number of inputs:	1 x BNC
Formats:	PAL(TU624-4) , NTSC (SMPTE 170M)
Impedance / Nominal Level:	75Ω / 1Vpp
Bandwidth:	>5.8Mhz
S/N Lum Wt.:	>68dB
Cable Eq / level adjustment:	>100m

Video Input Features	
Built-in video generators:	Color Bars Generator
Vertical interval processor:	VITS, Transparent and Teletext

Monitor Outputs	
AV-Monitored:	1 x BNC Analog video input
LOOP:	1 x BNC Analog video

Audio Input

SDI Embedded	
Number of outputs:	Up to 8 SDI embedded channels.
Analog Inputs:	
Number of inputs:	Up to 8 mono or 4 stereo channels
Format:	Balanced analog audio
Impedance:	600Ω or High-Impedance (>22 KΩ)
S/N:	80dB rms, >62dBq Ops
Features:	Audio pattern generator

Digital Inputs:	
Number of inputs:	4 stereo channels
Format:	AES/EBU
Sample frequency:	32Khz, 44.1 Khz or 48Khz
Impedance:	110 Ω, balanced

Video encoding

Standard:	MPEG-2(ISO/IEC 13818)
Profile / Level:	MPEG-2 422P@ML; 2,5 to 50 Mbps(Optional) MPEG-2 MP@ML; 1 to 15 Mbps
Configurable GOP settings:	Open and Close GOP, GOP size,I,P,B Images
Encoding Resolutions:	525 : 720 x 480, 704 x 480, 640 x 480, 544x480, 528x480, 480x480, 352x480 625 : 720 x 576, 704 x 576, 640x576, 544 x 576, 528x576 , 480x576 ,352x576
Delay:	< 140 ms encoding and decoding with MVD
Extra Delay:	Selectable extra delay feature to work with middle down gamma decoders

Audio encoding

Audio Formats:	MPEG-1 Layer II (ISO/IEC 11172-3)
Encoding Bit-Rates:	From 64 kbps to 384 kbps (per stereo channel)
Operating Modes:	Stereo, Joint Stereo, Mono and Dual Mono

Internal Multiplexer

PMT:	Up to 4 PMT
PMT Tables:	PID, Type of Service Programa Name

Network Interfaces

PDH	
Number of inputs:	1xBNC
Number of outputs:	1xBNC
System Specifications:	E3(G.751), DS-3(C-bit parity)

ASI	
Number of outputs:	1xBNC
System Specifications:	ASI
Standard:	EN50083-9

Ethernet	
Number of outputs:	1xRJ-45
Jitter Reduction:	FastIPsync
Interface:	10/100 Mbps
Encapsulation:	TS over IP: UDP, RTP, and RTP with COP3 FEC (SMPTE 2022) (Multicast / Unicast / Multi-Unicast with 2 streams)

WEB Browser:	WEB Browser access
NMS:	SIVAC NMS Control (optinal SAPEC NMS software)

System management

Power	
Input Voltage Range:	AC 105 - 240 V and DC 36V - 72V
Typical Consumption:	<18W
Operating Temperature:	0°C to 50°C

SIVAC 1000 MVD decoder

Video Output

Digital Outputs	
Number of outputs:	2 x BNC
Formats:	SDI 4:2:2(SMPTE 259M)

Analog Outputs	
Number of outputs:	2 x BNC
Formats:	PAL(TU624-4) , NTSC (SMPTE 170M)
Impedance / Nominal Level:	75Ω / 1Vpp
Bandwidth:	>5.8Mhz
S/N Lum Wt.:	>68dB
Cable Eq / level adjustment:	>100m

Input Features	
Vertical interval processor:	VITS, Transparent and Teletext locally inserted

Audio Output

SDI Embedded	
Number of outputs:	Up to 8 SDI embedded channels.
Analog Outputs	
Number of outputs:	Up to 8 mono or 4 stereo channels
Format:	Balanced analog audio
Impedance:	600Ω or Low-Impedance (<47Ω)
S/N:	80dB rms, >62dBq Ops

Digital Outputs	
Number of outputs:	4 stereo channels
Format:	AES/EBU
Sample frequency:	32Khz, 44.1 Khz or 48Khz
Impedance:	110 Ω, balanced

Video decoding

Standard:	MPEG-2(ISO/IEC 13818)
Profile / Level:	MPEG-2 422P@ML; 2 to 50 Mbps(Optional) MPEG-2 MP@ML; 1 to 15 Mbps
Decoding Resolutions:	525 : 720 x 480, 704 x 480, 640 x 480, 544x480, 528x480, 480x480, 352x480 625 : 720 x 576, 704 x 576, 640x576, 544 x 576, 528x576 , 480x576 ,352x576
Delay:	< 140 ms encoding and decoding with MVE

Audio decoding

Audio Formats:	MPEG-1 Layer II (ISO/IEC 11172-3)
Decoding Bit-Rates:	From 64 kbps to 384 kbps (per stereo channel)

Internal Demultiplexer

PMT:	Up to 4 PMT
PMT Tables:	PID, Type of Service Programa Name

Network Interfaces

PDH	
Number of inputs:	1xBNC
Number of outputs:	1xBNC
System Specifications:	E3(G.751), DS-3(C-bit parity)

ASI	
Number of inputs:	1xBNC
System Specifications:	ASI
Standard:	EN50083-9

Ethernet	
Number of inputs:	1xRJ-45
Jitter Reduction:	FastIPsync
Interface:	10/100 Mbps
Encapsulation:	TS over IP: UDP, RTP, and RTP with COP3 FEC (SMPTE 2022) (Multicast / Unicast / Multi-Unicast with 2 streams)

SNMP:	Support for SNMP V2
Front:	Front Pannel controls with display

Environmental

Physical	
Dimensions :	19" wide x 1RU high x 280 mm

SAPEC reserves the right to change the specifications without notice



Local Distributor:

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