

VNP-400 Video Network Processor

High Performance, low latency leader.

IPtec specializes in facilitating high performance, low latency services over IP networks.

IPtec provides reliable, high quality products for low latency video and telemetry services. These products enable customers to transport high quality video and telemetry signals over IP networks.

<http://www.iptec-inc.com>



**H.264 Video/Audio Codec or Dual Enc/Dec
Contribution quality video/audio IP transmission
Dual ASI/IP Gateway**

Future Proof by Software Upgrade to:

- **SMPTE 2022-6 transmission option**
- **H.264 & JPEG2000 Mezzanine Compression options**
- **SMPTE 2022-5/6 to H.264/J2K Gateway**
- **JPEG2000 to H.264 Gateway**
- **HEVC Encoding/Decoding and Gateway/Transcoding**
- **Dual Channel Genlock capability**

**Integrated Loopbacks, Test Patterns, and Alarms
Configuration via user-friendly WEB interface
SNMP Manageability**

Broadcast Quality Video & Audio Processing

The VNP-400 is a standalone, H.264 Contribution-quality video codec supporting one and two-way transmission of real-time video and audio signals over IP Networks. The system enables multiple, user selectable compression algorithms depending on Software and Hardware configuration options. The system also enables transmission of ASI signals over 1/10Gb/s IP networks.

Multiple Video/Audio user interfaces

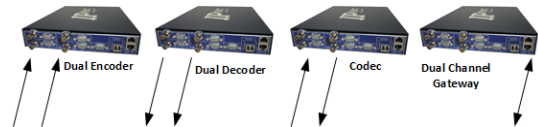
The VNP-400 encoder compresses a Standard or High Definition video source with accompanying audio signals for transmission over IP Networks.

The Encoder accepts NTSC, PAL composite video formats with analog audio, HDMI video with embedded audio streams as well as SDI/HD-SDI/3G-SDI video signals with embedded audio streams, and AES/EBU Audio signals.

Independent of the encoder configuration, the VNP-400 decoder reconstructs a SD/HD Video signal with accompanying audio signals from an IP packet stream. The recovered video and audio signals are available as baseband NTSC/PAL composite video signals with baseband audio signals, HDMI video signals with embedded audio streams and SDI/HD-SDI/3G-SDI video signals with up to 8 embedded audio pairs (16 Audio Channels per video channel).

Flexible System configurations

The VNP-400 is available in bi-directional codec configuration as well as single and dual Encoder or decoder configurations for uni-directional video/audio transmission for applications requiring high channel density in a small "foot-print" (up to 4 HD and 2 SD V/A channels per 1 RU). The VNP-400 is upgradable by software and supports Transcoding and Gateway functionality between SMPTE 2022-5/6, H.264 (MP, HP, 8/10-bit 420/422P), MPEG-2 (MP, HP, 422P) and (Optional) JPEG2000 standards.



Network Interface

The VNP-400 is equipped with both optical (1/10Gb/s) and electrical network interfaces, supporting 10/100/1000Mbps. Multiple bridged Ethernet interfaces provide flexible installation and interconnectivity options.

Powerful Management

The VNP-400 is remotely manageable via a standard WEB interface and SNMP. Performance monitoring and system configuration capabilities facilitate installation and management in large networks.

VNP-400 Overview and features

- Video Interfaces: HDMI and composite video I/O (NTSC & PAL), optional (Auto sensing SDI/HD-SDI/3G-SDI up to 8 pairs of embedded audio)
- Audio Interfaces: Analog baseband, HDMI with embedded audio, AES-EBU and SDI/HD-SDI/3G-SDI with embedded audio
- Serial data transmission (RS232, RS422 & others, "push to talk functionality")
- IP Encapsulation/De-encapsulation of DVB/ASI Streams or Compressed Video/audio (TS), ASI/IP Gateway functionality
- IP Encapsulation/De-encapsulation of AES/EBU Streams
- Multiple Video and Audio Compression algorithms
- Compression Latency: MPEG2/H.264/AVC-I 50/100 compression system Latency: Encoding 150mS, 200mS & 650mS, Decoding Latency 100mS & 300mS.
- Integral analog and digital video format conversion
- Video picture scaling
- Audio embedding and de-embedding
- Electrical & Optical Ethernet network/user interfaces
- UDP, RTP, RTP/w FEC (SMPTE 2022-1/2,) IP network protocols
- ARQ Option
- Uni-cast, Broadcast, and IGMP Multi-cast connections supported for each service.
- Remote Management
- Small "foot-print" with high Video/Audio channel density
- Multiple System configurations: Bi-directional video Codec (Encoder/Decoder), Uni-directional Single & Dual Encoders or Decoders
- Software Upgradable to support:
 - SMPTE 2022-6
 - JPEG 2000 Encoding/Decoding
 - Dual Stream Genlock Option
 - HEVC Encoding and Decoding
- Note for H.264 Encoding of 1080p60 video formats and appropriate software must be installed.

VNP-400 Technical Specifications

Base System interfaces

Baseband Video Input & Output

Composite 1Vp-p Video (PAL B/D/G/H/I/M/N & NTSC M), 75 Ohms unbalanced, BNC connector

HDMI Input & Output Interfaces

HDMI (720X480i30 to 1920X1080@60, with embedded audio support for SD & HD video)

Baseband Audio

Analog Audio Input ports

Density: 1 stereo or 2 mono
Format: balanced
Impedance: > 10Kohms
Max input level: +21 dBu
Connection: DB-9

Analog Audio Output ports

Density: 1 stereo or 2 mono
Format: balanced
Impedance: 25 ohms
Max output level: +21 dBu
Connector: DB-9

Serial Data port

Density: 1 port Bi-directional (RS232/422)
Connector: DB-9

Serial Digital Video/Audio interfaces

SDI Video configurable Input or output

Density: 2 BNC connector
Configurable for: 2 inputs or 2 outputs or 1 input & 1 output
Formats: SDI, HD-SDI, 3G-SDI (with support for embedded audio up to 8 pairs (16 Channels), DVB/ASI

Digital AES/EBU Audio Interface

Density: 2 ports

Configurable for: 2 inputs or 2 outputs or 1 input & 1 output

Format: AES/EBU, balanced 110 ohms

Connector: DB-9

Compression Options (Hardware configurations)

Video: No-compression (SMPTE 2022-5/6), MPEG-2, H264, AVC-I 50/100, Proprietary Low latency compression

Software upgradeable options:

- HEVC Encoding/Decoding
- JPEG 2000 Encoding/Decoding
- SMPTE2022 -6
- Dual Stream Genlock option

Audio: SMPTE302, MPEG-1 Layer 2, AAC-LC, HE-AAC

Remote Management

Built-in Web-based GUI and SNMPv2 and v3

Ethernet Network Interface

One pluggable SFP+ module. 1/10Gb/s Base-X
Two RJ45.10/100/1000Base-T

Physical Dimensions

1RU, 1/2-width 19". Two units fit in a 19": (H x W x D)
1.75" x 8.50" x 10.00" (4.45 x 21.59 x 25.54) cm

Environmental Conditions

Operating Temperature: 0 to 40°C (32F to 104F)
Storage Temperature: -40 to 70°C (-40F to 158F)
Relative Humidity: 5% to 90% (Non Condensing)

Dual Power Supply

100 - 264V AC (47 - 63Hz) < 70W