

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>



Flexible:

- **H.264 and JPEG-2000 Video/Audio Codec**
- **Dual Encoder or Dual Decoder**

Contribution Quality Video/Audio IP Transmission ASI/IP and IP-to-IP Gateway functionality

Simultaneous Triple Encoding Flexibility:

- **JPEG-2000 100 Mbps for Production**
- **H.264 High Bitrate 50 Mbps for Archiving**
- **H.264 Low Bitrate 12 Mbps for Monitoring**

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 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, 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 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: 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, 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. 3G-SDI encode compression latency: 650mS
- Integral analog and digital video format conversion
- Video picture scaling on decoder
- Audio embedding and de-embedding
- IP protocol conversion Gateway functionality
- Electrical & Optical Ethernet network/user interfaces
- UDP, RTP, RTP/w FEC (SMPT 2022-1/2), RTP with ARQ (RFC 3366), RTP with Seamless Switching (SMPT 2022-7) IP network protocols
- Dual output IP stream per video
- 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:
 - JPEG 2000 Encoding/Decoding
- Note for H.264 Encoding of 1080p60 video formats and appropriate software must be installed.
- RADIUS Client Authentication
- SCTE 104—35
- SMPTE 302 Audio-Only
- USGv6 Certified



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

DVI Input & Output Interfaces

DVI (720x480i30 to 1920x1080p60, 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 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

Serial Data port

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

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: MPEG-2, H264, AVC-I 50/100, Proprietary Low latency compression

Software upgradeable options:

- JPEG 2000 Encoding/Decoding
- 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