IPtec Incorporated

VNP-100
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

Standalone Video/Audio Codec, or Dual Enc/Dec
Broadcast Quality A/V Transmission over IP
Low Latency Video/Audio transmission option
Media Friendly Customer/User Interfaces
Integrated Loopbacks, Test Patterns, and Alarms
Configuration via user-friendly WEB interface
SNMP Manageability

Broadcast Quality Video & Audio Processing

The VNP-100 is a standalone, high-quality video encoder/decoder (codec) supporting uni– and bidirectional 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 Near-Loss-Less compressed SD & HD video over 10Gb/s IP networks.

Multiple Video/Audio user interfaces

The VNP-100 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-100 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 embedded audio streams.

Flexible System configurations

The VNP-100 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-100 also supports Transcoding between H.264 Profiles and H.264 & MPEG-2 formats.

Applications:

- Broadcast contribution and distribution
- Surveillance (including Real time surveillance)
- Tele-Presence
- Medical imaging
- Tele-robotics
- REMI
- News-Gathering

Network Interface

The VNP-100 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-100 is remotely manageable via a standard WEB interface and SNMP. Performance monitoring and system configuration capabilities facilitate installation and management in large networks.

VNP-100 Overview and Features

- Video Interfaces: Composite video I/O (NTSC & PAL), optional (Auto sensing SDI, HD-SDI, 3G-SDI with embedded audio)
- Audio Interfaces: Analog baseband, AES-EBU and SDI/HD-SDI/3G-SDI with embedded audio
- Close Caption and VITC (SMPTE 12M) data services supported
- Serial data transmission (RS232, RS422 & others, "push to talk functionality")
- IP Encapsulation/De-encapsulation of DVB/ASI Streams or Compressed Video/audio (TS)
- IP Encapsulation/De-encapsulation of AES/EBU Streams
- Multiple Video and Audio Compression algorithms
- Compression Latency: 2mS for Low latency compression schemes (Proprietary encoding) for 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
- Audio embedding and de-embedding
- Electrical & Optical Ethernet network/user interfaces
- UDP, RTP (SMPTE 2022-2), RTP/w FEC (SMPTE 2022-1), RTP/w ARQ (RFC 3366), RTP/w Seamless Switching (SMPTE 2022-7) IP network protocols
- 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, and Transcoding.
- 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-100 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 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 4 pairs), 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: MPEG-2, H264, AVC-I 50/100, Proprietary Low latency compression

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, ½-width 19". Two units fit in a 19": (H x W x D)
1.75" x 8.50" x 13.00" (4.45 x 21.59 x 33.02) cm

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

Power
100 – 264V AC (47 – 63Hz)< 60W