

TNP-100 Telemetry 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.

www.iptec-inc.com

Standards based Telemetry over IP, TMoIP
Analog IRIG timing and Video over IP
Four programmable multi-function IO ports
Multiple programmable Telemetry data formats
Low latency transmission over IP networks
Superior Flat Line response
Integrated Loopbacks, BERT, and Alarms
Managed via Embedded Web Server and SNMP



Multiple Services over IP Networks

The TNP-100 is a telemetry over IP (TMoIP) compliant network processor enabling transparent, low latency, bidirectional transfer of digital and analog signals over IP networks. The TNP-100 packetizes telemetry data and PCM data from analog sources, and transfers the packets across an IP network. Another TNP-100 is used to reconstruct the telemetry and PCM data to its original state.

Flexible, multi-function interfaces enable the network processor to be used in many different applications, where high performance and low latency are required.

The TNP-100 provides IP Network Processing for up to four independent digital and analog signal sources. Each multi-function interface can be independently configured as analog or digital, input or output. The digital signals include most standard interfaces such as TTL, ECL, PECL, LVPECL, LVDS, CML and RS-232. Balanced signals such as T1 and RS-422 are supported using an external transformer. Analog signals can include IRIG timing, video, radar and more.

Network Interface

The TNP-100 is equipped with both optical and electrical network interfaces all supporting 10/100/1000Mbps. Multiple bridged Ethernet interfaces provides flexible installation and interconnection options.

Multi Media Card Interface

The TNP-100 is equipped with a standard Multi Media Card Interface. This enables recording of telemetry, IRIG and video application data, easy access to alarm and configuration data, as well as transmission of user data already stored on the MMC card.

Diagnostics Tools

The TNP-100 provides statistics data and diagnostics tools for network installation and troubleshooting. The tools include test pattern generation and Bit Error Rate Testing (BERT).

Superior Performance

The TNP-100 supports individual port timing recovery, using adaptive clock techniques to regenerate source timing information. The user may optimize operation for different networks and applications by configuration. An optional rate independent, flat line response feature guarantees fixed delay on all ports.

Powerful Management

The TNP-100 can be remotely managed via a standard WEB interface or SNMP. Performance monitoring and system configuration capabilities facilitate installation and management in large networks.

TNP-100 Overview

Input Processing

The TNP-100 supports multiple digital clock and data formats such as TTL, ECL, PECL, LVPECL, LVDS, CML, RS-232 (6vpp) and more. Each port is independently configurable. Adaptive input signal detection circuitry guarantees superior performance. The digital data is encapsulated into IP packets and forwarded to the Ethernet interface. Multiple IP-encapsulation methods are supported including TMoIP, RCC 218-07.

Each multi-function input port can also be configured as an analog interface, supporting signals such as IRIG timing, analog video or other signals. The analog signal is digitized by a high performance ADC. The PCM data is packetized and transmitted by the network processor.

Additional features, including Forward Error Correction can be supported by remote software upgrade.

Output Processing

The original Telemetry Data Streams entering the IP network are reproduced from the received IP packets. Employing sophisticated adaptive timing recovery; allow users to optimize performance and latency for various network conditions and applications. Configurable high performance output drivers are capable of generating multiple clock and data signal formats.

Each multi-function output port can also be configured as an analog interface, supporting signals such as IRIG timing, video or other signals.

The high-speed, multi-function outputs are equipped with high performance Digital to Analog Conversion technology for accurate regeneration of the original application data.



TNP-100 Technical Specifications

Multi-Function Interface

Number of user configurable inputs/outputs

4 Data & 4 Clocks. Single ended. Balanced signals are supported using external transformer.

Connector

BNC

Digital

Format Support

TTL, ECL, PECL, LVPECL, LVDS, T1, RS-232 and RS-422

Signal Level

6Vpp max

Impedance

50 ohm and 75 ohm

Data Rate

Up to 50Mb/s per port

IRIG A/B/G

Signal Level

Input: 0.2Vpp min. 10Vpp max

Output: 6Vpp (50 ohm), 10Vpp (600 ohm)

Impedance

Input: 600 ohm and 50 ohm

Output: 25 ohm

Analog

Format Support

Composite Video and others

Signal Level

6Vpp max

Impedance

50 ohm and 75 ohm

Bandwidth

Up to 10Mhz

Remote Management

Built-in Web-based GUI and SNMPv2 and v3

Ethernet Network Interface

One pluggable SFP module. 100/1000Base-X

Two RJ45.10/100/1000Base-T

Maintenance

An onboard BERT (Bit Error Rate Test) generator allows remote testing. Following test patterns are supported:

- Alternating Ones and Zeroes
- Pseudorandom 2^{11-1}
- Pseudorandom 2^{15-1}

Physical Dimensions

1RU, 1/2-width 19". Two units fit in a 19" 1RU rack space (H x W x D) 1.75" x 8.50" x 10.00"

Environmental Conditions

Operating Temperature: 0 to 50°C (32F to 122F)

Storage Temperature: -40 to 70°C (-40F to 158F)

Relative Humidity: 5% to 90% (Non Condensing)

Regulatory Compliance

FCC CFR47 Part15B Class A

UL/IEC 60950-1

Telemetry over IP (TMoIP), RCC Standard 218-07

Power

100 – 240V AC (47 – 63Hz). 25W