

TNP-100 Multiservice Network Access System

High Performance, low latency leader.

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

IPtec provides reliable, high quality products for low latency, E1/T1 (CESoIP), video and data acquisition (TMoIP) services. These products enable transport of high quality voice (E1/T1), video and telemetry signals over Ethernet, IP-based or MPLS networks.

Standards based Multiservice over Packet (MSoP)

Low latency transmission over packet based networks

Superior Flat Line response

Four programmable multi-function IO ports

Enables Multiple TDMoIP (CESoIP) & LAN services

Enables Analog & Digital data acquisition services

Integrated Loopbacks, BERT, and Alarms

Managed via Embedded Web Server and SNMP



Multiple Services over Packet based Networks

The TNP-100 is a standards compliant network processor enabling transparent, low latency, bidirectional transfer of almost any type of digital and analog signals over Ethernet, IP-based and MPLS networks. The TNP-100 is a single platform Ethernet (LAN), Circuit Emulation (CESoIP), Video and Data acquisition (TMoIP, SCADA) service solutions. Flexible, multi-function interfaces enable the network processor without physical re-configuration to be used in many different applications, where high performance and low latency are required, minimizing capital (CapEx) and operational (OpEX) expenses.

The TNP-100 provides IP Network Processing for up to four independent digital and analog signal sources. Each multi-function port can be independently configured for voice (E1/T1 CESoIP), Video, and Analog or Digital Data acquisition (TMoIP) services. .

LAN & Network Interfaces

The TNP-100 is equipped with both optical and electrical network interfaces all supporting 10/100/1000Mbps Ethernet. Three Ethernet interfaces connected via a managed Ethernet switch provides flexible installation and interconnection options, as well as superior QoS capabilities.

Multi Media Card Interface

The TNP-100 is equipped with a standard Multi Media Card Interface, which enables data recording and 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 per port based tools include test pattern generation and Bit Error Rate Testing (BERT).

Superior Performance

The TNP-100 supports individual port timing recovery, using sophisticated clock recovery to regenerate highly accurate source timing and enhanced jitter management required for E1/T1 CESoIP and TMoIP applications. An optional rate independent, flat line response feature guarantees an equal user-configured fixed transmission latency on all ports.

Powerful Management

The TNP-100 can be managed local and remotely via a standard WEB interface or SNMP. Performance monitoring, system configuration and upgrading capabilities simplifies network management and operations.

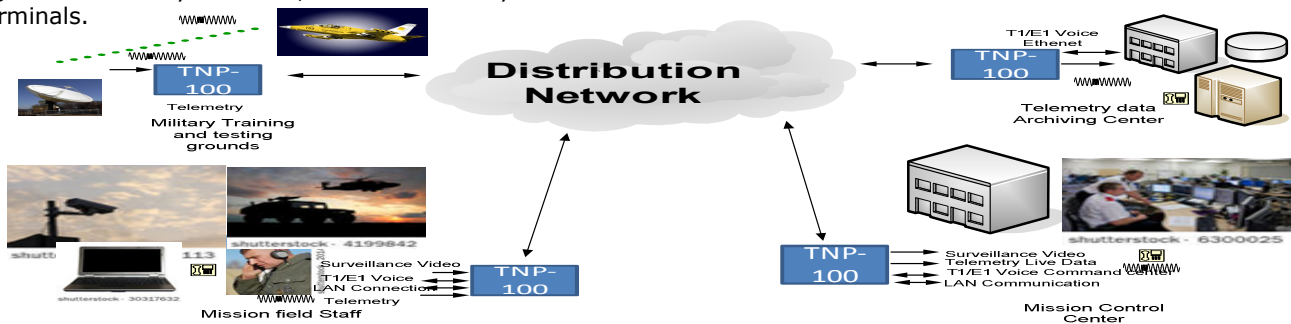
TNP-100 Telemetry Application

The TNP-100 is a field configurable multi-service access system enabling simultaneous transmission of Telemetry (TMoIP), IRIG, T1/E1 (CESoIP) and video services over packet based networks without any changes to the hardware.

Telemetry signals from Aircraft and Ground Sensors are required to be transmitted to the Telemetry Ground Station for Recording and Processing. The TNP-100 is a network access enabled data acquisition system, co-located with antenna systems, and other analog and digital telemetry data receiving sensors from air-borne and ground instrumentation. Provisioned multicast connections ensure delivery at the Telemetry Ground Station and the Recording/Processing centers where the original telemetry signals are directly recorded, and recovered by TNP-100 terminals.

The TNP-100 is capable of providing transmission of IRIG timing signals along with the telemetry data and other services for data time stamping purpose. The system can be configured for "Flat-line" response ensuring that all services from one TNP-100 transmit location will arrive at the destination at the same time with the shortest end to end latency.

Additionally the TNP-100 provides intercom and telecom services as T1/E1 carriers, as well as very low latency video transmission capabilities for range and mission surveillance. The video signals may be transmitted in Loss Less or compressed form featuring processing latencies between (1mS-10mS).



TNP-100 Technical Specification Summary

Multi-Function Interface

Number of user configurable inputs/outputs

4 multi-service ports.

Connector

BNC & RJ45 (using an in-line Balun adaptor)

Impedance

75 ohms (Unbalanced), 110 ohms (Balanced)

Telecom

E1,T1 (CESoIP) (PWE3)

Digital Data Acquisition Format Support

TTL, ECL,RS-232 and RS-422 (TMoIP)

Impedance

50 ohm and 75 ohm

Data Rate

Up to 50Mb/s per port

IRIG Timing

Analog format (1, 10 & 100Khz)

Signal Level

Input: 0.2Vpp min. 10Vpp max

Output: 3Vpp (50 ohms), 10Vpp (25 ohms)

Impedance

Input: Hi-Z, 600 ohms and 50 ohm

Output: 25, 50 & 600 ohms

Analog Data Acquisition & Video

Baseband Analog signals (TMoIP)

Signal Level

5Vpp max

Impedance

50 ohms and 75 ohms

Bandwidth

Up to 10Mhz

Video data rates:

5Mb/s-200Mb/s (user configurable)

Video Processing Latency

1mS to 10mS

Signal Processing

Processing Latency <1mS

PVD Compensation: 1-100mS

Packet Size: up to 1500 bytes

Remote Management

Built-in Web-based GUI and SNMPv2 and v3

Ethernet Service Ports & 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)

Relevant Publications

FCC CFR47 Part15B Class A

UL/IEC 60950-1

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

IETF-PWE3, SAToIP, CESoIP, G823/G.824, IEEE 808.1D, 1Q, 1P, 1p, 1ag, 3x, 1x, 2, 3ad, 3u, 3z, 3ah, IRIG 106, IRIG A/B/D/H/G

Power

100 – 240V AC (47 – 63Hz). 25W