NetProcessor **9010**

NETWORK ADAPTER

THOMSON

VIDEO NETWORKS

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THE NETPROCESSOR 9010 IS A HIGHLY INTEGRATED NETWORK ADAPTER DESIGNED FOR PASS-THROUGH, BIT-ACCURATE TRANSMISSION OF MPEG COMPRESSED VIDEO OVER IP, E3, DS3, STM1, OC3, OR ATM NETWORKS, THEREBY OFFERING A MIGRATION PATH FROM ONE TO THE OTHER.

The Thomson NetProcessor range of products, a family of video and network processing solutions, is designed for the full range of digital TV applications.

The NetProcessor line is a hierarchical range of products that provides:

- Network adaptation for the transport of MPEG compressed video over telecom networks and ability to automatically or manually switch between main and backup transport streams
- MPEG processing, including multiplexing, demultiplexing, scrambling, as well as IP streaming
- Video processing, including transrating, splicing, and ad insertion

These products include the NetProcessor 9010, a highly integrated network adapter designed for pass-through, bit-accurate transmission of MPEG-compressed video over ATM and/or IP networks.

The NetProcessor 9010 adapter is suitable for:

- Carriers providing circuits between regional studios and a central playout facility
- Contribution (backhaul) circuits from occasional venues such as sports arenas
- Links from playout centers to regions and affiliates
- Link from studio to transmitter (ATSC)
- Distribution from playout centers to headends
- Links from headend to transmitters (MFN and SFN)

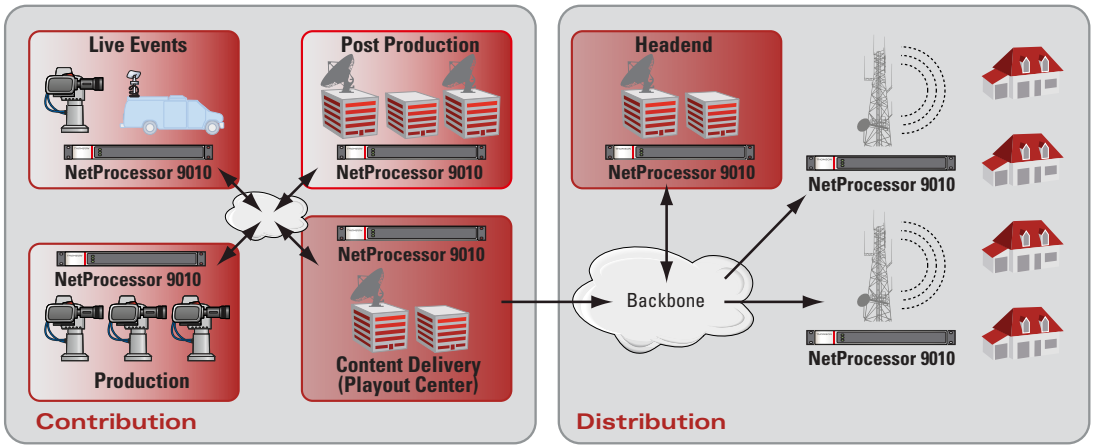
In its 1 RU chassis, the NetProcessor adapter supports up to 22 ASI interfaces: 10 configurable as inputs or outputs (N in, 10-N out) plus 12 optional ASI inputs (exclusive on ATM option). On the network side, it provides two ATM ports and/or two Gigabit Ethernet ports.

The NetProcessor 9010 solution can also handle impaired IP or ATM networks. With the implementation of powerful tools for error correction and advanced clock recovery/jitter removal, ultra-fast signal recovery after link breaks is possible.

key features

- **Transparent, bit-accurate MPEG stream transmission over telecom networks, convenient for the transport of SFN multiplexes**
- **10 ASI interfaces configurable as inputs or outputs (N in + 10-N out) plus 12 optional inputs**
- **Two independent Gigabit Ethernet/IP ports**
- **Two independent E3-DS3/ATM or STM1-OC3/ATM ports**
- **Traffic policing and shaping**
- **Error-free transmission over any network thanks to forward error correction (FEC) and advanced clock recovery mechanisms**
- **Automatic input transport stream redundancy**
- **SFN alignment with GPS time base correction for:**
  - **Clock recovery on streams without PCR (i.e., DVB-H)**
  - **Signal robustness improvement for downstream modulators in DTTV**
  - **Can be combined with input TS redundancy for seamless switching**
- **ATM and IP interfaces can be operated simultaneously for a seamless migration**
- **1 RU cabinet with optional dual redundant AC and/or DC power supplies**
- **Designed for on-demand contribution, 24/7 backhaul to the headend, and 24/7 distribution of bouquets from the central headend to the regional headend and the transmitter sites**

NetProcessor 9010 environment



The NetProcessor 9010 provides the transport of MPEG-compressed video over telecom networks.

technical specifications

DVB-ASI Interfaces
- 10 DVB ASI interfaces configurable as inputs or outputs (N in, 10-N out) plus 12 optional DVB ASI inputs
- 100 kb/s to 213 Mb/s per interface

Gigabit Ethernet/IP Interfaces
- Two independent Gigabit Ethernet ports, electrical or optical (SFP)
- 10/100/1000Base-T auto-sensing
- Half and full duplex

MPEG Services Over IP
- Up to 20 IP streams in & 20 IP streams out
- SMPTE 2022/Pro MPEG Forum COP#3
- RTP/UDP and UDP, 1 to 7 MPEG packets per IP datagram
- Row, 1D/2D column forward error correction (FEC)
- Advanced clock recovery to minimize the effects of IPDV jitter, up to 200 ms
- Traffic policing and shaping
- IntServ/DiffServ ToS byte field tagging for QOS support
- VLAN tagging 802.1p, 802.1q
- Unicast and multicast (IGMP V2&V3)
- IP routing: static, RIP, OSPF
- Up to 213 Mb/s per IP stream

TM Interfaces
- Two independent G.703 E3, DS3 interfaces (BNC), or two independent STM1/OC3 electrical, optical single-mode or multimode optical interfaces (SFP)
- Bi-directional or unidirectional

MPEG Services Over ATM
- Up to 10 ATM connections
- PVC, full range of VPI/VCI
- AAL1 with FEC
- Advanced clock recovery to minimize the effects of jitter
- Up to 130 Mb/s per ATM connection
- Traffic policing and shaping

IP Data Services Over ATM
- Ethernet bridge mode, UBR+
- Up to 50 Mb/s in + 50 Mb/s out

Automatic TS Redundancy
- Automatic input transport stream redundancy
- Main TS and backup TS from the same or different media
- Up to 10 main TS & 10 backup TS

SFN Alignment
- For input TS on telecom networks (ATM, IP) with inserted MIP packets
- MIP packet insertion to be performed prior to sending TS over the primary distribution network (feature available in NetProcessor 9030 – please refer to the related product data sheet)
- Interface for external GPS receiver and time reference (1 pulse per second signal – 1 pps), BNC connector

Monitoring
- Visualization of the MPEG stream structure (services, components, bit rates)
- Monitoring the IP and ATM layers

Management
- In-band and out-of-band management
- SNMP v.2 agent
- Embedded Web server
- 100Base-T for management
- RS-232C port for maintenance
- HD15 for alarm relay
- Supported by mediaXsuite management system

Physical Characteristics
- 1 RU x 19» (44.5 mm high x 484 mm wide x 620 mm deep)
- Weight: 10 kg
- 110V to 240V AC, -40V to -60V DC
- Hot-swappable dual power supplies (optional), 180W max.

Environmental Conditions
- Operating temperature +5° to +45°C (+41° to +113°F)
- Storage temperature -25° to +70°C (-13° to +158°F)
- Transport temperature: -25° to + 70°C (-13° to +158°F)
- Maximum operating humidity: 85%

Compliance
- CE, UL, FCC Part 15

ordering information

N901BXYZAA
- NetProcessor 9010, 10 ASI ports, for transmission over ATM (z=0) or IP (z=G)

N901YYYYGA
- ATM option board, PDH E3/DS3 (yyyy=PDH0), STM1/OC3 (yyyy=STMF), ASI option board (yyyy=ASE0)

Please contact your authorized Thomson Video Networks representative for additional hardware and software options.

E-mail: sales@thomson-networks.com

professional services

Our professional services offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock; system planning, design, and commissioning; professional training courses; and technical maintenance programs and service agreements.

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