

## NetProcessor 9010

### NETWORK ADAPTER



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)

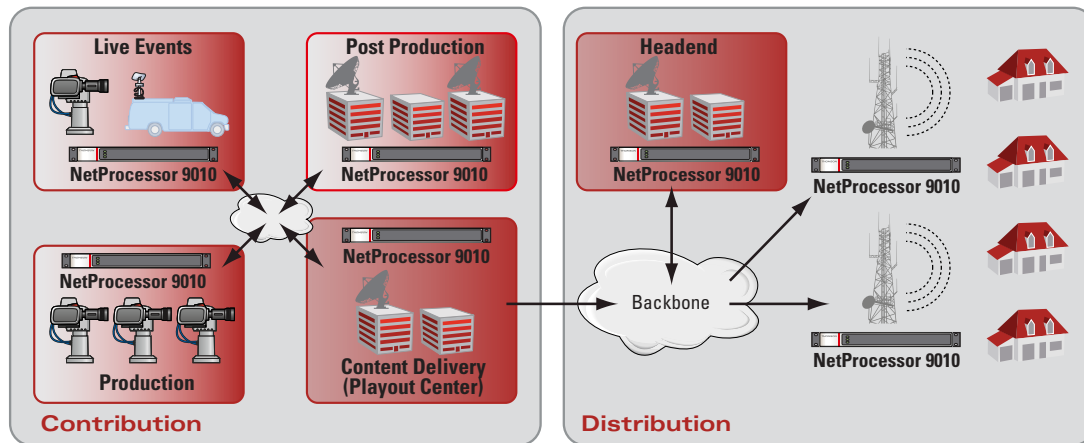
In its 1 RU chassis, the NetProcessor adapter supports up to 22 ASI interfaces: 10 configurable as inputs or outputs (N in, 10-N out) plus 12 optional ASI inputs (exclusive on ATM option). On the network side, it provides two ATM ports and/or two Gigabit Ethernet ports.

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

### N901BXZYAA

- › 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](mailto: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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