The TVG450 represents the next generation solution for transport of high definition TV over IP networks.

JPEG2000 wavelet compression technology enables transmission of compressed 3G, HDTV and SD television over Gigabit Ethernet or DVB ASI links.

The TVG450 is the newest member of the T-VIPS’ Video Gateway suite; a line of compact, powerful and cost-effective products designed for real-time contribution and distribution of broadcast quality video over IP networks. The TVG450 has increased density with up to 1 3G-SDI, 2 HD-SDI or 4 SDI channels in the same unit.

TVG450 takes advantage of the unmatched quality of JPEG2000 compression combined with the inherent flexibility of IP. Broadcasters are offered an efficient, affordable and scalable solution for studio quality high definition video contribution. TVG450 supports lossless and visually lossless compression.

TVG450 enables operators to utilize Ethernet technology to build cost effective SONET, IP-MPLS or Metro Ethernet networks for video transport. Built in Quality of Service functionality combined with Forward Error Correction and error concealment secures flawless operation from end to end even in presence of IP impairments as packet loss or heavy jitter.

The TVG450 performs JPEG2000 compression of HD-SDI signals allowing transmission of HDTV signals over Gigabit Ethernet links as well as over DVB ASI links. TVG450 does also support transport of MPEG-2 Transport Stream over IP.

Applications

• Professional broadcast contribution
• Studio-to-studio media exchange
• In-house signal distribution and routing
• Live event coverage
• 3G high definition contribution
• Digital Cinema intermediate production

Key Features

• Multiple JPEG2000 compressed video channels
  - 4 SD channels (4 Rx, 4 Tx or 2Rx/2Tx) or
  - 2 HD channels (any direction) or
  - 1 HD and 2 SD channels (3 Rx or 3 Tx) or
  - 1 3G HD channel (any direction)
  - 1 MPEG-2 Transport Stream may replace 1 JPEG2000 SD channel
• High Quality Video
  - JPEG2000 compression
  - 10 bit video resolution
  - Frame-by-frame encoding
• Robust transmission of HDTV signals
  - Flexible Forward Error Correction
  - Error concealment
  - Ethernet and ASI network interfaces (option)
• Very Low Delay
  - Encoding and decoding delay < 60 ms (mode dependent)
• MXF encapsulation
  - Suitable for file-based workflow
• Ancillary data support
  - Transparent transfer of embedded audio and vertical ancillary data
• Compact, flexible cost-effective solutions
  - ½ width 19" version: 3G transmitter and receiver in 1 RU or 1 RU 19" version with dual power
  - User configurable as transmitter or receiver
• User-friendly configuration and control
  - WEB/XML based remote control
  - SNMP agent for easy integration with NMS systems
  - Integrated with T-VIPS Connect
Video Interfaces

- **Inputs (2 3G/HDI 2 SD/ASI ports):** 3G / HD-SDI / SDI / ASI
- **Output (4 ports):** 3G / HD-SDI / SDI / ASI
- **Connector:** Female BNC
- **Reference Input:** SDI, tri level and BB sync

Network Interfaces

- **Ethernet:** 2 RJ45 100/1000Base-T and SFP (Option)
- **Protocols:** IEEE802.3 Ethernet, RTR, ARP, IPv4, IGMPv2/3, TCP/UDP, VLAN
- **Connector:** RJ45, SFP Module (Option)
- **Type:** DVB ASI, Female BNC (Option)

Video Encoding

- **Video Encoding:** JPEG2000
- **IP Encapsulation:** MXF over RTP
- **IP Bitrate:** 25 to 450 Mbit/s
- **Forward Error Correction:** Forward Error Correction based on SMPTE 2022-1 FEC

HD Resolutions

- **SD 270 Mbps:** 625 lines 25i and 525lines 29i
- **HDTV 1.5 Gbps:** 1920x1080, 23PsF, 24PsF / 25i / 29i / 30i
- **HDTV 1.5 Gbps:** 1280x720, 50 / 59 / 60
- **3G 3 Gbps:** 1920x1080, 50 / 59 / 60
- **Digital Cinema:** 2048x1080, 23PsF, 23PsF / 24PsF

Audio and Ancillary data

- **Audio formats:** Embedded audio
  - Uncompressed, 16 channels, 24 bit
- **Data formats:** HD: Timecode, Closed Caption,
  - Subtitling SMPTE RDD08,
  - AFD SMPTE 2016,
  - SD: WST Teletext, Closed Caption,
  - Video index, VITC, VPS and WSS (coded as video)

Audio/video synchronization: +/- 1 line

Control and Management

- **Type:** 10/100/1000 Base-T Ethernet
- **Features:** Element control through HTTP/WEB,
  - SNMP traps and SNMP control
  - In band management
- **Protocol:** HTTP, XML, SNMP v2c/v1
- **Connector:** RJ45
- **Alarm Relay:** 9 pin D-SUB
- **Maintenance Port:** USB

Physical and Power

- **Input Voltage:** 100-240V AC +/- 10%
- **Input Voltage Option:** -48V DC
- **Dimensions:** Compact version: 1 RU, ½-width 19"
  - (WxDxH) 210 x 300 x 44.5mm
  - Two units may be mounted in 19" 1 RU rack
- **Dual power version:** 1 RU 19"
  - (WxDxH) 420 x 300 x 44.5mm
- **Power consumption:** ~30W

Environmental Conditions

- **Operating Temperature:** 0°C - +50°C
- **Storage Temperature:** -20°C - +70°C
- **Relative Humidity:** 5% to 95% (non condensing)

Compliance

- **CE:** 73/23/EEC (Low voltage equipment)
  - 89/336/EEC (Electromagnetic compatibility)
- **CSA:** Designed for CSA approval
- **Safety:** IEC60950 and EN60950
- **EMC:** EN55022, EN55024, EN61000-3-2

T-VIPS continuously improves its product portfolio and reserves the right to modify the specifications without prior notice.

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