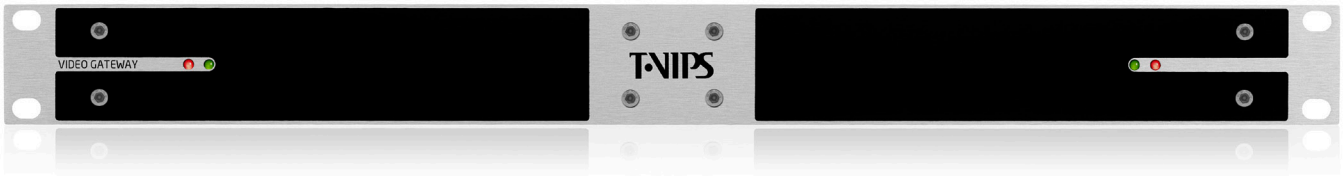
Datasheet

# *TVG650* MPEG-4 Contribution Encoder




The TVG650 MPEG-4 Contribution Encoder offers best-in-class video quality with MPEG-4 AVC 10-bit 4:2:2 coding for SD and HD signals.

Designed for professional broadcast contribution, the TVG650 enables reliable transmission of sports, news and other live events via satellite or bandwidth-constrained IP links, without sacrificing image quality.

The TVG650 is part of T-VIPS' Video Gateway line of compact, powerful and cost-effective products designed for real-time contribution and distribution of broadcast quality video signals.

The TVG650 MPEG-4 Contribution Encoder is a future-proof platform for MPEG-4 encoding, offering support for 10-bit and 4:2:2 coding, as well as future upgrade path to 3G/1080p 50/60 Hz. At the same time, the TVG650 includes support for MPEG-2 4:2:0 and 4:2:2 compression for SD and HD, ensuring full compatibility with existing contribution infrastructure.

The TVG650 is ideal for live contribution applications that require the highest possible video quality, but where the transmission link is bandwidth-constrained, as in satellite and low-bandwidth IP contribution. Using the TVG650 for high quality satellite contribution, typically 2-3 HD channels can be transmitted on a single DVB-S2 transponder. Content protection is ensured using DVB Scrambling (BISS 1/E). At the recieving end, the companion TVG610 MPEG-4 Contribution Decoder offers built-in DVB S/S2 demodulation, redundant IP and ASI interfaces, content descrambling and SD/HD MPEG-4 10-bit 4:2:2 decoding.

## *Applications*

- Professional broadcast contribution
- Satellite and IP contribution
- Outside Broadcast productions
- Live event coverage (Sports/News)
- Studio-to-studio media exchange
- Primary distribution

## *Key Features*

- High quality MPEG-4 AVC video compression
  - SD up to 30 Mbit/s, HD up to 60 Mbit/s
  - 10-bit or 8-bit precision
  - 4:2:0 or 4:2:2 chroma sampling
- Support for MPEG-2 compression
  - SD up to 30 Mbit/s, HD up to 60 Mbit/s
  - 4:2:0 or 4:2:2 chroma sampling
- Low latency mode
  - Less than 300 ms encoder latency
- ASI and IP/Ethernet output
  - Simulatenous output on ASI and IP
  - IP smallcast on dual Ethernet ports
  - Flexible Forward Error Correction
- Ancillary data support
  - Extensive support for ancillary data and broadcast signalling
  - Closed captioning, time code, AFD, WSS, teletext
- Compact, flexible cost-effective solutions
  - 1 RU 19" integrated chassis
- User-friendly configuration and control
  - Integrated web-based user interface
  - SNMP MIB for easy integration with NMS systems
  - Integrated with T-VIPS Connect and Skyline's Dataminer

# TVG650 MPEG-4 Contribution Encoder

## Video Input

| | |
|---|---|
| Inputs: | 1 SD-SDI, HD-SDI |
| Connector: | Female BNC (75 ohm) |

## Video Encoding

| | |
|---|---|
| Video Encoding: | MPEG-4 AVC/H.264 and MPEG-2 |
| Profiles Supported: | MPEG-4: Main, High, High10, High 4:2:2 Profile up to Level 4.1 |
| | MPEG-2: 422P@ML /HL |
| Encoding bit rate: | SD up to 30 Mbit/s, HD up to 60 Mbit/s |
| Video Processing: | Scene change detection, Noise filtering, Inverse telecine (3:2 pulldown), resizing, logo insertion |
| Options: | HD, 4:2:2 10-bit |

## Video Formats

| | |
|---|---|
| SD 625 / 525 lines: | 25i / 29i / 30i |
| 1280x720: | 50p / 59p / 60p |
| 1920x1080: | 25i / 29i / 30i |
| 1920x1080: | 23psf / 24psf / 50p / 59p |
| Format detection: | Automatic with config switching |

## Audio input

| | |
|---|---|
| Audio input: | Embedded in SDI Uncompressed, 8 pairs (16 channels) |
| External audio input: | AES/EBU up to 8 stereo pairs, or Analog balanced audio - up to 4 pairs |

## Audio encoding

| | |
|---|---|
| Audio channels: | Native encoding of up to 8 stereo pairs Multi-channel 5.1 audio service support |
| Audio encoding: | MPEG-1 Layer II, MPEG-2/4 AAC-LC, HE-AAC v1 & v2 |
| Audio pass-through: | Dolby E, Dolby Digital/AC-3 and Dolby Digital Plus/E-AC-3 |

## Ancillary data SD

| | |
|---|---|
| SD VBI: | VITC timecode (IEC 60461) WSS (ITU-R BT.1119-2) VPS (ETSI EN 300 23) WST (ITU-R BT.653-3) Enhanced Teletext (ETSI EN 300 706) Closed Captioning (CEA/EIA 608-D) |

## Ancillary data HD

| | |
|---|---|
| VANC data: | Ancillary timecode (ST 12M-2) AFD (ST 2016-1) , VPI (ST 352M) Closed Captioning (CEA/EIA 608/708, ST 334-1/2, ARIB STD-B37) , Teletext/VPS (ST 2031M), SCTE 104 messages (ST 2010) |

## Transport Stream Output

| | |
|---|---|
| DVB-ASI output: | 3 ASI outputs (75 Ohm female BNC) |
| IP/Ethernet output: | 2 Gigabit Ethernet, 100/1000Base-T with RJ-45 connector |
| IP Encapsulation: | RTP/UDP/IP, UDP/IP (SMPTE 2022-1/2) |
| Forward Error Correction: | FEC according to SMPTE 2022-1 |
| IP Features: | Multicast, Unicast, multiple unicast |
| Conformance: | MPEG-2 (PSI), DVB (SI), ATSC (PSIP) ISDB, SBTVD (ISDB-T International) |
| Content protection: | DVB Scrambling - BISS 0/1/E |

## Control and Management

| | |
|---|---|
| Type: | 100/1000 Base-T Ethernet (RJ-45) |
| Features: | Web-based GUI, SNMP traps/config |
| Protocols: | HTTP, SNMP |
| Alarm Relay: | 9 pin D-SUB |
| Maintenance Port: | USB |

## Physical and Power

| | |
|---|---|
| Input Voltage: | 100-240V AC 50/60 Hz |
| Dimensions: | 1 RU 19" 482 x 508 x 44.5mm (WxDxH) |
| Power consumption: | ~150W |

## Environmental Conditions

| | |
|---|---|
| Operating Temperature: | +5 to +40 °C |
| Storage Temperature: | -20°C to +70°C |
| Relative Humidity: | 5% to 90% (non condensing) |

## Compliance

ROHS, CE and FCC class B Certifications, ECM Compliancy:
EN 55022: 2006, EN 55024: 1998 / A1 : 2001 / A2 : 2003,
FCC PART 15 Class B: 2006, EN 61000-3-2: 2000 / A2 : 2005,
EN 61000-3-3: 1995 / A1 : 2001 / A2 : 2005
Safety: EN/UL/CA 60950-1

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