

SDI Encoder

Multi-Channel SDI to MPEG-TS Encoding Platform

DATASHEET



16x

ENCODING CHANNELS

3G-SDI

INPUT STANDARD

HW GPU

ENCODING

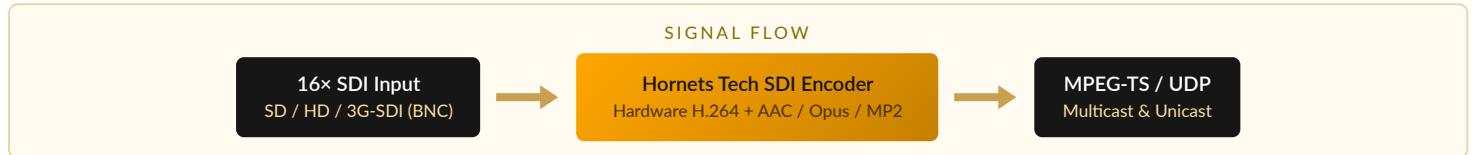
1 RU

FORM FACTOR

REST API

MANAGEMENT

The Hornets Tech SDI Encoder is a high-density, broadcast-grade encoding platform that receives up to **16 SDI inputs** (SD-SDI, HD-SDI, 3G-SDI) and encodes them in real time to H.264 MPEG-TS for IP distribution. With hardware-accelerated encoding, **16-channel embedded audio** with language tagging, selectable audio codecs (AAC, Opus, MP2), live thumbnail monitoring, and a full REST API with web UI, it delivers professional-grade reliability in a compact 1RU form factor.



KEY FEATURES

- 16x simultaneous SDI input channels
- SD-SDI, HD-SDI, and 3G-SDI support
- Hardware-accelerated H.264 GPU encoding
- 16-channel embedded audio (8 stereo pairs)
- Automatic language tagging per audio pair
- Per-channel configurable video bitrate
- Live thumbnail preview per encoder channel
- Independent per-channel start / stop / restart
- Auto-recovery watchdog with crash detection
- Real-time bandwidth monitoring per interface
- Active stream detection with bitrate estimation
- Per-stream multi-destination output (tee)
- Full REST API for integration & automation
- Web-based management dashboard
- License-based flexible channel configuration

INPUT SPECIFICATIONS

Interface	3G-SDI Mini DIN
Standard	SD-SDI, HD-SDI, 3G-SDI
Max Channels	16x video + audio
Resolution	Up to 1920 x 1080 (Full HD)
Frame Rate	25, 29.97, 30, 50, 59.94, 60 fps
Audio Channels	16 embedded (8 stereo pairs)
Audio Codec	AAC-LC, Opus, MP2 (selectable)
Language Tags	Per-pair automatic assignment

OUTPUT SPECIFICATIONS

Video Codec	H.264 Main Profile
Audio Codec	AAC-LC, Opus, MP2 (selectable)
Audio Bitrate	64–384 kbps (per codec limits)
Container	MPEG-TS
Transport	UDP multicast & unicast
Bitrate	Configurable per stream (default 4 Mbps)
GOP / B-frames	30 frames / 0 (low latency)
Multi-Output	Per-stream configurable

PRODUCT



TYPICAL APPLICATIONS

- Broadcast SDI-to-IP ingest & contribution
- OB van & mobile production encoding
- Sports venue multi-camera SDI distribution
- Hotel & hospitality IPTV headend encoding
- Multi-site live event encoding & backhaul
- Playout & master control room monitoring
- Corporate AV & digital signage ingest

MANAGEMENT & MONITORING

API	RESTful JSON (status, control, config)
Web UI	Browser-based management dashboard
Stream Control	Per-channel start / stop / restart
Thumbnails	Live preview per channel
Health Monitoring	CPU, temperature, disk, RAM, uptime
Bandwidth	Real-time per-interface TX/RX monitoring
Stream Detection	Auto-detect active streams & bitrate
Watchdog	Auto-restart with per-channel isolation

PHYSICAL & ENVIRONMENTAL

Form Factor	19" rack-mount, 1 RU
Network	GbE (multicast-capable)
Operating Temp	0 °C to +40 °C
Humidity	10–90 % RH, non-condensing
Compliance	CE, FCC Class A