

ST 2110 Encoder

16-Channel SMPTE ST 2110 to MPEG-TS Encoding Platform

DATASHEET



16x

ENCODING CHANNELS

4x 25G

NETWORK INTERFACES

ST 2022-7

SEAMLESS REDUNDANCY

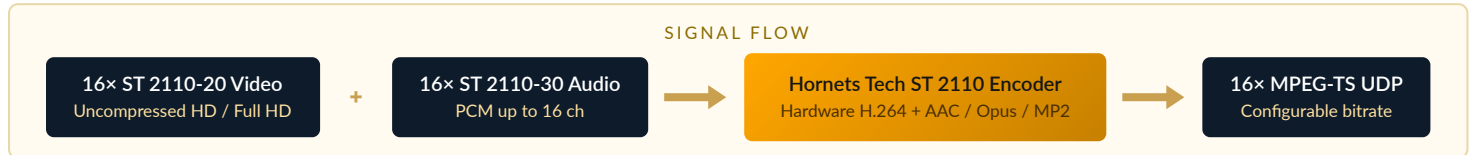
1 RU

FORM FACTOR

REST API

MANAGEMENT

The Hornets Tech ST 2110 Encoder is a high-density, broadcast-grade encoding platform that receives up to **16 uncompressed video and audio streams** via SMPTE ST 2110-20/30 over 4x 25GbE interfaces and encodes them in real time to H.264 MPEG-TS for IP distribution. With built-in **SMPTE ST 2022-7 seamless protection switching**, hardware-accelerated encoding, selectable audio codecs (AAC, Opus, MP2), and a comprehensive REST API, it delivers carrier-grade reliability in a compact 1RU form factor.



KEY FEATURES

- 16x simultaneous 1080p60 ST 2110 inputs
- SMPTE ST 2022-7 seamless protection switching **REDUNDANT**
- 4x 25GbE SFP28 interfaces with hardware PTP
- Hardware-accelerated H.264 High Profile (L5.1)
- AAC-LC, Opus, and MP2 audio encoding, 1–16 channels per stream
- Per-stream configurable video bitrate (1–100 Mbps)
- Per-stream configurable audio bitrate
- Independent per-channel start / stop / restart
- Auto-recovery watchdog with crash detection
- Real-time health monitoring (CPU, GPU, temperature)
- Per-stream status, uptime, and encoding metrics
- Network bandwidth monitoring with alerts
- Full REST API for integration & automation
- Web-based management UI
- Diagnostics bundle export (ZIP)
- IEEE 1588 PTP hardware timestamping
- Redundant power supply, 24/7 operation

PRODUCT



MANAGEMENT & MONITORING

API	RESTful JSON (CRUD, health, metrics)
Web UI	Browser-based management dashboard
Stream Control	Per-channel start / stop / restart
Health Monitoring	CPU, GPU, temperature, throughput
Alerts	CPU, RAM, network, time sync
Diagnostics	On-demand ZIP bundle export
Watchdog	Auto-restart, per-channel isolation
Clock Sync	IEEE 1588 PTP (hardware)

INPUT SPECIFICATIONS

Standard	SMPTE ST 2110-20 / ST 2110-30
Redundancy	SMPTE ST 2022-7 (per input)
Max Channels	16x video + 16x audio (paired)
Video Resolution	Up to 1920 × 1080 (Full HD)
Frame Rate	25, 29.97, 30, 50, 59.94, 60 fps
Audio Channels	1–16 per stream
Audio Sampling	48 kHz PCM (24-bit)
Transport	RTP/UDP multicast or unicast
Network Interface	4x 25GbE SFP28

OUTPUT SPECIFICATIONS

Video Codec	H.264 High Profile @ L5.1
Audio Codec	AAC-LC, Opus, MP2 (selectable per stream)
Container	MPEG-TS
Transport	UDP unicast (per-stream destination)
Video Bitrate	1–100 Mbps (configurable per stream)
Audio Bitrate	64–384 kbps (per codec limits, configurable)
Keyframe Interval	2 seconds (configurable)

TYPICAL APPLICATIONS

- Live broadcast facility ST 2110 to IPTV contribution
- Sports venue multi-camera encoding & distribution
- Broadcast-to-IP migration (SDI replacement)
- Remote production & at-home workflows
- Multi-site live event encoding & backhaul
- IPTV headend ST 2110 ingest & transcoding
- OB van IP-based encoding infrastructure

PHYSICAL & ENVIRONMENTAL

Form Factor	19" rack-mount, 1 RU
Network	4x SFP28 25GbE + 2x RJ45 1GbE
Power Supply	Redundant, 80+ Platinum
Power	125 W per PSU (redundant)
Operating Temp	0 °C to +40 °C
Humidity	10–90 % RH, non-condensing
Cooling	Internal fans, front-to-rear airflow
Compliance	CE, FCC Class A