

ENC-400-HDSDI

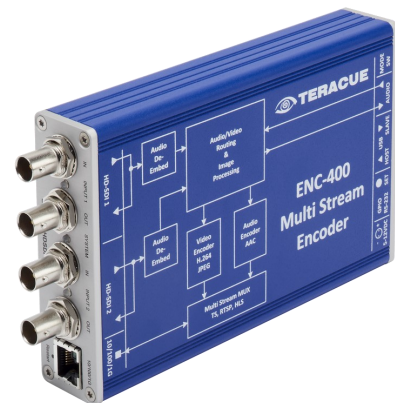
3G/HD/SD SDI H.264 and MJPEG Encoder

PRODUCT DESCRIPTION

This HD/SD H.264 fanless video encoder is able to deliver multiple streams in multiple bitrates and protocols to multiple destinations. The built-in frame synchronizer guarantees stable signal processing. Both inputs provide loop through outputs and can be used for redundancy switching or as sources for two individual encodings. Besides the well approved H.264 encoding technology, the ENC-400 features MJPEG for legacy as well. Both for live streaming and recording.

The compact fanless and lightweight aluminium PORTABLE unit is ideal for broadcast contribution, IPTV and webcasting.

The ENC-400 encoders can also be placed in FR-620-EXT. This compact 1RU chassis houses up to 6 encoder blades and provides redundant power supplies.



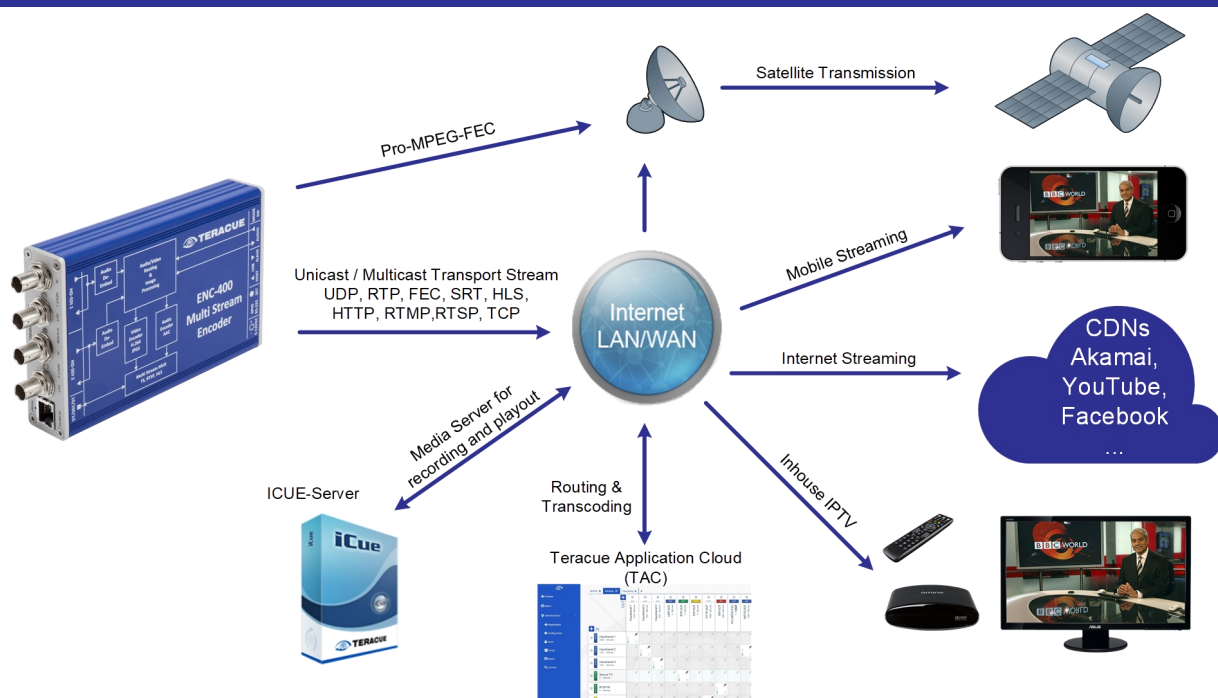
KEY FEATURES

- H.264 Baseline, main and high profile and MJPEG
- Full support 3G-SDI, HD-SDI, SD-SDI
- Embedded and analog audio input
- Custom logo, text and time inserter
- Adjustable frame rate and auto scaler
- Up- and downscaling with cropping
- Frame synchronizer for seamless switching
- AES-256 encryption
- Pro MPEG FEC and SRT streaming
- UDP, RTP, RTSP, RTMP and TCP streaming
- HLS with adaptive bitrate support
- Simultaneous stream & record in various formats
- Fanless, lightweight aluminum chassis
- Low power consumption < 5 Watt, 5-12 Volt
- Web GUI, Telnet and SNMP configuration

APPLICATION

- IPTV solutions
- AV over IP streaming
- Broadcast contribution
- Event webcasting & internet streaming
- Digital signage streaming
- Training & education
- Medical & campus TV
- Remote desktop streaming
- Wireless & mobile streaming
- Networked conference room
- Control room & HQ surveillance

WORKFLOW INTEGRATION



VIDEO I/O & ENCODING

SDI video input:	Dual SDI input, YCbCr 4:2:2; loop through					
Compression standard:	H.264 (MPEG-4 AVC Part 10) and MJPEG, 4:2:0, 8-Bit					
Profiles:	Baseline, Main Profile, High Profile, signal can be scaled up to 3 instances					
Video encoding bit rate:	300Kb/s – 16Mb/s, low delay support, adaptive CBR					
Supported video resolutions:	1080p	(1920x1080)	@60p/i	1080p	(1920x1080)	@24p
	1080p	(1920x1080)	@59,94p/i	720p	(1280x720)	@60p
	1080p	(1920x1080)	@50p/i	720p	(1280x720)	@59,94p
	1080p	(1920x1080)	@30p	720p	(1280x720)	@59,94p
	1080p	(1920x1080)	@29,97p	PAL	(720x576)	@50i
	1080p	(1920x1080)	@25p	NTSC	(720x480)	@59,94i

AUDIO I/O & ENCODING

Audio input:	1x Stereo (2 channel) embedded per HDSDI input (selectable from 4 embedded groups) 1x Stereo, unbalanced, AC-coupled, mini-jack 3.5, 10 kOhm MIC/LINE level: +4/0/-3/-6 dBu selectable
Compression standard:	MPEG-4 AAC LC
Sampling rate:	Sample rate 48 kHz, 16Bit, 32-320 kbit data rate
Audio output (TALKBACK):	1x Stereo, unbalanced, AC-coupled, via mini-jack 3.5, Output gain: -78 dB to +9 dB 16 bit stereo, PCM, sample rate 48/44,1/32/16/8 kHz

TS PROCESSING & OUTPUT

TS Multiplexer:	ISO/IEC 13818-1 Transport, ISO/IEC 14496-10 NAL (Network Abstraction Layer)
Streaming types:	Up to 3 simultaneous unicast or multicast streams TS over UDP, TS over RTP, TS with Pro-MPEG FEC, TS video only, TS audio only, TS over TCP, RTP/RTSP (UDP or interleaved, RFC 3984), RTMP push, SRT, HLS
IP protocols:	HTTP, TCP/IP control protocol, UDP/RTP/TCP streaming, IGMP, SAP, unicast/multicast, SNMPv2, DHCP, IPV4, DNS, NTP
Network:	10/100/1000 TX Ethernet, RJ45, half/full duplex, auto sensing

ADDITIONAL FEATURES

Inserter:	Inserter for Logo, Text, Time and Date
Error correction:	(Forward-) Error correction with Pro-MPEG FEC and Secure Reliable Transport (SRT)
Scaling and frame synchronizer:	Up- and downscaling and cropping for each encoder, adjustable frame rate divider, auto scaling for seamless switching and fixed resolution or output follows input
Recording:	USB host device for recording Simultaneous streaming and recording to USB drive (TS and MP4)
RS-232:	RS-232 console mode for local control, com-server mode for RS-232 IP bridging
GPIO:	1x GPIO in TTL level, 1x GPIO out 10mA TTL
Management and security:	Web browser, SNMP, SSH/Telnet and RS-232, software updates via web browser fault measurement with log generation, authorization via user password, IEEE802.1X, RTC (Real Time Clock) support

ENC-400-HDSI

GENERAL

Housing:	PCB-Board or 100% lightweight closed aluminium case, fanless
Temperature & humidity:	0 to +45°C, Up to 90% RH, non-condensing
Agency approvals:	CE, RoHS
Dimensions and weight:	(H/W/D) 30mm x 105mm x 170mm, approx. 400 grams
Power:	5-12 VDC ≤ 5W per unit
Limited warranty:	1 year standard limited warranty. Warranty extensions for up to 5 years available.

FEATURE OVERVIEW

ENC-400-HDSI

HDSI input: Supports up to:	2x In + 2x loop through outputs 2x 1920x1080p60
Simultaneous encoding up to:	1x 1920x1080p60 or 1x 1920x1080p30, 1x 1280x720p60, 1x 720x480p30 or 1x 1920x1080p60, 1x 720x480p30 or 2x 1920x1080p30, 1x 720x480p30
Simultaneous encodings video/audio:	3/2
Simultaneous streams:	3
Telnet/SSH/SNMP:	✓/✓/✓
A/V multiplexer, stream container:	HLS, RTSP, RTMP, SRT, TS, TCP
Resolution:	1920x1080
Pro-MPEG FEC:	option
USB recording:	option
Logo insertion:	✓
Adaptive bitrate:	✓
Transport stream with constant bitrate:	✓
AES encryption:	✓
Stream synchronisation, time stamping:	NTP

CHASSIS OVERVIEW ENC/DEC SERIES

Type / Number of blades	400-Portable	FR-620-EXT
DEC-400-HDMI	1	6
DEC-400-HDSDI	1	6
ENC-400-HDMI/HDMI2	1	6
ENC-400-HDSDI	1	6

SPECIFICATION		
Redundant power supply:	x	✓
Power supply:	5-12 V DC ≤ 5W	100-240V AC 60W
Weight:	ca. 0,4 kg	2,36 kg (3,52 with power supply)
Dimensions (HxWxD):	30mm x 105mm x 170mm (HDMI) 39mm x 105mm x 190mm (HDSDI)	45mm x 485 mm x 185 mm



FR-620-EXT front view

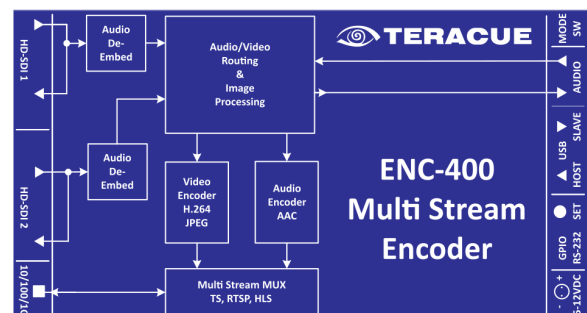


FR-620-EXT rear view

REAR VIEW & BLOCK DIAGRAM



ENC-400 rear view



ENC-400-HDSDI block diagram

ORDER INFORMATION

ENC-400-HDSDI-(PORTABLE)	H.264 and MJPEG HD/SD (portable) encoder device with dual HDSDI input with embedded audio and loop through outputs.
400-OPT-FEC	Upgrade option for Pro-MPEG FEC.
400-OPT-REC	Upgrade option for USB recording.
FR-620-EXT	1RU Rack mount chassis for max. 6 boards.

COMPLEMENTARY PRODUCTS

DEC-400-HDSDI	H.265, H.264 and MPEG-2 HD/SD decoder blade with dual SDI output, embedded audio Standalone portable decoder also available.
XPLAYER	PC Live stream playback software. License packages are available.
AMINET-140	Multi-format and multi-resolution Set Top Box for MPEG-2 SD/HD & H.264 SD/HD, compo- site, S-Video or component video and analog audio output.