

ENC-400-HDMI

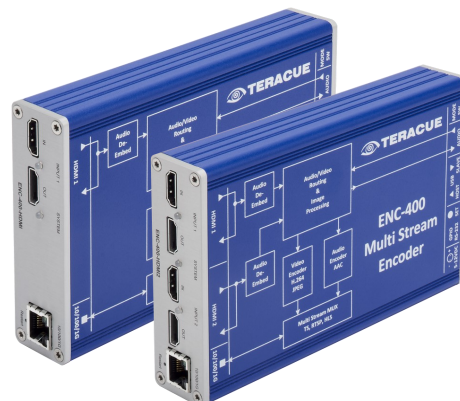
HD/SD HDMI H.264 and MJPEG Encoder

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.



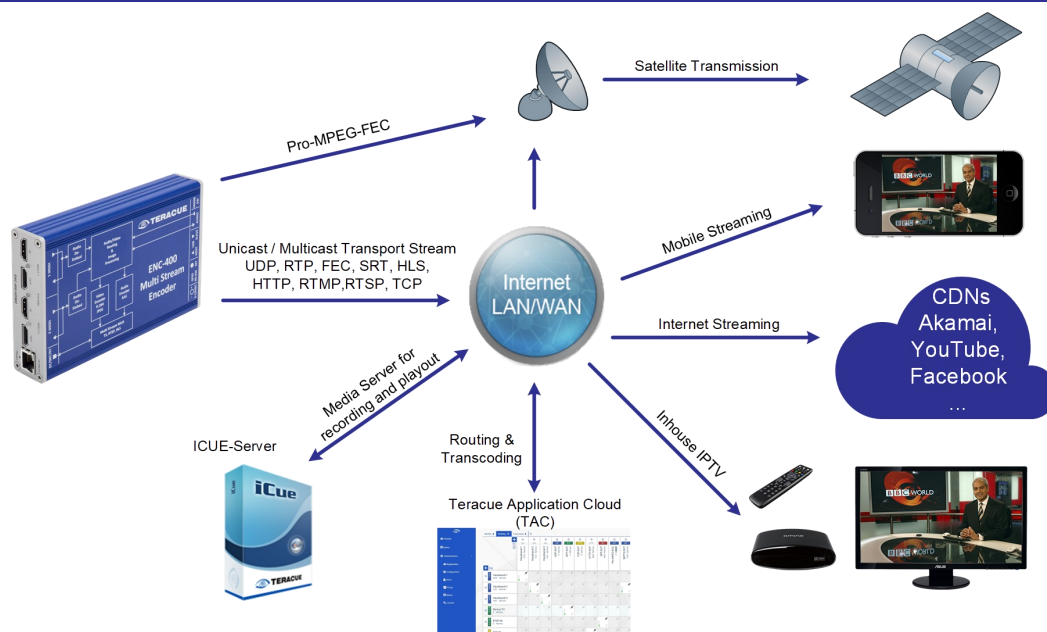
KEY FEATURES

- H.264 Baseline, main, high profile and MJPEG
- Up to 1920x1200@p60, 3440x1440@p24 or 4K@p15
- 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

HDMI video input:	Dual or Single HDMI 1.4 input, RGB 4:4:4, YCbCr, 4:4:4, YCbCr, 4:2:2, loop through (without HDCP)	
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:	4KUHD* (3840x2160) @15p UWQHD* (3440x1440) @24p WQXGA* (2560x1600) @30p 1200p (1920x1200) @60p 1080p (1920x1080) @60p	1080i (1920x1080) @60i 1080i (1440x1080) @60i 720p (1280x720) @60p PAL (720x576) @50i NTSC (720x480) @59,94i
	*ENC-400-HDMI2-(Portable) Only	

AUDIO I/O & ENCODING

Audio input:	1x Stereo (2 channel) embedded per HDMI input 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

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-HDMI	ENC-400-HDMI2
HDMI input:	1x In + 1x loop through output	2x In + 2x loop through outputs
Supports up to:	1x 1920x1200p60	1x 3840x2160p15 1x 3440x1440p24 or 1x 2560x1600p30 or 1x 1920x1200p60 or 2x 1920x1080p60 or
Simultaneous encoding up to:	1x 1920x1200p60 or 1x 1920x1080p30, 1x 1280x720p60 or 1x 1920x1080p60, 1x 720x480p30	1x 3840x2160p15 or 1x 2560x1600p30 or 1x 1920x1200p60 or 2x 1920x1080p30, 1x 720x480p30 or 1x 1920x1080p30, 1x 1280x720p60, 1x 720x480p30 or 1x 1920x1080p60, 1x 720x480p30
Simultaneous encodings video/audio:	2/1	3/2
Simultaneous streams:	3	3
Telnet/SSH/SNMP:	✓/✓/✓	✓/✓/✓
A/V multiplexer, stream container:	HLS, RTSP, RTMP, SRT, TS, TCP	HLS, RTSP, RTMP, SRT, TS, TCP
Resolution:	up to 1920x1200	up to 4K
Pro-MPEG FEC:	option	option
USB recording:	option	option
Logo insertion:	✓	✓
Adaptive bitrate:	✓	✓
Transport stream with constant bitrate:	✓	✓
AES encryption:	✓	✓/✓
Stream synchronisation, time stamping:	NTP	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

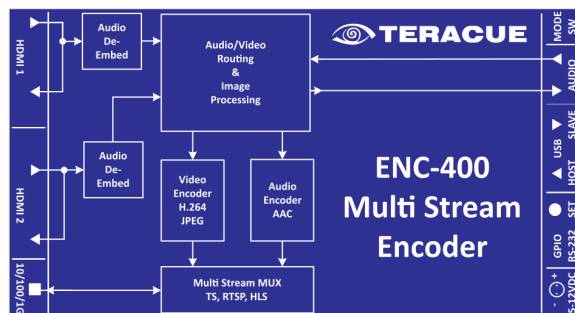


FR-620-EXT rear view

REAR VIEW & BLOCK DIAGRAM



ENC-400 rear view



ENC-400-HDMI2 block diagram

ORDER INFORMATION

ENC-400-HDMI-(PORTABLE)	H.264 and MJPEG HD/SD (portable) encoder with single HDMI input with embedded audio and loop through output.
ENC-400-HDMI2-(PORTABLE)	H.264 and MJPEG HD/SD (portable) encoder with dual HDMI 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

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, composite, S-Video or component video and analog audio output.