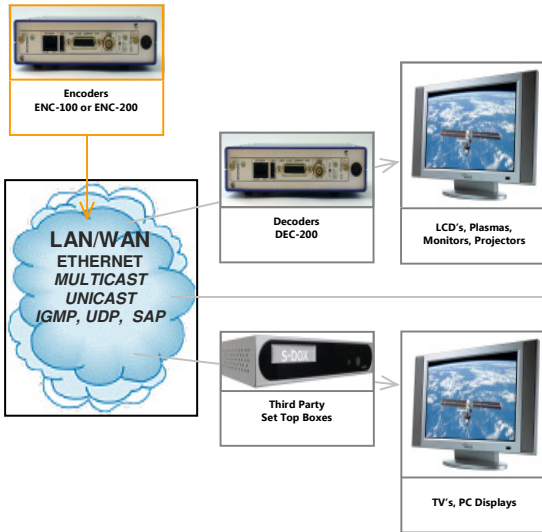# ENC-200

TERACUE
an eyevis group company

COMPACT MPEG-4 AVC H.264 SD ENCODING BLADES

The ENC series is designed for LIVE streaming applications where single TV channels, CAMERA signals or MONITORING feeds are distributed or published on a network.

The ENC series provides real-time compression of video and audio inputs. The ENC series create and transmit video streams inside LAN and intranet networks.

Input video/audio signals on an ENC encoder and view these streams directly -via network- on PC's, TV's or other display devices.

The ENC-200 is a compact, low cost H.264 SD video encoding and LIVE streaming blade.

The **ENC-200** encoder process input streams in up to full DVD-quality for professional MPEG-4 AVC H.264 SD streaming to any kind of device. ENC-200 encoder blades are built for robust 24/7 LIVE encoding operations and can be used in tough environmental conditions. They are designed without any moving parts, making them disk-, fan- and noiseless.

ENC-200 combines high-performance with unparalleled simplicity in a compact Ethernet video encoding appliance designed for commercial, institutional, and industrial applications such as:

- **Broadcast/TV Distribution over IP**
- **IPTV/Confidence Monitoring**
- **Security/Surveillance/Monitoring/Public Safety**
- **Medical/Corporate/Military/Industrial-Training**
- **Education/Distance Learning/Tele-Teaching**
- **Finance/Brokerage Television**
- **Legal/Legislative Communications**
- **News/Sports/Advertising Agencies – Air/Rail station advertising**
- **Manufacturing/Process Monitoring**
- **Hospitals/Clinics/Telemedicine**

Networking video input and stream creation
The ENC-200 real-time encoder is designed for LIVE streaming applications such as LIVE TV or video transmission, video trunking, IPTV encoding, remote monitoring feeds, video collaboration and is also used as the ingest for LIVE and VOD video publishing systems.

Flexible video for LIVE and ON-DEMAND
Real-time LIVE streams from ENC-200 encoders can be viewed on PC's by using Teracue's XPlayer software player.
TV's, LCD's, plasmas, monitors, can join the transmission streams with the robust DEC-200 decoder. Consumer and PC-based displays can cost-effectively receive ENC-200 streams with set top boxes.
To record and preserve LIVE feeds for later viewing, analysis or simply archiving the iCue™ Streaming Server has been designed.

Professional quality
ENC-200 encoders incorporate low-latency compression technology and professional signal processing, creating full resolution and smooth motion DVD-quality video streams.

Simple setup
Connect LAN Ethernet and a video/audio input signal and the ENC-200 encoder will turn into a true video networking "port", transmitting your video in digital form over IP networks.

Easy configuration
To access the intuitive graphical user interface use your standard web browser from any PC on the network, no special or additional tools are required. Remote network configuration is also supported over SNMP and Telnet, as well as serial control over the local Comport.

TALKBACK audio conferencing, integrated COM server and GPIO
The ENC-200 supports TALKBACK. This allows audio conferencing and communication between encoder standpoint and viewer. TALKBACK to ENC encoders is supported by PC's, as well as from the DEC decoder series. The Comport supports remote control of PTZ cameras and other peripheral serial equipment through it's integrated RS-232 port. The GPIO interface enables basic remote control of the ENC-200, e.g. turning encoding/transmission on/off, by a light sensor or foot switch.

Extremely robust and durable
The encoder blades are designed without any moving parts; such as hard drives/fans, to ensure system uptime, reliability and noiseless operation. The ENC-200 can be used in extreme operating conditions and at temperatures up to 60°C.

Blade based operation
The ENC-200 blades are operated inside the FR chassis series. Blades can be used in a single channel chassis (FR-110, as shown above) or in the FR-210 dual channel chassis. High-density requirements are solved by operating the ENC blades in the FR-2000 multi-channel rack, which can hold up to max. 21 Teracue blades. Different types of ENC encoder blades, DEC decoder blades and DVB/IP videogateways can be "mixed and matched" inside the FR-2000 chassis.

The ENC-200 encoder blades can be operated, mixed-and-matched inside the FR Chassis series:
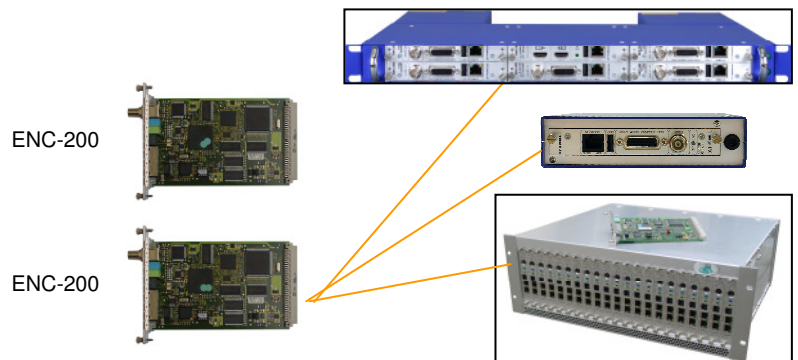
ENC-200

ENC-200

PRODUCT NAME: ENC-200

MPEG-4 AVC H.264 SD encoder blade with SDI input (embedded audio supported) and Composite, S-Video or Component Input
The BNC connector on the front panel can be configured as Composite input or as SDI input via mini-jumper.

The ENC-200 is delivered with the BREAK-OUT cable S as standard additional inputs/outputs via the DB26 connector.
Teracue also offers a professional BREAK-OUT cable P which must be ordered separately.

S - YC (MiniDIN), CVBS (RCA plug), Analogue Audio In/Out (RCA plug)

P - YP_BP_R, YC, CVBS, AES-3id (all BNC), Analogue Audio In/Out (RCA plug), GPI In/Out (Sub D 9pin), RS-232 (Sub D 9pin)

ENCODING SPECIFICATIONS

Standards	PAL, NTSC, 576i50, 480i60
Video Inputs	Composite: 1 V_{PP}, 75 Ohm (BNC) or SDI Input: 0,8 V_{PP}, 75 Ohm (BNC , embedded audio support); SMPTE259M, SMPTE272M This can be configured via mini-jumper

Break-out cable inputs: Composite: 1 V_{PP}, 75 Ohm
S-Video: 1 V_{PP} (Y), 0,3 V_{PP} (C - Pal), 0,286 V_{PP} (C - NTSC), 75 Ohm
Component: 1 V_{PP} (Y), 0,7 V_{PP} (P_BP_R), 75 Ohm

Video Encoding	MPEG-4 AVC H.264	Baseline Profile** at Level 3.0 (BP@L3.0), 4:2:0, ISO/IEC 14496-10 Main Profile at Level 3.0 (MP@L3.0), 4:2:0, ISO/IEC 14496-10

Video Encoding Bitrates	250Kb/s – 4Mb/s, CBR/VBR, low latency support
Video Input Resolutions	Full D1: 720h x 576/480v, Half-D1: 352h x 576/480v, CIF/SIF: 360/384h x 288/240v
Audio Inputs	2x Mono or 1x Stereo, unbalanced, AC-coupled Audio nominal level: -10 dBV (0,316V_{rms}), Maximum level: 3 V_{PP} Microphone nominal level: -50 dBV (1mV_{rms}), Gain Control for microphone and line input Minimum load resistance 10kΩ 2x AES-3id-1995 unbalanced, AC-coupled, 1V_{PP}, 75 Ohm, SDI embedded Audio, Dolby Digital Pass through*
Audio Encoding	MPEG-1 Audio Layer II (ISO/IEC ISO/IEC 11172-3), MPEG-4 AAC LC (ISO/IEC 14496-3)
Supported Sample Rates	48 kHz, 16Bit Sample Rate, 64-384 kbit data rate
Audio Outputs (TALKBACK)	Stereo, unbalanced, AC-coupled Output gain adjustment from (off) -78 dB to +9 dB Talkback: 16 bit mono, PCM, Sample Rate 24kHz/48kHz switchable
Stream Types, Multiplex Format	ISO/IEC 13818-1 Transport ISO/IEC 14496-10 NAL (Network Abstraction Layer) Elementary Audio/Video

I/O SPECIFICATIONS

Network	10/100TX Ethernet, RJ45, half/full duplex, Auto-sensing or manual control
Streaming Traffic	Unicast and Multicast traffic supported
IP Protocols	HTTP, TCP/IP Control Protocol, UDP/IP Streaming, RTP*, RTCP*, IGMPv3, SAPv2, Unicast/Multicast, Telnet, SNMPv2, DHCP
USB*	1x USB 2.0 (Blade Connector), High Speed, Type A socket 1x USB 2.0 (on board Connector), High Speed, Type A socket (on board USB stick recording, usage alter nately with Bade Connector)
RS-232 port	RS-232 connection via console (Remote control for non IP devices via TCP/IP RS-232 command tunnelling*)
GPIO*	1x In, non isolated, TTL 4 mA, 1x Out, non isolated, TTL 20 mA
MANAGEMENT	Configuration data can be stored/loaded as XML presets* Software updates via web browser (remote), or via Comport* (local) Fault measurement with log file generation*, authorization via user password, RTC (Real Time Clock) support

ENVIRONMENTAL

Agency Approvals	CE, RoHS, EN 55103-1, EN 55103-2, EN 55022
Humidity	Up to 90%, non-condensing
Temperature	0 to +60°C environment temperature; fanless when operated in FR-110 or FR-210
Weight	Approx. 160 grams
Blade dimensions (H/W/D)	20mm x 130mm x 190mm, Europe Card (160mm x 100mm, 3HE), Conform to IEC60297-3/-4
Power	5Vdc ±10% / 4W per blade
Limited Warranty	1 year standard limited warranty. Warranty extensions available.

***PLEASE NOTE: Live streaming/Multicast Streaming requires specially designed and configured networks.
Minimum Requirements include: Layer-3 Switched Ethernet, Multicast Enabled, IGMPv2/3, Network and Multicast Routing Supported.
* = Will be supported in future firmware versions.
** = On request