



Applications

- Converting between ETI and EDI
- Encapsulation of ETI/EDI streams for satellite and IP distribution
- Analyzing ETI/EDI streams
- ETI/EDI Recording

Features

- 4 ETI Inputs/Outputs
- Quad 10/100/1000 Ethernet interfaces with dynamic role assignment
- Highly energy efficient
- Remote control using REST API, SNMPv2c, EmBER+
- State-of-the-art security

The universal ETI/EDI processor.

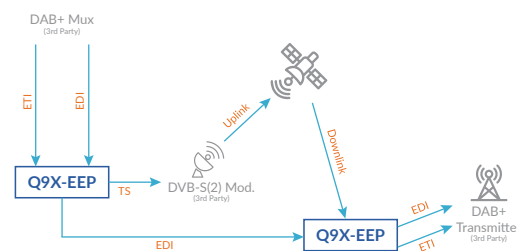
The Q9X-EEP is a universal processing platform that allows for conversion between ETI and EDI streams, as well as encapsulation of ETI and EDI streams for satellite and IP transport.

An integrated ETI/EDI analyzer allows checking and monitoring ETI and EDI streams for errors and to view the contents of a stream.

The optional recording features allows operators to do a rolling recording of up to 4 ETI or EDI streams on a local disk or network disk.

The ETI and EDI streams may be encapsulated into MPEG-2 Transport Streams for transport over existing transmission paths, for example via satellite. Seamless switching on the EDI PFT layer allows minimal impact to the customer on switchover.

Example Application: DAB Distribution Network



Multiple Q9X-EEP may be used in combination for redundant ETI/EDI transport over satellite and IP simultaneously. Seamless switching between both links ensures minimal impact to the listener.

Q9X-EEP ETI/EDI Processor

Specifications



ETI Interfaces

Physical Connectors	• 4x BNC E1/ETI Inputs (75Ohm) • 4x BNC E1/ETI Outputs (75Ohm)
Supported Formats (as per ETSI ETS 300 799)	• ETI(NI, G.703) • ETI(NA, G.704) 5592 • ETI(NA, G.704) 5376

EDI (as per ETSI TS 102 693)

Supported Transports	• SRT • RIST • UDP • TCP • Encapsulated in DVB-MPE (as per ETSI EN 301 192)
PFT Modes	• Encapsulation • Transportation • Fragmentation • Reed Solomon including all permitted combinations

MPEG-2 Transport Stream Output (as per ISO 13818-1)

Supported Transports	• SRT, RIST, RTP, Plain UDP • Forward Error Correction (according to Pro-MPEG Code of Practice #3, release 2) • Unicast, Multicast (IGMPv2/v3)
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Satellite Tuner (optional)

Input Frequency	950 MHz to 2150 MHz
Input Signal Level	-65 dBm to -25 dBm
Symbol Rates	• 1 MSps to 45 MSps ○ 100 kSps to 45 MSps (VLSR Tuner)
Standards	DVB-S, DVB-S2 (according to ETSI EN 300 421, ETSI EN 302 307-1/-2)
Payload Types	• MPEG-2 TS • GSE-HEM
Modulation	QPSK, 8PSK, 16APSK, 32APSK ACM, CCM, VCM
Roll-Off	0.05 to 0.35
Multi-Stream	Supported, automatic or manual ISI selection
Physical Layer Scrambling	Supported
LNB Control	• Universal LNB: 0V, 13V, 18V • DiSEqC 1.x

Recording

Rolling recording of full ETI streams	
Duration	Last 7 days
Number of streams	Up to 4 in parallel
Storage	• NFS • SMB ○ Local SSD

ETI/EDI Analyzer

Input Protocols	• ETI(NI, G.703) • ETI(NA, G.704) 5592/5376 • EDI
Features	• FCT/FP Monitoring • Sub-Channel Organization • Service List • FIB Counters ○ Audio Decoding ○ MOT Slideshow Decoding

Network Interfaces

4x Ethernet interfaces (IEEE 802.3, RJ-45, 10/100/1000 Mbps)	
Isolation of all networks by integrated firewall	
Roles can be freely assigned to any of the interfaces (Management, Data, etc.)	

System Configuration, Control and Monitoring

HTML5 Web UI	
Remote Control	• REST API • EmBER+ • SNMPv2c
User Management	• Fine-grained permission control • LDAP(S) authentication

Power Requirements

Connectors	• 1x IEC60320 C14 ○ 1x IEC60320 C14 (for 2nd power supply 100-230 V AC) ○ 1x Neutrik powerCON (for 2nd power supply -48 V DC)
Power Supply	• 100 to 240 V AC +/- 10%, 50 to 60 Hz ○ -48 V DC ○ Redundant Power Supply
Power Consumption	< 20 W

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Specifications (continued)

Physical Parameters	
Chassis	19", 1 RU
Size (W/D/H)	483 mm / 360 mm / 44 mm
Weight	5 kg

Environmental Conditions	
Operating Temperature	0 to 45 °C
Storage Temperature	-20 to 70 °C
Humidity	< 95 % (non-condensing)

Legend: ● Default ○ Optional