

EN470 Smart Encoder III

Standard Definition NTSC EIA-608B encoder used to encode closed captions into a video signal.

The Model EN470 Smart Encoder III is the standard for Broadcast Closed Caption Encoders. It can recover existing Line 21 code from the input video signal and insert locally supplied captions and text into Line 21 of either field, XDS data into field 2 or process both fields simultaneously. The EN470 has three RS232/RS422 Data Ports and one fixed RS422 Port. The user may configure these Data ports according to their operational needs. The encoder comes with one built in Modem and provision for a second internal Modem. The modems can be used as alternate ports in addition to the three RS232 ports.

ENCODER INPUT VIDEO CHARACTERISTICS

Video Input Level	1.0v p-p, Back Porch nominally at Ground
Video Input Circuit	Terminated except in by-pass mode
Input Impedance	75 Ohms
Input Return Loss	>= 40dB to 5 MHz.

DECODER INPUT VIDEO CHARACTERISTICS

Video Input Level	1.0v p-p, Back Porch nominally at Ground
Input Impedance	75 Ohms
Input Return Loss	>= 40dB to 5 MHz.
Input S/N Ratio	Unit will function down to 25 dB ratio (CCIR weighted) with typically one error per row at that level

ENCODER OUTPUT VIDEO CHARACTERISTICS

Video Output Level	Out 1 bypass protected, OUT 2 & 3 Auxiliary video outputs. 1.0V p-p Nominal
Insertion Gain	Unity, ± 2 IRE
Output Impedance	75 Ohms nominal
Output Return Loss	30dB to 5 MHz
Output DC Level	0V, ± 50 mV at back porch level
Clamp Type	Keyed-back porch
Frequency Response	± 0.1 dB, 50KHz to 5MHz; +0.1dB, -0.5dB 5MHz to 8MHz
Line Tilt	Less than 1%
Field Tilt	Less than 1%
Differential Gain	0.5% at 1V p-p 10-90% APL
Differential Phase	0.25 degrees at 1V p-p 10-90%APL
Signal-to-Random-Noise Ratio	65dB or greater CCIR weighting
Spurious Signals	At least 60dB down (up to 5MHz); At least 40dB down (above 5MHz)
Keying Transients	Less than 2 IRE units

DECODER OUTPUT VIDEO CHARACTERISTICS

Video Outputs	2 provided
Video Output Level	1.0V p-p nominal
Insertion Gain	Unity, ± 2 IRE
Output Impedance	75 Ohms nominal
Output Return Loss	30dB to 5 MHz
Output DC Level	0V, ± 50 mV at back porch
Clamp Type	Keyed-back porch
Frequency Response	± 0.1 dB, 50KHz to 5MHz; 0.1dB, -0.5dB 5MHz to 8 MHz
Line Tilt	Less than 1%
Field Tilt	Less than 1%
Signal-to-Random-Noise Ratio	65dB or greater CCIR weighting
Spurious Signals	At least 60dB down up to 5MHz; At least 40dB down above 5MHz
Character Video	90 units
Character Background Level	10 units

DATA INPUT CHARACTERISTICS

Data Ports	Three Ports via RJ 11 jacks
Serial Data Format	RS232C, settable between 1200-38400 Baud, typically 7 data bits, odd parity, 1 stop bit.
Modem	Provision for 2 modems, full duplex operation over PSTN per WECO 212A.

FRONT PANEL CONTROLS & DISPLAY

Display	2 x 24 LCD, back-lit display showing unit operating conditions.
Power (On/Off)	Push-button switch with integral circuit breaker. White band indicates Off state.
Encoder ON	Push-button switch controls bypass state. LED lit for non-bypassed state.
Selection	Three push-buttons used to control the decoder state or the menu selections.
Reset	Flush Push-button switch, resets the encoder.

REAR PANEL CONNECTORS

Encoder Video In	BNC connector, internal 75 Ohm termination when not by-passed.
Encoder Out 1	BNC 75 Ohm connector, unity gain output. bypass protected, external termination required.
Encoder Outs 2 & 3	BNC 75 Ohm connector, unity gain output. not bypass protected, external termination required.
Decoder Video In	BNC 75 Ohm connector, 1V p-p nominal level.
Decoder Out 1 & 2	BNC 75 Ohm connector, 1 V p-p out when terminated by 75 Ohms.
NC Code	0.3V p-p positive data stream, 75 Ohm Contains the entire Line 21 data.
Key Pulse	0.7V p-p, 75 Ohm. Positive rectangular pulse covering the duration of the active time of Line 21.
Data	Six RJ 11 Jacks for P1, P2, P3, Ma, Mb and VTR Control
Power	Standard captive 3-wire line cord, 5 feet long.

PHYSICAL CHARACTERISTICS

Height	1.75 inches (4.4 cm)
Width	19 inches (48.3 cm)
Depth	10 inches (25.4 cm)
Mounting	Designed for rack mounting with or without chassis slides.
Weight	9 lbs. (4.1kg)
Ambient Operating Temp	0øC, +50øC

POWER REQUIREMENTS

Line Frequency	50/60 Hz
Line Voltage	117 VAC 10%
Line Current	0.3 A maximum
Input Power	36 W
Circuit Protection	Internal to On/Off switch, 0.4 A.