

# WV Communications



## Model EX1001 - Tri-Mode Command Exciter/Encoder

### DESCRIPTION

WV Communications has designed, manufactured and tested the industry's first Tri-Mode Command Exciter/Encoder capable of supporting all three FTS formats; IRIG, Secure (High Alpha) & EFTS. This Tri-Mode Command Exciter/Encoder provides test ranges around the world with the flexibility of supporting numerous customers without incurring costs associated with reconfiguring the range's FTS assets. Our designs incorporate the latest engineering designs using DDS, DSP and FPGA technologies that provide for the highest performance and reliability on the market today. That design heritage along with WV Communications commitment to quality and customer support, make WV Communications the answer to all your FTS requirements.

### SPECIFICATIONS

#### EXCITER

Frequency Range:	370-450 MHz, in 100.0 KHz Steps
RF Output Power:	-5 dBm to + 10 dBm, in 0.5 dB Steps
Carrier Frequency Stability:	$\pm 0.0005\%$ Maximum over 24 hours
RF Output Impedance:	50 $\Omega$ Nominal
RF Output VSWR:	2.0:1 Maximum
Deviation Level:	IRIG/HA: $\pm 30$ KHz/Tone Nominal Adjustable EFTS: $\pm 50$ KHz Adjustable
RF Output Harmonics/Spurious:	60 dBc Minimum
FM Deviation Response:	$\pm 0.5$ dB Maximum from 5-75 KHz Tones



#### ENCODER

Types:	IRIG, Secure (High Alpha) & EFTS
Number of Tones:	IRIG: 20 Tones, Up to 6 Simultaneous Secure: 2 Tones (pairs) out of 8 Tones
Tone Frequency Stability:	$\pm 0.01\%$ Maximum
Tone Turn-On Stability:	Frequency Stable within 0.1% after 1 second
Tone Activation Input Level:	TTL levels, ON < 0.8 Vdc, OFF > 2.4 Vdc
Tone Output Level:	1V Pk-Pk /30KHz Pk Deviation
Tone Output Amplitude Variation:	15% Maximum
Tone Output Distortion:	1% Maximum with any Tone Enabled
Tone Output Signal Delay:	5 mSec Maximum from ACS to Stable Output, $\pm 0.1\%$ sec.
Tone Output Impedance:	50 $\Omega$ Nominal
EFTS Command Format:	64-bit Digital word per RCC 208-06
EFTS Message Format:	144-bit message frame per RCC 208-06
EFTS Bit & Message Rate:	50 messages per second
EFTS Encoding:	Manchester Bi-Phase Level Encoding per IRIG 106
EFTS Pre-Modulation Filtering:	4-pole linear phase filter with a bandwidth of 14.4 kHz at the -3 dB points
EFTS Bit Rate Stability:	1,000 ppm Maximum
Encryption Device:	Triple Data Encryption Standard (DES) Unit (TDU)
Status & Control:	Local via Color LCD Touchscreen, Remote via Serial RS-232 & Ethernet UDP/IP
Operating Temperature Range:	0-50 Degrees Celsius
Operating Relative Humidity:	0-95%
Operating Altitude:	0-10,000 Feet
Input Power:	115/230 $\pm 10\%$ VAC, 1 $\emptyset$ , 47-63 Hz, Auto Select, at 2/1 Amp Maximum