SMPTE/EBU TIME CODE
GENERATOR / INSERTER / READER

The **ES-488U** is a combination SMPTE/EBU Time Code Generator, Reader and Inserter. The unit can read and generate both time and user bits, and can operate in either drop frame or non-drop frame modes. Front panel controls select Time or User Bits, Drop Frame or Non-Drop Frame, Run or Hold and Reader or Generator modes. The micro-processor circuitry automatically detects and corrects for errors in time code (when reading). The **ES-488U** has "jam-sync" capability, a color sync input and a reconstituted time code output (when in reader mode). Video Inserter controls allow the Brightness to be adjusted and the Size and Position to be adjusted horizontally and vertically.

Reader Features:

- Display "Hold" Control
- Reads Time or User Bits
- Error Detection & Correction
- Reconstituted Time-Code Output
- Eight-Digit .56" Yellow LED Display
- "On Time" Count (Frame Accurate)
- Reads from 1/30th to 30x Play Speed
- Drop Frame & Non-Drop Frame Modes

Generator Features:

- "Hold" Control
- Color Frame Input
- Jam-Sync Capability
- Generates Time & User Bits
- Reset To 00:00:00:00 Switch
- Drop Frame & Non-Drop Frame Modes
- Time Code Synched To Composite Video

Inserter Features:

- Brightness Control
- Vertical & Horizontal Size Control (2% - 20% of screen)
- Vertical & Horizontal Position Control (anywhere, line by line)
- White or Translucent Video Characters Are Located Within Black or Translucent Keyed Background
- Other Features Identical To Reader

Operation Notes:

- Selectable EBU / PAL operation
- Incoming video is passed through unaffected when "Blanking" Switch is "OFF"
- Set/Select Controls set Time up to 23:59:59:00 and User Bits up to 99:99:99:00
- Color Frame Input usage assures frame numbers agree with SMPTE color frame standard
- GEN / READ Control selects Generator or Reader mode and implements the Jam Sync Function
- External composite video signal is the source of signal for video character inserter as well as for synchronizing the generated time code output (two BNC video outputs are provided)

Specifications

Time Code Input:	100 mV - 10 Vpp; 2kΩ input impedance unbalanced	**Drift:**	2 Seconds/Day
Time Code Output:	0 dB into 600Ω, balanced	**Display:**	Eight Digits, Yellow LED, .56" High
Video In/Out:	1 Vpp, 75Ω	**Electrical:**	117 VAC, 50/60 Hz
Color Frame Input:	Field #1 Vertical interval negative TTL/CMOS pulse	**Power:**	10 Watts Maximum
		Mechanical:	1.75" x 19" Rack Mount, 10" Deep
		Options:	Black, J, R, UL

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