

# NTP REFERENCED MASTER CLOCK/ TIME CODE GENERATOR

The **ES-188E** is an NTP referenced Master Clock and Time Code Generator. It displays nine digits (Day of Year, Hour, Minute & Second) of time as received via a user selected NTP server. Simultaneously, the **ES-188E** generates several types of time code (SMPTE-LTC/EBU, **ESE-TC89**, **ESE-TC90**, USB, RS232C/ASCII and IRIG-B) and a 1PPS signal. These outputs allow the **ES-188E** to easily interface with new or existing computer, automation and clock systems. An optional ethernet NTP (Network Time Protocol) port may be specified (**ES-188E/NTP6**) allowing the clock to be an NTP server and providing clock set-up via a LAN.

## Features:

- **ESE**, USB, ASCII (RS-232C), SMPTE-LTC/EBU & IRIG-B Time Code Outputs
- NTP Ethernet Port
- Automatic or Manual Daylight Saving Time Correction
- NTP Update Output
- 1 PPS Output
- USB Set-up Interface & Software
- Dual Battery Back-Up
- NTP Sync Indicator
- 9-Digit .56" LED Display
- Optional DC Operation for Field and Ground Mobile Applications
- Rugged Rack Mount Enclosure
- Time Advance/Retard Feature for Synchronization Purposes (+/- 15 sec)
- Time Zone Offset



Applications include NPR's ContentDepot in which the **ES-188E** extracts time data from the NPR satellite receiver. Connection is easily made between the units NTP port and the station's Local Area Connection (LAN). Option NPR permits the **ES-188E** to drive legacy equipment.

Software supplied with the **ES-188E** allows the user to select SMPTE mode (DF, NDF, EBU & Real Time), offset the Time Zone displayed and output by the **ES-188E**, input the time & date (when not synched to a server), modify dates for Daylight Saving Time, set for 12 or 24 hour display and advance or delay the time output for various synchronizing purposes.

## Specifications

**Electrical:** 117 VAC, 50/60 Hz  
**Power:** 15 Watts Maximum  
**Mechanical:** 1.75" x 19" Rack Mount, 10" Deep  
**Displays:** Nine Digits, Yellow LED, .56" High  
**Accuracy:** Network dependent, generally less than 1mS  
**Drift:** 33mS/day (if no NTP signal)  
**Input:** Ethernet: 10/100 Base-T  
**Battery:** 4-Hour Back-Up (displays are blank)  
**Video Input:** RS-170A Composite Video/Blackburst, 1Vpp, 75Ω

**Outputs:** **ESE** Time Code: drives 100 Slaves @ 4000'  
 USB: Universal Serial Bus, Date & Time Output  
 RS-232C: Date & Time Output  
 SMPTE: 600Ω Balanced or Unbalanced  
 IRIG-B: 3 Vpp (mark amplitude), 600Ω, AM or TTL selectable  
 1 PPS: TTL, 50% Duty Cycle  
**Clock Set-up:** USB, RS-232C, Network (Telnet or Windows®)  
**Options:** DC, HR, J, NPR, NTP6, UL

