

GPS MASTER CLOCK / TIME CODE GENERATOR

The **ES-185U** is a GPS (Global Positioning System) Master Clock and Time Code Generator. The unit displays nine digits (Day of Year, Hour, Minute & Second) of UTC (Coordinated Universal Time) as received via the internal 12-channel GPS receiver. Simultaneously, the **ES-185U** generates several types of time code (SMPTE/EBU, IRIG-B, **ESE-TC89**, **ESE-TC90**, RS232C/ASCII and USB) and an extremely accurate 1PPS signal (+/-10ns). These outputs allow the **ES-185U** to easily interface with new or existing computer, automation and clock systems. An optional ethernet NTP (Network Time Protocol) port may be specified (**ES-185U/NTP**) allowing the clock to be an NTP server and providing clock set-up via a LAN.

Features:

- SMPTE/EBU, IRIG-B, USB, ASCII (RS-232C) & **ESE** Time Code Outputs
- USB Set-up Interface & Software
- Automatic or Manual Daylight Saving Time Correction
- GPS "Lock" Indicator
- 4-Hour Battery Back-Up
- Optional NTP Ethernet Port
- Leap Second Correction
- Loss of GPS Signal Output
- 9-Digit .56" LED Display
- Indoor / Outdoor Antenna and 16' Cable
- Optional DC Operation for Field and Ground Mobile Applications
- Rugged Rack Mount Enclosure
- Time Advance/Retard Feature for Synchronization Purposes
- Dual 1 PPS Outputs
- Time Zone Offset



Included with the **ES-185U** is an indoor/outdoor antenna which is connected to the unit via the provided 16' cable. If additional cable is required, "low-loss" cable, an "in-line" amplifier (**LA-12F** or **LA-12FN** for low-loss cable) or, for extra long cable runs where more than one in-line amplifier is used, an "Antenna Power Supply" (**ES-AB1A**) may be required. Consult the **ESE** factory or website for more information.

Software is also supplied with the **ES-185U** permitting the user to continuously update a computer's Windows® clock to the time available on the USB port. Other features allow the user to 1) select SMPTE mode (DF, NDF, EBU & Real Time) 2) offset the Time Zone displayed and output by the **ES-185U**, 3) advance or delay the time output for various synchronizing purposes and 4) modify dates for Daylight Saving Time.



Standard GPS Antenna
with 16' cable



ES-Ant (Optional)
High Performance Antenna
with 19' cable

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
GPS Receiver: Internal 12-Channel
Antenna: Indoor/Outdoor Dome with 16' Cable
Accuracy: 1 PPS @ <10ns (20% Duty Cycle)
 IRIG-B @ 1µS
ESE TC89 & TC90 Time Code @ 17mS
 SMPTE , +/- 3 to 12 Frames
 Adjustable (Video Modes),
 0 Frames (Real Time Mode)
Drift: 33mS/day (if no GPS signal)
Video Input: RS-170A Composite Video/Blackburst, 1 Vpp, 75Ω

Outputs: 1 PPS: TTL, 20% Duty Cycle
 1 PPS: TTL, 50% Duty Cycle
 IRIG-B: 3 Vpp (mark amplitude), 600Ω,
 AM or TTL selectable
ESE Time Code: drives 100 Slaves @ 4000'
 SMPTE: 600Ω Balanced or Unbalanced
 RS-232C: Date & Time Output
 USB: Universal Serial Bus, Date & Time Output
 Ethernet (optional): 10/100 Base-T, NTP Output
Clock Set-up: USB, RS-232C, Network (Telnet or Windows®)
Battery: 4-Hour Back-Up (displays are blank)
Options: Ant, DC, HR, J, K, NTP, UL

