



WHAT'S NEW FOR NAB 2019

GPS BASED PTP GRANDMASTER CLOCK



The **ES-185F/PTP** is a GPS Master Clock/Time Code Generator and IEEE-1588 PTP/NTP Time Server. The unit receives accurate time and date information from Global Positioning System satellites and displays nine digits of time (Day of Year, Hour, Minute & Second). Simultaneously, the **ES-185F/PTP** generates several types of time code including SMPTE/EBU LTC, ESE-TC90/TC89, ASCII (RS-232C & USB), IRIG-B and a 1PPS signal. These outputs allow the **ES-185F/PTP** to easily interface with new or existing computers, automation and clock systems. ESE's **ES-185F/PTP** offers an accuracy of better than 10nS, and is entirely self-setting. The unit provides an internal Coin Cell for backing up the GPS receiver time.

Shown Above with Option FREQ

OVEN CONTROLLED CRYSTAL OSCILLATOR

The **Option OCXO** provides an Oven Controlled Crystal Oscillator that replaces the standard temperature compensated crystal oscillator. The OCXO improves drift from 33mS per day with the standard oscillator to only 2mS per day. **Option OCXO** is currently available for the ES-185F/PTP, ES-188F/PTP, HD-488E, SD-488E, ES-295/GPS/NTP6 & ES-295.

RUBIDIUM OSCILLATOR

The **Option Rb** provides a Rubidium Oscillator that replaces the standard temperature compensated crystal oscillator. The Rubidium Oscillator improves accuracy beyond the OCXO from milliseconds per day to just microseconds per day during drift. **Option Rb** is currently available for the ES-185F/PTP & ES-188F/PTP.

GLOBAL NAVIGATION SATELLITE SYSTEM



A Global Navigation Satellite System, or GNSS, is a generic term for a group of satellites that send timing & position data. The GPS, or Global Positioning System, is just one GNSS. Access to more than one GNSS has many benefits. ESE's **Option MG** provides a Multi-GNSS receiver capable of tracking GPS, GLONASS, Galileo or BeiDou systems.



ESE's standard product line covers a wide range, from inexpensive desk clocks to highly accurate PTP GrandMaster Clock Systems including Digital & Analog Displays, as well as a variety of Video & Audio Products. ESE has also been a pioneer in affordable Time Code Systems from broadcast quality SMPTE/EBU to advanced military IRIG Time Code & Airborne Products.

- Master Clocks Systems
- Clocks & Timers
- Digital Video Products
- Distribution Amplifiers
- SMPTE Time Code Products
- Audio Products
- Video Products
- Time Control Products
- IRIG Time Code Products
- Airborne Products
- Time Code Converters
- 9-1-1 Products

PTP REFERENCED MASTER CLOCK



The **ES-188F/PTP** is a PTP referenced Master Clock / Time Code Generator / NTP Server. It displays nine digits (Day of Year, Hour, Minute & Second) of time as received via a user selected IEEE-1588 PTP Grandmaster. Simultaneously, the **ES-188F/PTP** generates several types of time code including SMPTE/EBU LTC, ESE-TC90/TC89, ASCII (RS-232C & USB), IRIG-B and a 1PPS signal. These outputs allow the **ES-188F/PTP** to easily interface with new or existing computers, automation and clock systems. The NTP Server function allows NTP synced equipment to be synchronized from the PTP source.

A user may find the **ES-188F/PTP** particularly beneficial if: 1) The user has trouble getting a reliable GPS Signal into a facility, such as a basement or a building with metallic coating on the windows; 2) The user has trouble getting an antenna to the outside of a facility, because the cable run will be too expensive or the facility cannot be modified, which is the case with many historical buildings or 3) A facility needs to be time synchronized to a remote location through PTP, for example, universities with multiple campuses or NPR affiliate stations.

Shown Above with Option FREQ

PROGRAMMABLE FREQUENCY OUTPUTS

The **Option FREQ** provides two BNC connector outputs that can individually be programmed for any of the following frequencies: 8 KHz, 1.544 MHz, 2.048 MHz, 10 MHz, 19.44 MHz, 20 MHz, 25 MHz, 125 MHz, 155.52 MHz, 156.25 MHz. These outputs can be used as a source for laboratory use or as an RF reference. **Option FREQ** is currently available for the ES-185F/PTP & ES-188F/PTP.

