Event Timer: A033-ET

Single-shot RMS resolution for the A033-ET is in the range 2.5-3.0 ps, allowing the repetition rate in burst up to 20,000,000 time-tags/sec

Temperature stability: Thanks to thermo-compensated schematic the RMS resolution after calibration degrades only 0.3 ps in temperature variation ± 7.5 °C.

Integral non-linearity is an error depending on the position of measured event over interpolation interval 10 ns and is included in RMS resolution.

Interval non-linearity error for full measurement range from 50 ns up to 1.5 hours does not exceed ± 0.25 ps

Input-to-input offset drift impacts on measured Start-Stop time interval value dependent on temperature. There it is less than 0.1 ps/°C.

New embedded server system Event Timing Server Console (ETSC) is designed for providing the TCP/IP interface for the A033-ET devices with parallel interface. This solves problem of PC with Parallel Port and increases the average measurement rate up to 160,000 time-tags per second.

ETSC software is implemented at Raspberry Pi and executes all functions of the Server 1 and Server 2 of the Event Timer A033-ET system providing the time measurements for distributed Clients of this system. The Client-Server configuration allows to create automated multi-user systems working with multiple ranging devices. Raspberry Pi resources in the ETCS can be used for additional application specific and automation software. Only a part of GPIO Raspberry interface is used for software interactions with A033-ET device so the remaining GPIO pins may be used to control other devices.

The models A032-ET and A033-ET are well known in ILRS community and are using in many SLR stations around the world.

In 2011 under Licensee Agreement the rights for manufacturing and distributing of all A033-ET systems are transferred to EvenTech Ltd. Today 91 devices and 12* sets of ET modules are sold not only for SLR applications but also for Time Transfer by Laser Link, Gravimetry, Jitter Measurement and Analysis etc.

New Event Timing Server Console solves the problem of PC with Parallel Port and essentially increases the measurement rate. Client-Server configuration gives wide possibilities for SLR automation and ETCS implementation in Raspberry allows to expand ranging functions with built-in application-specific SW.