



Picosecond-precise & Extremely Reliable Data Acquisition & Signal Processing Systems for Terrestrial & Space Applications

What we do?

Eventech is a highly experienced **engineering company** from Europe, which **develops & manufactures proprietary timing products and complex signal processing systems**, cooperating with leading Research Organisations, Space Agencies & Industrial Partners and providing **on-demand engineering services** to tackle technological challenges and create new market applications.

Eventech's core competences lie in **repeatable, extremely accurate and environmentally resistant data acquisition** via Time-to-digital Conversion (TDC) and Analogue-to-Digital Conversion (ADC), **and signal processing / data interpretation**.

Partners:

- European Space Agency • NASA • German Aerospace Center (DLR) • National Physical Laboratory (NPL) • many more •

40+ Years Technology Heritage

1.5 ps Terrestrial Precision 5 ps Space Precision

- Reliable**
Our customers report the extreme reliability of our products!
- Trusted**
> 50% of all SLR stations are equipped with our products.
- Recognised**
European Space Agency (ESA) projects for Space Missions. Recommended by NASA ILRS.

Competences

Picosecond Precise TDC (Time-to-Digital Converter) Systems Terrestrial & Space Applications	Photoncounting for Atmospheric Lidars	High-rate Low Power Consumption Systems for Telecommunication
Photoncounting Combined with TDC & High-speed High-resolution Analogue-to-digital Data Acquisition		IN DEVELOPMENT
Amplitude Measurements	Signal Curve Reconstruction	TDC with Subpicosecond Precision

Terrestrial Applications

- Satellite Laser Ranging
- > 50% Stations Worldwide
- Gravimetry
- Time Transfer via Optical Fiber
- Signal Processing for LiDAR
- Time Resolved Measurements
- Time Synchronisation
- Time Transfer via Open-air Optical Link (e.g. T2L2)

Space Applications

- Accurate TDC for Space LiDAR
- Atmosphere Aerosols Backscattering
- Debris Tracking Systems
- Space Gravimetry
- Space Altimetry
- Super Low Power Consumption PPM Based Communication & Data Transfer
- Accurate Signal Registration in Sensor Systems to Provide Time Stamps
- Quantum Communication Quantum Key Distribution

• Customisable to Fit Your Application •

Projects by Competence

Picosecond Precise TDC (time-to-digital converter) systems Terrestrial & Space Applications		Photoncounting for Atmospheric Lidars	High-rate Low Power Consumption Systems for Telecommunication
ESA Project MPET Onboard implementation of the Multi-purpose Event Timer Start Year: 2017 Status: Completed Role: Main Contractor Subcontractors: Institute of Electronics & Computer Science, BD Sensors	ESA Project ESA Satellite Laser Ranging Operational Prototype. Timing System for ESA SLR station in Tenerife Start Year: 2019 Status: Completed Role: Subcontractor Main Contractor: DiGOS	ESA Project SPATILIDAS Space Timer for Lidars and Autocorrelation Sensors Start Year: 2020 Status: Completed Role: Main Contractor	ESA Project TIPIPLAS Timer for Picosecond PPM based Lasercom Link Start Year: 2022 Status: Ongoing Role: Main Contractor
ESA Project CUTMB Compact Universal Time Measurement Block ASIC Timer Preliminary Design Start Year: 2020 Status: Completed Role: Main Contractor	ESA Project Part of HERA Mission LSTM LIDAR and altimetry Specialized Timing Module Start Year: 2020 Status: Completed Role: Main Contractor	ESA Project EVELIP Eventech Lidar Processor Start Year: 2021 Status: Completed Role: Main Contractor	Advantages Compared to Other Telecom: MINIMUM Power Consumption for the MAXIMUM Data Rate
ESA Project Part of HERA Mission PALT Timing Module for Planetary Altimeter Start Year: 2021 Status: Ongoing Role: Subcontractor Main Contractor: EFACEC	Private Project Project with ASIC-producing Partner Request for external TDC testing Start Year: 2023 Status: Completed	Photoncounting Combined with TDC & High-speed High-resolution Analogue-to-digital Data Acquisition	
		ERAF Project Multi-channel Picosecond Precise Time-tagging System with Amplitude Measurement Start Year: 2020 Status: Ongoing Role: Main Contractor	

Services

On-demand Engineering

- According to Our Competences & Your Requirements •

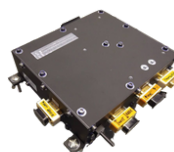
Products



Eventech Stream Time Tagger

ESTT 7 Series

RMS, time tags (typical)	1.5 ps
RMS, time tags (max)	1.8 ps
RMS, differences (typical)	2.1 ps
RMS, differences (max)	2.5 ps
Input minimum pulse width	> 0.5 ns width
Measurement average rate	25 MEPS
Dead time	40 ns
Synchronisation error of input signals and signal 1 PPS	± 15 ps (max)
Single-input time tag drift	< 1 ps / °C
Input-to-input offset drift	< 0.15 ps / °C
Comparison levels of input signals	set by software in the range -2÷+3V step 1 mV
Selection of the effective edge of the input signal	rising or falling edge selectable by software



Eventech Space Ready Timing Module

Precision range	5 - 10 ps
Single-shot RMS (typical)	7 ps
Two measuring inputs A and B	LVDS levels
Communication interface	RS-422
External power supplies	+ 3.3V, ± 5V
Power consumption	≤ 4 W
Minimum measurable time interval	60 ns
Working temperature range	- 40C ° ÷ + 60C °
Radiation level	up to 100Krad
Maximum measurable time interval	Tmax up to 167 ms
Dimensions	110x130 mm (can be below 100x100 mm)
Accuracy	depends on Tmax and the class of the internal clock generator used (for XO clock generator: Tmax X ± 50 ppm)