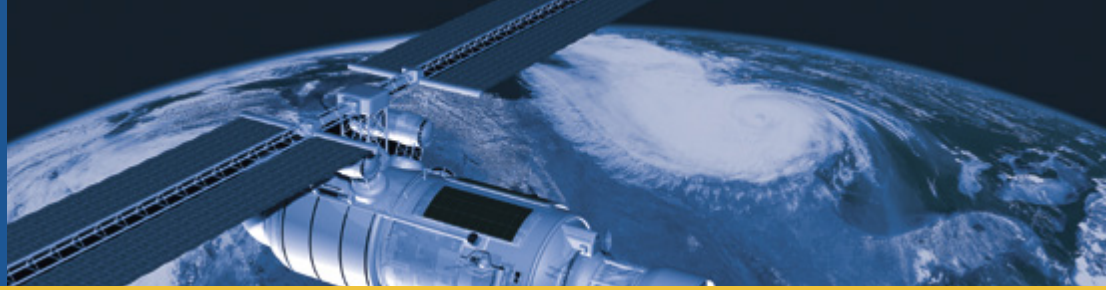
The right one.™



THE THUNDERBOLT® LAB KIT

GPS-DO CLOCK FREQUENCY AND TIME REFERENCE

for Laboratory, Manufacturing and Research

KEY FEATURES & BENEFITS

- Low cost lab reference for frequency and precise time
- 10 MHz and PPS reference
- Complete kit including GPS receiver, antenna, software and power supply
- Improve CMC (Calibration and Measurement Capability) under ISO/IEC 17025
- Lock your lab instruments to a traceable source
- Add value to existing equipment

SAVE WITH GPS-DISCIPLINED 10 MHZ AND 1 PPS REFERENCE

Laboratories and research facilities often need a high-accuracy frequency and time standard. Possession of such a standard improves the CMC (Calibration and Measurement Capability) of the laboratory leading to opportunities for increased business and revenue.

With the Thunderbolt® E GPS disciplined oscillator (GPS-DO) you can achieve high accuracy in a less complex and more cost effective way. This combination of GPS receiver and oscillator is inherently "on time". Your reference is locked to the atomic time reference of the GPS system and in turn to UTC.

Eliminate Reference Calibration Requirements

This product eliminates the time consuming and costly process of calibrating stand-alone reference sources.

The reference source maintains the traceability requirements according to ISO/IEC 17025, ILAC and laboratory accrediting organizations.

The GPS receiver calculates the time from the available satellites and adjusts the oscillator to remove the major inaccuracies from the 10 MHz frequency and pulse per second (PPS) outputs.

The Thunderbolt frequency and time outputs are now locked to the GPS master clock and in turn to UTC providing tracability to a national standard as required by lab accrediting organizations.

Enhance Capabilities of Equipment You Already Own

The Thunderbolt Lab Kit may be used as an external time base for frequency counters and other lab test equipment. Your counter time base is now locked to a traceable source, specifically GPS and UTC.

Carry Your Reference In The Field

The Thunderbolt E GPS-DO is easy to deploy at customer sites for enhanced accuracy.

Start With Complete Kit "Ready To Go"

The kit is complete and ready to be used in the lab including the GPS-DO Clock (GPS receiver with double-ovenized oscillator and communications), active GPS antenna, power supply, connectors and extra power cable for wiring into test apparatus, enclosures, panels or racks.

The kit is supported by the Trimble GPS Studio software (downloadable from the Trimble website). Trimble GPS Studio offers complete control, monitoring and data logging and data conversion features. The logging features can be used to create audit records to support traceability and operating status for the system. This data can also be made available to other applications including spreadsheets and databases allowing integration into other reporting and analysis systems.

75 feet of RG-6 cable, terminated with TNC connectors at both ends

Trimble Bullet antenna (5 V with TNC connector)

Power cable (two cables - one unterminated)

Power converter (24 V DC AC/DC)

Power pin adapters

BNC-(m) / TNC-(f) connector

Trimble

THE THUNDERBOLT® LAB KIT

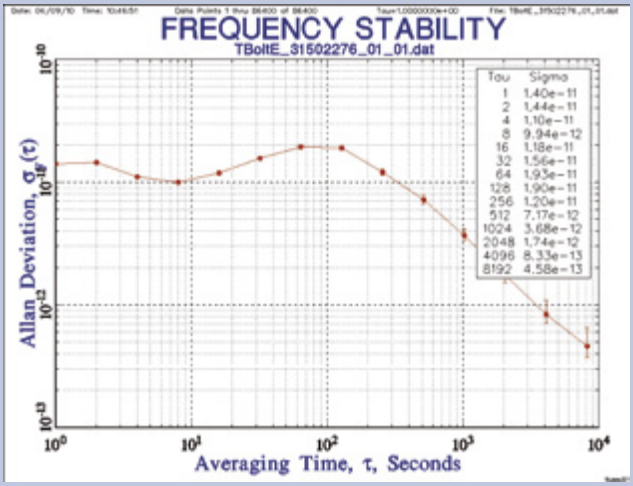
LOWER YOUR OPERATING COST
Eliminate the calibration cycle associated with a traditional reference source

ENHANCE YOUR CUSTOMER SERVICE
Easy to transport and use at a customer site.

COMPLETE KIT
Includes antenna, power supply, all cables and connectors. No add-ons required

REDUCE CAPITAL EXPENDITURE
Enhance your existing equipment and avoid purchasing new or additional instruments

INCREASE YOUR REVENUE POTENTIAL
Improve lab CMC capabilities to attract new business and add higher value business



REFERENCE ACCURACY
PPS accuracy . . . . . UTC 15 ns (1 sigma)
10 MHZ accuracy . . . . . 1.16×10^{-12} (1 day average)
10 MHZ stability (see graph at left)

ORDERING INFORMATION & ACCESSORIES
Please go to www.trimble.com/timing for the latest documentation, software, tools, part numbers and ordering information.

Trimble has relied on representations made by its suppliers in certifiying this produt as RoHS compliant.

Specifications subject to change without notice.

Trimble Navigation Limited is not responsible for the opration or failure of operation of GPS satellites or the availability of GPS satellite signals.

NORTH AMERICA
Trimble Navigation Limited
Corporate Headquarters
935 Stewart Drive
Sunnyvale, CA 94085
+1-704-875-0875 Phone

Email: timing@trimble.com

EUROPE
Trimble Navigation Europe
+46 70-544-10-20 Phone

KOREA
Trimble Export Ltd, Korea
+82-2-555-5361 Phone

CHINA
Trimble Navigation Ltd, China
+86-10-8857-7575 Phone

PN 022542-037 (03/12)

Trimble

www.trimble.com