GuideTech

Precision Time & Frequency
Test & Measurement Instruments, ATE

GT9000, GT9000R, GT9000SLR, GT9000P

TIC Time Interval Counter 2.7GHz, 0.9ps
MUX DC to 6 GHz 17-to-2 Active Multiplexer
CTIA Continuous Time Interval Analyzer 2.7GHz, 0.9ps

APPLICATIONS

- 1 PPS Monitoring
- Allan Variance
- Measure Jitter and Skew
- Real-Time Time Stamping
- Lab / R&D Characterizations
- Variation in Pulse Timing
- PLLs and Frequency Modulation
- Fast Production Time Analysis
- Portable Telecommunication Test
- Nuclear Physics
- Radar & Ultrasonic Timing
- Satellite Laser Ranging
- Optical and Magnetic Disk Timing

SOFTWARE SUPPORT
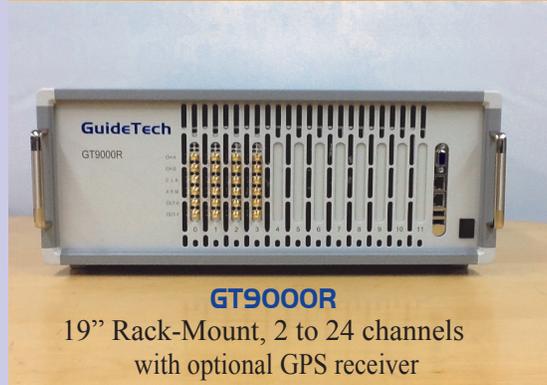
- GuideTech GT668 CTIA GUI
- Windows 32bit, 64 bit
- Linux 32bit, 64 bit
- NI LabVIEW
- Python
- Java
- Custom software dev/support
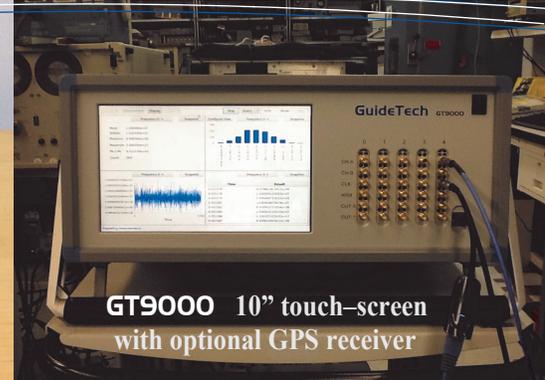
KEY FEATURES

- Very low noise floor
- Extremely high throughput
- NIST traceable calibration
- 2 to 24 correlated channels
- 17 to 102 channels GT916MUX
- Small-size & portable-USB3 unit
- Seamless transition from R&D, device characterization to production
- High accuracy & measurement speed
- Easy integration with ATE systems

GuideTech

GT9000P-USB3 2 channel Portable

GT9000 10" touch–screen with optional GPS receiver

GT9000R
19" Rack-Mount, 2 to 24 channels
with optional GPS receiver

GuideTech's computer-based plug-in card instruments (since 1988), **GT668 CTIA C**ontinuous **T**ime **I**nterval **A**nalyzers & **GT210 TIC T**ime **I**nterval **C**ounters, are also available as an industrial-grade integrated Test platform with high-accuracy 10MHz OCXO time-base with optional GPS disciplining and optional Rubidium or Cesium**, NIST** traceable calibration, enabling accurate continuous (Zero Dead Time) test, where all measurement channels are correlated and synchronized to the same master-clock.

GT9000 is a scalable 2 to 10 channels Bench-Top **CTIA** and/or **TIC** Test Platform with 10" touch-screen-display (iPhone quality), integrated **GUI** with Touch, Ethernet, Wi-Fi and/or wireless keyboard & mouse.

GT9000R is a scalable 2 to 24 channels 19" Rack-Mount **CTIA** and/or **TIC** Test Platform with integrated **GUI**, Ethernet, Wi-Fi and/or wireless keyboard & mouse.

GT9000P-USB3 is a 2 channel Portable **CTIA** and/or **"TIC"** Test Platform controlled by USB3.

GT9000SLR is a scalable 2 to 24 channels **Event-Timer** with GPS receiver.

GT916MUX is a DC to 6 GHz 17-to-2 Active Multiplexer. Combined with the **GT668 CTIA** and/or **GT210 TIC,** you can Have up to **36** channels in the **GT9000** and up to **102** channels in the **GT9000R.**

Some of the **GT9000** test-platform measurements include: Frequency, 1 PPS Monitoring, Alan Variance, Time Interval, Time Interval Error, Real-Time Time Stamping, Jitter measurements, PLL & Clock Jitter, Spread Spectrum Modulation, PLL Lock Time, Period, Pulse Width, Skew, Tpd, Rise/Fall Time, and more.

With easy expansion through its modular design, **GuideTech**'s **GT9000** Test-Platforms offers a comprehensive Time & Frequency test-solutions for a wide range of applications From R&D labs to Characterization, field test, fast automated characterization and high-throughput production test on all ATE platforms, including low-cost in-house testers.

In addition to the **GT9000** Test Platforms, **GuideTech** offers **CTIA & TIC** instruments in **PCI, PCIe, PXI** and **PXIe** plug-in cards**.**

GT9000 family is USA-made industrial -grade systems with an integrated industrial-computer. The platform enables scalable optimal test at lower cost .

GT9000, GT9000R, GT9000SLR, GT9000P

TIC Time Interval Counter 2.7GHz, 0.9ps
MUX DC to 6 GHz 17-to-2 Active Multiplexer
CTIA Continuous Time Interval Analyzer 2.7GHz, 0.9ps

- ♦ The **GT9000, GT9000R, GT9000SLR** & **GT9000P** test Platforms can be configured with any combinations of **GT668 CTIA** and/or **GT210 TIC** and/or **GT916MUX**

- ♦ The performance level of the instruments ranges from **0.9ps** to **40ps** (see **GT9000** Models table on left)

- ♦ The Time-Base has several options from OCXO to Rubidium and CSAC-Cesium

- ♦ **GTGPS** - Optional GPS Receiver with Antenna disciplining the time-base

SPECIFICATIONS

GT9000 MODELS

GT668 CTIA

- ♦ **GT668-1**
- ♦ **GT668-2**
- ♦ **GT668-15**
- ♦ **GT668-40**

GT210 TIC

- ♦ **GT210-1**
- ♦ **GT210-2**
- ♦ **GT210-15**
- ♦ **GT210-40**

- ∗ **-1** = 0.9pS resolution
- ∗ **-2** = 1.8pS resolution
- ∗ **-15** = 15pS resolution
- ∗ **-40** = 40pS resolution

GT916MUX

GTGPS - GPS Receiver

- ♦ **GTGPS0 - OCXO**
- ♦ **GTGPSR - Rubidium**
- ♦ **GTGPSC - CSAC Cesium**

MAIN INPUT CHANNELS:
- No. of channels: 2 per site, A & B
- Frequency range: DC - 2.7 GHz
- Sensitivity:
  - * 50 mV rms (DC - 2.7 GHz)
- Input impedance: 1KΩ / 10 pF, or 50Ω software programmable
- Coupling: DC or AC
- Threshold setting (each channel):
  - * Range: -5V to + 5V
  - * Resolution: 153μV
  - * Absolute accuracy: 0.1% of setting
  - * Automatic threshold setting option

TIMEBASE:
- Frequency 100MHz locked to:
  - * Internal 10MHz OCXO
  - * External clock: 5 or 10 MHz (±3KHz)
- Minimum pulse width: 6nS
- Oven Oscillator:
  - * Temp: 0 - 45ºC ± 25ppb
  - * Aging: ±1 ppm first year, ±3 ppm over 20 years

EXTERNAL CLOCK & ARM INPUTS:
- Sensitivity: 50mV rms
- Input impedance: 1KΩ
- Threshold setting
  - * Range: - 5V to + 5V
  - * Resolution: 153μV
  - * Absolute accuracy: 0.1% of setting
- Automatic threshold setting available

EXTERNAL CONNECTIONS
- Main channels: 2, SMA per site
- External clock: 1, SMA
- External arm: 1, SMA
- Digital input: 1 SMA (for 1PPS UTC synch)
- Digital output: 2, SMA (software programmable, to control user subsystems)