

GuideTech

Precision Time & Frequency
Test & Measurement Instruments, ATE

GT668 Ultra Fast CTIA

2.7GHz, 0.9pS Res. Continuous Time Interval Analyzer



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**
- Software package & APIs
- Windows 32bit, 64 bit
- Linux 32bit, 64 bit
- NI LabVIEW
- Python
- Java
- Custom software development/support

KEY FEATURES

- Very low noise floor
- High Accuracy, flexibility, and measurement speed 4M m/s per channel
- Two programmable Outputs
- UTC synchronizable with 1 PPS
- NIST traceable OCXO time-base
- Seamless transition from R&D lab to device characterization, and production
- Easily expandable for building complete **PXI/PXIe** systems with up to 17 Cards/34 synchronized channels

With a smaller foot-print and much more powerful performance than its previous generation **GT658** (since 1988), **GuideTech's** computer-based **GT668 CTIA** enables a wider range of cutting-edge applications.

With easy expansion and modular capabilities, **GuideTech** offers a wide range of **CTIA** solutions in **PCI, PCIe, PXI, PXIe, GT9000, GT9000R, GT9000SLR, GT9000P, GT8000-PXI/PXIe, GT8000SLR-PXI/PXIe** Test Platforms.

A true breakthrough in high-speed Time Measurement and test technology, **GuideTech's GT668** leverages the power of its continuous time-stamping technology, eliminating the need for supplemental triggers, pattern markers or clock recovery circuits.

GuideTech's CTIAs enable serial interface pattern verification and full jitter analysis in milliseconds for fast, automated characterization and high-throughput test on all ATE platforms, including low-cost in-house testers.

GT668 PXI & PXIe cards can be expanded up to 34 Channels Single Ended Input in a single 3U **GT8000 PXI** and/or **PXIe** chassis.

Some of the **GT668** measurements include Time Interval Error, 1 PPS Monitoring, Jitter measurements, PLL & Clock Jitter, Spread Spectrum Modulation, PLL Lock Time, Frequency, Period, Pulse Width, Skew, Tpd, Rise/Fall Time, and more.

GuideTech's GT668 has high-accuracy 10MHz OCXO time-base & **NIST** traceable calibration, enabling high-precision optimal test at lower cost.



GT668PCI



GT668PCIe



GT668PXI

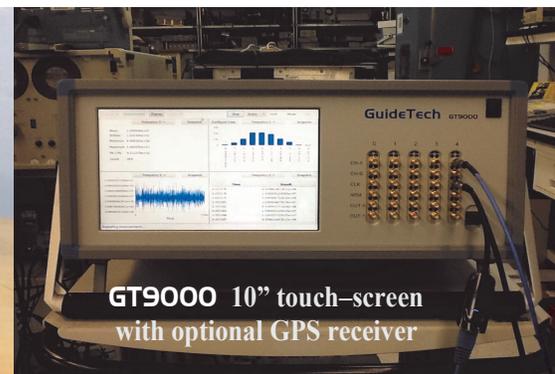


GT668PXIe



GT9000R

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



GT9000 10" touch-screen
with optional GPS receiver

GuideTech

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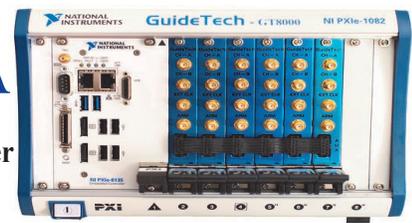
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GT668 MODELS

PCI

- ◆ GT668PCI-1
- ◆ GT668PCI-2
- ◆ GT668PCI-15
- ◆ GT668PCI-40

PCIe

- ◆ GT668PCIe-1
- ◆ GT668PCIe-2
- ◆ GT668PCIe-15
- ◆ GT668PCIe-40

PXI

- ◆ GT668PXI-1
- ◆ GT668PXI-2
- ◆ GT668PXI-15
- ◆ GT668PXI-40

PCIe

- ◆ GT668PXIe-1
- ◆ GT668PXIe-2
- ◆ GT668PXIe-15
- ◆ GT668PXIe-40

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

SPECIFICATIONS

- Time resolution single-shot - 0.9ps
- Frequency resolution (Digits/S) - up to 12
- Maximum measurement rate - 4 M m/s

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: 1K Ω / 10 pF, or 50 Ω software programmable
- Coupling: DC or AC
- Threshold setting (each channel):
 - * Range: -5V to + 5V
 - * Resolution: 153 μ V
 - * Absolute accuracy: 0.1% of setting
 - * Automatic threshold setting option

TIMEBASE:

- Frequency 100MHz locked to:
 - * Internal 10MHz OCXO
 - * External clock: 5 or 10 MHz (\pm 3KHz)
- Minimum pulse width: 6nS
- Oven Oscillator:
 - * Temp: 0 - 45 $^{\circ}$ C \pm 25ppb
 - * Aging: \pm 1 ppm first year, \pm 3 ppm over 20 years

EXTERNAL CLOCK & ARM INPUTS:

- Sensitivity: 50mV rms
- Input impedance: 1K Ω
- Threshold setting
 - * Range: - 5V to + 5V
 - * Resolution: 153 μ V
 - * 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)

GuideTech

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GT8000PXI & GT8000PXIe