GuideTech

GT210 Time Interval Counter

2.7GHz, 0.9ps Resolution Time & Frequency Measurement Instrument

APPLICATIONS

- 1 PPS Monitoring
- Fast Production Time Analysis
- Lab / R&D Characterizations
- Variation in Pulse Timing
- PLLs and frequency modulation
- Allan Variance
- Measure Frequency, jitter & skew
- Semiconductor ATE
- Radar, Laser & Ultrasonic timing
- Time Transfer
- Real Time, Time stamping

SOFTWARE SUPPORT

- 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
- Built-In NIST Traceable 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
- Easy to integrate in ATE systems

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SUPERIOR PERFORMANCE

The **GT210** Time Interval Counters are an improved version of the popular **GT200**, which are currently in use in thousands of applications ranging from satellite tracking to monitoring of atomic clocks. They include all of the functions normally found on premium counters: Time Interval, Frequency, Period, Totalize, Ratio, Time Interval with Delay, and Pulse Width. Unlike many other boards of its kind, these instruments deliver worry-free results, and their inputs are high instrumentation quality, with the sensitivity and damage protection features common to all high quality counters.

GuideTech's next generation Time Interval Counters, a smaller foot-print and much more powerful instruments to address your current and future applications.

With easy expansion and modular capabilities, **GuideTech** offers wide range of TIC solutions in **PCI, PCIe, PXI, PXIe,** and integrated systems.

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Achieve impressive performance and accuracy with **GuideTech's** Time Interval Counters product line with up to 2.7GHz and a noise floor of 3ps.

GuideTech's GT210 PXI/PXIe 3U form factor meets industrial standard chassis with an expandable platform, facilitating for optimal test systems configurations at optimal cost.

The ability to precisely resolve frequency and time yields both an increase in accuracy as well as reduced measurement time. For example, with the **GT210** you can determine any frequency to 0.001 part per million (nine digits) in just 1 mS, and resolve each time measurement to 0.9pS. Couple that with tens of thousands measurements per second, and you can acquire more data in a single second than a typical GPIB counter can in one minute! Faster measurements and higher resolution, along with built-in statistics functions give you a more thorough analysis of your signal.
Standard deviation, peak to peak jitter, and/or a graph of the measurements are available at the click of a mouse.

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GT210 MODELS

PCI

- GT210PCI-1
- GT210PCI-2
- GT210PCI-15
- GT210PCI-40

PCIe

- GT210PCIe-1
- GT210PCIe-2
- GT210PCIe-15
- GT210PCIe-40

PXI

- GT210PXI-1
- GT210PXI-2
- GT210PXI-15
- GT210PXI-40

PXIe

- GT210PXIe-1
- GT210PXIe-2
- GT210PXIe-15
- GT210PXIe-40

* -1 = 0.9pS resolution

* -2 = 1.8pS resolution

* -15 = 15pS resolution

* -40 = 40pS resolution

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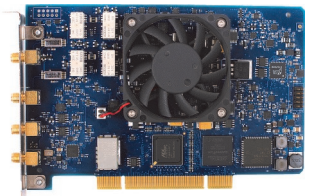
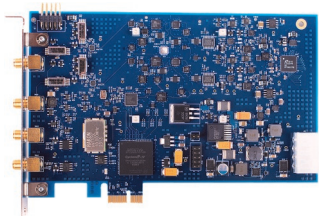
SYSTEM & BENCH-TOP APPLICATIONS

The **GT210** counters is operated just like conventional bench-top instruments with a standard Virtual Front Panel software which uses the power of a PC and/or PXI/PXIe controller to speed and simplify data acquisition and analysis. Instant plots of measurements can be viewed or saved to disk without any programming.

In system applications, you can read and control the **GT210** from a test program using a set of library functions for C, or Visual Basic, via NI LabVIEW driver, or with any language that can call a Windows DLL (or Linux .so) library.

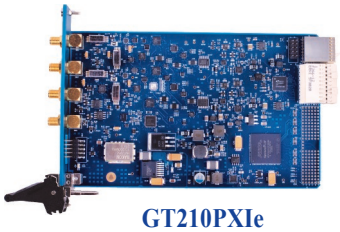


GT210PCI



GT210PCIe

GT210PXI



GT210PXIe

EXCEPTIONAL VALUE

Installed inside any **PC** and/or **PXI/PXIe** chassis, you will experience superior counter capability for a remarkably low price. The **GT210** is a much better choice, in terms of performance, flexibility, and ease of use, when compared to the premium priced bench-top instruments.

MAIN INPUT CHANNELS:

- No. of channels: 2 per board, A & B
- Frequency range: DC - 2.7 GHz
- Sensitivity:

- Sine: 25 mVrms 100MHz
  50 mVrms 100MHz—2 GHz
  100 mVrms 2 GHz—2.7 GHz
- Pulse: 50 mV pk-pk at 1.5 ns Pulse-Width

- Input impedance: 1KΩ / 10 pF, or 50Ω software programmable
- Coupling: DC or AC
- Threshold setting (each channel):
  * Range: -5 V to + 5 V
  * Resolution: 160 µ V
  * Absolute accuracy: 0.1% of setting
  * Automatic threshold setting is available

TIMEBASE ACCURACY:

- Frequency range:
  * External clock: 10 MHz (+ 100 Hz)
- Minimum pulse width: 6 nS
- Sensitivity: 50 mV rms
- Input impedance: 1KΩ

EXTERNAL-CLOCK & ARM INPUTS:

- Threshold setting
  * Range: - 5 V to + 5 V
  * Resolution: 150 µ V
  * Absolute accuracy: 0.1% of setting
- Automatic threshold setting available
- Input impedance: 1KΩ

EXTERNAL CONNECTIONS

- Temperature compensated crystal oscillator:
  * Temp: 0 - 45 C + 1ppm
  * Aging: <1 ppm / year
- Main Channels: 2, SMA
- External Clock: 1, SMA
- External Arm: 1, SMA
- Trigger Outputs: 2, SMA

Time Res. Single Shot - 0.9ps

Freq. Res. (Digits/S) - up to 12

7 Slot Hybrid **GT8000PXI / GT8000PXIe**

With Integrated Controller

17 Slot Hybrid

GT8000PXI / GT8000PXIe

With Integrated Controller