NEW FROM

PC INSTRUMENTS

# PCI-443 and PCI-444 Digital Oscilloscopes

## High Performance Instrumentation in a PC

### Features

- 12 Bit Resolution at 40 MSPS
- 64k Samples/channel
- 20 MHz Bandwidth
- 10 Voltage Ranges
- Burst Mode
- Options: Video Trigger (Line Counter) Master/Slave, and Differential Inputs

### Applications

- ATE and Functional Test Systems
- Video, TV, and HDTV Measurements
- Ultrasound (Industrial and Medical)
- Radar, Sonar, and Lidar Systems
- Laser Detectors, PZT and Fast Sensors
- Modulated Communications Signals
- High Voltage Impulse Testing
- Test Motor Controllers and Starters

The PCI-443 and PCI-444 Digital Oscilloscopes occupy one PC expansion slot and provide extensive features and outstanding specifications. Some of the advanced features of the PCI-443/4 include:

- External Sample Clock
- HF Reject, LF Reject, and Bandpass Trigger Filters
- Programmable Trigger Gain and an "Arm" Input
- Baseband Sampling for I/F Strips
- Temperature Compensated Offset Voltage

And, three options are available for enhancing the measurement performance of the PCI-443/4 :

- Video Trigger with Line Counting
- Differential Inputs
- Master/Slave for Multi-Channels

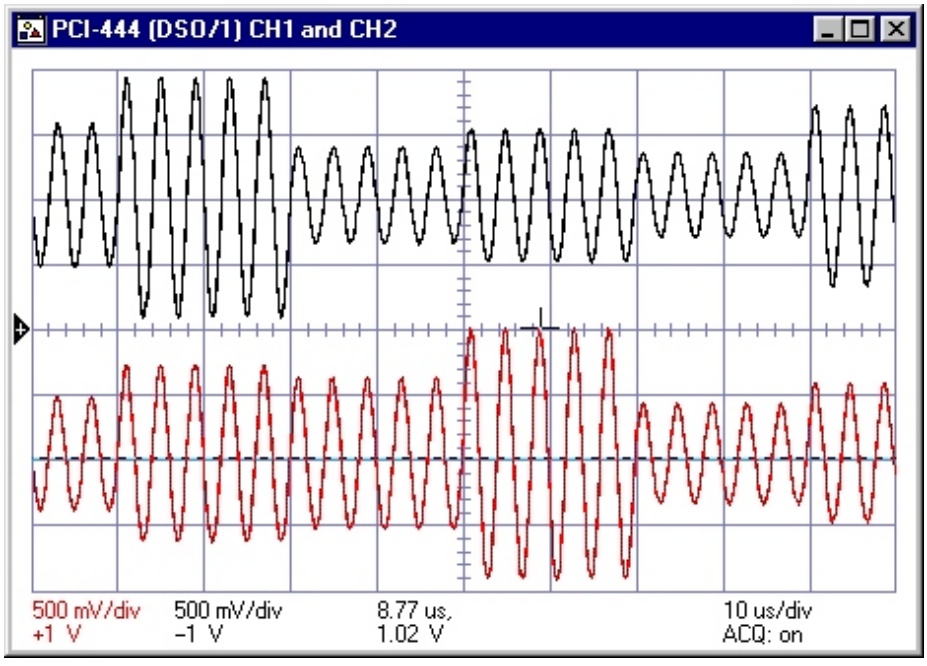
Test and Production engineers will benefit from the small size, excellent measurement characteristics, fast system throughput and extensive software support provided with the PCI-443/4. Resolution of 12 bits, an offset range independent of the vertical range, and a lifetime free-upgrade software policy are just a few of the features making the PCI-443/4 a smart addition to your ATE test set.

A sampling rate of 40 MSPS, 12 bit ADC resolution, flat frequency response, and overvoltage protection that works with the power on or off, combine to make the PCI-443/4 an excellent choice for use in High Voltage Impulse testing. These same features, combined with the optional differential inputs, make the PCI-443/4 ideal for measuring waveforms from motor controllers/starters, and power supplies.

The PCI-443/4's feature the capability of measuring band-limited signals with center frequencies (i.e. carriers) as high as 80 MHz. Also, I/Q signals can be measured accurately due to the simultaneously sampled inputs of the dual channel PCI-444.

The external sample clock feature, coupled with the programmable memory length feature, is essential for engineers testing the characteristics of rotating machinery or for systems integrators building a network analyzer based on a peak detector.

The BenchCom™ software bundle, provided with the PCI-443 and the PCI-444, provides programmer's libraries, third-party drivers, 16/32 bit DLLs, and the BenchTop™ Lite graphical user interface for Windows NT, 98/95, and 3.X. Also available is the optional BenchTop Plus software package providing advanced features including FFT, pulse analysis adhering to IEEE Standard, boundaries testing, and the ATL interpreter.




*Using baseband sampling, the PCI-444 can measure I/Q communication signals from a 70 MHz I/F strip.*

PC INSTRUMENTS
2300 W 31st St - Suite AA
Lawrence, KS 66047
**785-856-8700**
FAX 785-856-8701
www.pcinstruments.com
info@pcinstruments.com

SPECIFICATIONS

PC INSTRUMENTS

# PCI-443 and PCI-444 Digital Oscilloscopes

## Vertical Section

| | |
|---|---|
| Channels | One (PCI-443), Two (PCI-444) |
| Inputs | Single-Ended, BNC, Simultaneous Sampled |
| Vertical Resolution | 12 Bits |
| Standard | |
| Vertical Ranges* | 20 mV/div to 2 V/div |
| Offset Range & Internal Trigger Range | ± 10 Volts |
| RMS Noise (typical) | 0.1 %FS + 0.7 mV |
| Common Mode Range** | ± 16 Volts |
| 05V Option | |
| Vertical Ranges* | 50 mV/div to 5 V/div |
| Offset Range & Internal Trigger Range | ± 25 Volts |
| RMS Noise (typical) | 0.1 %FS + 2 mV |
| Common Mode Range** | ± 40 Volts |
| 10V Option | |
| Vertical Ranges* | 100 mV/div to 10 V/div |
| Offset Range & Internal Trigger Range | ± 50 Volts |
| RMS Noise (typical) | 0.1 %FS + 4 mV |
| Common Mode Range** | ± 80 Volts |

*Also includes vernier control

| | |
|---|---|
| **Differential Inputs | (Option DEI) |
| Differential Bandwidth | 1 MHz |
| CMRR | 80 dB @ 100 Hz, 70 dB @ 1 kHz |
| Input Resistance and Capacitance | 1 MΩ, 15 pF |
| Input Coupling | AC or DC |
| Gain Accuracy | ± 1% at 10 kHz |
| Offset Accuracy | ±(0.07% Offset + 0.4% FS + 3 mV) |
| Maximum Voltage (Power On or Off) | ± 200 Volts |
| Bandpass Flatness (typical) | ± 0.3 dB (100 Hz - 500 kHz, relative to 10 kHz) |

## Horizontal Section

| | |
|---|---|
| Maximum Sample Rate | 40 Megasamples/second |
| Time/Division | 200 ns/div - 100 sec/div |
| Maximum Resolution | 25 ns/sample |
| Timebase Accuracy | ± 0.01 % |
| Memory | 64k Samples/channel |
| Pre-, Post- Trigger | 1 Sample to 64k Samples |
| Variable Length | 1 Sample to 64k Samples |
| Variable Length Increment | 1 Sample |
| Burst Mode (i.e. Segmented or Stacked) | |
| Bursts | 1 to 64k |
| Burst Length | 1 Sample to 64k Samples |
| Burst Length Increment | 1 Sample |
| Burst Deadtime | 150 ns |
| Sample Clock | Internal (40 MSPS to 50 SPS)<br>External (Maximum of 10 MSPS) |
| Master/Slave | Option MSL |

## Trigger Section

| | |
|---|---|
| Sources | Channel 1, Channel 2 or External (BNC) |
| Slope | + or - |
| Trigger Gain | X1, X2, or X10 |
| External Range | ± 10 V (X1), ± 5 V (X2), ± 1 V (X10) |
| Sensitivity (DC to 10 MHz Square Wave): | 200 mVpp (X1), 100 mVpp (X2), 20 mVpp (X10) |
| Level Settability | 10 mV |
| External Trig Resistance/Capacitance | 1 MΩ, 15 pF |
| Filters | DC, AC, HF Reject, and LF Reject |
| Video with Line Counting | Option VID |
| Modes | Normal, Auto, Auto-Level, and Software |
| Arm Input (Contact Factory) | SMB Connector |

## General

| | |
|---|---|
| Sweep Averaging | On-board Hardware |
| Compensation Signal (Typical) | ± 1.3 Volts, 1 kHz |
| Specified Temperature Range | 18 °C to 28 °C |

## Software

| | |
|---|---|
| Programming Support | 16 and 32 Bit DLLs, C and C++ Programmer's Libraries, Basic and Pascal File I/O, Visual Basic and C (Windows) |
| User Interface | BenchTop™ Lite ( 3.X and 95) |
| Third Party Drivers, Compilers | Contact Factory |

## Computer Requirements

| | |
|---|---|
| Processor | 80386 and Up |
| Bus | ISA 16-bit (PC/AT) |

PC Bus Power Requirements

| | +5V | +12V | -5V | -12V |
|---|---|---|---|---|
| PCI-443 | 1.85 A | 280 mA | 35 mA | 110 mA |
| PCI-444 | 3.26 A | 500 mA | 35 mA | 110 mA |



Document #97091

PC INSTRUMENTS
PC Instruments Incorporated
2300 W 31st St - Suite AA
Lawrence, KS 66047
**785-856-8700**
FAX 785-856-8701
www.pcinstruments.com
info@pcinstruments.com