PCIUT3100 All-in-One

ULTRASONIC PULSER/RECEIVER AND 100MHZ A/D BOARD FOR PCI BUS

FEATURES:

- One-Board Design: pulser/receiver and A/D converter on a single PCI board
- 32-bit PCI bus for the ultra-fast data transfer rate
- On-board microprocessor for various custom applications
- On-board encoder counters featuring optional position based data acquisition
- Time stamps, XY positions, and I/O status for each A-scan
- 256-channel automatic timing and switching capability when coupled with DT16B
- Distance amplitude correction (DAC) for all 256 channels (optional)
- Up to 100MSPS high-speed A/D conversions
- FIFO memory for storing multiple A-scans—up to 256 kilo samples
- Pulser switch-off during data acquisition for low noise operation
- Wide-range dynamic gain
- Adjustable DC offset
- Oscilloscope software for Windows XP/Win 7/10 included
- Windows XP/Win 7, and 10 software development kits for C/C++, Visual BASIC, and LabVIEW

DESCRIPTION:

The PCIUT3100 ultrasonic testing board is a combination pulser/receiver and high-speed analog to digital converter on a single PCI board. The board generates an electrical pulse which is transmitted to an ultrasonic transducer. The transducer converts the electrical excitation pulse to an ultrasonic pulse which then propagates into the test material or couplant. The transducer also receives the echoes that are reflected back from the interface and converts the ultrasonic pulse back into an electrical signal which is then processed by the on-board receiver and analog to digital converter.

This process is entirely adjustable by the end user—configurable parameters include: pulse voltage, pulse width, damping, pulse/echo or through transmission mode, receiver gain, DC offset, low-pass filter, high-pass filter, rectification, sampling rate, trigger source—internal or external, and trigger delay.

Optional add-ons include digital inputs and outputs, a sync output, memory updates, distance amplitude correction (DAC), up to two additional 14-bit analog to digital converters, up to 4 encoder counters for on position data acquisition, and software development kits.

When used in conjunction with our DT16G 16-channel pulser/receiver switching boards, the PCIUT3100 becomes a multi-channel ultrasonic inspection and analysis system capable of up to 256 channels. Multiple PCIUT3100 boards can also be installed in one computer to develop a multi-channel ultrasonic system capable of firing multiple transducers and acquiring data at the same time.

Part Numbers:

PCIUT3100: Single channel version
PCIUT3100M: Multi-channel version
PCIUT380: 80 MHz sampling rate short board version
UTM: 4 channel / single board version

ZYKANG
深圳众裕康科技有限公司
Shenzhen Zhong Yu Kang Technology Co., Ltd
联系人：曾祥满 手机：13632925349 QQ：812401203 电话：0755- 28896837
地址：深圳市龙岗区沙平北路111号6008 网址：www.zykang.cn 邮箱：zykang2021@163.com

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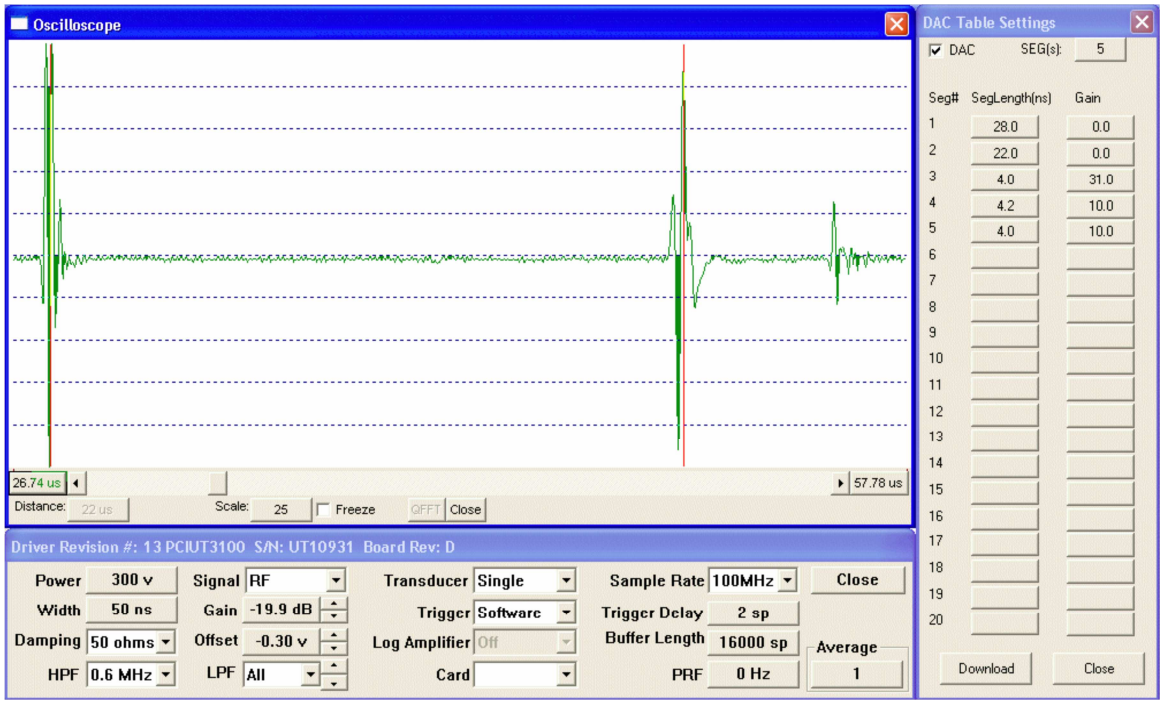
SPECIFICATIONS:

Pulse Voltage	-40V to -300V, 256 steps, higher voltages are available upon request
Pulse Width	50 ns to 484ns, 256 steps Optional 15 ns is available upon request.
Damping	620Ω, 340Ω, 200Ω, 160Ω, 60Ω, 55Ω, 50Ω, or 47Ω
Internal Trigger	10 Hz to 5000 Hz in 10 Hz increments when internal trigger is selected.
Receiver Gain	0 dB to 80 dB in 0.1dB increments.
DC Offset	-2.5V to +2.5V in 5mV increments
Low Pass Filter	All, 48MHz, 28MHz, 18MHz, 8.8MHz, 7.5MHz, 6.7MHz, or 5.9MHz
High Pass Filter	4.8MHz, 1.8MHz, 0.8MHz, or 0.6MHz
Waveform	Full rectification, + half rectification, - half rectification, or RF
Sampling Rate	100MHz, 50MHz, 25MHz, 12.5MHz, 6.25MHz, 3.125MHz, and 1.5725MHz
Transducer Mode	Single (Pulse/Echo) or dual (through transmission)
Resolution	8 bits (0 to 255)
Memory	16 kilo samples and optional 256 kilo samples
Waveform Length	16 to 16382 in 4 sample steps
Trigger Source	external, internal or software
Connectors	2 BNC (or optional LEMO 00) connectors: Pulse out, and receiver in
Post Trigger delay	2 to 32764 samples in 2 sample steps
Dimensions	12.5"x4.25" not including BNC and PCI edge connectors
Add-on Options	- BNC (or LEMO 00) trigger SYNC output and/or EXT TRIG connectors - 160 MHz sampling rate - Distance amplitude correction - Up to 4 encoder counters and connectors and 16 digital I/O - Two additional 14-bit A/D converters - 256K sample memory upgrade - Windows software development kits - Multi-channel control option



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深圳众裕康科技有限公司
Shenzhen Zhong Yu Kang Technology Co., Ltd
联系人：曾祥满　手机：13632925349　QQ：812401203　电话：0755- 28896837
地址：深圳市龙岗区沙平北路111号6008　网址：www.zykang.cn　邮箱：zykang2021@163.com