DSPUT5000

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

MAJOR NEW FEATURES:

1. **High-speed data collection: up to 20,000 PRF**
2. **High-pulse voltage option: up to 600 volt pulse voltage**
3. **Additional on-board encoder counter option: up to 6 encoder counters**
4. **Real-time on-board data processing: up to 4.8G instructions/sec**
5. **High-speed data transfer rate from the board to computer RAM: up to 80Mb/s**
6. **User programmable DSP chip for customized applications**
7. **Optional standalone remote operation with RS-232 communication**
8. **Large on board memory: up to 800KB**

FEATURES

- On board DSP Chip for the world's fastest ultrasonic data processing and custom real-time applications
- Single-board design: Pulser/receiver and A/D converter on one PCI board
- Up to 100MSPS high-speed A/D conversion and data compression
- 32-bit master mode PCI bus for an ultra-fast data transfer rate
- Up to 6 on-board encoder counters featuring optional position based data acquisition
- Time stamps, 6-axis position, and I/O status for each A-scan
- 256-channel automatic timing and switching capability when coupled with DT16B
- Distance gain correction (DAC) for all 256 channels
- 800 KB buffer memory to ensure real-time operation
- Pulser switch-off during data acquisition for low noise operation
- Wide-range dynamic gain
- Pulse voltage of up to 900V
- UT oscilloscope software for Windows 2000/XP/Win7 32-bit Included
- Windows 2000/XP/Win7 32-bit software development kits (DSPSDK) for C/C++, Visual BASIC, and LabView

DESCRIPTION

The DSPUT5000 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 properties 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.

One of the unique features of the DSPUT5000 is the on-board DSP chip from Texas Instruments. Running at 600 MHz it executes up to 4.8 giga-instructions per second and is capable of processing data at high speeds for real-time peak detection, data compression, spray marker control, factory process control and feedback. The on-board DSP chip enables the DSPUT5000 to run standalone as a remote pulser/receiver and data processing system with host control through an RS232 serial port. A DSP software development kit is available for customized data processing applications.

When used in conjunction with our DT16B 16-channel pulser/receiver switching board, the DSPUT5000 becomes a multi-channel ultrasonic inspection and analysis system capable of up to 256 channels. Multiple DSPUT5000 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.

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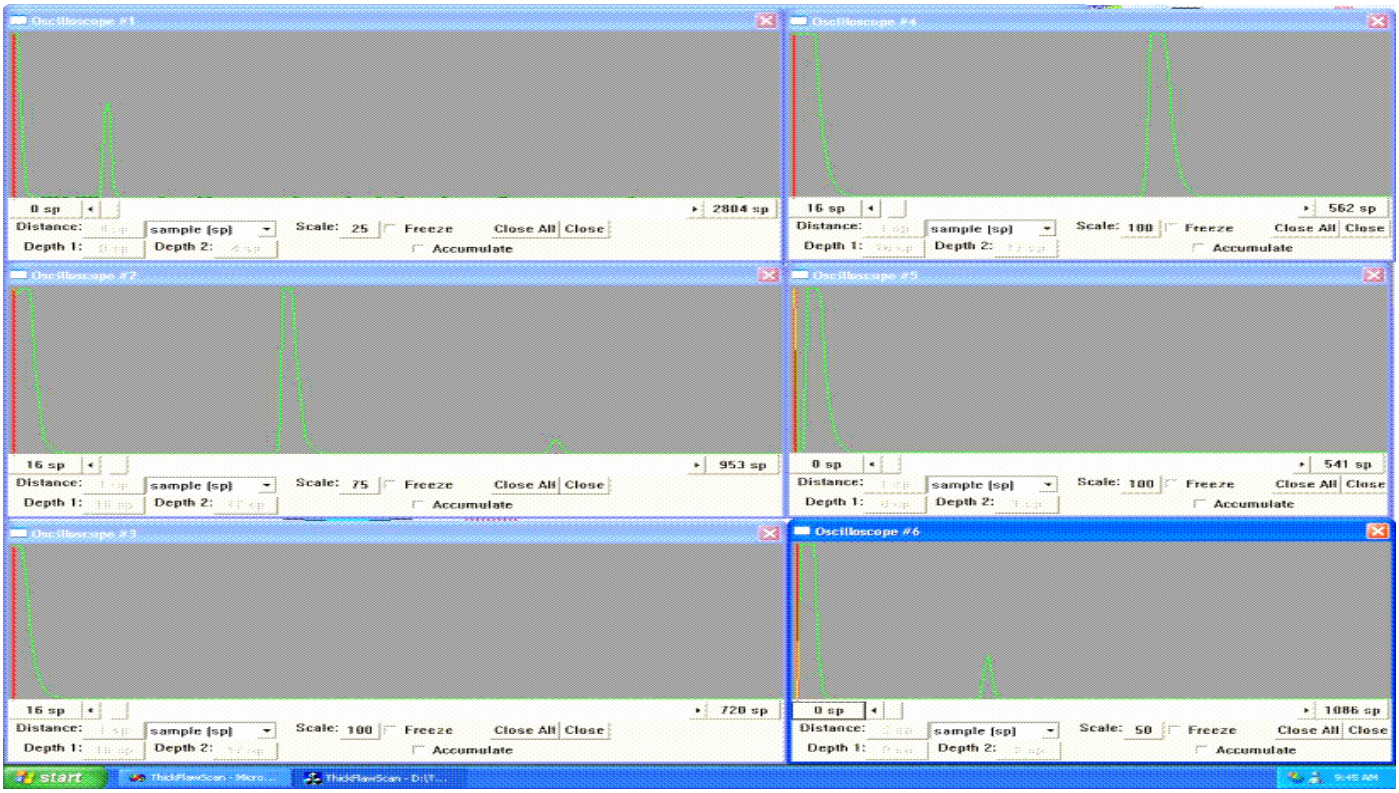
DSPUT5000

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

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	1 Hz to 5000 Hz in 1 Hz increments when internal trigger is selected. Optional high PRF available.
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 rectify, + half rectify, - half rectify, or RF
Sampling Rate	100MHz, 50MHz, 25MHz, 12.5MHz, 6.25MHz, 3.125MHz, 1.5725MHz, and external clock < 100MHz
Resolution	8 bits (0 to 255)
Memory	800 kilo samples
Waveform Length	16 to 16382 in 4 sample steps
Trigger Source	+external, -external, internal or software
Connectors	3 BNC connectors: Pulse out, receiver in, and external trigger in
Post Trigger delay	4 to 32764 samples in 2 sample steps
Dimensions	9.75"x4.25" not including BNC and PCI edge connectors
Add-on Options	- BNC external trigger connector - BNC trigger sync output connector - High pulse voltage up to 600 volts - Distance gain correction (DAC) - Up to 6 encoder counters - Up to two additional 14-bit A/D converters - 20,000 Hz high PRF option - 16-bit digital I/O - Standalone operation with RS232 communication - DSP software development kit - Windows software development kits - Hardware security key and development kit

Multiple A-Scan Window Display



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