

FEATURES



- Compatible with laptop and desktop computers
- Low cost UT instrument
- No external power supply required
- Standalone (computer-free) mode
- Internal speaker
- On-board DSP chip for real-time data processing
- All-In-One Design: Pulsar/Receiver and A/D converter
- On-board encoder counters featuring optional position based data acquisition
- 40 MBPS high speed data transfer to computer RAM
- Distance amplitude correction (DAC)
- Up to 50MSPS high-speed A/D conversions
- Pulsar switch-off during data acquisition for low noise operation
- Wide-range dynamic gain
- Included UT oscilloscope software for Windows 2000/XP
- Windows 2000/XP software development kits for C/C++, Visual BASIC, and LabVIEW

DESCRIPTION

The USB-UT350 ultrasonic inspection device is a combination pulser/receiver and high-speed analog to digital converter for computer USB port. The device 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, pulse/echo or through transmission mode, receiver gain, rectification, sampling rate, trigger source—internal or external, trigger delay, and gate settings. Oscilloscope software for Windows 2000/XP is included with the device.

One of the unique features of the USB-UT350 is the on-board DSP from Texas Instruments. It is capable of processing data at high speeds for real time peak detection, data compression, spray marker control, as well as factory process control and feedback. Another benefit of the DSP is that the device can also run in standalone operation mode as a remote pulser/receiver and data processing system. When used in standalone operation mode the device does not need to be connected to a computer. The device will remember the stored configuration and operate independently, powered either by an AC adapter or optional battery pack. It is capable of providing feedback through the internal speaker and digital I/O pins to indicate flaws or measurements outside of the specified thickness range.

The optional software development kits enable the user to build their own automated ultrasonic testing system or custom testing machine using industry standard development environments. Possible uses of the USB-UT350 include temperature measurement, flow metering, and medical applications.

The USB-UT350 is designed to meet the majority of ultrasonic requirements while providing a low cost solution. Currently this device features the lowest price for UT inspection devices on the market. The USB-UT350 can be used as a smart flaw detector and thickness gauge with various software running at real-time. Custom software is available for specific applications upon request. Complete C-scan image and TOFD systems based on this low cost device are also available. These systems can be used with laptop computers and provide the user with battery operated portable inspection solutions.

SPECIFICATIONS

Pulse Voltage	-40V to -300V, 256 steps.	Connectors	2 BNC connectors: Pulse Out, and Receive In
Pulse Width	50 ns to 320 ns in 20 ns step	Post Trigger delay	0 to 16,370 samples in 1 sample step
Damping	500Ω	Dimensions	4.2"x5.65"x1.55" (107mm X 144mm X 40mm) not including BNC connectors
Internal Trigger	1 Hz to 1000 Hz in 1 Hz increment	Power Supply	External power supply: +9V / 1A, or from USB connector
Receiver Gain	0 dB to 80 dB in 0.1dB increments.	Weight	1 lb
Filter	0.6 MHz to 18MHz fixed	Add-on Options	Distance amplitude correction (DAC)
Waveform	Full rectify, + half rectify, - half rectify, or RF		Up to 4 encoder counters
Sampling Rate	50MHz, 25MHz, 12.5MHz, 6.25MHz		16-bit I/O, TRIG IN, sync out, and encoder connector
Resolution	8 bits (0 to 255)		Flaw detector software
Waveform Length	1 to 8190		Thickness gauge software
Trigger Source	+external, -external, internal or software		Windows software development kits for LabVIEW, MS C/C++ and Visual BASIC
Transducer Range	1 to 10 MHz		
Transducer Mode	Single or dual via external switch		
USB Connection	USB 2.0 compatible		

