USB-UT350T

TONE BURST PULSER/RECEIVER AND 50 MHZ A/D DEVICE FOR USB PORT

FEATURES

- Tone burst pulser for testing attenuating materials
- USB interface for laptop and desktop computers
- Low cost UT instrument
- No external power supply required
- On board DSP Chip for real-time data processing
- One-Device Design: tone burst pulser/receiver and A/D converter
- On-board encoder counters for on-position acquisition
- 40 MBPS high speed data transfer to the computer
- Distance gain correction (DAC)
- Up to 50 MSPS high-speed A/D conversions
- 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

USB-UT350M is a combination of a tone burst pulser/receiver and an analog to digital converter -- both of which are located in a single device for the universal serial bus (USB 2.0). There are three models in this series: 4-channel, 8-channel and 16 channel. The device generates a series of bipolar pulses with user-defined pulse frequency and pulse cycles from T connectors of a channel. The pulses are transmitted to an ultrasonic transducer, and the transducer converts the electrical excitation pulses to ultrasound which is propagated into either the tested material or air. The transducer also receives the reflected echoes from the material and converts the ultrasound back into an electrical signal. The on-board receiver processes the signal with the user defined parameters, and the A/D converter converts analog signals into digital data at a rate of up to 50 million samples per second. The digital data is transferred to a computer at about 40 MB per second.

Adjustable parameters include pulse frequency, pulse cycles, receiver gain, DC offset, rectifications, sampling rates, trigger source, and adjustable trigger delay. A standard scope software for MS Windows is included with the device.

One of the unique features is the on-board DSP chip from Texas Instruments. It is capable of processing data at high speeds for real-time peak detection, data compression, spray marker control, factory process control and feedback. With the on-board DSP chip, the device can run stand alone as a remote tone burst pulser/receiver and data processing system without being connected to a computer. The user can set up the parameters through the USB port and then save the parameters in the memory. The device can load the parameters automatically after the device is powered up without any control from the computer.

The USB-UT350M can be used as a smart flaw detector (for wood, rubber and concrete) and distance measuring device (in air) with various software running at real-time. Custom software is available for your applications upon request.

SPECIFICATIONS

Pulse Voltage	40 - 300V peak to peak
Pulse Frequency	20 kHz to 6.25 MHz
Pulse Repetition Frequency	1 Hz to 1000 Hz in 1 Hz increment
Pulse Cycles	1 to 30 cycles
Receiver Gain	0 dB to 80 dB in 0.1dB increments.
DC Offset	-2.5V to 2.5V in 5mV increments
Filter	14 kHz to 18 MHz
Waveform	Full rectify, + half rectify, - half rectify, or RF
Sampling Rate	50, 25, 12.5, 6.25, 3.125 MHz
Resolution	8 bits (0 to 255)
Waveform Length	0 to 8190 samples

Transducer Mode	Single or dual mode selection with an external switch
USB Connection	USB 2.0 compatible
Trigger Source	+external, -external, internal or software
Connectors	LEMO 00 connectors for pulse out and receiver in
Post Trigger delay	0 to 16,370 samples in 1 sample step
Dimensions	4.2"x5.65"x1.55" (107mm X 155mm X 40mm) not including BNC connectors
Power Supply	External power supply: +9V / 1A, or power from USB connector
Weight	1 lbs
Add-on Options	Up to 2 encoder counters 16-bit I/O, TRIG IN, sync out, and encoder connector Flaw detector software Distance gauge software Windows software development kits for LabVIEW, MS C/C++ and Visual BASIC

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