PCI Compatible • 50 MHz Receiver Bandwidth • Transmit/Receive and Through Modes

PRC50 Pulser-Receiver

Low-Noise Ultrasonic Pulser-Receiver on a PCI Format Card



The PRC50 is a versatile single-channel Pulser-Receiver on a half-length PCI card. It is ideal for use in PC-based ultrasonic testing and inspection systems, and its small size and low power consumption enable systems to be implemented using portable computers. The PRC50 is provided with turnkey control software for Windows. A Software Development Kit and Programmer's Manual are provided for the development of custom applications.

Seven energy levels and a variable power supply allow for precise adjustment of the PRC50's transducer excitation pulse. The Pulser has eight damping levels to enable fine adjustment of the transducer performance. The PRC50 Pulser synchronizes easily to other system hardware by producing or accepting trigger pulses on the PRC50 Trig/Sync connector.

The wide-bandwidth low-noise PRC50 receiver has inputs for T/R (Transmit-Receive) and Through transducer signals. The receiver can amplify either input signal while maintaining excellent isolation from the other signal. In addition, the PRC50 receiver can independently amplify both input signals, and output the sum of the amplified signals. Following amplification, the receiver output signal passes through selectable High-Pass and Low-Pass filters. The output signal is then provided on the PRC50 Output connector.

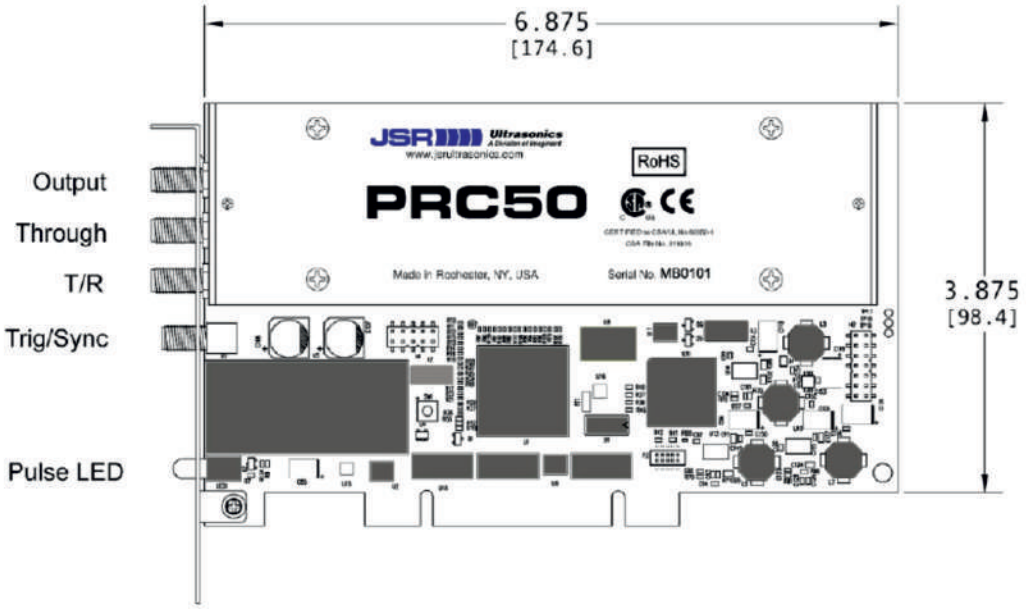
The PRC50 can be combined with A/D Boards or other signal detection and processing instrumentation, which gives system integrators the flexibility to optimize system cost and performance. Connections are easily made between the PRC50 and other hardware using 50Ω coaxial cables. The four interface connectors on the PRC50 are SMA female coaxial connectors.

The full-featured PRC50 is an excellent choice for PC-based ultrasonic system applications including flaw detection, quality assurance, material characterization, transducer testing, and time of flight measurements.

JSR Ultrasonics
A Division of Imaginant

3800 Monroe Avenue Pittsford, New York 14534 USA Tel: +1 585 264 0480 www.imaginant.com

PRC50 Pulser-Receiver Specifications



Pulser

Pulse Type	Negative spike pulse on T/R Connector
Pulser Supply Voltage	Adjustable 100V to 475V
Initial Transition	6ns typical (10–90% Fall Time)
Pulse Amplitude	-180V into 50Ω typical. Amplitude varies with Energy and Damping control settings, and load impedance
Pulse Duration	25–150ns FWHM typical with 50Ω external load. Pulse duration varies with the Energy and Damping control settings
Damping	Eight discrete damping values; 28, 31, 36, 42, 50, 63, 85 and 128Ω
Internal Triggering	100 Hz – 5 kHz trigger rate Synchronization pulse appears on Trig/Sync Connector. Sync Pulse + 5Vmax into 50Ω load, 20ns max risetime, 200 ns width typical • Rising edge of sync pulse is synchronous with the initial pulse transition on T/R connector
External Triggering	0 Hz – 5 kHz trigger rate Trigger Pulse applied to Trig/Sync Connector • Trig/Sync input impedance is selectable as either 50Ω or 10kΩ • Triggering may be selected to occur on either the rising or falling edge of the trigger pulse

Environmental Operating Conditions

Temperature	0 to 45°C
Humidity	0 to 80% RH non-condensing

Receiver

Gain	-14 to +60 dB noninverting
Input Modes	T/R, Through or 'Both' Receiver Modes
Through Trans. Isolation	60 dB typical between Through and T/R receiver paths at 10 MHz
Input Impedance	Through Input Connector: 128Ω T/R Input Connector: Impedance varies with Damping Value
Bandwidth	0.3 to 50 MHz minimum (-3 dB)
High Pass Filter	0.3, 1.0, 5.0 or 12.5 MHz
Low Pass Filter	7.5, 15, 25 or 50 MHz
Noise	Typically 145μV_{p-p} input referred (measured at 60 dB gain, 50 MHz – 3 dB BW)
Output Impedance	50Ω
Output Voltage	±1V into 50Ω

PC or Compatible Control Computer

Interface	PCI bus
Software	Turnkey software for Windows 2000 and Windows XP Software Developers Kit provided

Miscellaneous

Power	7.5 W maximum.
Dimensions	3.875" H by 6.875" W (98.4 x 174.6mm), not including SMA and PCI edge connectors
Weight	0.63 lbs (0. 29 Kg)

© 2006 JSR Ultrasonics
Note: Specifications are typical at 25°C
Specifications subject to change without notice.

ARORA Arora Technologies (P) Limited
D-183/8, MIDC, TTC Nerul, Navi Mumbai- 400706, India
T: +91-22-6138 0600 | **E:** info@arorandt.com | **W:** www.arorandt.com

JSR Ultrasonics A Division of Imaginant