# PRC35

## Computer Controlled Pulser/Receiver Card


- Fast recovery amplifier
- 80 dB receiver dynamic range
- 3 each selectable high and low pass filters
- Broadband pulser with selectable energy
- Regulated pulser high voltage power supply
- Fast (<5 ns) pulser initial transition
- Variable damping control
- Instrument control software, Windows 98/95 and NT .dll's, LabVIEW .vi drivers, and C language source code provided

The PRC35 is a 35 MHz computer controlled ultrasonic pulser/receiver on a 2/3 length ISA card. Instrument controls include receiver gain, pulse repetition rate, pulse energy, pulse-echo or through transmission mode select, pulser trigger source select, high and lowpass filter cutoff frequency selection, and damping adjustment. A standby mode with reduced power consumption for use in power sensitive applications can be selected. Signal connections are via standard BNC type connectors.

The PRC35 does not compromise on performance. The receiver amplifier is fully shielded from the electromagnetic noise and interference inside the PC to ensure a high signal to noise ratio. A fast recovery amplifier provides rapid recovery from the excitation pulse and from large interface echos.

The regulated pulser high voltage power supply ensures that the amplitude of the transducer excitation pulse remains stable, regardless of fluctuations in the supply voltages, or the rate at which the pulser is being fired.

A turnkey software front panel control program is provided in which an unlimited number of instrument setups can be stored and retrieved through named setup files. The instrument base I/O port address is selectable, allowing multiple cards to be installed in the same host computer.

Windows 98/95 and NT .dll's, LabVIEW Virtual Instrument .vi drivers, and C language source code are provided to enable rapid development of custom software.

Applications include computer controlled imaging and measurement systems, materials analysis and inspection, transducer evaluation, and portable NDE systems.

JSR Ultrasonics

# PRC35 Specifications

## Pulser

**Pulse Type** Negative spike pulse.

**High Voltage Supply** Precision Regulated.

**Initial Transition** <5 ns (10-90%) typical. (Fall Time)

**Pulse Amplitude** -140 to -210 V into 50 Ω, -170 to -310 V into 250 Ω. Amplitude depends on Energy and Damping control settings.

**Pulse Energy** 12 -120 µJoules, selectable in 4 steps.

**Pulse Duration** Typically 10 - 70 ns FWHM for 50 Ω load. Function of both the Energy and Damping settings.

**Damping** Sixteen discrete damping values: 24.7, 26.3, 28.1, 30.3, 32.8, 35.7, 39.2, 43.4, 48.8, 55.6, 64.6, 76.9, 95.4, 125, 182, 333 Ω

**Mode** Pulse-echo or through transmission. Selectable by computer.

**Through Trans. Isolation** 50 dB typical at 10 MHz with 48.8 Ω Damping

**Pulser Repetition Rate** Internal: 100 - 5 kHz
External: 0 - 5 kHz. Internal rate is selectable by computer in 256 discrete values in approx.19 Hz increments.

**Sync Output** Maximum +5V, tr < 30 ns, tw = 200 ns. min., TTL and CMOS compatible, Load impedance 50 Ω min.

**Pulse Trigger Source** Selectable by computer between internal oscillator external source, computer trigger, and other PRC35 card.

**External Trigger Input** Positive going 3 - 5 V pulse. Triggering will occur on leading edge. TTL and CMOS compatible.

## Receiver

**Gain** -30 to 50 dB in .5 dB steps.

**Phase** 0° (noninverting).

**Input Impedance** 500 Ω (through transmission).

**Bandwidth** .001 - 35 MHz (-3 dB).

**High Pass Filter** .3, 1.0, or 5.0 MHz.

**Low Pass Filter** 10, 15, and 25 MHz.

**Noise** Typically 92.7 µVp-p input referred (50 dB gain, 35 MHz -3 dB BW, PRC35 installed in a 133 MHz Pentium.)

**Output Impedance** 50 Ω

**Output Voltage** ±1 V into 50 Ω

## Computer

**Computer Interface** ISA bus.

**Software** Turnkey control program provided. Windows 98/95 and NT .dll's, LabVIEW Virtual Instrument .vi drivers, and C language source code are provided.

## Miscellaneous

**Power** 4.1 watts maximum in active mode.

**Dimensions** .75" T x 4.2" H x 13.2" W.

**Weight** 1.3 lbs (.6kg).

**Operating Temperature** 0 to 50° C.


Note: Specifications are typical, at 25° C.
Specifications subject to change without notice.

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