

# JSR

# DPR300

## Ultrasonic Pulser/Receiver



- 35 MHz receiver BW (50 MHz option available)
- Noise level of 49  $\mu\text{Vp-p}$  input referred @ 35 MHz BW
- User adjustable pulse amplitude up to 475V (900V pulse amplitude option available)
- 16 damping values
- Selectable high and low pass filter settings (6 each)
- Selectable pulser energy and impedance
- 80 dB receiver gain range
- Windows-based control program and a Windows SDK are provided

The DPR300 is a computer controlled ultrasonic pulser/receiver with an extremely low noise receiver. Instrument controls include receiver gain, high and lowpass filter cutoff frequency selection, pulse energy, pulse amplitude, pulser impedance, damping level, pulse-echo or through transmission mode select, pulse repetition rate, and pulser trigger source select. A Manual Control option is available.

The DPR300 is designed for exacting applications. The rapid-recovery receiver is fully shielded from electromagnetic noise and interference to ensure a high signal to noise ratio. In addition, the pulser impedance, pulse energy, and pulse amplitude may be individually adjusted to optimize the excitation pulse for a specific application or transducer.

The DPR300 includes a Windows-based software control program to enable immediate usage in your application. Multiple DPR300's, and other JSR Ultrasonics instruments can be controlled from one computer using a hardware daisy chain interconnection scheme.

The Windows-based JSR Control Panel application and an SDK are provided to enable rapid development of custom software.

Areas of application include computer-controlled imaging and measurement systems, NDE systems, research and development, materials analysis and inspection, transducer evaluation, and exacting low-noise measurement systems.

# DPR300 Specifications

## Pulser

**Pulse Type** Negative spike pulse.

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

**Pulse Amplitude** Variable from 100V to 475V maximum. Amplitude depends on Energy, Damping, Amplitude, and Impedance control settings. 900V Amplitude option available.

**Pulser Energy** Selectable in 4 steps.

**Pulse Impedance** High or Low, user-selectable.

**Pulse Duration** Typically 10 - 70 ns FWHM for 50  $\Omega$  load. Function of the Energy, Impedance, and Damping settings.

**Damping** 16 Damping settings: 24.6, 26.3, 28.1, 30.3, 32.7, 35.7, 39.2, 43.5, 48.7, 55.6, 64.5, 76.9, 95.2, 125, 182, 333  $\Omega$ .

**Mode** Pulse-echo or through transmission. User-selectable.

**Through Trans. Isolation** Typically 80 dB at 10 MHz.

**Pulser Repetition Rate** Internal: 100 - 5 KHz, External: 0 - 5 KHz, Internal oscillator frequency user-selectable in 16 steps.

**Sync Output** Maximum +5V,  $t_r < 30$  ns,  $t_w = 200$  ns. min., TTL and CMOS compatible.

**Pulse Trigger Source** Internal oscillator and external source. User-selectable.

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

## Receiver

**Gain** -13 to 66 dB in 1 dB steps

**Phase** 0° (noninverting)

**Input Impedance** 500  $\Omega$  (through transmission)

**Bandwidth** .001 - 35 MHz (-3 dB)  
.001 - 50 MHz (-3 dB) bandwidth option available.

**High Pass Filter** 1.0, 2.5, 5.0, 7.5, 12.5 MHz.

**Low Pass Filter** 3, 7.5, 10, 15, 22.5 (35 MHz BW) or 5, 10, 15, 22.5, 35 (50 MHz BW)

**Noise** Typically 49  $\mu$ Vp-p input referred (60 dB gain, 35 MHz BW). Typically 59  $\mu$ Vp-p input referred (60 dB gain, 50 MHz BW).

**Output Impedance** 50  $\Omega$  Out-

## Computer

**Computer Interface** Bi-directional communication via RS-232 serial link using RJ45 type 8-conductor cable. 6' cable length standard. Other lengths available.

**Software** The Windows-based JSR Control Panel application and a Windows SDK are provided for custom application development.

## Miscellaneous

**Power** 100/120/220/240 VAC, 50/60 Hz, 30 W

**Dimensions** 8.5" W x 3.5" H x 12" D

**Weight** 10 lbs. (4.54 Kg)

© 2000, JSR Ultrasonics, DPR 300  
Note: Specifications are typical, at 25° C.  
Specifications subject to change without notice.