DPR300

Ultrasonic Pulser/Receiver

- 35 MHz receiver BW (50 MHz option available)
- Noise level of 49 µVp-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, Windows 98/95 and NT .dll's, and LabVIEW .vi drivers 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.

Windows 98/95 and NT .dll's, and LabVIEW .vi drivers 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.

JSR Ultrasonics

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 Ω 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 Ω.

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 Ω (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 µVp-p input referred (60 dB gain, 35 MHz BW). Typically 59 µVp-p input referred (60 dB gain, 50 MHz BW).

Output Impedance 50 Ω

Output Voltage ±1 V into 50 Ω

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 Windows based control program, Windows 98/95 and NT .dll's and LabVIEW .vi and C language drivers are provided.

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)

Operating Temperature 0 to 50 °C

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

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