



FEATURES

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- Frequency spectrum up to 50MHz
- Automatic frequency and bandwidth generation
- User-specified report title and parameters
- User-specified colors for graphics
- Comments and notes available for special cases
- Ability to save and read parameters and waveforms
- Ability to print certificates

DESCRIPTION

QuickFFT (QFFT) is an ultrasonic transducer evaluation package to test ultrasonic transducers and print certificates. The package includes a PR300 pulser/receiver card, an AD100 100MHz analog to digital converter card, and a program called QFFT. The two PC cards are compatible with PCs 386Mhz or higher; the QFFT program runs under Windows 3.1, 95, and 98.

The PR300 generates an electrical pulse with user defined pulse voltage and pulse width. The pulse is transmitted to an ultrasonic transducer, which converts the electrical excitation pulse to an ultrasonic pulse. The pulse is then propagated into couplant or the material to be tested. In pulse-echo mode operation, the transmitting transducer receives echoes that are reflected from an interface. In transmission mode, a second transducer receives the ultrasonic pulse. In both modes, the receiving transducer converts the ultrasonic pulse back into an electrical signal after it has propagated through the material, and the PR300 receiver processes the signal with the user-defined parameters. The processed signal is digitized by the AD100 card.

The QFFT program analyzes the digitized signal with the method of Fast Fourier Transform. It ascertains the peak frequency, -6dB upper frequency, -6dB lower frequency, the center frequency, and the bandwidth; and displays the results on the screen. A user can specify the title of the certificate as well as other parameters, such as transducer properties, instrument types, and the color of the traces.

SPECIFICATIONS

PR300

Pulse Voltage	-40V to -300V, 256 steps. Higher voltage is available upon request.
Pulse Width	95 ns to 728ns, 256 steps. Optional 28 ns is available upon request.
Damping	620Ω, 480Ω, 340Ω, 290Ω, 200Ω, 180Ω, 160Ω, 150Ω, 60Ω, 59Ω, 55Ω, 54Ω, 50Ω, 48Ω, 47Ω, or 46Ω
Receiver Gain	-14 dB to 82.8 dB in 0.01dB increment. Other gain ranges are also available.
DC Offset	-2.5V to 2.5V in 5mV increments
Low Pass Filter	All, 48MHz, 28MHz, 18MHz, 8.8MHz, 7.5MHz, 6.7MHz, or 5.9MHz
High Pass Filter	4.8MHz, 1.8MHz, 0.8MHz, or 0.6MHz
Waveform	Full rectify, + half rectify, - half rectify, or RF

AD100

Sampling Rate	100MHz, 50MHz, 25MHz, 12.5MHz, 6.25MHz, 3.125MHz, 1.5725MHz, and external clock <= 100MHz
Input Range	±1.0V, ±0.5V, and ± 0.1V
Resolution	9 bits (0 to 511)
Memory Depth	8 kilo samples and 128 kilo samples
Waveform Length	4 to maximum memory available in 4 sample steps
Post Trigger delay	0 to 65534 samples in 4 sample steps
I/O Port Address	200H to 3D0 in 10H increment