

# ULTRASONIC ANALYZER

**MODEL 5600**



The Model 5600 Ultrasonic Analyzer is a very high frequency, broadband Pulser/Receiver and Stepless Gate offering outstanding performance and flexibility for demanding ultrasonic testing applications. It is capable of providing the extremely high resolution required for those high frequency applications that push the present state of the art.

Model 5600 combines a true 100 MHz broadband Pulser/Receiver and a Stepless Gate in a single stand-alone package. The Pulser/Receiver section features operator-adjustable controls with discrete, calibrated settings and continuous adjustment capability. Model 5600's Stepless Gate allows selection of a small part of the RF waveform for spectral analysis. Both the gate position and width are easily controlled to cover a wide range of values. A gate delay may be used to position on the gate to eliminate unwanted interface signals or to select a precise time interval to be measured; this delay can be referenced to either the main bang or a selected interface echo.

Applications for the Model 5600 include high resolution flaw detection in critical components where defects as small as

.001"-.002" (.025mm-.050mm) must be detected or where defects very near the sound entry surface must be resolved. Model 5600 can also be used for thickness gaging of extremely thin materials, including many films and coatings beyond the range of other ultrasonic instrumentation. With appropriate transducers, thickness under .002" (.05mm) in metals and .001" (.025mm) in plastics can be measured. Other important applications are velocity measurement, spectrum analysis, transducer characterization, and a wide variety of other measurements used to monitor materials or processes.

Many oscilloscopes may be used with the 5600 with good results. To utilize fully the Model 5600's capability, an oscilloscope with at least 200 MHz bandwidth and a delayed sweep function is most desirable. If you would like specific recommendations regarding oscilloscopes for use with the 5600, the Panametrics staff will be pleased to assist you.

## SPECIFICATIONS

### PULSER RECEIVER SECTION

AVAILABLE ENERGY CONTROL:	Switch selectable: 1, 2, 3 and 4 microjoules
RISE TIME:	<3nS (50Ω damping, #1 energy position)
DAMPING:	Variable 1 to 50Ω ±10%
REPETITION RATE:	Internal: 0.2, 0.5, 1, 2, 5, 10KHz External: 0 to 20KHz
VOLTAGE GAIN:	30dB ± 1dB
BANDWIDTH:	1-100MHz (-3dB)
NOISE:	Typically 100μV pk-pk referred to input (BW = 100MHz)
ATTENUATION:	0-69dB in 1dB steps

### STEPLESS GATE SECTION

GATE DELAY RANGE:	0.1 to >200μS
DELAY MODE:	Main Bang or selected interface echo
GATE WIDTH RANGE:	50nS to >200μS in three switched ranges. Continuously variable within each range.

### STEPLESS GATE SECTION CONTINUED

BLANKING DELAY:	3μS to 50μS
GATE BANDWIDTH:	1-100MHz (-3dB)
GATE MARKER SIGNAL:	Gate pedestal level: ≈ +40mV
GATED RF LEVEL:	±0.6V pk max. into external 50Ω
MARKED RF OUTPUT LEVEL:	±0.6V pk max. into external 50Ω
SWITCHING TRANSIENTS:	<20mV
ISOLATION:	Typically 32dB @ 100MHz for signals less than ±0.6V pk
<b>MISCELLANEOUS</b>	
OPERATING TEMPERATURE:	0°-50°C
SIZE:	17" W × 3½" H × 13" D (432mm W × 89mm H × 330mm D)
POWER:	115/230VAC ± 10% 50-60HZ, 30W

All specifications subject to change without notice.