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## Multiferroic II Performance Summary

Radiant's Multiferroic II Test System is the most advanced test system on the market. The Multiferroic's unique frequency rating is 270KHz @ +/-100V, 100KHz @ 200V and 5KHz @ 500V using a built-in internal amplifier. The Multiferroic II is expandable to 4kV and 10kV. The Multiferroic II is ideal for magnetoelectric testing.

- » 18-bit resolution at 2MHz single pass capture rate
- » 10MHz -16-bit Stimulus interlace
- » Hysteresis accuracy 0.5%
- » Maximum data points 30,000
- » Maximum pulse width 1s and Minimum pulse width 0.5µs
- » Executes hysteresis loops to 270kHz up to +/-100V
- » Fatigues using an internal waveform generator at 2.5MHz
- » 1pA\* current resolution measuring DC leakage
- » Measures 200fC of charge in a single 1 second pass considering all noise sources combined!
- » All test can be obtained without any configuration change. Radiant's test systems are offered in a single self-contained enclosure.
- » Vision Data Acquisition & Management Software is provided with Radiant Test Systems. Optional packages for Magnetoelectric thin and bulk film testing, Pyroelectric, Piezoelectric, e31 and Transistor Testing

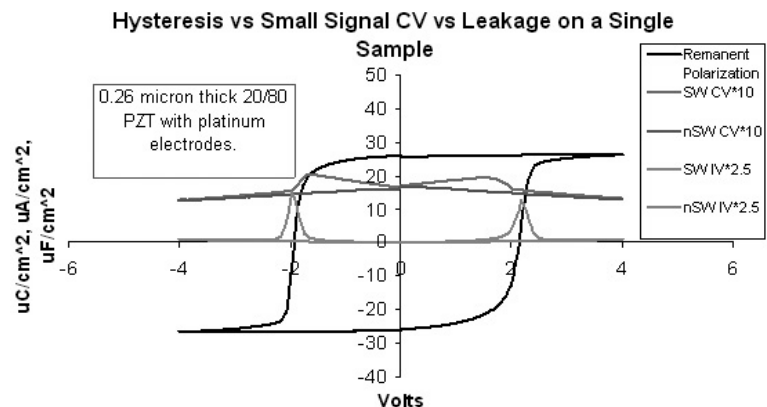
### Additional Multiferroic II Specifications include:

- » Hysteresis Frequency  
0.033Hz-270kHz
- » 32,000 points Max Data  
Points
- » Minimum Pulse Widths  
500ns
- » 50 points/5µs data  
capture rate
- » 2 COMM channels + I<sup>2</sup>C
- » 2 external 18-bit, ±10V  
SENSOR voltage inputs

## Includes Vision Software Operating System

The Multiferroic II Ferroelectric Test System is driven by Vision Software. Vision offers 155Tasks in Total. Vision is the only software package available for ferroelectric testers that provides exceptional freedom to design, conduct and review all procedures associated with any material experiment.

Vision dramatically increases the productivity of the researcher, reducing the time required to acquire data in an experiment. Vision's enhanced productivity directly reduces cost of test. Vision dramatically increases the complexity of the research that may be accomplished by allowing researchers to combine different measurement tasks with environmental controls into an automated test procedure managed by programmable logic embedded with automated data collection, analysis and plotting tools.





### The Vision Task Library Includes:

- » Hysteresis, Leakage, Charge, Retain, Resist, Fatigue, IV, CV, PUND, Imprint, Leakage Current and Many More Options
- » Link multiple tasks to create a custom program
- » Networking features allow researcher to share data from anywhere in the world
- » Continuously variable pulse widths and hysteresis periods

### Dimensions:

- » Width-17" x Depth-13" x Height-4"
- » Weight 20lbs

## Hardware Specifications

TESTER PARAMETER	Multiferroic II
Voltage Range (built-in amplifiers)	±10V (Built-in internal amplifier options +/- 100V, 200V, 500V)
Voltage Range (with and HVI and external amp)	±10KV
Number of ADC Bits	18
Minimum Charge Resolution	0.8fC
Minimum Area Resolution (assuming 1 ADC bit = 1μC/cm2)	0.08μ2*
Maximum Charge Resolution	5.26mC
Maximum Area Resolution (assuming saturation polarization = 100μC/cm2)	52.6cm <sup>2</sup>
Max Charge Resolution w/HVI	526mC
Maximum Area Resolution (assuming saturation polarization = 100μC/cm2)	>100cm <sup>2</sup>
Maximum Hysteresis Frequency	270KHz
Hysteresis Frequency	0.033Hz – 270kHz
Minimum Pulse Width	0.5μs
Minimum Pulse Rise Time (5V)	400ns
Maximum Pulse Width	1s
Minimum Delay between Pulses	40ks
Internal Clock	25ns
Minimum Leakage Current*	2pA - +/-3.5% accuracy 1pA - +/-15% accuracy
Maximum Small Signal Cap Freq.	1MHz
Minimum Small Signal Cap Freq	1Hz
Output Rise Time Control	10 <sup>5</sup> scaling
Input Capacitance	~6fF
Electrometer Input	Yes