

RT66B Specifications:

The Precision RT66B is a low cost test instrument for use in the initial process development of ferroelectric materials.

- Output Range $\pm 10V$
 - 12-bit Arbitrary Waveform Generator output
 - 100 points in 5ms single-pass
 - 500 points in 8 seconds
 - Pulse Widths down to 500 μs and up to 100ms
 - Fixed 125KV/s and 1.25KV/s output ramps (selected by the driver).
- Polarization Measurement
 - 14 bit analog to digital converters – 1.22mV sensitivity on 100pF Csense
 - 50 μs capture rate
 - Polarization, output voltage, and SENSOR inputs captured simultaneously
 - Minimum charge sensitivity -> 122fC
 - Minimum PZT capacitor area -> 12.2 μ^2
 - Maximum charge measurement -> 4.8 μC (480 μC w/HVI)
 - Maximum PZT capacitor area -> 4.8mm² (4.8cm² w/HVI)
 - Maximum hysteresis loop frequency -> 200Hz
 - Minimum hysteresis loop frequency -> 1/8th Hz
- 1 COMM channels for controlling high voltage amplifiers.
 - 1 I²C COMM channel
- 1 external 14-bit, $\pm 10V$ SENSOR voltage inputs.
- Requires a desktop or laptop computer with USB1.0 Port or better
Can be operated with Windows 2000 | ,Windows XP | , or Windows Vista |
- Will execute Hysteresis, Remanent Hysteresis, Small signal CV, IV, fatigue, imprint, retention, and piezoelectric displacement from one hardware configuration.
- HVI requires I²C channel to connect to RT66B

| Tester Parameter | RT66B |
|--|--------------------|
| Voltage Range (no external amp) | ±10V |
| Voltage Range (external amp) | ±10KV |
| Number of ADC Bits | 14 |
| Minimum Charge Resolution | 122fC |
| Minimum Area Resolution* (assuming 1 ADC bit = 1μC/cm ²) | 12.2μ ² |
| Maximum Charge Resolution | 4.8μC |
| Maximum Area Resolution (assuming saturation polarization = 100μC/cm ²) | 4.8mm ² |
| Max Charge Resolution w/HVI | 480μC |
| Maximum Area Resolution (assuming saturation polarization = 100μC/cm ²) | 4.8cm ² |
| Max Hysteresis Frequency | 0.2KHz |
| Min Hysteresis Frequency | 0.125Hz |
| Min Pulse Width | 500μs |
| Minimum Pulse Rise Time (5V) | 500μs |
| Max Pulse Width | 100ms |
| Max Delay between Pulses | 40ks |
| Internal Clock | 50μs |
| Minimum Leakage Current (assuming maximum current integration period = 20 seconds) | 10pA |
| Maximum Small Signal Cap Freq. | 2KHz |
| Minimum Small Signal Cap Freq. | 10Hz |
| Output Rise Time Control | 2 settings |
| Input Capacitance | 1pF |
| Electrometer Input | Yes |

* The minimum area resolution under actual test conditions depends upon the internal noise environment of the tester, the external noise environment, and the test jig parasitic capacitance.

**The maximum hysteresis or fatigue frequency is 10KHz with the 200V internal amplifier and 50KHz with the 100V internal amplifier.