

Barth Model 4702 HMM+™

50Ω HMM Pulse Test System



Preliminary Specifications

Output to DUT (program driven)

- ⊗ Pulse Rise Time: 0.7 - 1.0 ns
- ⊗ I_{PEAK} : 3.75 A/kV* +/-10%
- ⊗ I_{30ns} : 2.0 A/kV* +/-20%
- ⊗ I_{60ns} : 1.0 A/kV* +/-20%
- ⊗ Voltage Range: 500V-27kV*
- ⊗ Max Current: 100A PEAK; = IEC gun current @ 27kV
- ⊗ Pulse Rate: ~10 test pulse series per minute
- ⊗ Leakage Voltage: 0V to 100V in 0.1V increments
- ⊗ Source Impedance: 50Ω
- ⊗ Load Impedance: Any load
- ⊗ Size: 19"W x 20.5"D x 11"H control unit, 18"H includes Tektronix oscilloscope
- ⊗ Weight: ~130lbs total system weight plus shipping materials

*IEC Equivalent Voltage

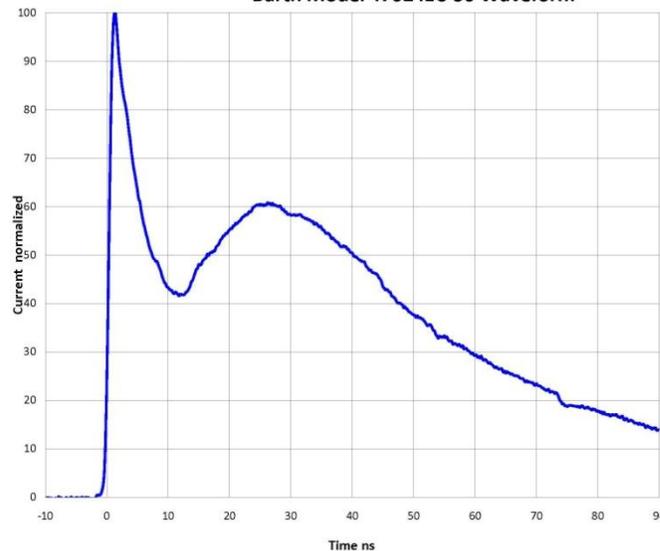
The Barth Model 4702 HMM+™ 50 Ω HMM Pulse Test System was designed and built to eliminate the common problems that are found with IEC gun testing. Gone are the interfering electromagnetic pulses that are induced with gun testing, and the system removes other undesirable effects that result from the gun's separate ground return cable. The test system also solves the large gun tip interconnect issues, providing a very easy connection to test fixture boards.

Connection and Operation

Tester is connected to the DUT with a single 50Ω coax which delivers the IEC-HMM pulse and provides connection for leakage measurements in between IEC stress pulses. This method provides a ready and convenient connection for both system type and component level IEC testing. Wafer level testing is also supported.

Testing is computer controlled, allowing the user to gradually increase the HMM delivered threat, while checking the DUT leakage, measured in between threat pulses, to develop information on DUT failure levels and signatures. will include references to this 50 ohm source test method. The IEC pulse is defined by the basic immunity test method for personal ESD Specification, IEC 61000-4-2:2008. A new version of this standard is currently under development and will include references to this 50 ohm source test method.

Barth Model 4702 IEC-50 Waveform



Pulse voltage and current delivered to the DUT are measured with custom Barth wide bandwidth voltage and current probes for accurate waveform measurement. Waveforms are digitized and downloaded to the control PC for processing. Our measurements provide the ESD chip designer with the detailed waveform information, which allows for assessment of effectiveness of the ESD protection circuitry, and to verify compliance to the desired ESD immunity level.

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