



Accelerating RF Solutions!

Accel-RF “millimeter-wave” Automated Accelerated Reliability Test Systems

AARTS fully integrated, automated, turnkey system provides flexibility and accuracy in determining RF and DC performance degradation with aging to predict life expectancy for compound semiconductor devices.

A single system to simultaneously ...

- Determine life expectancy of compound semiconductor components
- Characterize components during test to show RF and DC degradation

Multidimensional Dynamic Testing

- Automatically perform 3-temperature life tests
- Automatically characterize components

Stimulate each DUT with ...

- **RF**
 - Independent RF drive level for each DUT
 - Standard frequency ranges to 78 GHz
 - Input drive levels to 0.25 watts with SSPA option
- **DC**
 - Two independent bias sources
 - Bias can be constant voltage or constant current sources
- **Temperature**
 - Independent control for each DUT
 - +50°C to +250°C

Specifications

Versions Simultaneous DUTs per system RF 4, 8, or 16 RF Ranges (custom ranges available) 26 to 40 GHz 58 to 62 GHz 76 to 78 GHz Maximum RF Drive Power per DUT (without SSPA option) +12 dBm (typical) +10 dBm (minimum) Maximum RF Output Power per DUT DUT RF Input Level Adjustment +37dBm >20 dB		Applications Software Setup Pull down menus with forms that define Test scenarios for each DUT. Includes: DC, RF, temperature, and over 40 parameters. Control DUT temperature, 2-DC biases, RF input and output signals Calibration Automated calibration of temperature, DC and RF Limit checking Continuous DUT data logging User defined rate Data storage Dual disks for redundancy Data Storage Rates Normal User defined rate Accelerated Parameter delta rates exceeded Alarm notification Sequence, UPS shutdown, low gas pressure, disk usage, etc.. Data & Status Displays Multi-channel grid; single-channel composite; plot; SPA I-V curve; event log Network Support Ethernet card with email notification Data Presentation Aggregate Analysis Capability included. Flat ASCII translator for post-processing to third-party programs On-line Reference Reliability Assurance Guideline	
DUT Configuration RF & DC Any die, standard packages or custom design (contact factory for availability) Accuracy ±2° C Range +50° to +250° C (under no load) Sensor Thermocouple per DUT fixture			
Heater Control Unit (HCU) Independent Channels 4, 8 or 16 Setup & Control GPIB			
RF Distribution Unit (RFU) Independent Channels 4, 8, or 16 Input Power per DUT +10 dBm maximum (without SSPA) Output Power per DUT ≤ +37 dBm maximum DUT Input Level Adjust >20 dB Setup & Control GPIB		Personal Computer (Rackmount) System Control PCI GPIB Network Support PCI 10/100 Ethernet Mass Storage Two internal Hard drives Removable R/W CDROM Monitor 17" diagonal color LCD Operating System MS Windows XP Pro or 2000 Pro	
Solid State Power Amplifiers (SSPA) Independent Channels 4, 8, or 16 Power per DUT Up to +23 dBm at the DUT (frequency dependent contact factory)		Physical Characteristics Size Single-Rack (8-standard channels) 22.5"W x 55"H x 36"D (1-bay) (57.2 x 139.7 x 91.4 cm) Double-Rack (8-special channels, 16 channels) 45"Wx 55"H x 36"D (2-bay) (114.3 x 139.7 x 91.4 cm)	
DC Power Control Unit (PCU) Independent Channels Two bias supplies per channel Bias 1 0.5V to 100V; up to 3A - (Pmax = 60W) Bias 2 -12.5V to +12.5V; up to 0.2A Driven Constant I, V or P Shutdown w/in 10 ms (depends load capacitance) Setup & Control GPIB		Weight Single-Rack 560 pounds typical 1-bay (260 Kg) Double-Rack 1150 pounds typical 2-bay (520 Kg)	
Switch Matrix Unit (SMU) Independent Channels 4, 8, or 16 (Triaxial) Setup & Control GPIB		Power 208V to 220V, 3-Phase, 40A	
Semiconductor Parameter Analyzer (SPA) Independent Channels 4, 8, or 16 multiplexed Type Agilent E5270B DC Source/Monitor Setup & Control GPIB		Peak Power 6.7 KW (8-Channel) 10.0 KW (16-Channel)	
Uninterruptible Power Supply (UPS) Setup & Control 6 - 10 KW Ethernet		Nitrogen (N2) Input Connect to a 1/4" inch Swagelok®	
		Environmental Requirements Standard laboratory	

Contact

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