Automated Test Equipment - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-06-01 | 120 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License $4750.00
- Team License (1-7 Users) $5250.00
- Site License $6500.00
- Corporate License $8750.00

Report description:

Automated Test Equipment Market Analysis

The Automated Test Equipment market size was valued at USD 9.20 billion in 2025 and is projected to climb to USD 12.84 billion by 2030, advancing at a 6.9% CAGR. Demand is propelled by the migration to sub-5 nm nodes, the electrification of vehicles, and the rising complexity of System-in-Package designs. Manufacturers are channelling capital toward ultra-low-noise platforms able to measure below 10 nV/?Hz, while power-device specialists are specifying testers that safely apply in excess of 1,200 V stresses. Equipment vendors are simultaneously integrating real-time data analytics to shorten debug cycles and improve yield learning. Consolidation among leading suppliers continues, yet innovative mid-tier companies are targeting niche growth pockets such as wafer-level burn-in for AI accelerators and photonics device reliability validation.

Global Automated Test Equipment Market Trends and Insights

Shrinking <7 nm Nodes Requiring Ultra-Low-Noise ATE

Sub-7 nm production ramp-ups in Taiwan and South Korea have mandated measurement precision below 10 nV/?Hz and picosecond-level timing. Leading foundries have responded by qualifying new vector-parallel architectures that suppress crosstalk through enhanced shielding and optimized ground referencing. Tool suppliers are pairing these designs with machine-learning-driven pattern generation to compress characterization loops, a feature now standard on flagship SoC platforms.

Automotive Functional-Safety IC Testing Surge (ISO 26262)

European Tier-1 semiconductor vendors increased deployments of fault-injection-capable testers by 34% between 2024 and 2025. The equipment executes hundreds of safety-goal permutations, mapping results back to requirements-traceability matrices. Integration with hardware-in-the-loop benches enables simultaneous verification of powertrain inverters, radar sensors, and MCU subsystems, ensuring ASIL-D compliance at scale.

High Capital Intensity and Lengthy Pay-Back for Sub-5 nm Testers

Platform prices rose 35% versus the 7 nm generation, stretching ROI beyond five years for mid-tier fabs. The need for ultra-stable low-k dielectric probing, advanced thermal regulation, and multi-terabit pattern memory inflates both acquisition and service costs, tempering adoption rates among smaller foundries.

Other drivers and restraints analyzed in the detailed report include:

SiC / GaN Power Devices Driving High-Voltage Discrete ATE / Growth of System-in-Package Fuelling System-Level Testers / On-Chip BIST Reducing External Digital ATE Demand /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Non-memory testers covering logic, SoC, and RF devices captured 47.3% of the Automated Test Equipment market share in 2024. Their dominance arose from demand to screen AI processors, 5G transceivers, and automotive domain controllers. Vendors lifted vector speeds beyond 5 Gbps per pin and added sub-terahertz RF options to serve mixed workloads. Machine-learning pattern generation trimmed cycle times, suiting smartphone and data-centre volume runs. Integrated analytics linked fail signatures to layout blocks, reducing respins and cementing the segment's revenue lead.

Test handlers form the fastest-growing category, with an 11.4% CAGR projected from 2025 to 2030 as automotive and power lines seek higher throughput and tighter thermal control. The Automated Test Equipment market size for handlers is widening as fabs specify multi-zone plates and active vibration damping to qualify wide-bandgap devices at 175 C. Advanced robotics now moves fragile 3D-stacked packages without micro-cracking, raising first-pass yield in SiP assembly. Predictive-maintenance software further trims downtime, sustaining the segment's double-digit trajectory.

Tester mainframes held 56.4% revenue in 2024, bolstered by upgrades that integrate pattern-generation accelerators and cloud-connected analytics modules. Interface boards now employ low-loss laminates to support 70 Gbps differential lanes, while active thermal-control sockets stabilize junction temperatures within ?0.5 C.

Automated Test Equipment market size for system-level/burn-in racks is projected to rise at 12.9% CAGR, driven by AI accelerator wafer-level stress testing and photonics assembly validation. Prober innovations address shrinking pad pitches through MEMS spring-probe cards offering 3 ?m positional accuracy. Handler designs add multi-zone chill plates to match extended temperature test matrices demanded by safety-critical automotive ICs.

Automated Test Equipment Market is Segmented by Test Equipment Type (Memory, Non - Memory, Discrete, and Test Handlers), by Component (Tester, Handler, Prober, and More), by Test Stage (Wafer Probe Test, and More), by Technology Node (?28 Nm, 14-22 Nm, 7-10 Nm, and ?5 Nm), End-User Industry (Consumer Electronics, and More), and Geography (North America, South America, Europe, Asia-Pacific, Middle East and Africa).

Geography Analysis

Asia Pacific led the automated test equipment market with 62.4% revenue in 2024, supported by dense clusters of 300 mm fabs in Taiwan, South Korea, mainland China, and Japan. Foundry expansions at 3 nm and 2 nm nodes triggered corresponding investments in ultra-low-noise final-test lines across Hsinchu and Gyeonggi provinces, while Chinese IDMs accelerated domestic prober and handler procurement to offset export restrictions.

North America ranked second as CHIPS Act incentives advanced multiple green-field fabs in Arizona, Texas, and New York, creating fresh demand for package/final and system-level stations capable of ambient-minus-40 C stress profiles; Mexico's automotive electronics corridor likewise upgraded handler fleets to serve nearby vehicle plants.

Europe's share increased on the back of functional-safety IC production, with Germany and France expanding test capacity for ADAS processors and power modules, while the EUR 43 billion European Chips Act aimed to double regional fabrication output by 2030, spurring parallel tester orders.

The Middle East and Africa are projected to post a 9.1% CAGR from 2025 to 2030 as the UAE and Saudi Arabia channel diversification funds into local RF-front-end ventures; African hubs in South Africa and Nigeria have begun qualifying mixed-signal benches for regional fabless start-ups.

List of Companies Covered in this Report:

Advantest Corp. / Cohu Inc. / National Instruments (NI) / FormFactor Inc. / Hon Precision (Huafeng) / TESEC Corp. / Tokyo Electron (TEL) / UniTest Inc. / Shenzhen ChangHong Tech. / Blue Chip Testers / MAC Panel Company / Star Technologies / Samsung Semiconductor (Internal ATE) / Teradyne Inc. / Chroma ATE Inc. / SPEA SpA / Astronics Corp. / InTest Corp. / Toray Engineering / Hangzhou ChangChuan Tech. / Exicon Co. / Leader Tech. / Roos Instruments / Virginia Panel Corp. / Aeroflex Inc. (Cobham) / Asset InterTech /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

Table of Contents:

Automated Test Equipment - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-06-01 | 120 pages | Mordor Intelligence

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4750.00
	Team License (1-7 Users)	$5250.00
	Site License	$6500.00
	Corporate License	$8750.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2026-03-01
		Signature