

# Integrated Test Solutions

Full Turnkey Services from Bump, Wafer Probe, Assembly, Final Test, Post Test and System Level Test to Drop Shipment



As one of the largest test outsourcing providers, we offer a full suite of test platforms and engineering services to support a broad range of mixed signal, RF, analog and high-performance digital semiconductor devices for the communications, digital consumer and computing markets. We combine operational efficiencies with proven test capabilities to achieve the lowest cost of test with the highest possible throughput and faster time-to-market.





### Test Platforms

		Teradyne	Advantest	LTXC
D	DIGITAL	UltraFLEX	PS400	Fusion CX
8	MIXED	iFLEX	PS800	
S	IGNAL	J750	PS1600	
		Catalyst	T2000 (GEN1, EPP)	
		Teradyne	Advantest	LTXC
■■■ R	RF .	UltraFLEX	PS800	Fusion CX
R		iFLEX	PS1600	
		Catalyst		
		Teradyne	Advantest	
M	IEMORY	Magnum	T5503	

## **Test Engineering Services**

Our experienced R&D and test teams have helped customers reduce their engineering burdens and prepare products for high volume manufacturing in the shortest time possible. Our world class test development and test program migration services include:

- Test program development, debug, optimization and validation
- Device characterization
- First silicon characterization (Wafer Probe)
- Probe card design, fabrication and qualification (Wafer Probe)
- Load board design, fabrication and qualification (Final Test)
- Prototype evaluation
- · Multi-site migration to higher parallel testing
- Test program conversion to new tester platform



#### **NEW PRODUCT**

Device Test Feasibility StudyTarget Teaser Identification

Test Plan / Docum

• Test Plan / Documentation

Development

Definition/

**Planning** 

- Pattern Generation
- Test Hardware Design / Build
- Test Program Coding

valuation

Test Verification and Debugging

- Customer Acceptance
- Final Spec and Limit Implementation
- Final Test Documentation

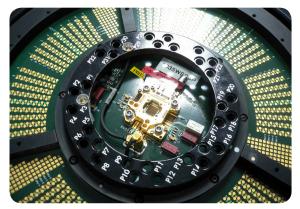
**PRODUCTION RELEASE** 



#### Wafer Probe

Wafer Probe is a critical step in semiconductor manufacturing due to the need to maxmize device throughput, yield and quality in order to reduce the overall cost of test. We operate some of the highest precision probers available in the industry. Our probe services include, but are not limited to:

- · Probe card design, development and maintenance
- Copper pillar bump wafer probe
- Known Good Die (KGD) testing for System-in-Package
- Prober network customization to support real-time data
- Fine-pitch, RF, bump, thin wafer probing
- Multiple site (x128) probing
- 3 row staggered / sample
- · Advanced fabrication wafer node
- 300mm (12") or 200mm (8") wafer probing



#### Final Test and Post Test

Every stage of the manufacturing process is critical and test automation is an important differentiator. We have a Next Generation Final Test Cell and highly automated Post Test systems that achieve extremely high throughput while maintaining a zero defects standard of quality. Whether you require production with minimum or full engineering support, we can provide:

- Multi-site implementation: x32 (Digital), x320 (Memory), x16 (Mixed Signal), x8 (RF)
- Testing advanced wafer level packages
- Testing silicon-based Integrated Passive Devices
- · Yield enhancement with monitoring and feedback
- Test time optimization
- Wafer sort to final test correlation feedback
- Quick-turn failure analysis
- Reliability services (i.e., ESD, latch-up and HTOL)
- Handlers with Active Thermal Control (ATC)



## System Level Test

We offer comprehensive test services for System-in-Package (SiP) and miniaturized modules including:

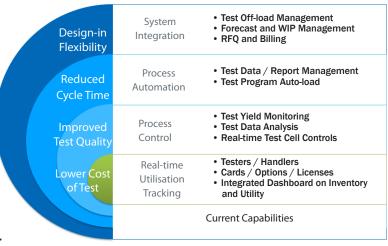
- Test program and hardware development
- Expertise in Digital, Mixed Signal and RF test solutions
- Characterization of SiP and modules
- Quick-turn failure analysis
- Cost effective ATE test platforms
- Extensive custom SLT solution experience
- Highest overall equipment effectiveness (OEE) in the industry with real-time machine down detection
- Latest technology on ATE and handler to support various package form factors



## Integrated Test Management System (ITMS)

Our test capabilities include an innovative Integrated Test Management System (ITMS) that efficiently and effectively integrates the test systems and business processes with all of our factories to achieve the highest levels of quality and throughput with a lower cost of test.

ITMS automates test systems and manufacturing processes in order to eliminate manual steps, reduce cycle time and provide an automatic closed-loop control process with real-time data analysis and monitoring. ITMS helps our customers gain significant yield improvements as well as the designin flexibility of having their devices tested in any of our factories while receiving the same successful results.



Value-Add to Our Customers

### Flexible Test Services to Meet Your Needs

We specialize in full turnkey test solutions that are supported in multiple geographies. Since 1999, we have provided world class test development and proven test experience in RF, mixed signal, digital, memory and integrated system-on-chip (SOC) devices. We also offer Wafer Sort only or Final Test only options to meet your unique test requirements. If you are looking for a test provider who can deliver a lower cost of test, proven test quality, design flexibility, higher yields, reduced cycle time and a broad geographic footprint, we have a solution for you.



