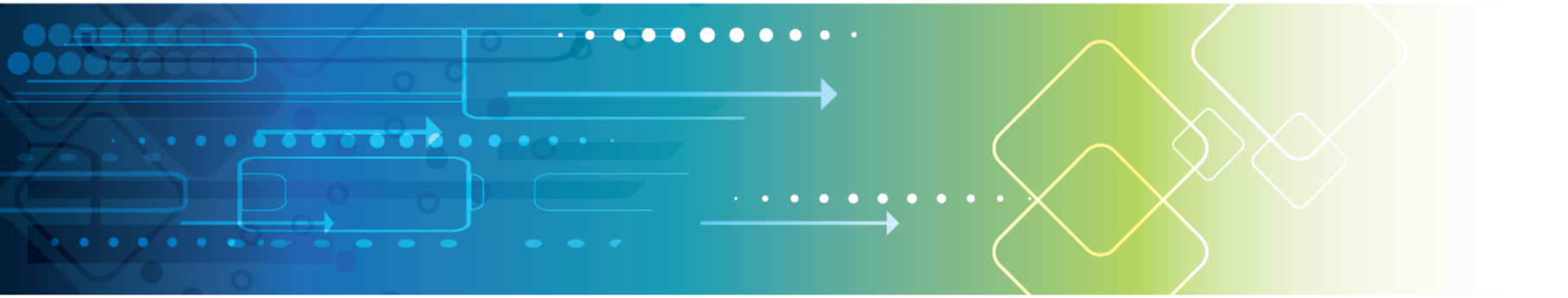
TERADYNE

Teradyne Overview

Results | Q4 2023



Who is Teradyne?

Leader in Test and Robotics Solutions

- We test the future of electronics and improve global manufacturing through advanced automation
- We power the technologies that inform, enrich and protect our lives by ensuring the reliability of electronics

TERADYNE

OUR VALUES

At Teradyne, we believe that fostering a diverse, equitable, and inclusive culture will build a stronger and more resilient company for our employees, our customers and our communities.

Honesty & Integrity In All That We Do

We act with integrity in all that we do for customers, shareholders, our communities, and each other.

Customers Count on Us

We go above and beyond to ensure our customers' success.

A Company Without Doors

If you don't know, feel free to ask. If you do know, it's your job to share.

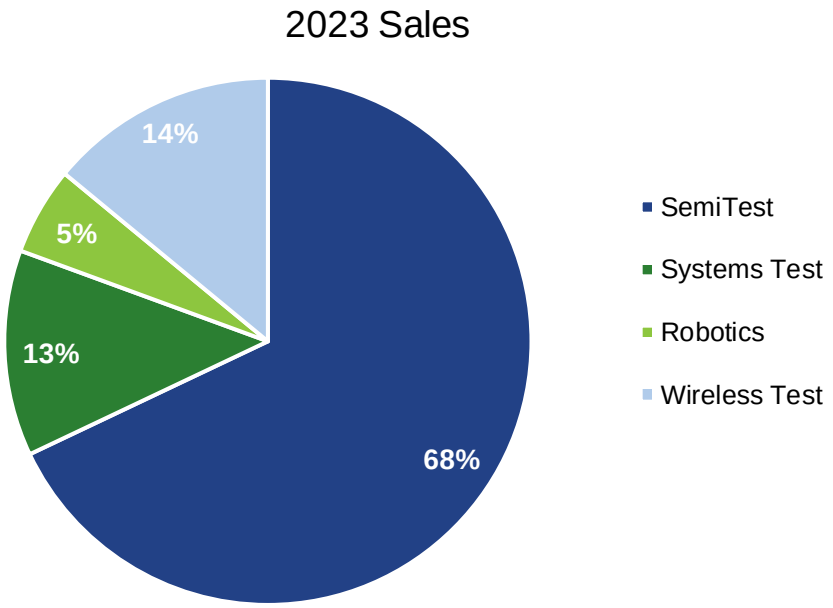
Our mission is to test the future of electronics and improve global manufacturing

- Ensure the power of electronics can be confidently trusted to inform, enrich and protect our lives
- Improve global manufacturing through the application of robotics solutions

TERADYNE

Teradyne Leads in Electronic Production Test and Collaborative Robots

- Semiconductor device test
- Wireless product manufacturing test and calibration
- Complex electronic system production test
- Robotics



Technology Leader

Wireless Production Test Leader

System Test Leader

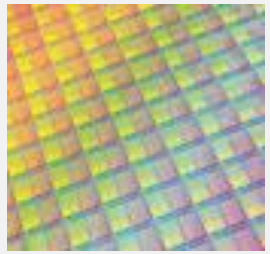
Cobots & AMR Leader

6,500+ people creating the tools to test the electronics that drive the global economy and the robots that power the next generation of automation.

TERADYNE

Teradyne - Ensuring high quality electronics & revolutionizing manufacturing automation

Semiconductors



Device Level Test

System-Level Test

Wireless

Module Test

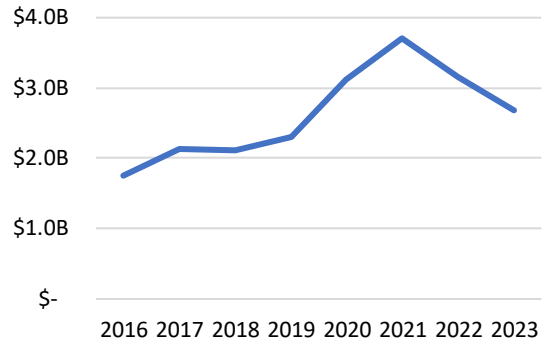
Printed Circuit Boards, Systems

Sub System Test

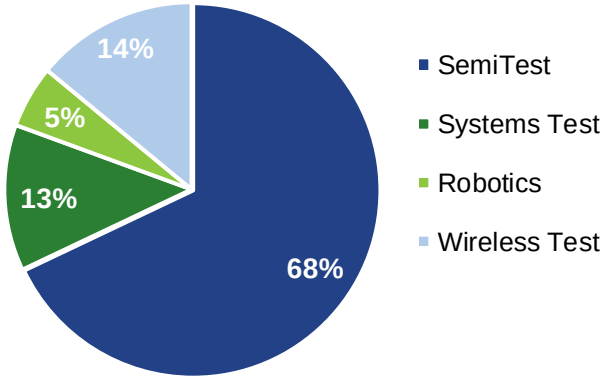
Advanced Automation

Next-Generation Collaborative Robots

Revenue



2023 Sales



TERADYNE

Semiconductor Test

A History of Innovation Drives our Growth

- #1 customer-rated test programming tools to shorten development times
- First true distributed processing architecture for highest parallel test efficiency
- First fully integrated 5G/mmWave test solution
- First floating resource architecture for more precise analog IC test
- Exclusive Near-DUT-Test architecture for high-speed memory and protocol test
- First massively paralleled, asynchronous System Level Test solution

TERADYNE

Wireless Test

LITEPOINT
A Teradyne Company

LitePoint solutions test the latest wireless technologies used in a wide array of mobile and connected devices

- Wi-Fi 6, Wi-Fi 6E and Wi-Fi 7 connectivity
- Sub 6 GHz and millimeter wave 5G cellular
- UWB location and security

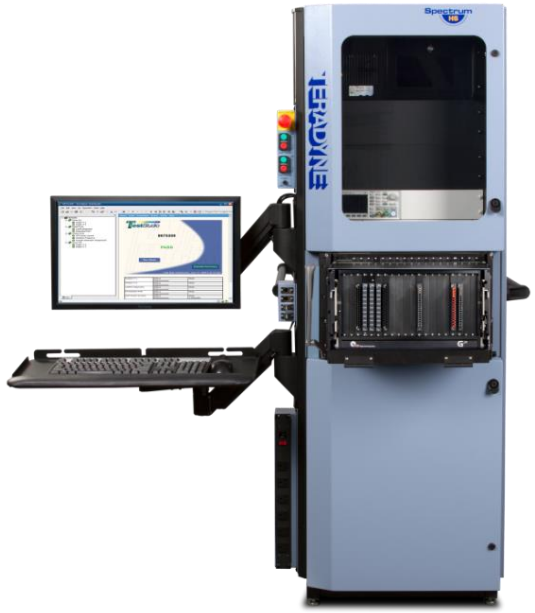
Unique turnkey solutions for over 350 wireless chipsets backed by worldwide support enabling fast high quality product ramps

TERADYNE

System Test

Serves the Commercial Circuit Board and Defense & Aerospace Markets

- Spectrum Series for production and field testing of defense systems
- TestStation family of systems for complex circuit board test
- Nano family of systems for low-cost automotive & industrial circuit board test



TERADYNE

Collaborative and Mobile Robots Driving Manufacturing and Warehouse Transformation

Market Trends

- Labor shortages and wage inflation
- Dull-Dirty-Dangerous tasks done by robots
- Productivity unlocked by automation

Robotics Solutions

- Material transfer
- Automated logistics
- Palletizing & Packaging
- Machine Tending
- Pick & Place

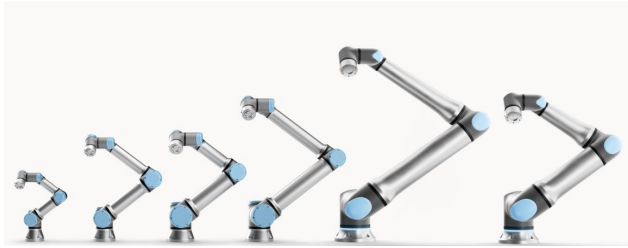
Technology Enabled

- Software *(AI, ML, Visualization, Cybersecurity)*
- Connectivity
- Advanced Sensors
- Mobility

Value Creation

- ROI's as fast as one year
- Fast to deploy and re-deploy
- Safe and versatile operations

UNIVERSAL ROBOTS



MiR

THIELE · LEAR CORPORATION · Continental · SANOFI · aurolab · Schneider Electric · Ford · DHL · AIRBUS · TOYOTA · Honeywell · Whirlpool

TERADYNE

Teradyne's Robotics Family of Companies

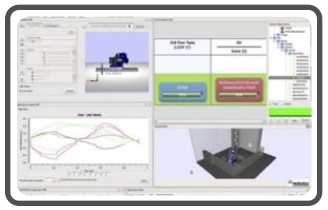
Growing Markets • Long Term Growth • Differentiated Products • Strong Teams

1,455 Total employees

427 Total engineers

2015 — May — UNIVERSAL ROBOTS

2018 — Feb — ENERGID Robotics and Machine Vision



2018 — Apr — MiR

2019 — Oct — AutoGuide Mobile Robots

2022 — Feb — Merger: UNIVERSAL ROBOTS + ENERGID Robotics and Machine Vision

2022 — Sept — Merger: MiR + AutoGuide Mobile Robots

Easy-to-use • Flexible • Fast ROI • Collaborative and Safe

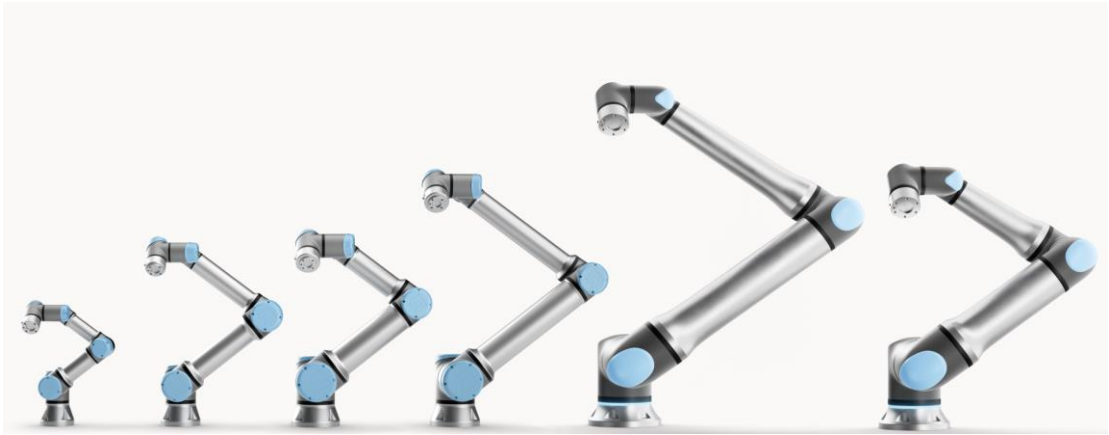
TERADYNE

Teradyne Robotics Companies

UNIVERSAL ROBOTS

Creating a world where people work **with** robots, not **like** robots

75,000+	1,100+	20+	1,000+
Robots sold	Partners	Offices	Employees

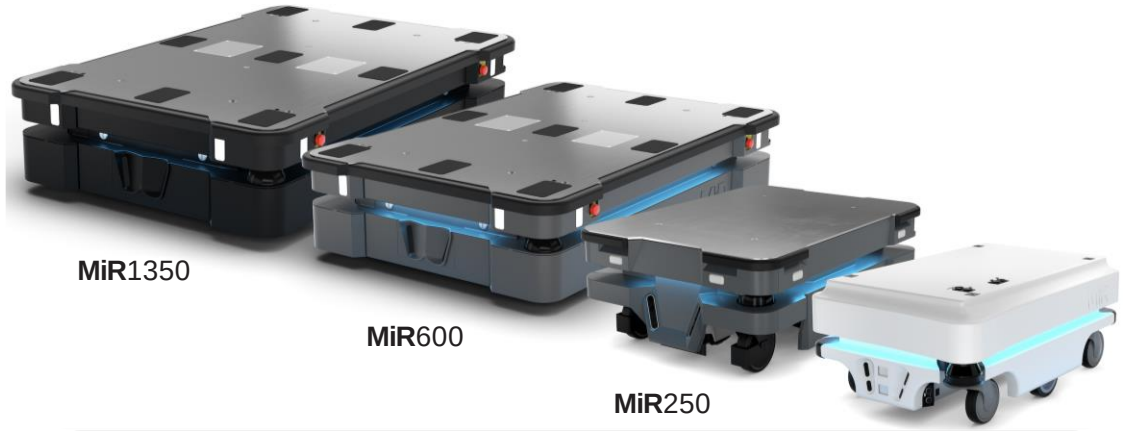


UR3e **UR**5e **UR**16e **UR**10e **UR**20 **UR30**

MiR

Automation on the **move**

9,000+	220+	12+	450+
Robots sold	Distributors	Offices	Employees



MiR1350 **MiR**600 **MiR**250 **MiR**100

TERADYNE

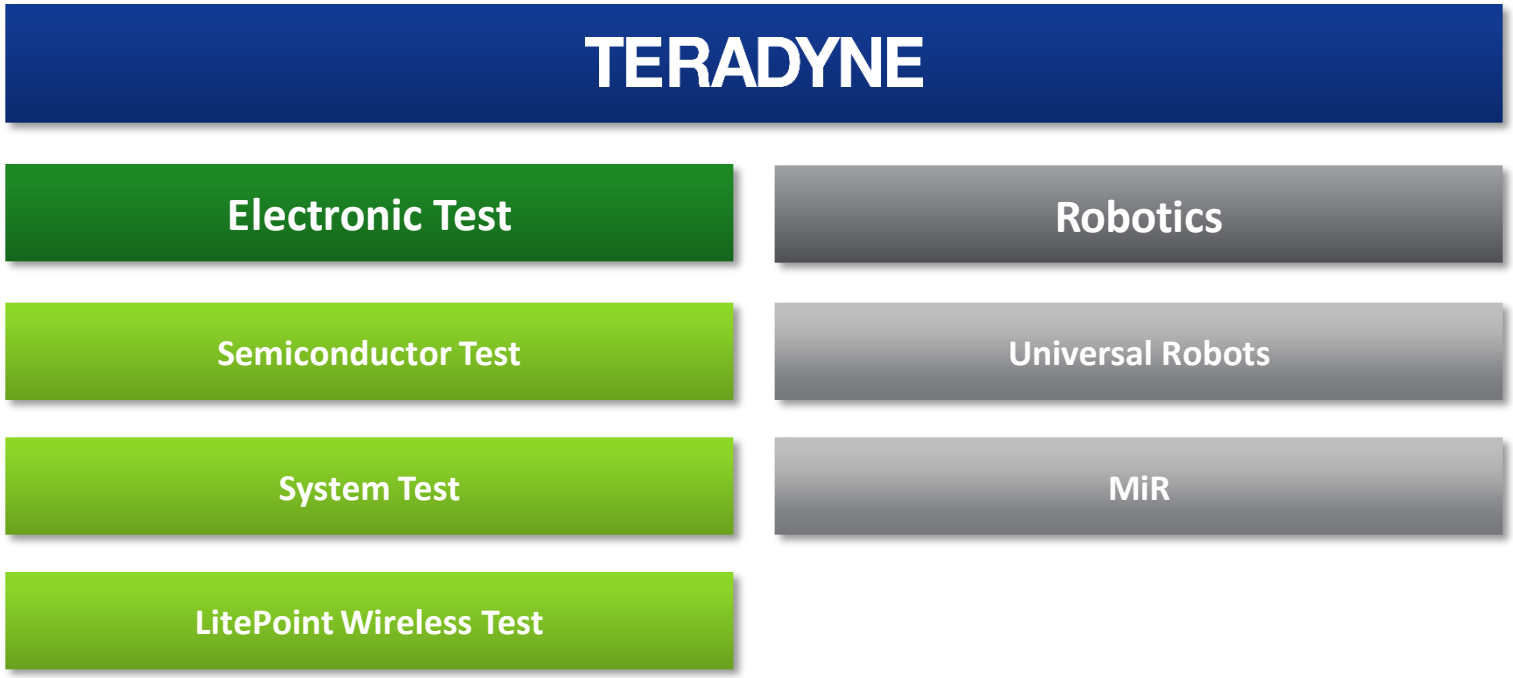
Annual Non-GAAP Results

$s in millions, except EPS	2022(1)		2023(1)	
Sales		$3,155M		$2,676M
Gross Margin	59.2%	$1,867M	57.4%	$1,537M
R&D	14.0%	$441M	15.6%	$418M
SG&A	17.7%	$558M	21.4%	$571M
OPEX	31.7%	$999M	37.0%	$990M
Operating Profit	27.5%	$868M	20.4%	$547M
Income Taxes *(& effective tax rate)*	16.3%	$138M	15.5%	$88M
EPS		$4.25		$2.93
Diluted Shares(2)		168M		164M

(1) See attached appendix for GAAP to non-GAAP reconciliations.
(2) Share count is full year average.

TERADYNE

Teradyne Company Organization



TERADYNE

Teradyne Management

Greg Smith
President & CEO

Andy Blanchard
VP, Corporate Relations

Ryan Driscoll
General Counsel & Secretary, VP

Jim Mahon
VP, Chief Human Resources Officer

Sanjay Mehta
VP, CFO

- **Amy McAndrews** — Financial Planning & Analysis
- **Mike Callahan** — Corporate Finance
- **Shannon Gath** — Information Technology
- **Robert Kenney** — VP Supply Chain and CPO
- **Michael Fischer** — Director New Product Introductions
- **Rich Lupien** — Facilities Manager
- **Dennis Mauriello** — VP of Global Manufacturing Operations
- **Steve Petter** — VP of Robotics Operations

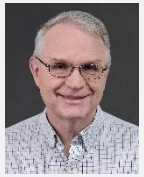
Tim Moriarty
VP, Business Development

Ujjwal Kumar
Group President, Robotics

- **Jean-Pierre Hathout** — President, MiR
- **Kim Povlsen** — President, Universal Robots

Rick Burns
President, Semi Test

John Lukez
President, LitePoint



John Wood
VP & General Manager, System Test Group

- **Ben Mitchel** — Production Board Test
- **John Wood** — Defense & Aerospace

TERADYNE

Teradyne Semiconductor Test Management

Rick Burns
President, Semi Test

Young Kim
President, Memory Test

Ty Akin
VP, Global Sales

Jason Zee
VP, Storage Test

Randy Kramer
VP, Solutions Engineering

Tyler Warren
VP, Finance

Jacqueline Briones
Sr. Director, Semi-Test – Production Support Business Unit

Peter Jeckel
Sr. Director, Semi Test – Interface Business Unit

Roy Chorev
VP, Engineering

Regan Mills
VP, SOC Marketing

Geeta Athalye
Sr. Director, Business Development

Courtney Simmons
Group HR Partner

TERADYNE

Robotics Group Leadership

Ujjwal Kumar
Group President

Kim Povlsen
President,
Universal Robots

Jean-Pierre Hathout
President, Mobile
Industrial Robots

Damien L. Tuffs
Finance

Jennifer Wentworth
HR

Steve Petter
Operations

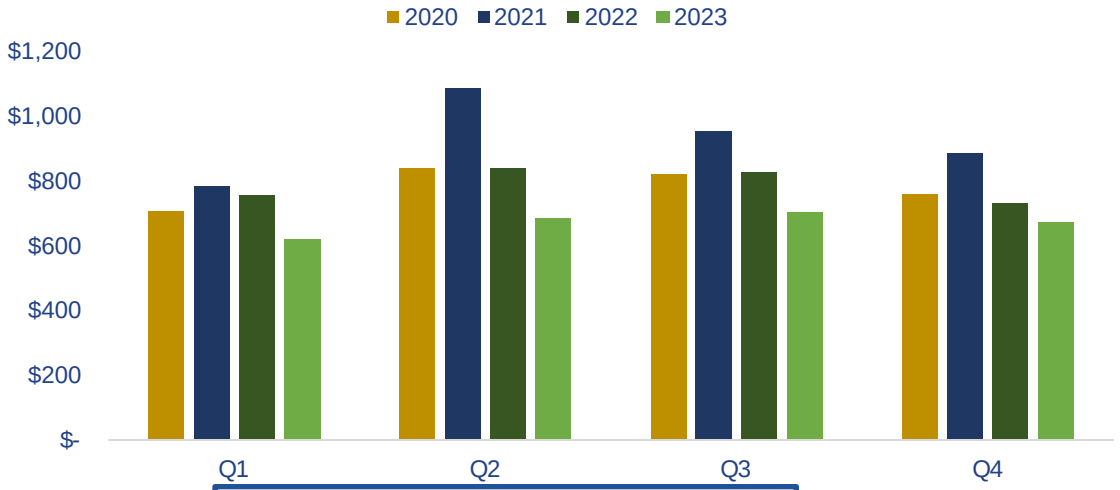
Jetta Withers
Legal

Martin Nordentoft
IT

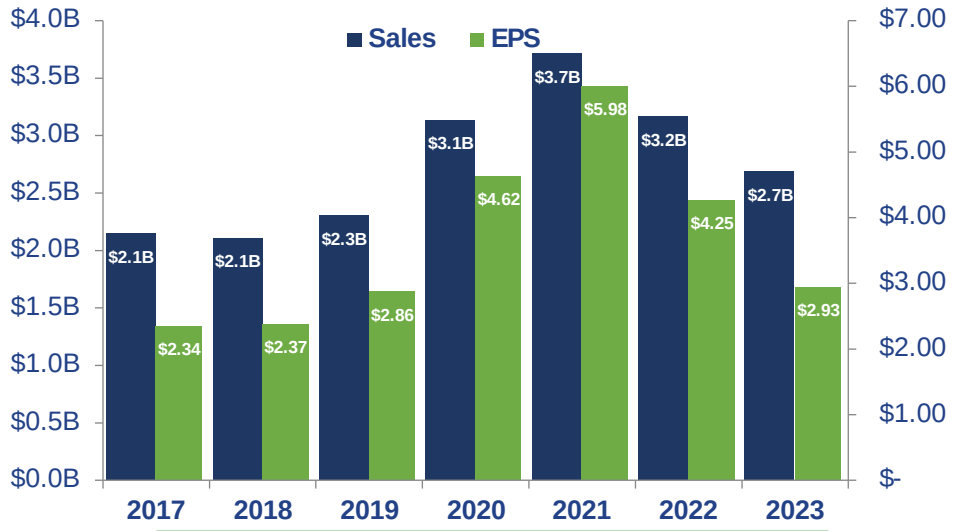
TERADYNE

Q4’23 and 2023 Summary

Q4 Sales of $671M, Non-GAAP EPS of $0.79, 2023 Sales of $2,676M, Non-GAAP EPS of $2.93



Quarterly Sales by Year ($M)



Full Year Sales/Non-GAAP EPS(1)

- Q4’23 sales down ~8% YoY on softer test demand
- Q4’23 Semiconductor test: Memory shipments strong, SOC weaker
- Q4’23 Robotics sales up 17% YoY, and up 50% sequentially

- Sales down 15% from 2022
- Full year 2023 Non-GAAP EPS of $2.93 down 31% from 2022

(1) See appendix for GAAP to Non-GAAP reconciliation

TERADYNE

Q4’23 Non-GAAP Results

	Q4’22 Actual(1)		Q3’23 Actual(1)		Q4’23 Actual(1)	
Sales		**$732M**		**$704M**		**$671M**
Gross Margin	*57.4%*	**$420M**	*56.6%*	**$398M**	*56.6%*	**$380M**
R&D	*14.9%*	**$109M**	*14.8%*	**$104M**	*15.2%*	**$102M**
SG&A	*19.5%*	**$143M**	*19.7%*	**$138M**	*21.2%*	**$142M**
OPEX	*34.4%*	**$252M**	*34.5%*	**$243M**	*36.5%*	**$245M**
Operating Profit	*23.1%*	**$169M**	*22.1%*	**$156M**	*20.1%*	**$135M**
Income Taxes *(& effective tax rate)*	*12.3%*	**$21M**	*15.7%*	**$24M**	*12.6%*	**$18M**
EPS		**$0.92**		**$0.80**		**$0.79**
Diluted Shares		**164M**		**163M**		**162M**

(1) See attached appendix for GAAP to non-GAAP reconciliations

TERADYNE

Balance Sheet & Capital Return

	Q4'22 Actual	Q3'23 Actual	Q4'23 Actual
Cash and Marketable Securities	$1,005M	$820M	**$937M**
Inventory	$325M	$323M	**$310M**
DSO	60 Days	59 Days	**57 Days**
Capital Additions	$35M	$35M	**$44M**
Depreciation and Amortization(1)	$39M	$41M	**$40M**
Free Cash Flow(2)	$149M	$140M	**$204M**
Capital Return – Buybacks(3)	$2M	$120M	**$51M**
Capital Return – Dividends	$17M	$17M	**$17M**

(1) Includes depreciation, stock-based compensation, amortization of acquired intangible assets
(2) Teradyne calculates free cash flow as: GAAP Cash flow from operations, excluding discontinued operations, less property, plant and equipment additions; see GAAP to non-GAAP reconciliations.
(3) Includes $1.1M in Q3'23 and $.5M in Q4'23 of excise tax to be paid in 2024

TERADYNE

Globally Aligned to Meet Customer Needs

United States (2200)

Headquarters

Product Development

Sales & Support

New Product Introduction

Supply Base Management

Costa Rica (400)

Applications Development

New Product Introduction

Global Security

Repair Center

Product Development

Supply Base Management

Europe (1200)

Sales and Support

UR Headquarters

MiR Headquarters

Product Development

China (700)

Applications Development

Sales & Support

Production

Japan (200)

Design Center

Applications Development

Sales & Support

Production

Korea (125)

Sales & Support

Singapore (200)

HQ Teradyne Asia

Product Development

Applications Development

Supply Base Management

Sales & Support

Philippines (1200)

Repair Center

Global IT

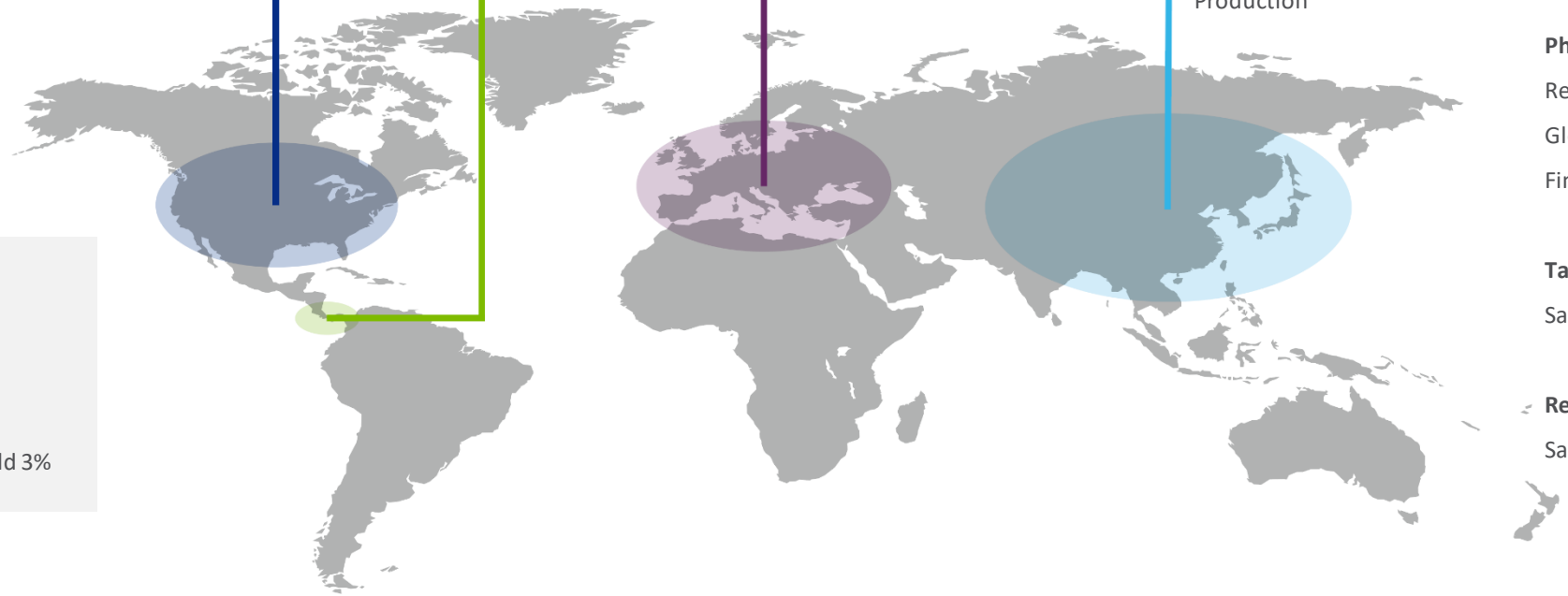
Finance

Taiwan (450)

Sales & Support

Rest of Asia (150)

Sales & Support



% of '23 Sales

US 16%

Europe 10%

Asia 71%

Rest of the world 3%

TERADYNE

Semiconductor Test

TERADYNE

Semiconductor Test Product Family

Memory

DRAM

Flash Memory

Magnum Family

Semiconductor Test

Complex SOC

Ultra FLEX plus

Performance Digital & Mixed Signal

Ultra FLEX

Low-Cost Consumer

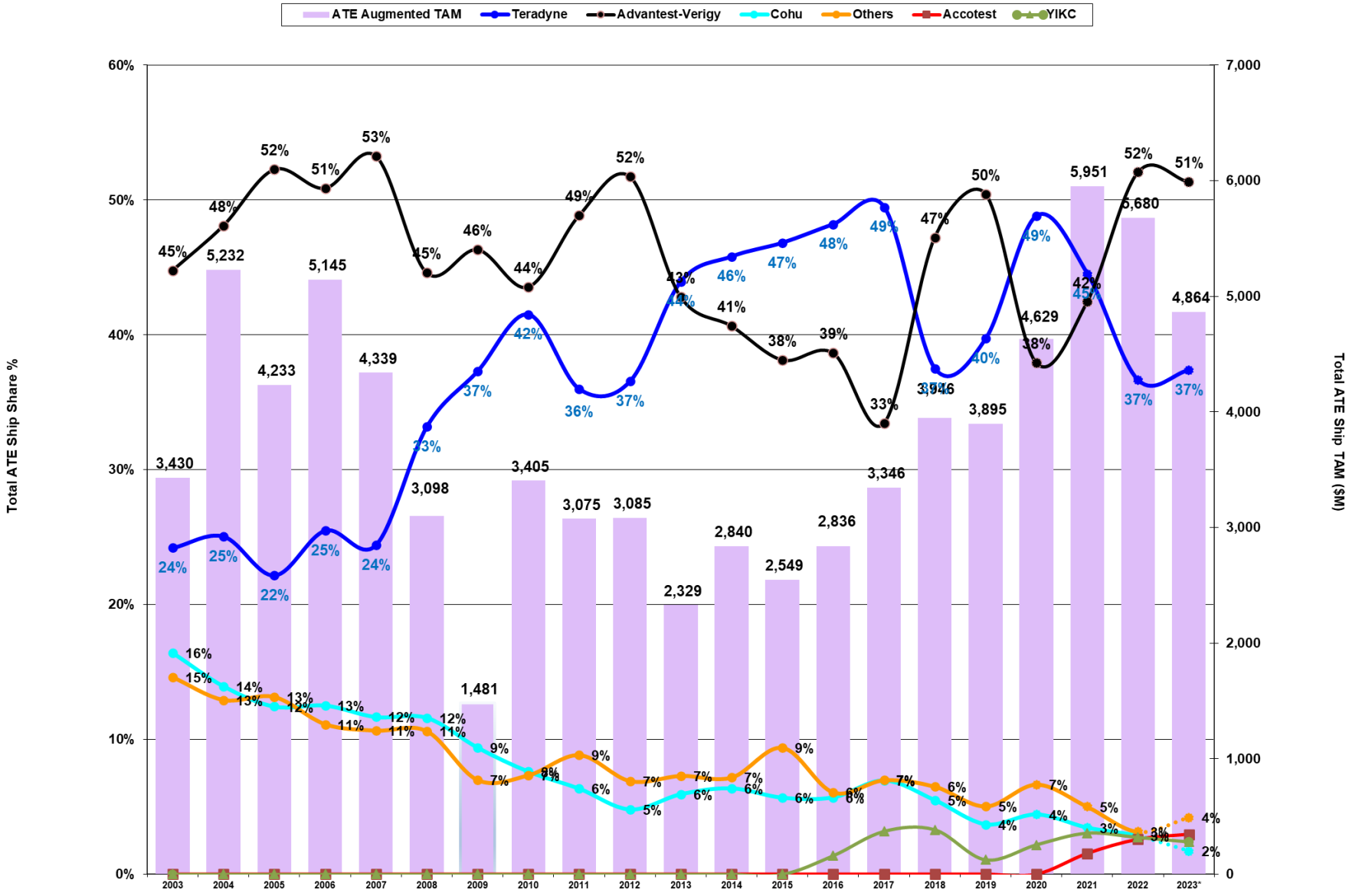
J750 EX HD

Precision Power & Analog

ETS Family

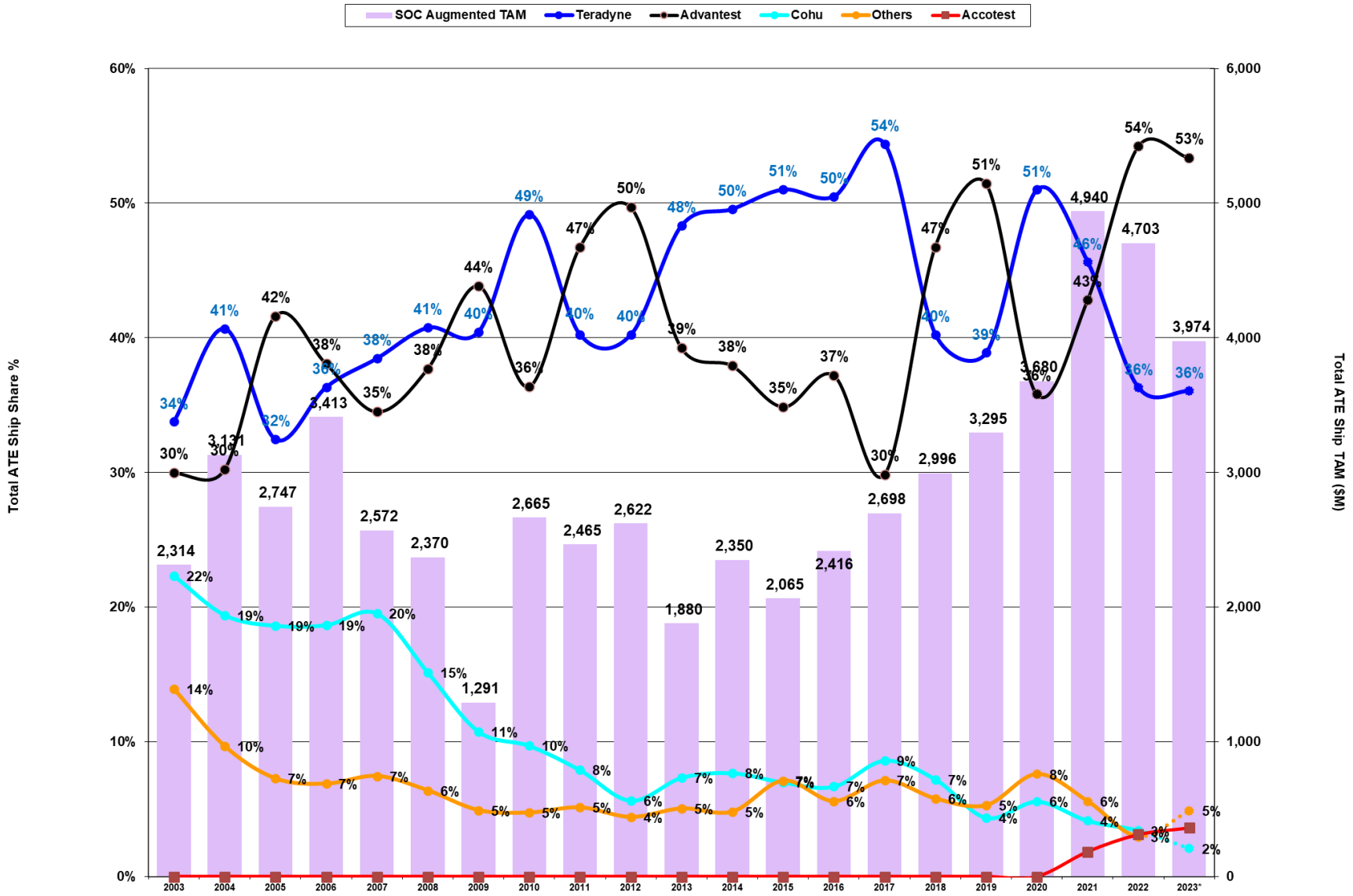
TERADYNE

Total ATE TAM and Share



TERADYNE

SOC TAM and Share



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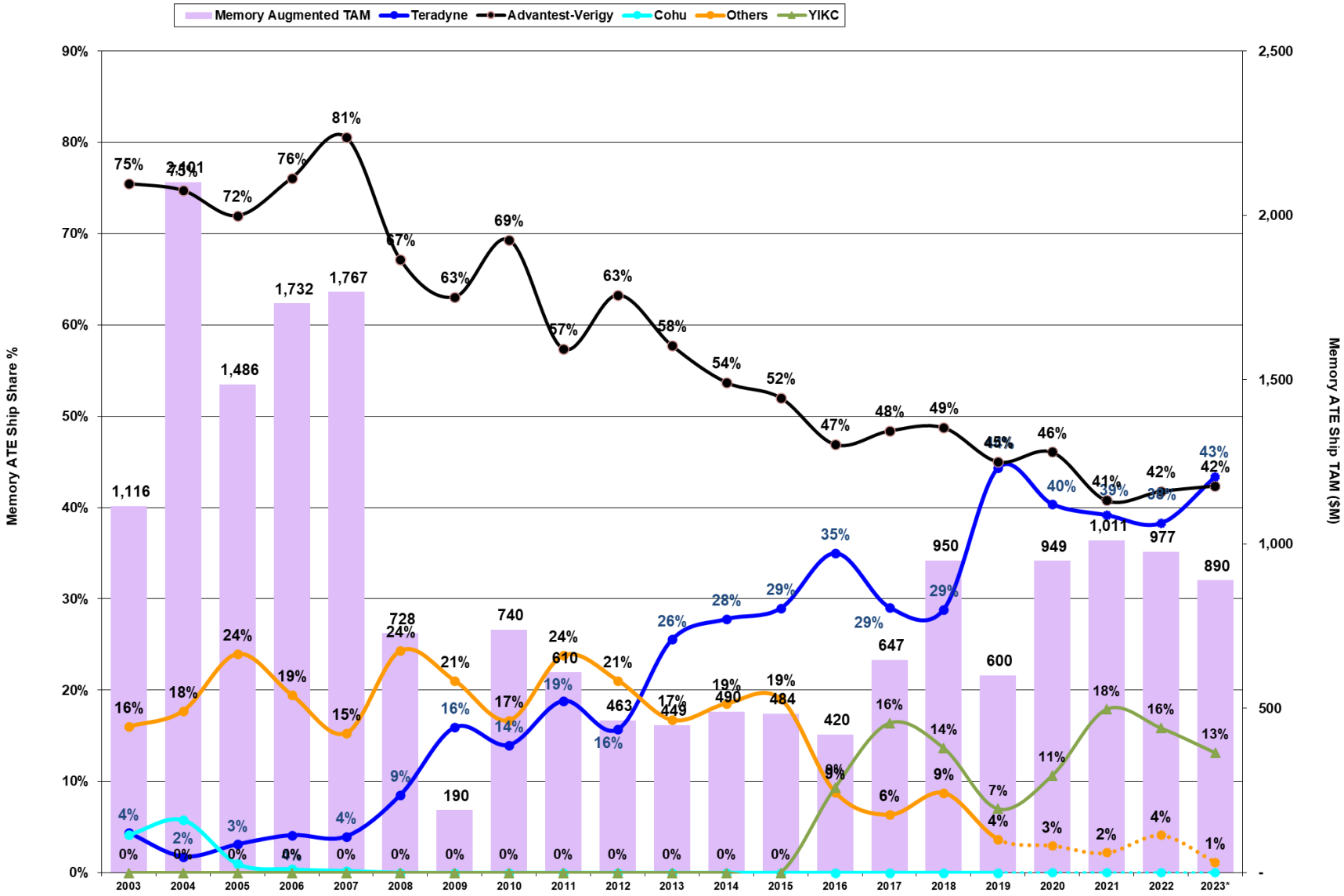
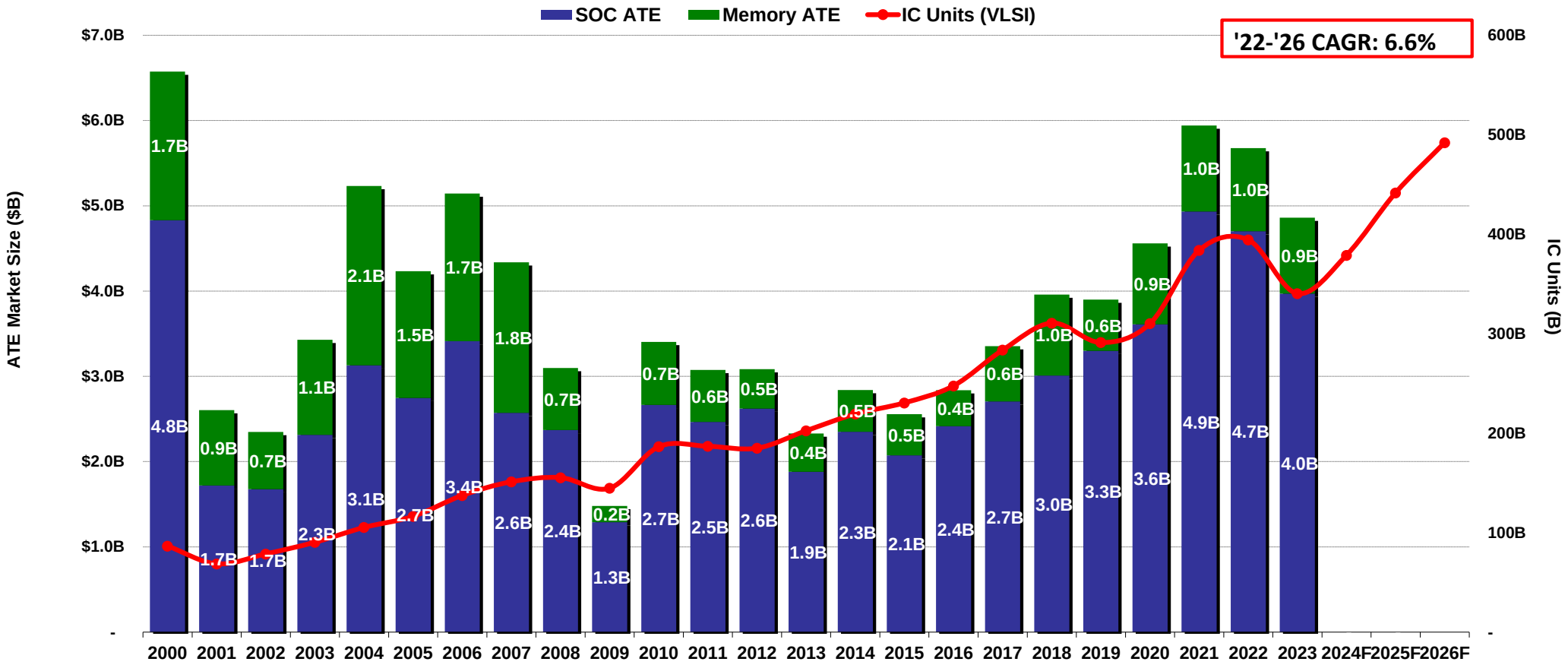
Memory TAM and Share



TERADYNE

IC Units and ATE Market Size



Sources:

	'00-'13 Source	'14-'18 Source	'18 and beyond Source
SOC ATE	PRG	TER Estimates	TER Estimates
Memory ATE	PRG	TER Estimates	TER Estimates
IC Units	WSTS Actuals	WSTS Actuals	WSTS * VLSI Est Growth Rate

TERADYNE

System Level Test

TERADYNE

Titan

Side View

SLT platform for maximum flexibility, scalability, reliability, and density

- Up to 424 test sites
- 2200 UPH throughput
- In production since 2017

Asynchronous architecture offers unmatched utilization & low cost of test across a large product mix.

TERADYNE

Storage Test

TERADYNE

Storage Test Product Portfolio

Solid State and Hard Disk Drive

Neptune™

Saturn™

TERADYNE

Production Support & Interfacing

TERADYNE

Teradyne is Your Service Solution Partner

Semi-Test Value Chain → **Test Development** → **Production Ramp-Up** → **Volume Production**

Considerations

- Test Time
- Quality of Test
- Time to Market
- Correlation
- Test Program Optimization
- OEE
- Cost of Test
- Yield

Our Solution

Full product life-cycle support focused on accelerating time to market and maximizing uptime

Applications Development

Global Customer Support

- Program Development
- Transfer to Production
- Ramp-up support
- Product Training
- Program Optimization (Yield/Test Time)
- Failure Analysis

Interface Solutions

Design & Build

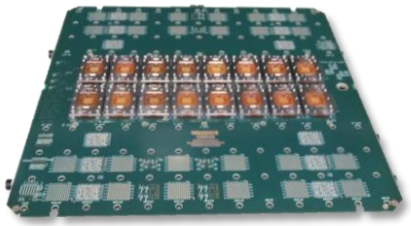
- Signal Delivery solutions
- Device interface boards
- Handler interface boards
- Probe cards

System Maintenance

- On-site Field Service
- Parts Replacement & Repair
- 24x7 Support Center

TERADYNE

Device Interface Solutions



Fully Integrated Device Interface Board
16x16”, +70 layers at 0.325mm pitch

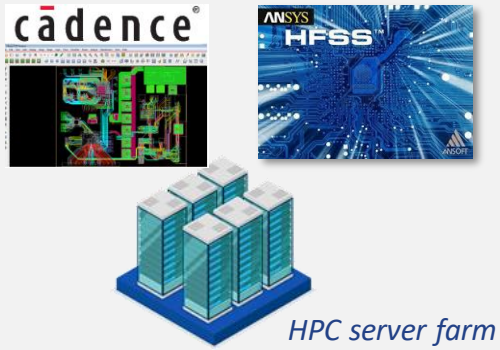
Teradyne Design & Manufacturing System Advantages:

- Faster new product introductions (NPI) via high first pass quality and on-time delivery
- High first pass quality and reliability enable higher up-time and fewer spares reducing total cost of ownership
- High performance (electrical and mechanical) design capability ensures accurate and repeatable test results.

Key Capabilities to Create First Pass Success

+200 staff WW

Expert Design & Project Management



HPC server farm

Design & Simulation to meet full performance on first pass

Precise measurement to validate design

#1 Provider for Teradyne Testers

+850 NPI designs
+4,000 Probe cards & DIBs

Performance, Quality & OTD Leader

TERADYNE

A Worldwide Service Solutions Partner

Supporting a worldwide installed base of ≈20,000 test systems on 45 platforms in more than 47 countries

Comprehensive portfolio of solutions to deliver design, production, test and maintenance services

Backed by ~1,450 service professionals

TERADYNE

Wireless Test

TERADYNE

Spanning the Wireless Value Chain

LITEPOINT
A Teradyne Company

Chipset Makers | Product Developers | Module/SiP Makers | Contract Manufacturers

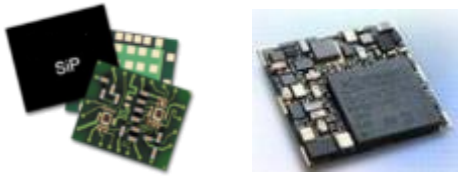
- Simple “reference designs for test” speed time to market
- End-to-end ecosystem coverage
- Superior manufacturing economics
- Comprehensive technology coverage

TERADYNE

Leader in Wireless System Level Production Testing

LITEPOINT
A Teradyne Company

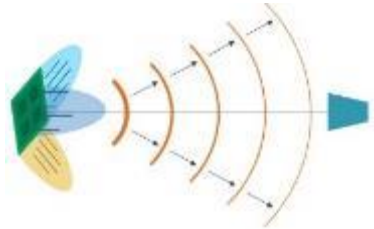
Module SIP Test



PCB Test

End Product Test

5G Over-the-Air Test



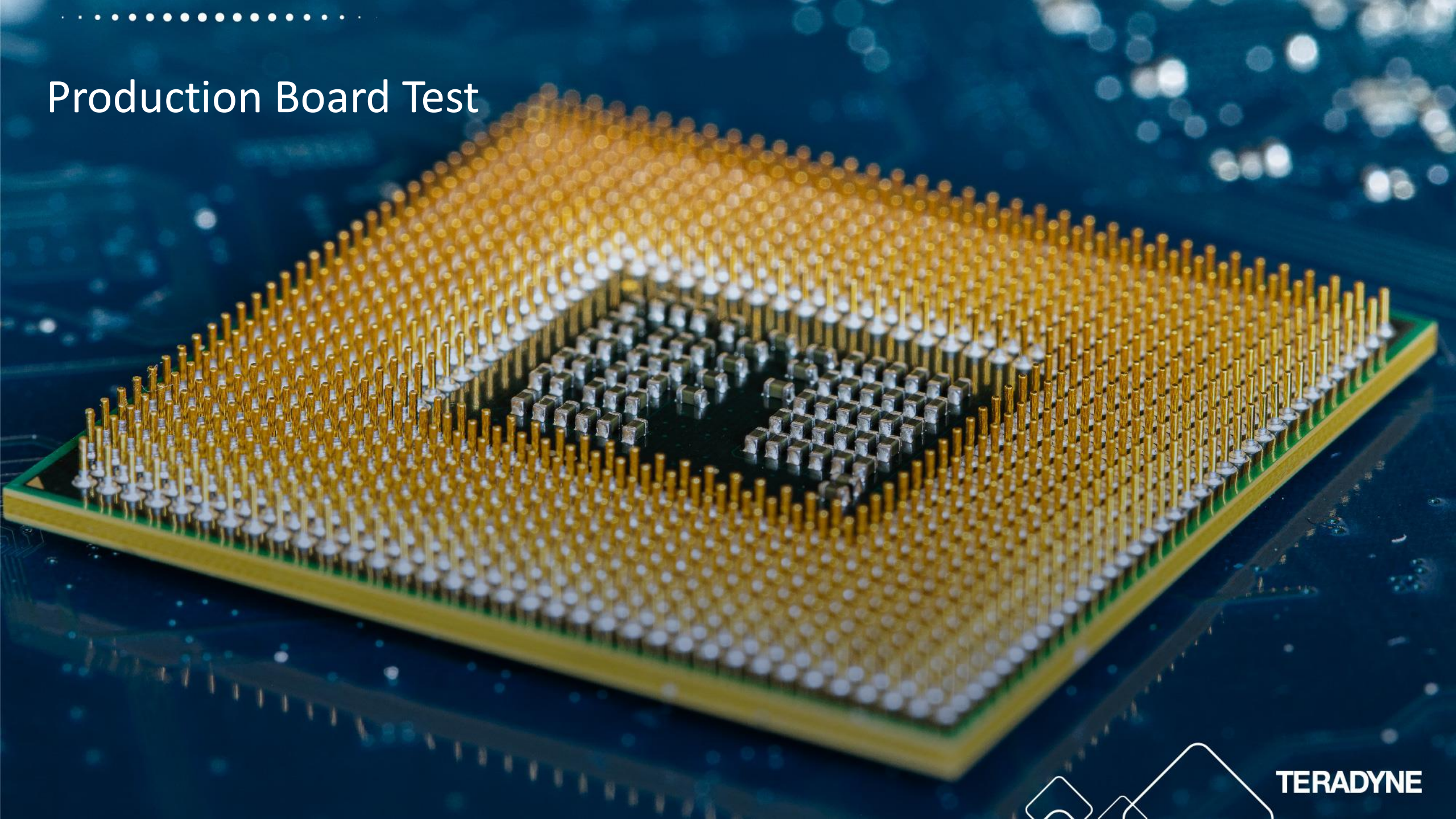
All Wireless Technologies

Wi-Fi 6 6E 7 Bluetooth LTE Advanced Pro LTE 4G Advanced 5G UWB NFC GPS ZigBee LoRa

Production Testers

TERADYNE

Production Board Test



TERADYNE

TestStation Systems: PBCA In-Circuit / Functional Test

TESTSTATION

Incomparable Test Productivity
Teradyne designed digital & analog subsystems and dedicated system controller, intelligent program optimizer & binary program execution outperform comparable competitive systems.

Consolidate Multiple Production Stages
TestStation systems has native parallel in-system programming and functional test; allowing operations to streamline backend test processes by blending some of these test steps during ICT.

Less is More
Save up to 6x more footprint than competitive testers. A single TestStation Multi-Site can deliver the productivity of 2-4x competitive systems.

OpEx & CapEx Friendly
Eliminate excess operators, fixtures, and energy costs. Common programming, fixturing, and debugging. “Copy-exact” test results worldwide.

Product Size Complexity	Small	Medium	Medium / Large	Large / Very Large

TERADYNE

NEW: Nano System for Lower Complexity PCBA Test

Right-sized automated-test solution

Multipurpose Automated PCB Test System

- Precisely designed for varied mid-to-low-end production line with a high mix of products
- Inherits TestStation's test coverage and performance
- Configurable and scalable for specification optimization

Simplified Operation

- User-friendly, intuitive all-new handler interface
- Automated fixture set-up for quick, easy changeovers
- Advanced conveyor system for versatile UUT handling
- Well-considered design for effortless maintenance and safety

Optimized OpEx/CapEx

- High performance in a compact design, saving floor space
- All-new budget-friendly fixture design & interface
- Minimized resource consumption for reduced emissions
- Lower maintenance for minimal cost of ownership

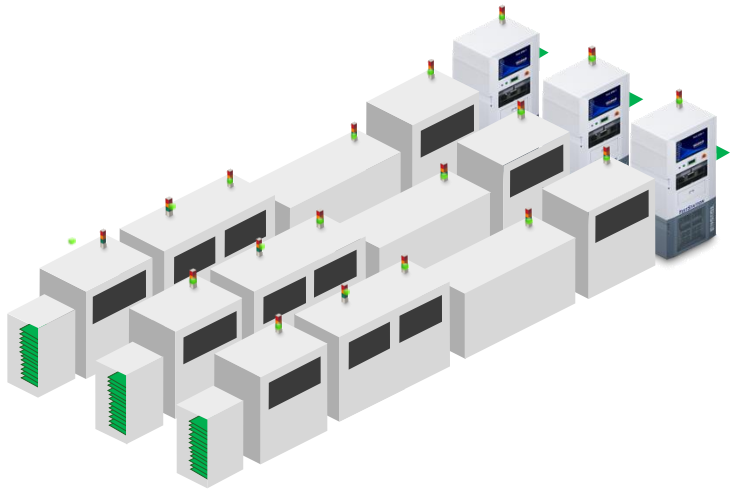
nano TEST AUTOMATION

TERADYNE

In-line Systems

Designed for highest productivity for SMT line

- The highest test speed
- Extremely small footprint
- Industry Highest Utilization <6sec
- Efficient / Balanced Fixture Press
- Designed for lowest MTTF and easy maintenance
- Dual-site support for doubled capacity



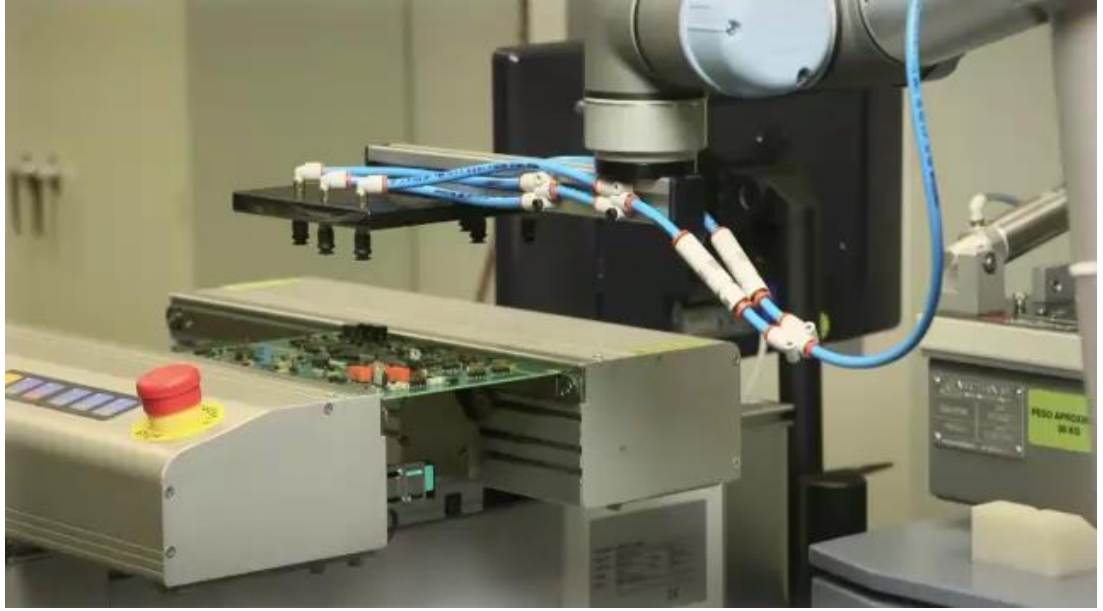
Model		TSH	TSHL
Test Point maximum	TSI 51 Insert (Single Site)	2,560	2,560
	TSI 52 Insert (Dual Site)	5,120 (2,560/site)	5,120 (2,560/site)
	TSI 161 Insert (Single Site)	N/A	6,144
Press Pressure Force		Up to 15kN	Up to 18kN
UUT Size (mm)		450 x 350	508 x 530
Dimension (mm)		850 x 1170 x 1904	850 x 1220 x 1905

TERADYNE

Offline Systems

Optimized size for High-Mix and High-Volume PCBA manufacturing

- Industry's highest test speed
- Small footprint than any testers
- Innovative new multi-tester design
- Wide selection of systems to meet any environment
- Common instrument, common test software



	Large Frame		Compact Dual Site Frame		Extra Large Frame	
Model	**LHS**	**LH**	**TSO**	**TSA**	**LX**	**LX2**
Test Site	Single	Single	Single / Dual	Dual (Asynchronous)	Single	Single
Pin Board Slot	16	16	10 (5/site)	10 (5/site)	30	30
Max. Test Points	4,096	4,096	5,120 or 2,560/site	5,120 (2,560/site)	7,680	15,360
Dimension (mm)	840 x 754 x 1349	1102 x 832 x 878	600 x 1560 x 1980	600 x 1560 x 1980	1672 x 844 x 1130	1672 x 844 x 1130

TERADYNE

Tester Inserts

Modularized TestStation for 3rd Party Automation

- Standard integration solution for custom automation
- Customizable to match end-user requirements
- Lower capital equipment, fixture, and operation cost
- Reduce handling times
- Smaller tester footprint
- High fault coverage
- Scalable performance and test capabilities

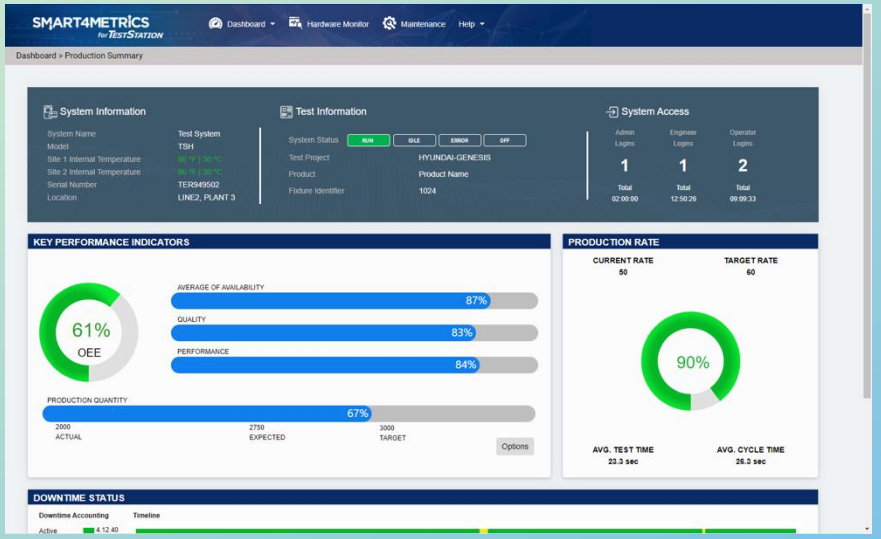
Model	TSI 161	TSI 52	TSI 51
Test Site	Single	Dual	Single
Pin Board Slot	16	10	5
Max. Test Points	6,144	5,120 (2,560/site)	2,560

TERADYNE

Factory of the Future:
Smart Factory Software Integration

SMART4METRICS

Smart4Metrics provides real-time product and tester data utilizing industry 4.0 standards and protocols, including IPC CFX, as a sensor for quality measurement. Utilizing an open API, Smart4Metrics connects to your existing MES systems and cloud solutions for streamlined data analysis with local and remote access.



Production Monitoring

- Production Efficiency
- Downtime Statistics

Hardware Monitoring

- Calibration Status
- Power Levels
- Fan Speed
- System Temperature

TERADYNE

Defense and Aerospace

TERADYNE

Defense and Aerospace Test Solution Customers

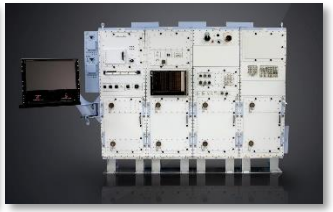
Defense Authorities

U.S. Department of Defense

DoD Standard Automated Test Systems

U.S. Air Force's VDATS

U.S. Army's NGATS



U.S. Navy's eCASS

U.S. Marine's RTCASS

International Defense Authorities

UK MoD

Japan MoD

Commercial Aerospace and Defense Companies

Aerospace and Defense Manufacturers

Commercial Airline Operators

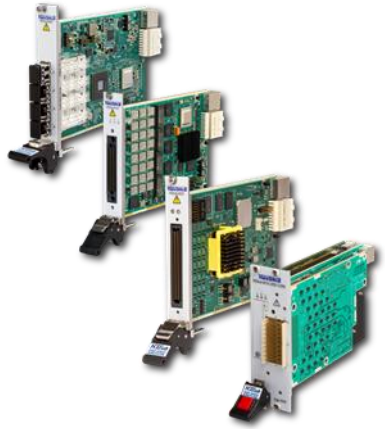
Avionics System Integrators

GE Aviation

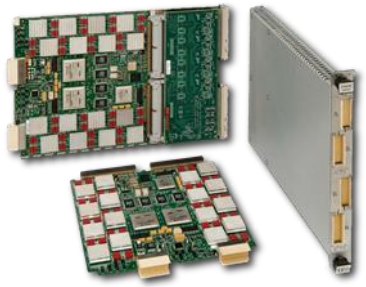
Defense and Aerospace Test Product Family

Instruments

Software-Defined Reconfigurable PXI Instruments



VXI Core System Instruments



Systems & Subsystems

Military, Manufacturing, Commercial Airline Test Systems

Military Depot and Factory Subsystems

Portable Field Testers and Maintenance

Test Solutions

Design and Verification Test

Avionics System Integration and Flight Test

Factory Functional Test

Field Test and Ground Maintenance

Sustainment Support & Engineering Services

ATE Life-cycle management and support

Project-based Engineering Services

Long Term Product Support

TERADYNE

Robotics

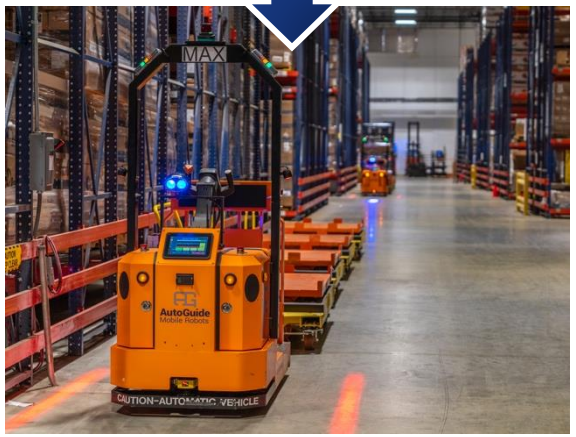
Automation transforming manufacturing & warehouse jobs

People doing safer and more fulfilling work

Welder

Assembler/Fabricator

Logistics / Warehouse Worker



TERADYNE

Proven Customer Success with Collaborative Robots

T&W Stamping

Efficiency increased by 40%

T&W Stamping wanted to automate the labor-intensive process: the tending of resistive **welders**. By using a cobot, with built-in safety system, they could keep their existing layout. The UR5 cobot paid for itself in less than four months-freeing up three operator functions.

Sanofi

Reduced time per task by 10% per day

Sanofi automated to keep up their productivity levels while reducing the total weight lifted (300 and 700 kilos per person) over the day. They installed seven UR10 cobots into **packaging and palletizing** lines. By automating they reduced time per task by 10% per day. They have gone from two operators per line to three operators for two lines.

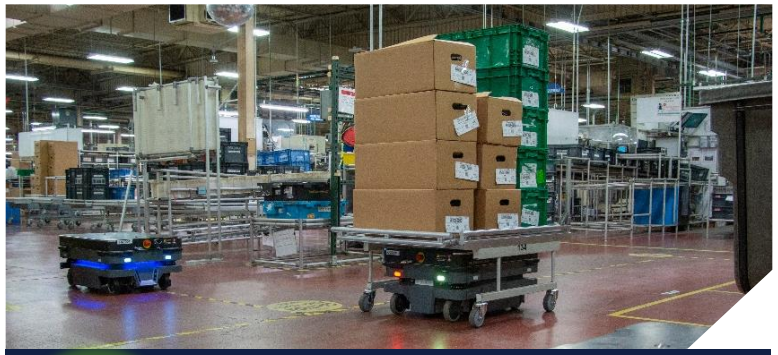
Continental

Improved productivity by reducing changeover time by 50%

Continental needed to improve productivity. They automated their manufacturing and handling of PCB boards with several UR10 cobots. This brought down changeover from 40 minutes to 20 minutes compared to performing the task manually.

TERADYNE

Proven Customer Success with Mobile Robots



Denso

Less than 1 year ROI

Denso uses a fleet of MiR robots to automate internal logistics between warehouse and production. 6 MiR250 robots have redeployed 6 employees for higher-value activities, improved workplace ergonomics and offer a ROI in less than a year.

Forvia

Fully automated workflows

Forvia uses a fleet of MiR250 and MiR600 robots to automate several processes between warehouse and production, and production and end of line.

Schneider Electric

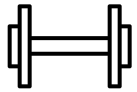
Improved transport costs

Schneider Electrics has implemented MiR500 robots to transport finished products between the production line and the warehouse, contributing to the optimization of internal logistics, reducing transport costs and improving safety.

TERADYNE

A Partner You Can Trust

Teradyne's Investment and Execution Engine



Financial Strength
$700M+ invested in robotics

Quality & Reliability
Half of world's semiconductors are tested on Teradyne testers

Execution
Lean operating model…60 years of serving the world's most demanding electronics customers

Over
6,500
employees

2.7B
USD annual revenue

Award-Winning Robotics Technology

Engelberger Award
***(The Nobel Prize of Robotics)* awarded to:**

- Esben Oestergaard , UR Founder, 2018
- Roberta Nelson Shea, Global Compliance Officer, 2023

Over 100 Single Robotics Patents Granted

TERADYNE

Companies Globally Using Teradyne Robots to Transform their Operations

Electronics & Technology

THIELE
BÖCO
BAJAJ
LEAR CORPORATION
Continental

Automotive & Contractors

STELLANTIS
Ford
GKN
Whippany Actuation Systems
NISSAN
FORVIA
Inspiring mobility

Logistics & Warehouse

Honeywell
EATON
TOYOTA
DHL
Whirlpool
IKEA

Metal & Machining

bj·gear
Paradigm
oticon
PEOPLE FIRST
BETACOM

Food & Beverages

Orkla
ATRIA
Nortura
Nordic Sugar
Unilever

Scientific & Research

AGH
iQLANDIA
RAMTEC
minitube

Plastic & Polymers

SHAD
TRELLEBORG
GLIDEWELL LABORATORIES
Clamcleat
Rope cleats

Pharma & Chemistry

Gentofte Hospital
SANOFI
MARKA
Replac-BM
aurolab

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Thank you

For more information, please visit teradyne.com

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