Nordson T&I Portfolio for Semiconductor Applications - Front, Mid and Back-End

Our Global Footprint

INDUSTRIAL PRECISION SOLUTIONS

Adhesives
Industrial Coatings Systems
Measurement and Control Solutions
& Polymer Processing Systems

MEDICAL FLUID SOLUTIONS

Medical &
Fluid Management

ADVANCED TECHNOLOGY SOLUTIONS

TEST & INSPECTION
& Electronic Processing Systems

Our Values & Philosophy

Integrity

We are honest with employees, customers, shareholders, the media, and ourselves. We will do what is right. We will not compromise standards.

Respect For People

We value employees. We thrive on teamwork, collaboration and diversity. We will not compromise safety. We communicate openly and honestly. We give back to our communities.

Customer Passion

Quality and service come first.

We expect more from ourselves than our customers do.

Excellence

We expect the best from management, co-workers and ourselves. We are not satisfied with work that is "average" or "OK." We seek innovative approaches to create value.

Energy

We approach challenges with an attitude of "lean forward, let's get it done." Enthusiasm drives the pace of our work.
We care...complacency is worse than our toughest competitor.

Nordson strives to be a vital, self-renewing global organization that produces and grows wealth for our employees, customers, shareholders and communities within the framework of ethical behaviour and enlightened citizenship.
Our employees are the engine that drives our progress in this pursuit.

Nordson
TEST & INSPECTION

Diversified Board of Directors

56% diverse board (3 gender and 2 racially or ethnically diverse)

8 out of 9 independent directors

7 years average tenure

Strong Culture and Values

Nordson Impact Invests 5% of domestic pre-tax earnings in communities

Paid time off for volunteer hours

Employee support programmes, including Matching Gifts

Environmental Stewardship

Product design improvements focused on reducing customers' material utilization

Journey to Zero adverse impacts to employees and community

Commitment to ESG

Environmental, Social, and Governance

With a global baseline established, we are pleased to take the next step in our ESG journey by establishing the following climate action targets:

- Achieve a 50% reduction in net Scope 1 and Scope 2 CO2 emissions by 2030*
- Achieve net zero Scope 1 and Scope 2 CO2 emissions by 2050
- Procure 70% of electricity from renewable sources by 2050

Nordson
TEST & INSPECTION

Nordson
TEST & INSPECTION

Nordson T&I Portfolio for Semiconductor Applications - Front, Mid and Back-End

Competitive Advantages

Technology Leadership

- Differentiated technology; Best-in-Class Test, Inspection & Metrology systems and sensors
- Proprietary technology ~250 active or pending patents in the portfolio
- Algorithm expertise
- Widest portfolio of superior solutions across the SMT and Semiconductor segments
- Market creator; Technology pioneers
- Innovator: Continued investment in technology roadmaps

Operational Excellence

- Global footprint
- Global manufacturing
- Strategic business discipline
- Commitment to Environment, Social and Governance (ESG) pillars
  - Commitment to reducing carbon footprint
  - Corporate social responsibility, corporate donations & employee wellness
  - Solid governance policies and procedures

Customer Intimacy / Centricity

- Market creator solving customer challenges
- Meaningful customer relationships focused on meeting/exceeding customer needs into the future
- In-depth application expertise
- Dedicated customer support

Nordson
TEST & INSPECTION

Nordson
2000+
Patents

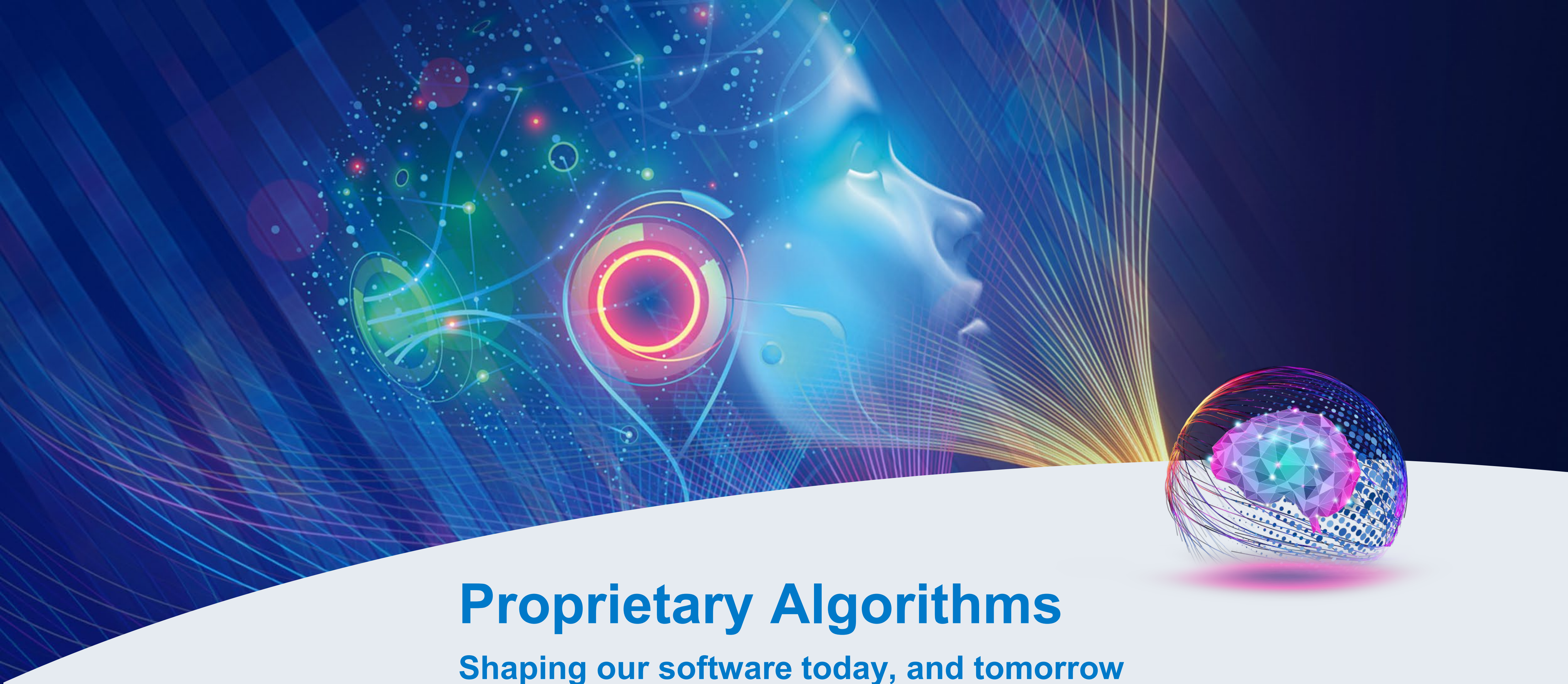
2000+ Nordson Patents

250+ TEST & INSPECTION Patents

For any technology device that you use day-to-day, it’s likely our team played a role in manufacturing that device and ensuring its reliability.

Nordson develops innovate proprietary technologies and provides global applications expertise that serves customers at key stages of the manufacturing process.

Nordson
TEST & INSPECTION



Proprietary Algorithms

Shaping our software today, and tomorrow

Nordson TEST & INSPECTION's sophisticated proprietary algorithms power our core technology platforms and software applications now and into the future

Nordson
TEST & INSPECTION

Innovative Software

Driving cutting-edge Inspection & Metrology solutions

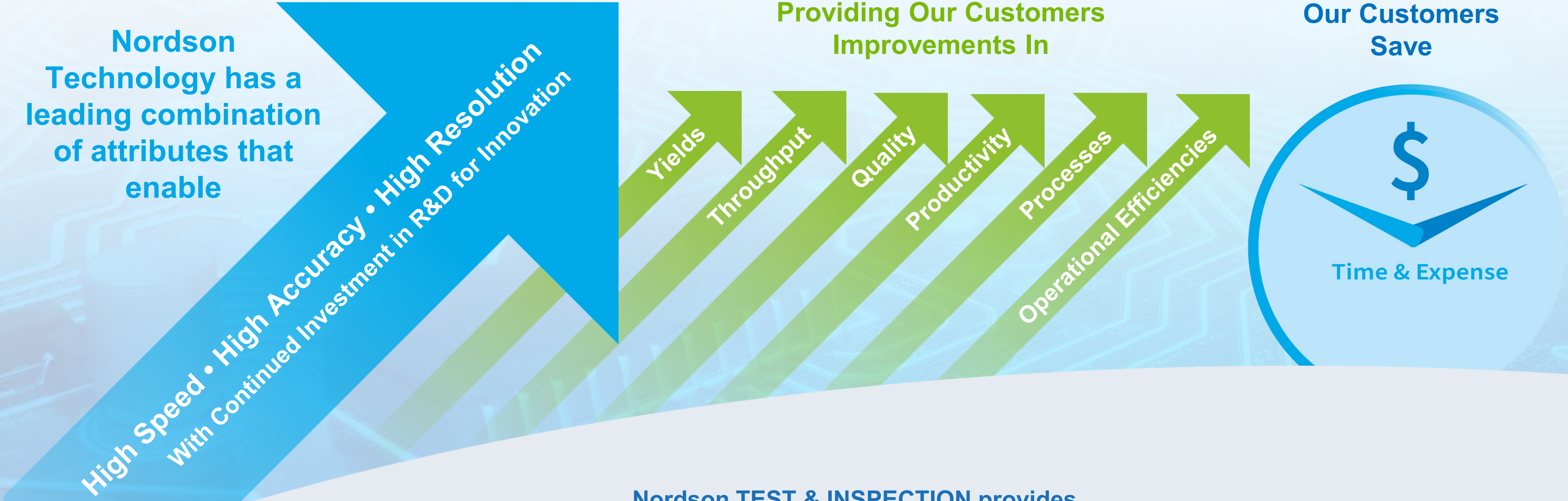
Nordson TEST & INSPECTION’s industry-leading, advanced application software and global applications expertise serves customers at key stages of the manufacturing process.

Incorporating sophisticated, proprietary algorithms and integrating the latest Machine Learning (ML), Artificial Intelligence (AI) and Deep Learning (DL) capabilities.

Nordson
TEST & INSPECTION

Competitive Advantages Across Portfolio

Nordson Technology has a leading combination of attributes that enable



High Speed • High Accuracy • High Resolution

With Continued Investment in R&D for Innovation

Providing Our Customers Improvements In

Yields

Throughput

Quality

Productivity

Processes

Operational Efficiencies

Our Customers Save

$

Time & Expense

Nordson TEST & INSPECTION provides the broadest portfolio of best-in-class Inspection and Metrology Solutions for Semiconductor and SMT high-end applications

Nordson
TEST & INSPECTION

Core Technologies Across T&I

AOI

Multi-Reflection Suppression® (MRS®) Sensor Technology

XRT

QuadraNT™ X-ray Tube & AspireFP™ Detector

AMI

C-SAM® & SpinSAM™ Acoustic Microscope

BT

Multi-Functional Cartridge (MFC)

WS

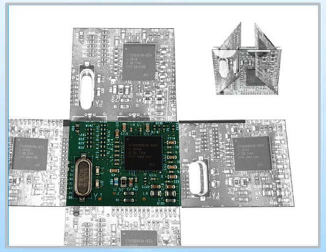
WaferSense® Metrology Sensors

Advanced, industry-leading, proprietary technology across applications.

Nordson
TEST & INSPECTION

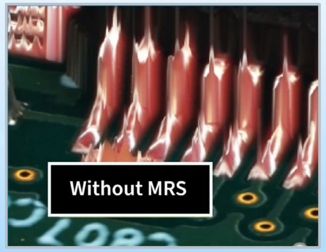
Multi-Reflection Suppression® (MRS®) Sensor Technology

Metrology-Grade Accuracy at Production Speed



MRS sensor captures multiple points of 3D imagery simultaneously and in parallel. Sophisticated fusing algorithms merge the images together

Sophisticated Algorithms Eliminate Reflection-Based Distortions


Without MRS


With MRS

MRS technology identifies and rejects multiple reflections from shiny and specular surfaces for highly accurate inspection and measurement. Provides an ultra-high resolution, full colour, 3D representation

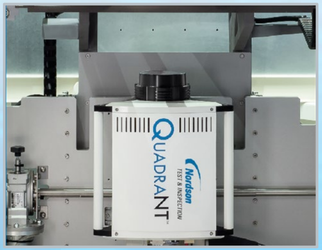
AOI

CORE TECHNOLOGIES

Nordson
TEST & INSPECTION

QuadraNT™ X-ray Tube, Onyx™ Detector

QuadraNT
X-ray Tube



QuadraNT tubes use proprietary “filament free” technology for continuous service

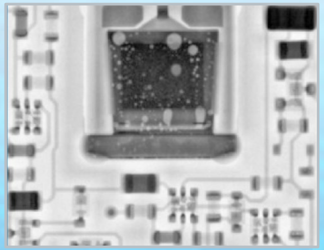
Dual Mode
X-ray Tube

Flexible & intelligent dual mode X-ray tube.
Switch between modes revealing the tiniest details

Onyx
Detector

HL 6.5 Mpix, superior performance, lower noise, faster imaging with highest clarity and brilliance

High-Speed
High-Resolution



Onyx consists of a high-speed, low-noise, radiation-tolerant, CMOS image sensor

XRT

CORE TECHNOLOGIES

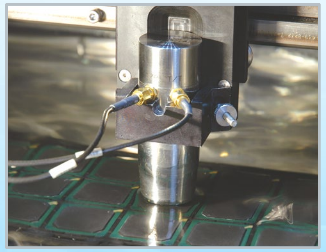
Nordson
TEST & INSPECTION

C-SAM® & SpinSAM™ Acoustic Microscope

Maximum Image Clarity & Quality Data

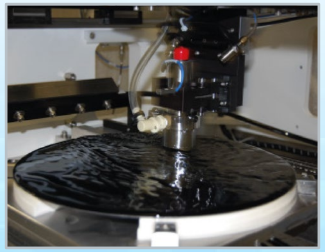
Transducers are carefully developed and manufactured to deliver maximum image clarity and quality data by our transducer lab located near Chicago, Illinois

Transducers Optimized for Applications

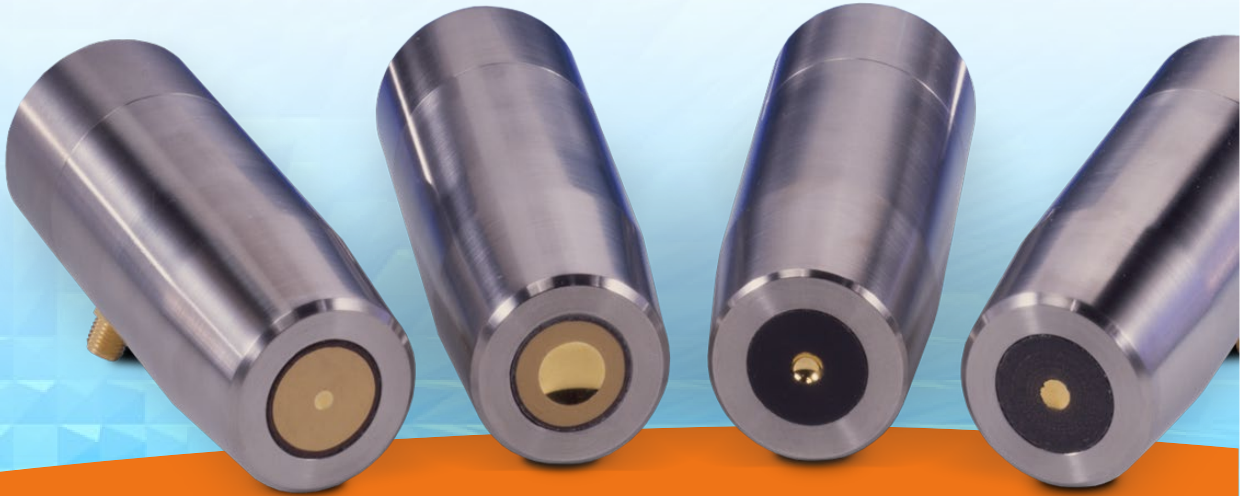


Broad range of standard transducers. We also have the expertise to optimize the design parameters for specific applications

Waterfall Non-immersion Scanning



Non-immersion scanning minimizes the risk of contamination and false bond indications



AMI

CORE TECHNOLOGIES

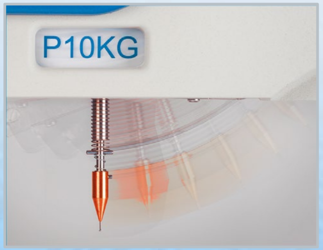
Nordson
TEST & INSPECTION

Multi-Functional Cartridge (MFC)

Industry Unique Cartridge

Designed for use with automatic test routines enabling multi-surface test patterns for complex hybrid packages

Switch Applications In Seconds



Ultra-quick application changeover

Multiple Tools All In One Cartridge

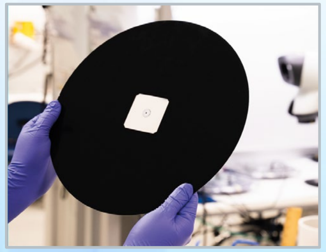
Switch applications effortlessly: wire pull, bump shear & tweezer pull

BT

CORE TECHNOLOGIES

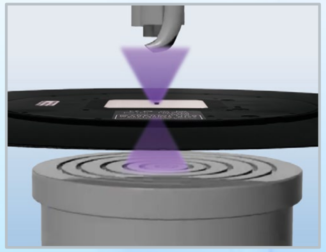
WaferSense® Metrology Sensors

Real-Time Sensor



On-board image processor “Sees” inside semiconductor equipment to capture three dimensional offset data (x, y and z) to quickly teach wafer transfer positions with accuracy to 50µm

Repeatable, Reproducible Semiconductor Setups



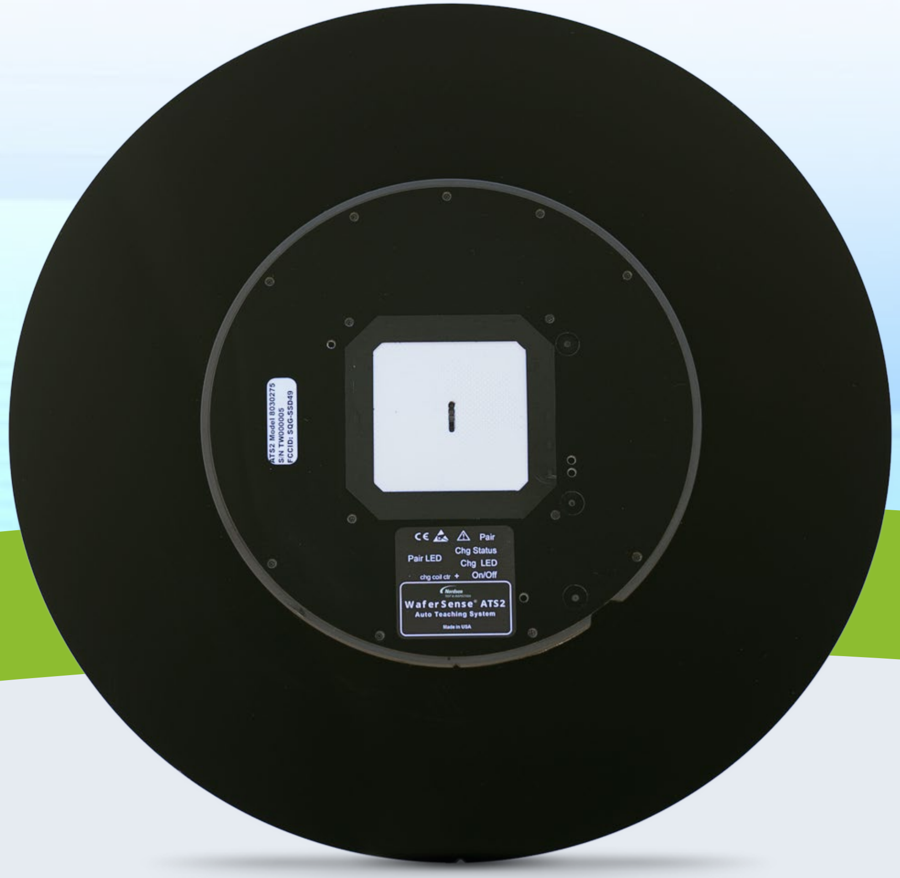
Downward view Inspects more complex alignment mark shapes, upward view measures and inspects the components above, ATS also can simultaneously inspect both upward and downward

CyberSpectrum™ Software

Speed up Troubleshooting, & Lower Consumable Expense CyberSpectrum™ provides numerical and visual feedback for real-time measurement and analysis

WS

CORE TECHNOLOGIES



Nordson
TEST & INSPECTION

Nordson TEST & INSPECTION's Best-in-Class Test, Inspection and Metrology Solutions

Providing the Ultimate Combination of High Resolution, High Accuracy and High Speed to Improve Yields, Processes and Productivity

Semiconductor Front End

WaferSense® Semiconductor Front-End Measurement Sensors

Auto Multi Sensors

Speed measuring levelling, vibration and humidity with a thinner, lighter, all-in-one multi sensor

Monitor humidity when wafers are in the FOUP

*AHS also available for RH

Auto Vibration and Levelling Sensor

Speed simultaneous vibration and levelling measurements

Speed equipment qualification and shorten equipment maintenance cycles

Airborne Particle Sensors

Quickly identify, monitor and troubleshoot airborne particles down to .14 micron

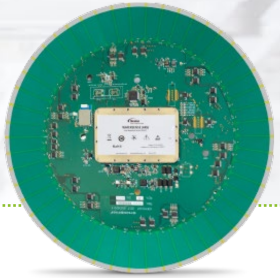
Easily identify when and where the particles originate and measure the effectiveness of cleaning adjustments in real time

IPS - 24/7 detection of small particles in gas and vacuum lines

Auto Gapping System

Speed non-contact gap measurements and parallelism adjustments under vacuum for semi processes such as thin film, deposition, sputtering and etch

Improve uniformity, tool availability and repeatability

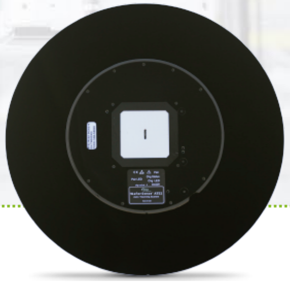


Auto Resistance Sensor

Shorten equipment maintenance cycles with 4-wire resistance sensor

Predict when a tool needs maintenance with quantitative analysis of measured mean resistance over time

Improve cell-to-cell process uniformity with objective and repeatable resistance measurements



Auto Teaching System

“See” inside equipment to capture dimensional offset data (x, y and z) to quickly teach wafer transfer positions

Lower particulate contamination with accurate wafer hand-off calibration, proper alignment and set-ups

World’s Most Efficient & Effective Wireless Measurement Sensors

Nordson
TEST & INSPECTION

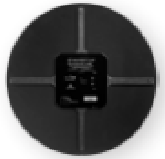
Semi Solutions for Front-End Tools

Semi	Sensor	Front-End Tools							
		Leveling	Vibration	Airborne Particles/ In-Line Particles	Gapping	Teaching	Relative Humidity (RH)	Resistance	
Front-End Semiconductor Tools	APS3 / APSRQ / IPS			●					
	ALS /AVLS	●	●						
	ATS / ATSR					●			
	AGS				●				
	AMS (L, V, RH)	●	●				●		
	ARS							●	Back-end packaging such as pillar bumping, RDLs, TSVs, and hybrid bonding
	AVS / AVLS	●	●						

Semi Solutions for Front-End Tools

AVS

AMS*



ALS

AVLS3

Applications

- Epitaxy
- Thermal oxidation/metallization
- Plasma vapor deposition; PVD
- Chemical vapor deposition; CVD, ALD
- CMP
- Atomic layer deposition; ALD
- Photo lithography
- Wet (chemical) etch, plasma etch
- Dry etch
- Ion implant
- Diffusion/furnace
- Rapid thermal anneal; RTA, RTP
- Test and inspection
- Metrology
- Micro contamination
- Auto handling system; AMHS
- Module repair

AGS

Applications

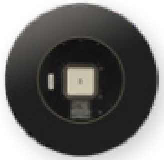
- Chemical vapor deposition; CVD, ALD
- Atomic layer deposition; ALD
- Wet (chemical) etch, plasma etch

APS3*

Applications

- Factory interface FI/EFEM
- Photo Lithography
- Diffusion/Furnace
- Test and Inspection
- Rapid Thermal Anneal; RTA, RTP
- Metrology
- Microcontamination
- Auto Handling System; AMHS and Stockers

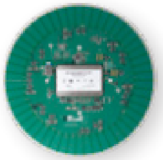
ATS2* **NEW! V2**



Applications

- Plasma vapor deposition; PVD
- Chemical vapor deposition; CVD, ALD
- Photo lithography
- Wet (chemical) etch, plasma etch
- Dry etch
- Ion implant
- Automated handling system

ARS



Applications

- Electrochemical Deposition; ECD

*Available in reticle form factor

World’s Most Efficient & Effective Wireless Measurement Devices

For Front-End Semiconductor Applications

Proven and Adopted

- Major Semi fabs WW have adopted CYBE wireless measurement devices
- Adopted as the Best Known Method (BKM)

Most Efficient & Effective

- Travels anywhere a wafer or reticle travels
- Calibrations can be done under closed chamber processes
- Provides accurate, reliable and repeatable real-time data that saves time and expense compared to legacy methods

Save Time & Expense

- Improves yields and tool uptime
- Increases throughput
- Reduces resource needs
- Speeds equipment set-up, maintenance processes, trouble-shooting, qualification and release to production.
- Speeds tool optimization, stabilization and standardization.
- Streamlines fab processes
- Establishes repeatable and verifiable standards

Superior Metrology Sensors

WaferSense®
Auto Gapping System™ (AGS)

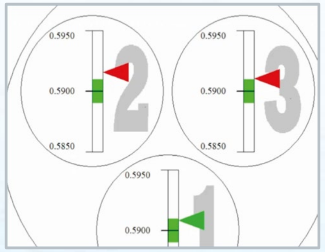
Achieve the Ideal Equipment Set-up

Speeds non-contact gap measurements and parallelism adjustments under vacuum for semiconductor processes such as thin-film deposition, sputtering and etch

3 Sensors Report Separate Readings

Non contact gap measurement by sensing capacitance from the top of the AGS ensures inclination and height are at the optimum positions for a pedestal or shower head

CyberSpectrum™ Software



Quickly achieve exactly the gap you need, using the chamber readings at process pressure in numerical and graphical form

TOP PRODUCTS

WS

Improves Yields Processes and Productivity

Nordson
TEST & INSPECTION

Semiconductor Mid End

Widest Portfolio of Best-In-Class Test, Inspection & Metrology Solutions for Mid-End Semiconductor Wafer-Level and Advanced Packaging Applications

AOI

WX3000

Fast, 100% 3D/2D automated inspection and metrology

Powered by Multi-Reflection Suppression® (MRS®) technology

For features down to 25 micron at 25 WPH, 2-3X faster than competitive technology

AXM

XM8000

Unprecedented, automated in-line X-ray metrology and defect review

Powered by QuadraNT™ X-ray and AspireNT™ detector technology

For optically hidden features including voiding and fill levels, overlay, critical dimensions and more, with high throughput

MXI

Quadra Pro

Superior 3D/2D manual inspection

Powered by QuadraNT™ tube and Onyx® detector technology

For voiding inspection with sub-micrometer accuracy for features down to 100um. Higher resolution, faster frame rate and lower noise

AMI

SpinSAM

Fast, acoustic 100% inspection.

Powered by SpinSAM™ transducer technology

For applications down to 75um with >95% detectability at 40WPH with 100um resolution

AMI

AW300

Fast, acoustic 100% inspection.

Powered by C-SAM® transducer technology

For applications down to 75um with >95% detectability at 5.8WPH with 100um resolution. Widest frequency range ever achieved in production environment

BT

4800 Integra

Factory-integrated test solution with automated sheer and cold pull testing

Powered by Core Cartridge Technology

For automated bond testing with maximum throughput in an operator free environment

Ultimate Combination of High Speed, High Accuracy and High Resolution

Nordson
TEST & INSPECTION

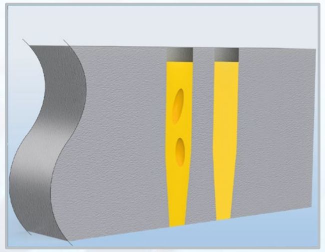
Semi Solutions for Mid-End

Semi	System	Mid-End					Technology
		WL & AP					
		Wafer Bump	Copper Pillars	Solder Paste	Die Stacking	TSV	
Mid-End	WX3000	●	●	●			AOI
	XM8000	●	●			●	AXM
	Quadra W8	●	●			●	MXI
	SpinSAM				●		AMI
	AW300	●	●		●		AMI
	4800 Integra	●	●				BT

Superior Automated X-ray Inspection

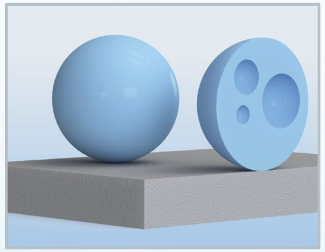
XM8000

TSV
Metrology



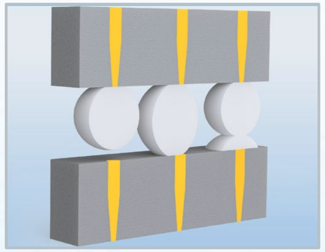
High throughput metrology of TSVs. Advanced 3D techniques are used to analyze shape, fill and voiding at sub-micron levels

Wafer Bump
Metrology



Measure wafer bump characterization including voiding, presence, position, shape, size and bridging. Unlike optical tools, XM8000 can measure voids within the wafer bump

Wafer Level
Packaging



The intelligent, self learning capability of XM8000 allows unrivalled detection of micro defects in complex packages

TOP PRODUCTS

AXM

Improves Yields Processes and Productivity

Nordson
TEST & INSPECTION

Superior Manual X-ray Inspection

QUADRA PRO

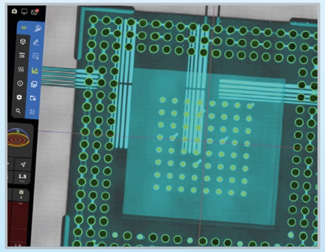
Onyx Detector

HL 6.5 Mpix superior performance, lower noise faster imaging with highest clarity and brilliance

Dual Mode X-ray Tube

Proprietary, high performance, flexible & intelligent dual mode X-ray tube. Switch between modes revealing the tiniest details

Revalution™ Software



Developed by our experts specifically for the proprietary high-end semiconductor application

MXI

NEW PRODUCTS

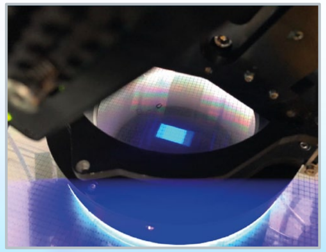
Improves Yields Processes and Productivity

Nordson TEST & INSPECTION

Superior WL&AP Automated Inspection System

WX3000™

High Speed, Accuracy and Resolution

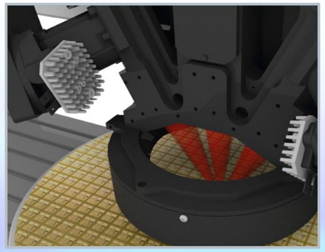


The ultimate combination of high speed, high resolution and high accuracy for wafer-level and advanced packaging applications to improve yields and productivity

Metrology-Grade Accuracy with MRS®

Sub-micrometer accuracy for features as small as 25 µm. Accurately inspect shiny or mirror-like surfaces. Attain repeatable and reproducible measurements

Fast, Inspection Performance



The MRS sensor that is 2-3x faster than alternate technologies, delivering greater than 25 wafers (300mm) per hour

AOI

NEW PRODUCTS

12” and 8” Wafer Size

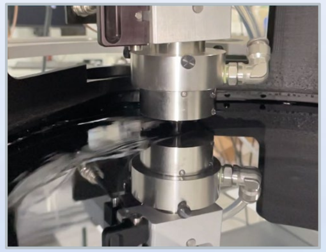
Improves Yields Processes and Productivity

Nordson
TEST & INSPECTION

Superior Acoustic Inspection

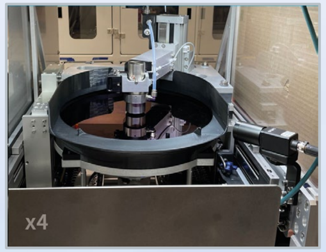
SpinSAM^{TM}

Highly Efficient



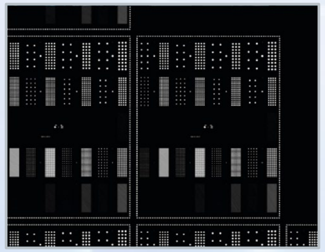
A continuous non-stop scan path provides the fastest data collection possible

40 Wafers Per Hour



4 combined scanners 40WPH each capable of 10WPH @ 100µm

Perfect Images



Single transducer image without any stitching artifacts

AMI

NEW PRODUCTS

Improves Yields Processes and Productivity

Nordson
TEST & INSPECTION

Semiconductor Back End

Widest Portfolio of Best-In-Class Test, Inspection and Metrology Solutions for Back-End Semiconductor Applications

AOI

SQ3000

Superior, 100% inspection and metrology

Powered by Multi-Reflection Suppression® (MRS®) technology

World's first and only in-line system with CMM capability

For semi packaging, socket metrology, wire bond and die, solder balls and bumps, microsensors, IC, LGA, epoxy and underfill, substrate epoxy, photoresist on substrate

SQ3000+

Superior, 100% inspection and metrology

Powered by Multi-Reflection Suppression® (MRS®) technology

World's first and only in-line system with CMM capability with an even higher resolution

For semi packaging advanced /next-generation applications

MX3000

Fast, 100% simultaneous, dual-sided inspection

Powered by Multi-Reflection Suppression® (MRS®) technology

The only final vision inspection (FVI) system for memory modules after the I/O check

SQ3000M2

Superior inspection and metrology

Powered by Advanced Focus variation measurement sensor technology with proprietary high resolution optics

For Automated Optical Inspection of Advanced Micro Electronics including wirebonds

BT

4000Plus

Superior bond testing and R&D prototype characterization

Powered by Core Cartridge Technology

For wire and die adhesion and pull strength testing capable of a multitude of test types including micro-materials and standard bond tests for R&D or quality control

MXI

Quadra Pro

Superior 3D/2D manual inspection

Powered by QuadraNT™ tube and Onyx® detector technology

For voiding inspection with sub-micrometer accuracy for features down to 100um. Higher resolution, faster frame rate and lower noise

AXI

XS

Superior automated X-ray inspection system

Powered by N24 X-Ray tube and CMOS DFP detector

For semiconductor samples, wire bonds, flip chip, voiding for single/multi-panels or samples in trays

X#UHP

Superior automated X-ray inspection system

Powered by QuadraNT™ and Aspire™ technology

For component level inspection and high-power electronics modules up to fully assembled modules Focused platform with versatile fields of use

AMI

DF2400

Superior, high-speed acoustic automated in-line inspection

Powered by Waterfall transducer and FACTS2

For simultaneous inspection of two trays or modules with precision of +/- 0.5um. Multiple scanning heads improves throughput ~2-7x previous tools

D9650

Superior lab-based acoustic microimaging inspection

Powered by C-SAM technology

Delivers unrivalled accuracy and robustness for failure analysis, process development, material characterization and low volume production inspection

Gen7

Superior lab-based, operator controlled and fully automated in-line acoustic inspection

Powered by C-SAM technology

For detecting delamination, voiding with the most sophisticated microscope for lab analysis and specialized high-resolution applications

Ultimate Combination of High Speed, High Accuracy and High Resolution

Nordson
TEST & INSPECTION

Semi Solutions for Back-End

Islands of Automation / In-Line

Semi	System	Back-End			Technology
		CPU/GPU	Memory	Power Hybrid/IGBT	
Back-End	Quadra Pro 5, 7	●	●	●	MXI
	XS	●	●		AXI
	X#UHP			●	AXI
	SQ3000M2	●	●	●	AOI
	MX3000		●		AOI
	SQ3000	●	●	●	
	SQ3000+	●	●	●	AOI
	DF2400	●		●	AMI
	D9650	●		●	AMI
	Gen 7	●		●	AMI

Nordson
TEST & INSPECTION

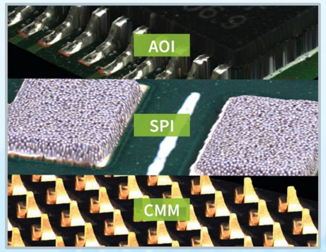
Superior AOI, SPI, CMM System

SQ3000+

Multi-Reflection Suppression® (MRS®)

The Ultimate Combination of High Speed, High Accuracy, and ***Even Higher*** Resolution

Multi-Function Capability



The SQ3000+ remains the only system on the market capable of performing AOI, SPI and CMM in-line

Award-Winning AOI Software

Ultra-fast programming, Auto Tune, AutoDefine, AutoTeach & advancing inspection algorithms to include deep learning capabilities

NEW
5 Micron
Ultra-High Res
MRS Sensor

AOI

NEW PRODUCTS

Ideal for next-generation applications. The system is specifically designed for high-end applications including advanced packaging, BGA, mini-LED, advanced SMT, 008004/0201 SPI, socket metrology and other challenging CMM applications

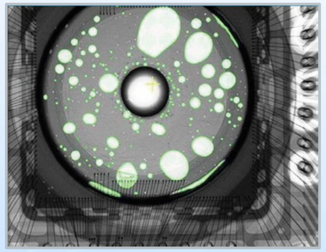
Improves Yields Processes and Productivity

Nordson
TEST & INSPECTION

Superior Automated X-ray Inspection

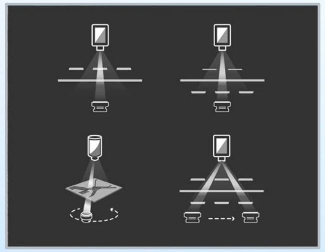
XS

High-resolution Automated X-ray Inspection



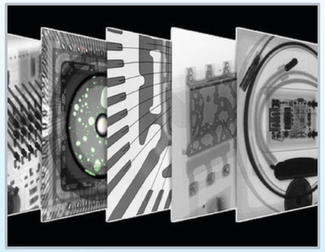
High-speed inspection of semiconductor samples, wire bonds and PCB-assembly boards for single/multi-panels or samples in trays

4 Advanced Technologies, One System

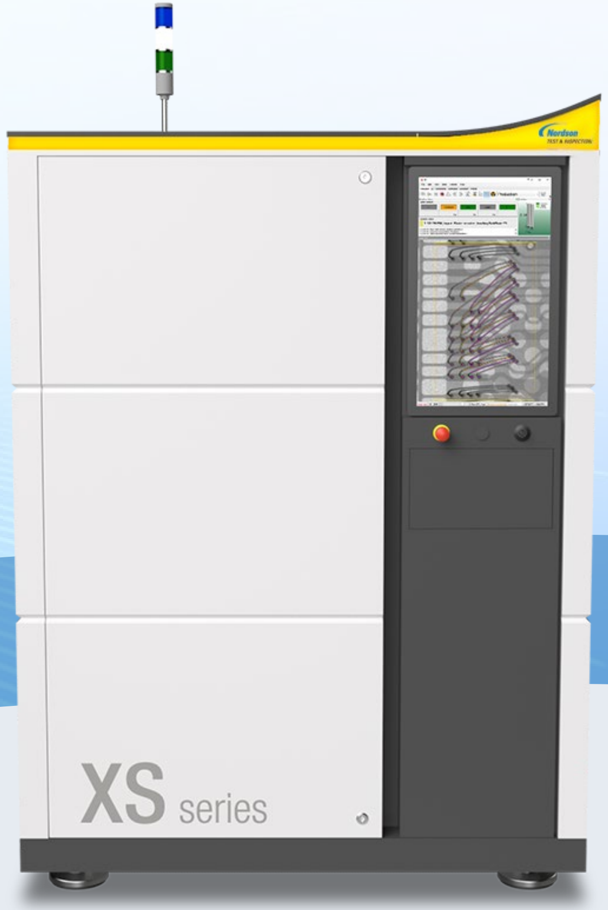


Transmission X-ray imaging (2D) with patented Slice-Filter- Technique^{TM} (SFT), Off-Axis technology (2.5D) and 3D SART (Simultaneous Algebraic Reconstruction Technique)

Unique Advanced Algorithm Library



For electronic applications, component and solder-joint inspection on PCB, hybrid or chip level assembly, semiconductor and wire bond testing



AXI

TOP PRODUCTS

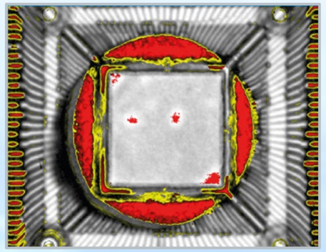
Improves Yields Processes and Productivity

Nordson
TEST & INSPECTION

Superior Non-Destructive Inspection

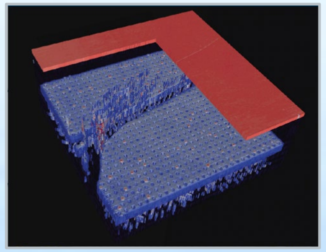
D9650

CSAM® (C-Mode Scanning Acoustic Microscope)



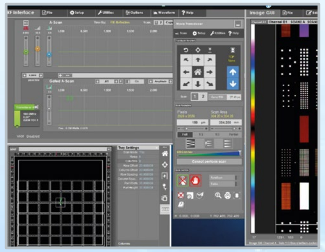
C-SAM® enhanced features accommodate the testing as well as performing standard C-SAM® operations

Industry Trusted Failure Analysis



Ideal for failure analysis, process development and low volume production environments

Powered by Our Sonolytics 2 Software



Maximize results and save time with the industry's leading easiest and intuitive interface software

AMI

TOP PRODUCTS

Improves Yields Processes and Productivity

Nordson
TEST & INSPECTION

Competitive Advantages Across Portfolio

Nordson Technology has a leading combination of attributes that enable

High Speed • High Accuracy • High Resolution

With Continued Investment in R&D for Innovation

Providing Our Customers Improvements In

Yields

Throughput

Quality

Productivity

Processes

Operational Efficiencies

Our Customers Save

$

Time & Expense

Nordson TEST & INSPECTION provides the broadest portfolio of best-in-class Inspection and Metrology Solutions for Semiconductor and SMT high-end applications

Nordson
TEST & INSPECTION

Appendix

Semi Mid-End Systems

Widest Portfolio of Best-In-Class Test, Inspection and Metrology Solutions for Mid-End Semiconductor Wafer-Level and Advanced Packaging Applications

Ultimate Combination of High Speed, High Accuracy and High Resolution

WX3000™

AOI

- Fast, 100% 3D/2D automated inspection and metrology
- Powered by Multi-Reflection Suppresssion® (MRS®) technology
- For features down to 25 micron at 25 WPH, 2-3X faster than competitive technology

XM8000

X-Ray AXM

- Unprecedented, automated in-line X-ray metrology and defect review
- Powered by QuadraNT™ X-Ray and AspireNT™ detector technology
- For optically hidden features including voiding and fill levels, overlay, critical dimensions and more, with high throughput

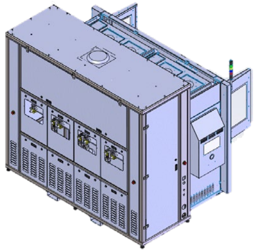
QuadraW8

X-Ray MXI

- Superior autoload, manual, lab-based, X-Ray inspection
- Powered by QuadraNT™ X-Ray and AspireNT™ detector technology
- Industry-leading magnification and image quality revealing defects as small as 0.1um.

SpinSAM

Acoustic AMI



- Fast, acoustic 100% inspection
- Powered by SpinSAM™ transduser technology.
- For applications down to 75um with >95% detectability at 40WPH with 100um resolution.

AW300

Acoustic AMI

- Fast, acoustic 100% inspection
- Powered by C-SAM™ transduser technology.
- For applications down to 75um with >95% detectability at 5.8WPH with 100um resolution. Widest frequency range ever achieved in production environment.

4800 Integra®

Bond Test

- Factory-integrated test solution with automated sheer and cold pull testing
- Powered by Core Cartridge Technology
- For automated bond testing with maximum throughput and an operator free environment.

Semi Back-End Systems

Widest Portfolio of Best-In-Class Test, Inspection and Metrology Solutions for Back-End Semiconductor Applications

Ultimate Combination of High Speed, High Accuracy and High Resolution

SQ3000™

AOI

- Superior, 100% inspection and metrology
- Powered by Multi-Reflection Suppression® (MRS®) technology
- World's first and only in-line system with CMM capability
- For semi packaging, socket metrology, wire bond and die, solder balls and bumps, microsensors, IC, LGA, epoxy and underfill, substrate epoxy, photoresist on substrate.

SQ3000™+

AOI

- Superior, 100% inspection and metrology
- Powered by Multi-Reflection Suppression® (MRS®) technology
- World's first and only in-line system with CMM capability with an even higher resolution
- For semi advanced packaging, high-end SMT, mini and micro-LED, socket metrology, 0201 solder paste and other next-generation applications

SQ3000M2

AOI

- Superior, 100% inspection
- Powered by advanced megapixel technology
- Exceptional defect coverage with high-resolution telecentric optics
- For wire bond, die placement and substrates

MX3000

AOI

- Fast, 100% simultaneous, dual-sided inspection
- Powered by Multi-Reflection Suppression® (MRS®) technology
- The only final vision inspection (FVI) system memory modules after the I/O check

4000 Plus

Bond Test

- Superior bond testing and R&D prototype characterization
- Powered by Core Cartridge Technology
- For wire and die adhesion and pull strength testing capable of a multitude of test types including micro-materials and standard bond tests for R&D or quality control

Semi Back-End Systems

Widest Portfolio of Best-In-Class Test, Inspection and Metrology Solutions for Back-End Semiconductor Applications

Ultimate Combination of High Speed, High Accuracy and High Resolution

QuadraPro 5, 7

X-Ray MXI

- Superior 3D/2D manual inspection
- Powered by QuadraNT™ tube and Onyx® detector technology
- For voiding inspection with sub-micrometer accuracy for features down to 100um. Higher resolution, faster frame rate and lower noise.

XS

X-Ray AXI

- Superior automated X-ray inspection system
- Powered by N24 X-Ray tube and CMOS DFP detector
- For semiconductor samples, wire bonds, flip chip, voiding for single/multi-panels or samples in trays.

X#UHP

X-Ray AXI

- Superior automated X-ray inspection system
- Powered by QuadraNT™ and Aspire™ technology
- For component level inspection and high-power electronics modules up to fully assembled modules Focused platform with versatile fields of use.

DF2400

Acoustic AMI

- Superior, high-speed acoustic automated in-line inspection
- Powered by Waterfall transducer
- For simultaneous inspection of two trays or modules with precision of +/- 0.5um. Multiple scanning heads improves throughput ~2-7x previous tools.

D9650

Acoustic AMI

- Superior lab-based acoustic microimaging inspection
- Powered by C-SAM technology
- Delivers unrivaled accuracy and robustness for failure analysis, process development, material characterization and low volume production inspection.

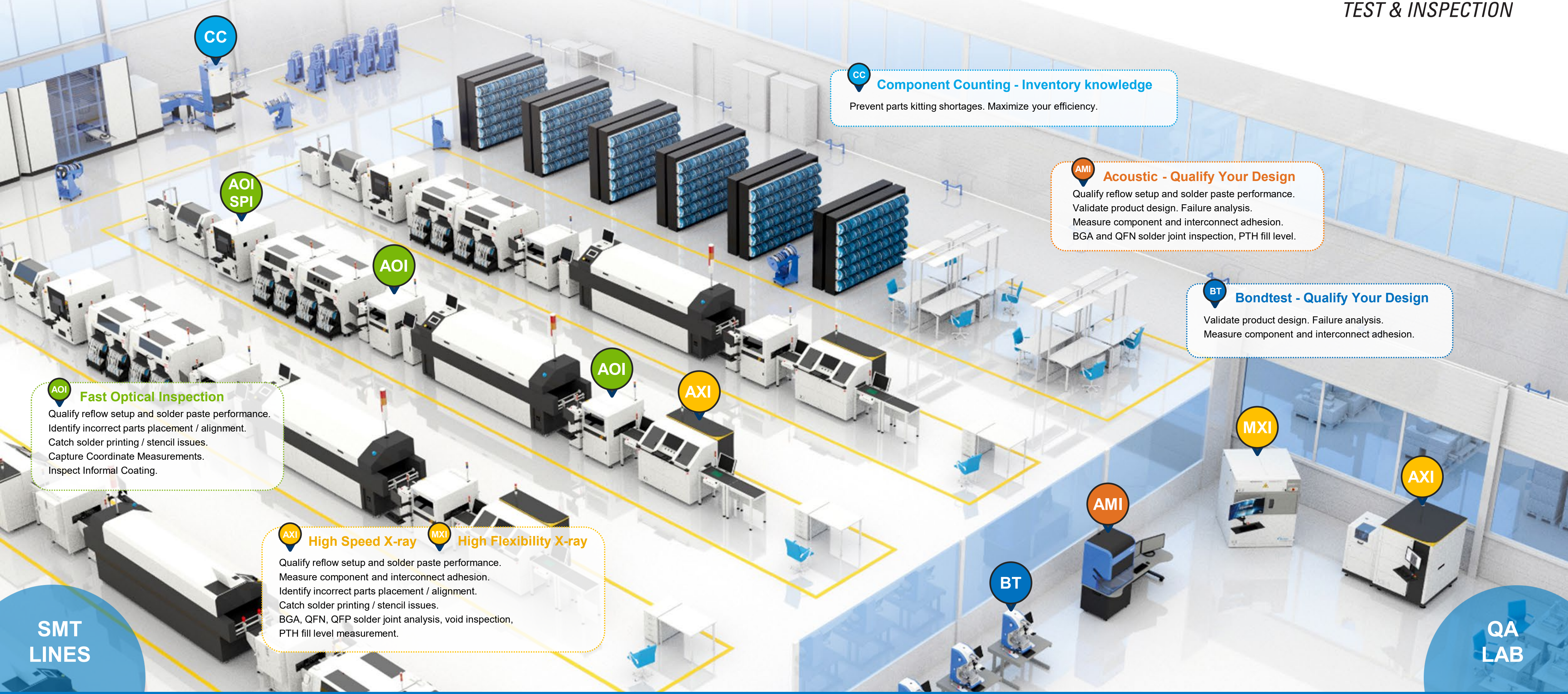
Gen7

Acoustic AMI

- Superior lab-based, operator controlled and fully automated in-line acoustic inspection
- Powered by C-SAM technology
- For detecting delamination, voiding with the most sophisticated microscope for lab analysis and specialized high-resolution applications.

Nordson T&I's industry leading portfolio. Build quality into your SMT manufacturing line

Nordson
TEST & INSPECTION



CC **Component Counting - Inventory knowledge**

Prevent parts kitting shortages. Maximize your efficiency.

AMI **Acoustic - Qualify Your Design**

Qualify reflow setup and solder paste performance.
Validate product design. Failure analysis.
Measure component and interconnect adhesion.
BGA and QFN solder joint inspection, PTH fill level.

BT **Bondtest - Qualify Your Design**

Validate product design. Failure analysis.
Measure component and interconnect adhesion.

AOI **Fast Optical Inspection**

Qualify reflow setup and solder paste performance.
Identify incorrect parts placement / alignment.
Catch solder printing / stencil issues.
Capture Coordinate Measurements.
Inspect Informal Coating.

AXI **High Speed X-ray** **MXI** **High Flexibility X-ray**

Qualify reflow setup and solder paste performance.
Measure component and interconnect adhesion.
Identify incorrect parts placement / alignment.
Catch solder printing / stencil issues.
BGA, QFN, QFP solder joint analysis, void inspection,
PTH fill level measurement.

Providing the Ultimate Combination of High Resolution, High Accuracy and High Speed to Improve Yields, Processes and Productivity