

SEMICONDUCTOR INDUSTRY MEASUREMENTS

INTRODUCTION TO PRECISION MEASURING INSTRUMENTS SOLUTIONS

GENERAL



Measurement Solutions for Semiconductor Manufacturing Processes

Measurement solutions for a wide range of fields in the semiconductor manufacturing industry, which is growing rapidly following a shift to the production of electric vehicles, the implementation of 5g, etc.

Industries Using Semiconductors

Automobiles (Intelligent manufacturing industry)



Smartphones (Intelligent Manufacturing Industry)



Servers (Data Centers)



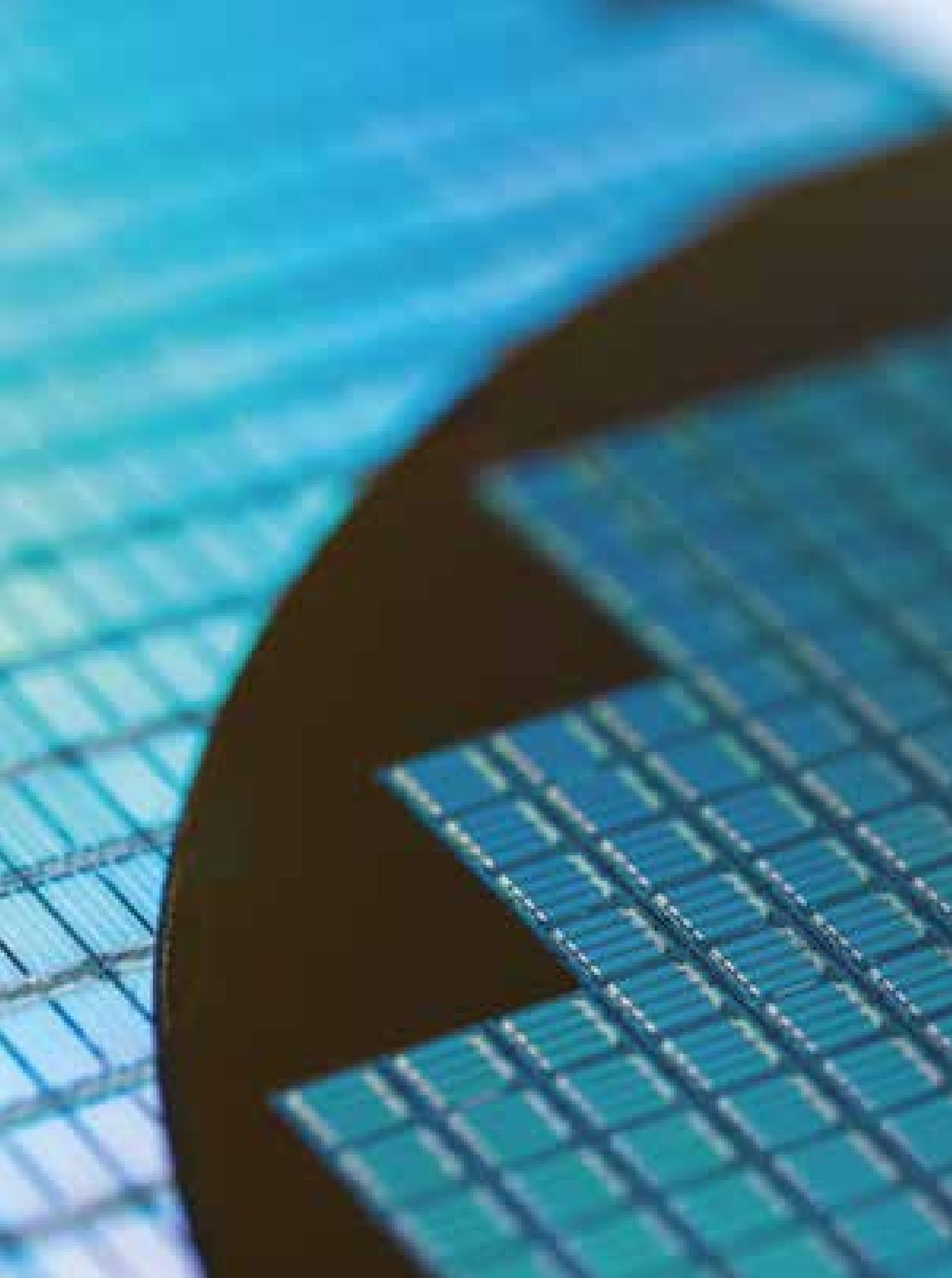
Semiconductors

Digital Home Appliances (Digital Cameras, TVs, Washing Machines, etc)

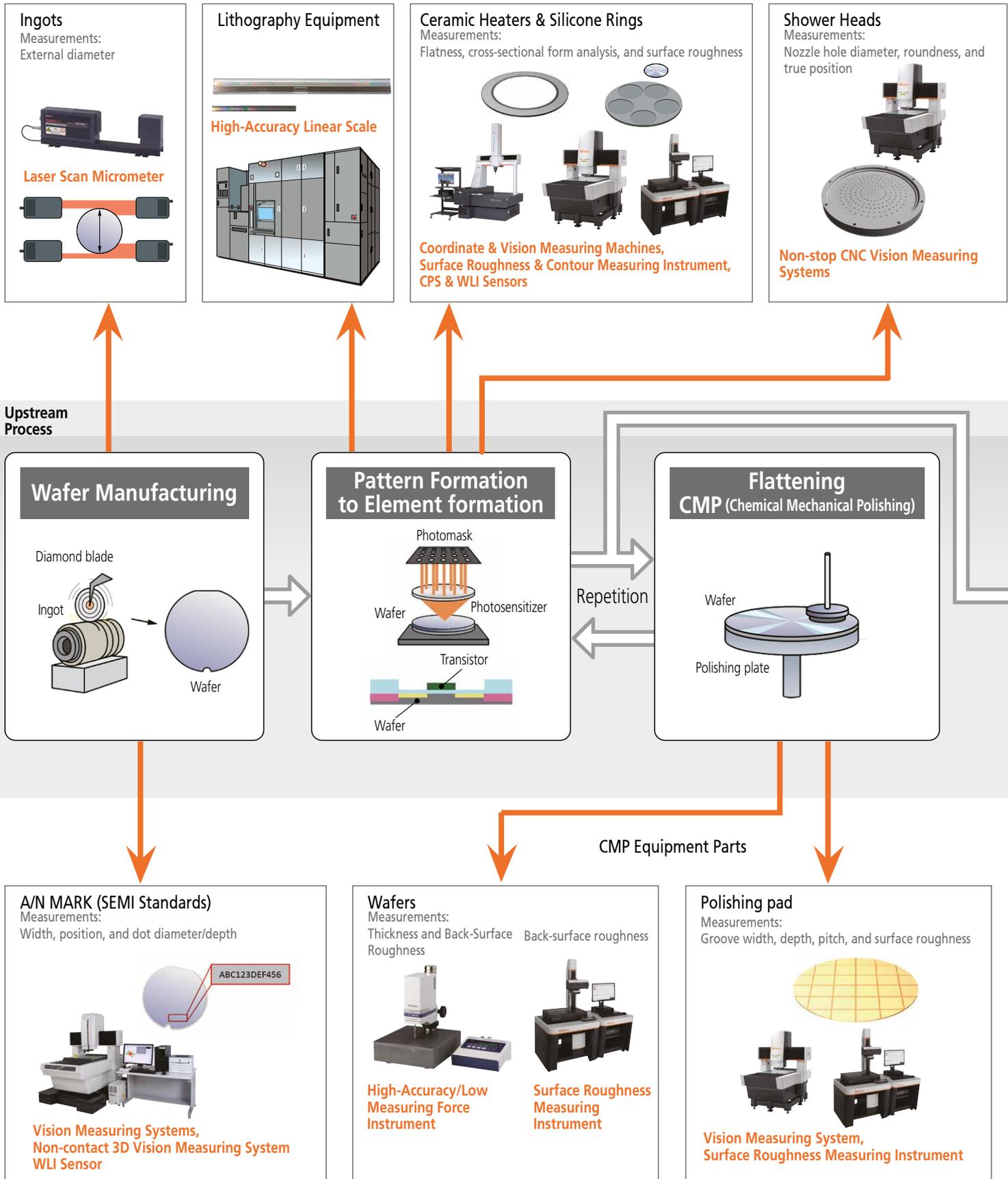


High-Speed Railways (Intelligent Transportation Industry)





Measurement Solutions for Upstream Semiconductor Manufacturing Processes



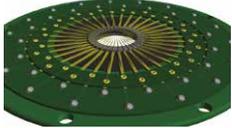
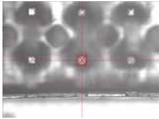
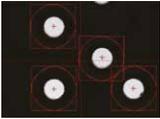
Etching Equipment

Electrostatic Chucks & Silicone Rings
 Measurements:
 Flatness, cross-sections, and surface roughness




**Coordinate & Vision Measuring Machines,
 Surface Roughness & Contour Measuring Instrument,
 CPS & WLI sensors**

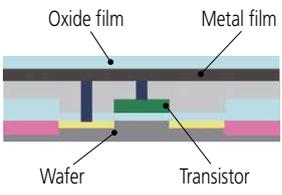
Probe Cards & IC Test Sockets



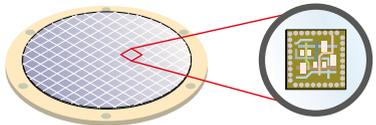
Vision Measuring Machines **Measuring Microscopes**

Wiring Formation



Oxide film Metal film
 Wafer Transistor

Wafer Inspection



To Downstream Process

Shower Head Nozzle Holes
 Inside diameter, roundness, and true position




Non-stop CNC Vision Measuring Systems

Wafer Probes & Probe Needles






**Video Microscope Unit,
 Measuring Microscopes, Profile Projectors**

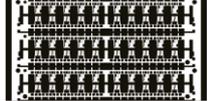
Measurement Solutions for Downstream Semiconductor Manufacturing Processes

Chip thickness
 Measurements: Cross-section observation and chip thickness



Measuring Microscope
High accuracy Linear Gauge

Lead Frames
 Measurements: Width, pitch, height, twisting action, etc.

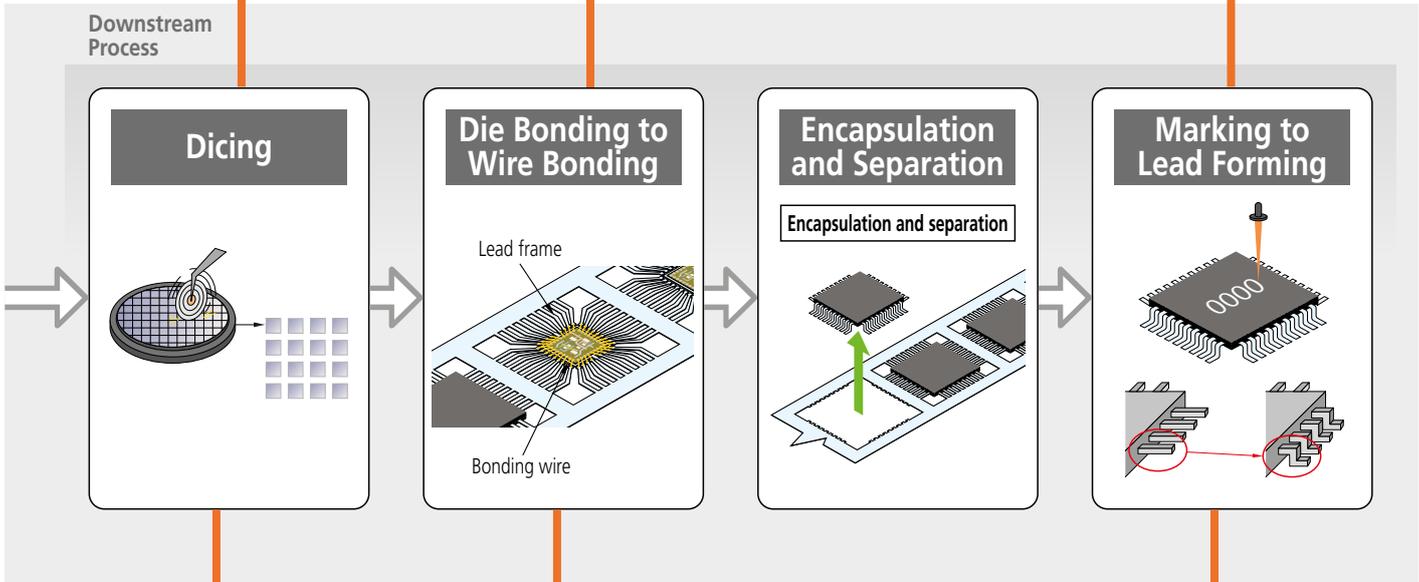



Vision Measuring System, Measuring Microscope

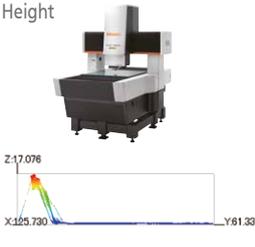
Individual Leads
 Measurements: Width, pitch, and height variation
 Lead width, pitch, and gap



Vision Measuring Machines, Measuring Microscope
Laser Scan Micrometer



Post Dicing Burr
 Measurement: Height



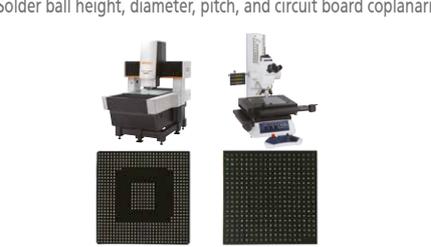
Vision Measuring Machines, Measuring Microscope

Die Wires
 Measurement: Loop height

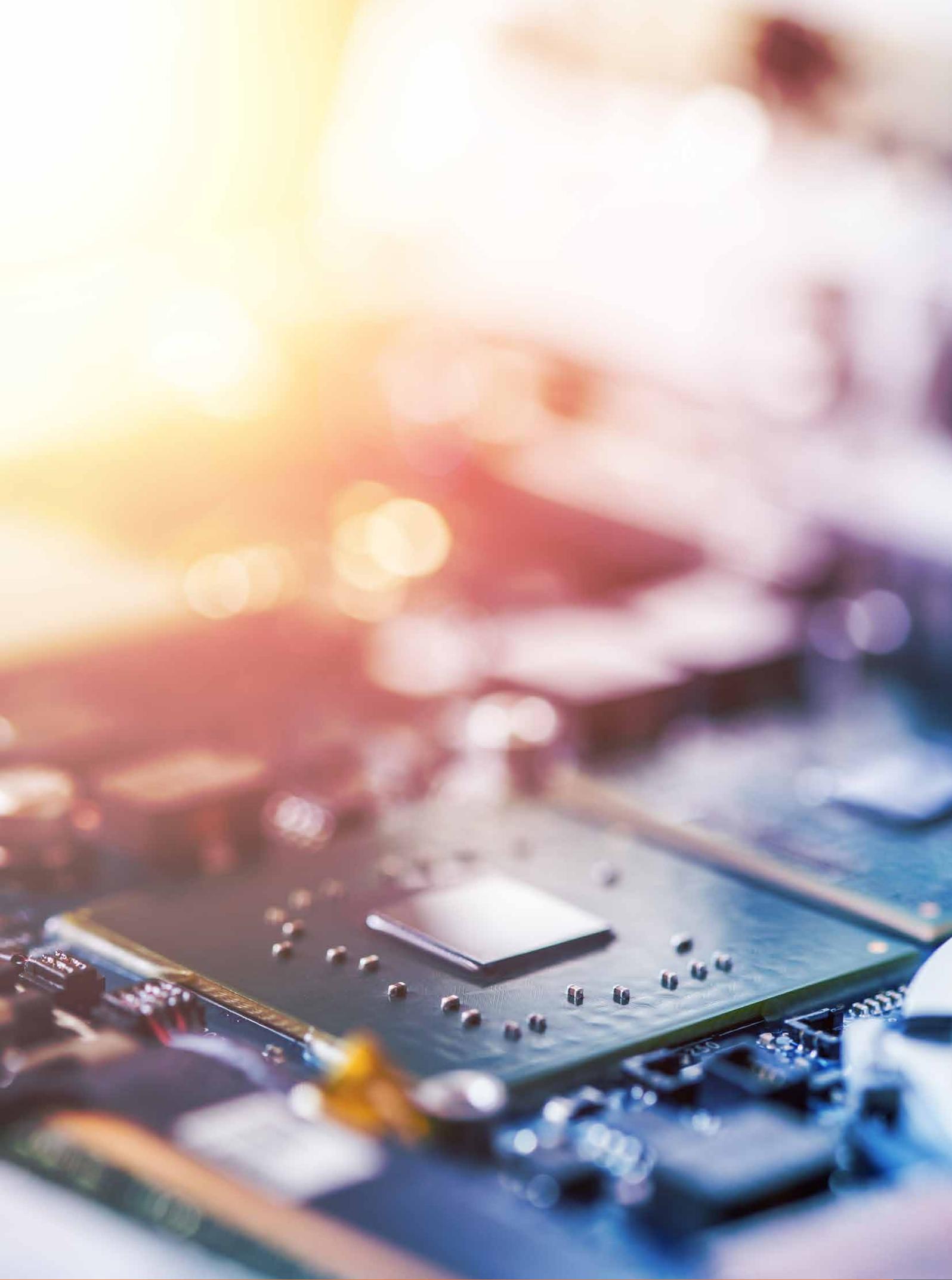


Vision Measuring Machines, Measuring Microscope

Lead Frame
 Measurements: Solder ball height, diameter, pitch, and circuit board coplanarity



Vision Measuring Machines with Laser Sensor, Measuring Microscope





Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top-quality measuring products but one that also offers qualified support for the lifetime of the equipment backed up by comprehensive services, ensuring your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test, and deliver bespoke measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.



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