InterElectronic INTEON

INTEON ProVision 4K



High-Resolution 2D/3D Optical Inspection Microscope System. Built for automated yield enhancement, SMT validation, and precision QA operations.

Strategic SMT Partnership

InterElectronic Hungary Kft. delivers regional SMT high-precision equipment lines, assembly process validation, and premium support architectures since 2003.

System Overview

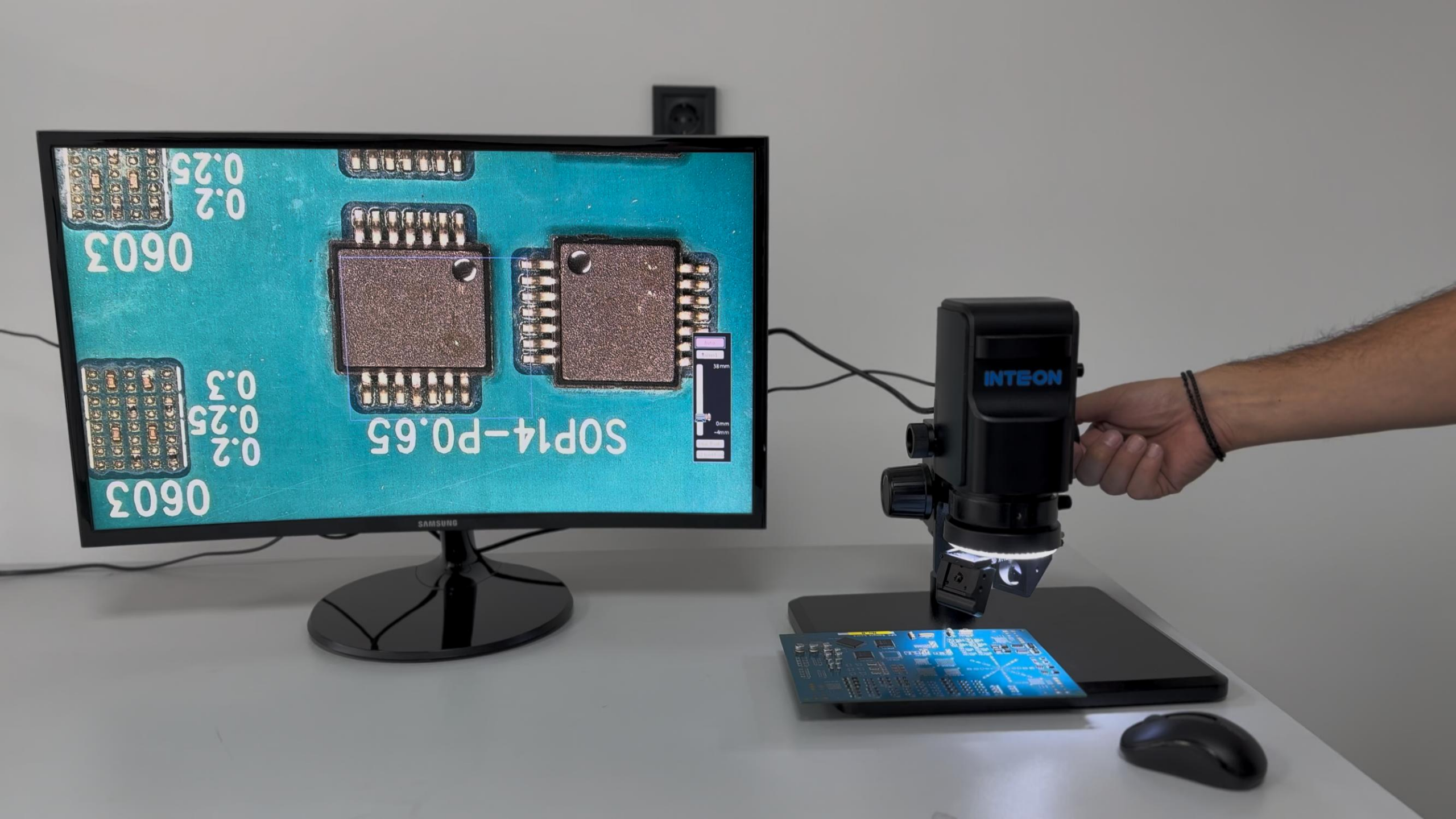
Ultimate 4K Inspection

The INTEON ProVision 4K system sets a new standard in digital microscopy. It delivers ultra-low latency, eliminating operator strain and visual fatigue during multi-shift operations.

Utilizing a premium Sony 1/1.8" CMOS Sensor, it pumps crisp 4K Ultra HD video streams directly to high-fidelity standalone monitors, establishing perfect environments for SMT component rework.

Operators smoothly transition between top-down ortho 2D perspectives and angled 3D rotating modules to capture vertical features on BGAs, QFNs, and sub-micron solder joints.




0603
0.25
0.2
0603
0.3
0.25
0.2
0603
SOP14-P0.65
38mm
0mm
-4mm
SAMSUNG
INTEON

What's in the Box

Complete Turnkey Set

Standard Package Includes:

- **1x INTEON Provision 4k microscope**
  Ultra-low latency 4K digital microscope with software (measurement, image capture, comparison mode, etc.)

- **1x INTEON 3D Attachment - 360 angle view**
  Dynamic multi-angle module for vertical feature and sidewall inspection.

- **1x INTEON PolarRing**
  Adjustable ring light with integrated cross-polarization to eliminate glare from solder joints.

- **1x INTEON OptiLens 1x**
  Standard primary objective delivering balanced magnification and optimal working distance.

- **1x INTEON OptiLens 0.5x**
  Extended field-of-view lens designed for large-area PCB overviews and extra clearance.

The stand is optional, see Arm Options.



Technical Specifications

Technical Parameter	Standard Values	SMT Production Benefit
Video Resolution	3840 x 2160P @ 60 FPS (Ultra HD 4K)	No-delay, highly fluid movements during hand-soldering and inspection
Imaging Sensor	1/1.8" Sony High-Performance CMOS Sensor	Superior dynamic range, preventing glare hot-spots on reflective joints
Connectivity	Dual Output: HDMI + UVC USB 3.0 Standard	Stream simultaneously to local high-res displays and network storage
Optical Zoom	0.7X - 5.0X Continuous Optical Magnification	High versatile overview capabilities with micro-structural zoom-in
Digital Zoom	25X - 230X Adjustable Magnification	In-depth verification of 0201 / 01005 passives and micro-vias
ESD Protection	Fully ESD Safe Metal Housing, Base and Stands	Total static dissipation protection for sensitive semiconductors

Guarantee & Support

Enterprise Integrity

High-volume manufacturing demands continuous up-time. InterElectronic Hungary secures SMT operations with premium service structures:

- 3-Year Hardware Warranty: Full coverage on all electronic parts, optical glass assemblies, and base frames.
- Regional Service: Sales, installation, training and service in the region, from InterElectronic.



Core Performance Pillars

Autofocus / Edge

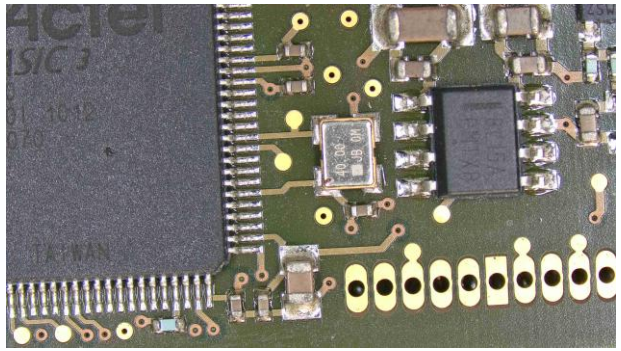
Instant autofocus minimizes visual adjustment cycles, and integrated hardware algorithms dynamically sharpen object edges on dark BGAs.

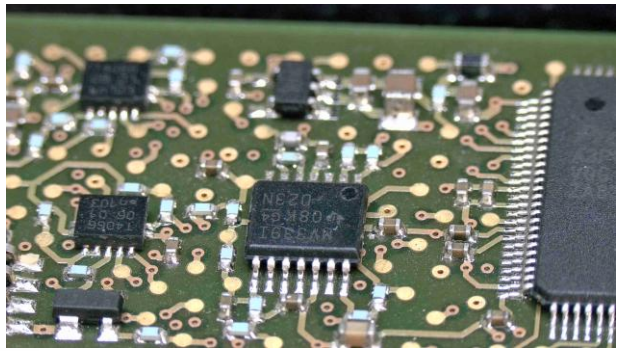
2D/3D Fast Switch

Seamlessly pivot from 2D orthographic perspectives to lateral 3D rotation inspects to examine micro solder heel and meniscus cracks.

Full ESD Compliance

Every element is integrated using static-dissipative materials ensuring total ESD security inside cleanrooms and assembly areas.







Optional Accessories

Prices available on request. Contact our sales team.

OptiLens Range

Low Magnification Optics

Alter workspace parameters, focus depth, and optical capture dimensions in SMT inspection:

- OptiLens 0.5X: Expands Working Distance (WD) to 180 mm, maximizing workspace for mechanical rework tools.
- OptiLens 0.7X: Establishes a comfortable Working Distance of 128 mm for a versatile balance of zoom power.

High Detail Objectives

Configure microscopic zoom options or 3D modules depending on micro-electronic and high-precision testing priorities:

- OptiLens 1.0X (Native): Standard 100 mm working distance lens. Mandatory for rotational 3D assembly support.
- OptiLens 2.0X: Focuses down to a tight 40 mm working distance for highly detailed inspections of sub-micron cracks.



Ring Lighting Systems

PolarRing Solutions

Highly reflective materials like shiny liquid flux and wet solder create severe glare. Eliminating reflections is crucial to catch voids:

- INTEON PolarRing: 80-LED ring light with adjustable brightness (0-100%). USB-powered.
- INTEON PolarRing Pro: 96-LED polarized ring light with adjustable brightness. Polarizing filter reduces reflections on shiny surfaces.
- Standardized Interface: Simple mounting and immediate power integration.



SpectraLight Solutions

Atypical validation scenarios require specific wavelength outputs to activate fluorescence inside modern coatings:

- Violet Ring Light: Wavelength approx. 400-435 nm, remaining clearly visible to standard eyes.
- UV Ring Light: Sub-400 nm Ultraviolet illumination. Identifies conformal coating distribution and chemical residues.



Arm Options

INTEON SoloArm

Single-arm articulating stand with flat base plate, horizontal travel and height adjustment.

Base plate: 230x230mm
Horizontal travel: 235mm
Column height: 380mm
Column diameter: 32mm



INTEON X7 Stand

Adjustable flex arm stand with table mount. Working height set to suit lens and sample, reach extendable with optional extensions.

Carrying capacity: 0-4.5 kg
Reach: 420-760 mm
Working height: 100-333 mm
Extensions: +120 mm / +220 mm



INTEON Base Standard

Optional tabletop stand for the ProVision 4K microscope: metal base with rack-and-pinion column height adjustment.

Base: 320 × 260 × 20 mm
Column height: 280 mm



InterElectronic INTEON

Your Premium SMT Sourcing Partner

Drive down failure rates. Maximize production yields with INTEON.

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