

# 4SOURCE

**Quality Assurance Methods** and  
Technology at 4Source electronics AG

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## Incoming Goods Inspections Under the IDEA Standard

All incoming goods at 4Source are inspected in compliance with the strict and independent IDEA standard which, as an integral part of the quality management system, is continuously improved and thereby developed further.



› IDEA-STD-1010, [www.idofea.org](http://www.idofea.org)

Our sophisticated quality management system received several certifications:

- › Incoming goods inspection routines are specified as a process and extensively documented.
- › Upcoming inspections are based on standardized inspection lists and documented for each order—and performed, e.g., depending on the supplier type which is determined by a complex supplier classification rating system.

### Current certifications

ISO 9001: Quality management  
EN 9120: Aviation and space  
ISO 14001: Environmental management  
IEC 61340-5-1 (ANSI/ESD S20.20): ESD



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## Visual Inspection and Photographic Documentation

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### Reviewing delivery notes and accompanying documents

- › Comparing delivery notes
- › Reviewing certificates of conformity (CoC)

### Checking packaging, packaging types and labels

- › Checking for damage
- › Scanning and comparing labels with reference documents
- › ESD-compliant packaging
- › ESD-compliant packaging under IEC 61340-5-3

### Inspecting components

- › Quantity
- › Labeling (marking), manufacturer's label/manufacturer, if applicable, revisions
- › Case (type), checking dimensional accuracy, case features
- › Date code, country of origin
- › RoHS and REACH conformity
- › Moisture sensitivity level (MSL)

### Visual inspection, including of

- › Wear (scratches, etc.)
- › Corrosion
- › Alignment, coplanarity, condition of pins
- › Whisker formation
- › Surface anomalies
- › Lead frames and extrusion pins

### Inspecting surfaces for manipulation

- › Surface anomalies, such as grinding marks, blacktopping, remarking
- › Acetone wipe testing to detect component labeling manipulation

### Complete digital imaging and comparison with reference image data

- › Digital imaging of all incoming goods
- › Digital microscopy
- › Real-time X-ray inspections
- › Comparisons with digital documentation (over 20 years!)
- › If necessary, inspections for existing programs: blank check for OTPs, EPROMs, EEPROMs, flash memory, MCUs
- › If possible, simple electronic inspections

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## Devices Used Daily

### Digital photography

- › Nikon D300, D300s, D7200s, D7500

### 1000x-magnification digital microscope

- › Keyence VHX-600, VHX-5000, VHX-7000,  
Leica DVM6A

### Real-time X-rays

- › X-Ray Cougar SMT  $\mu$ CT of YXLON,  
TVX-IM9000FS of TechValley

### Component programming/testing

- › Conitec GALEP-5D

### LCR meter

- › Sourcetric ST2830

### High-quantity label scanning

- › Keyence CV-X350F

### Drying cabinets/tempering under J-STD-033C

- › Totech SuperDry SD-1106-01, Mekko AD-606

### Solderability testing under IEC 60068-2-69 and J-STD-002D

- › Gen3 MUST III Solderability Tester

### Material analysis/RoHS testing

- › FISCHERSCOPE® X-RAY XDV-SDD

### X-ray component counter

- › TechValley Hawkeye1000





When learning of their high moisture sensitivity level (MSL), components are treated in accordance with J-STD-033C and vacuum-packaged. Depending on the requirements, packaging gas may be added.



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