Seica Automation

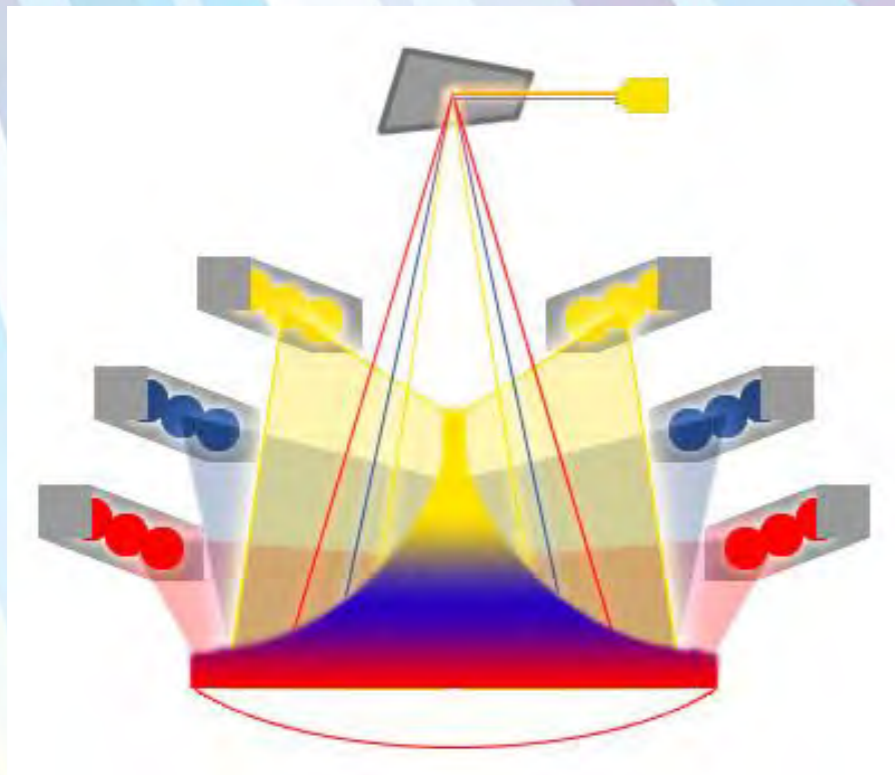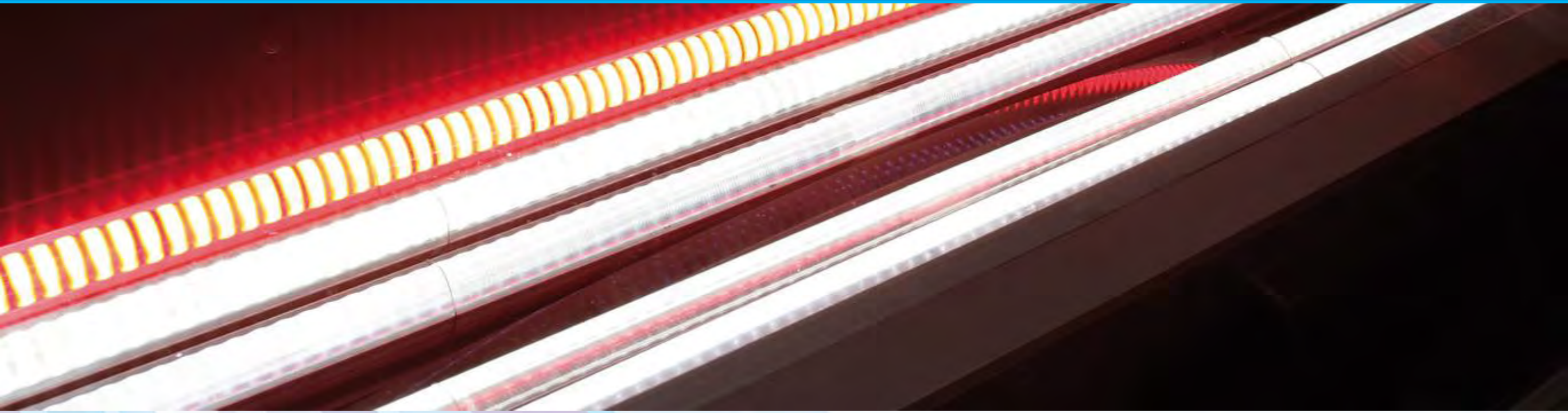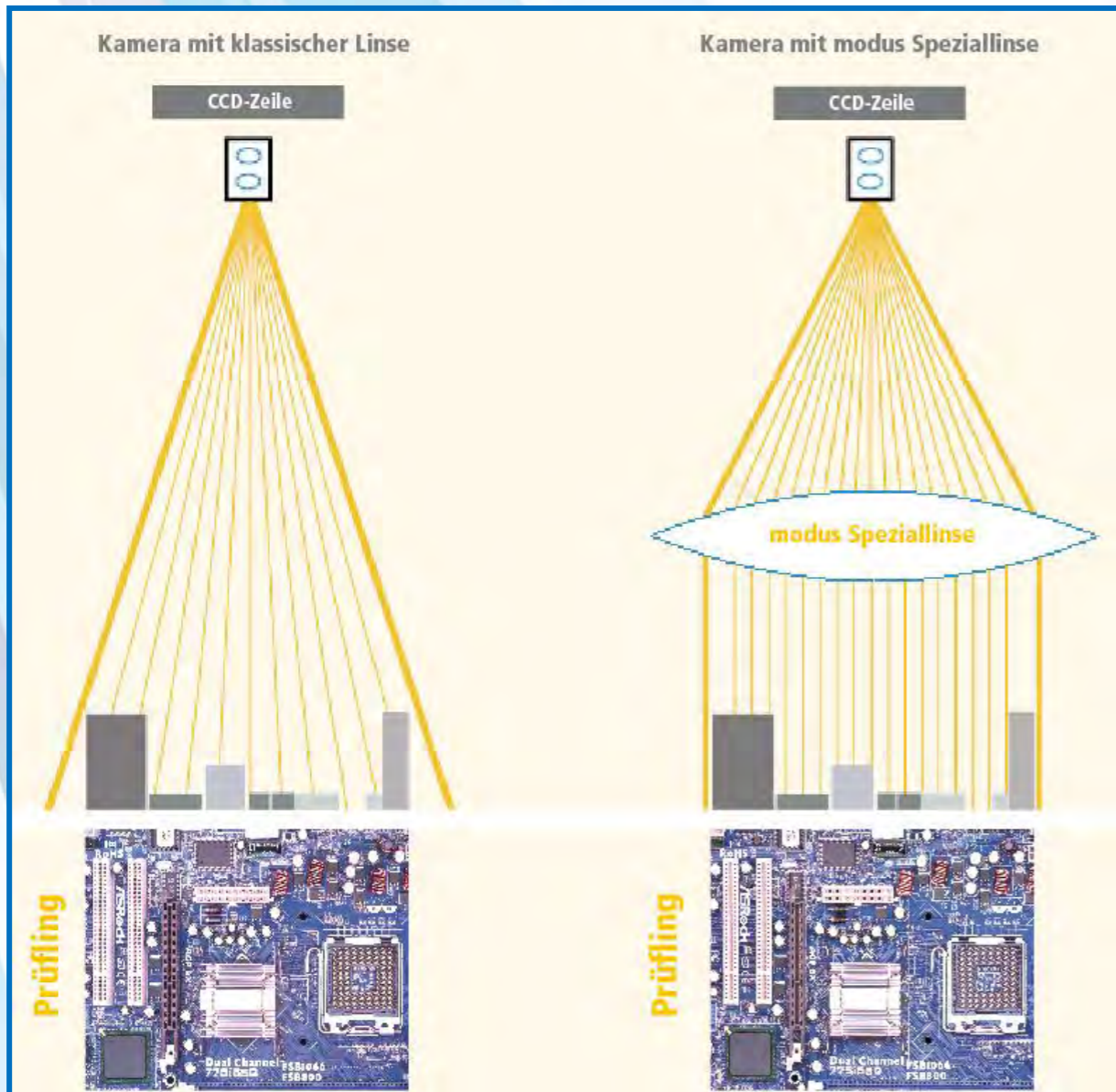# CONFORMAL COATING INSPECTION

MODULO AOI-CC

Multi-LED Scanner

- 1200 dpi, 20µm, full RGB 24 Bit (~16 Mio. colors)

- LED illumination: red - white (standard)
  red – blue - white or UV - white

- Advantage: no shadows or brightness deviation, due to constant illumination ratio to the position of image capture.

- Parallax free view of FOV 300 x 400 mm or 420 x 550 mm

- 14040 x 20400 Pixel / Scan (ca. 860 MPixel)

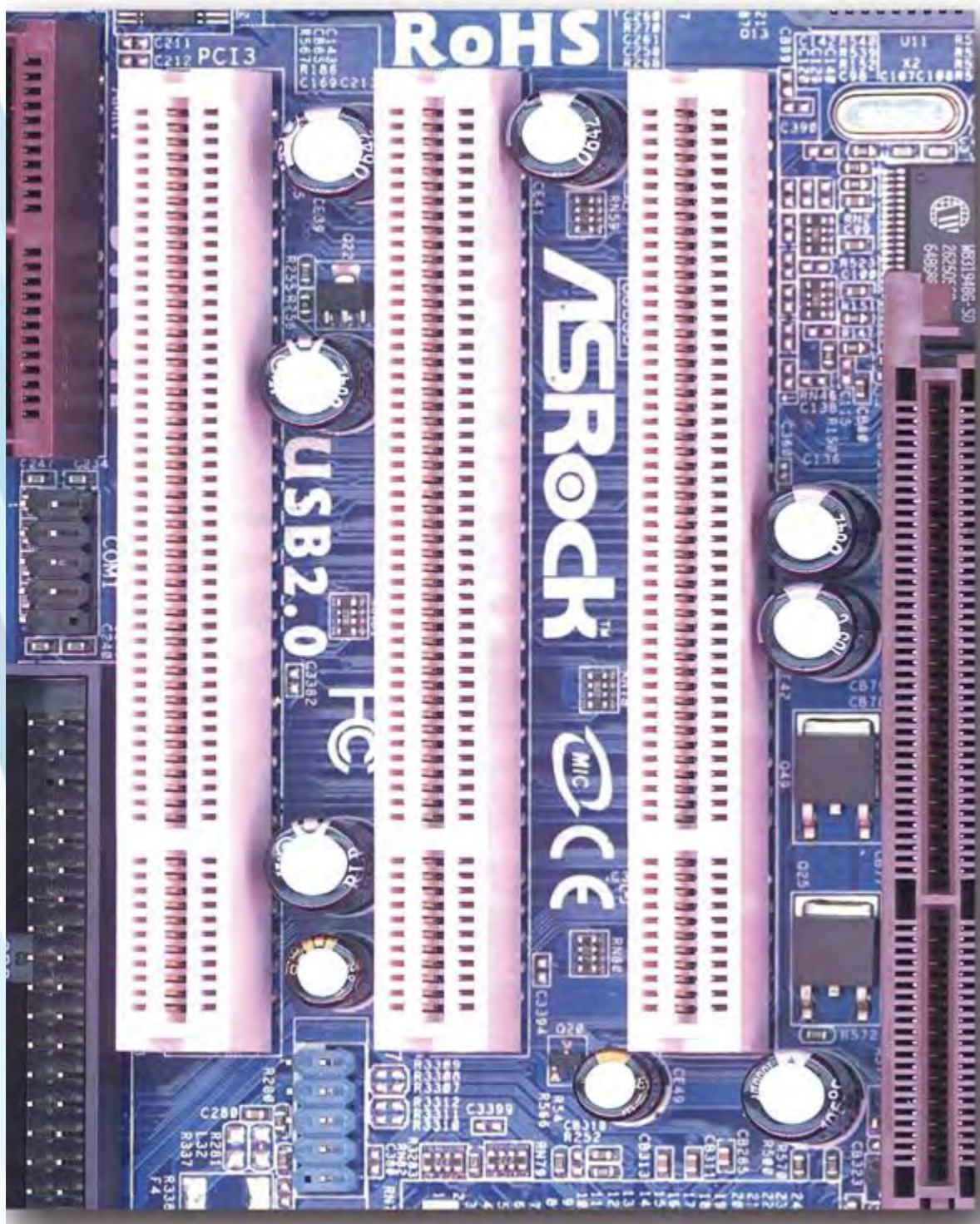- Total test time: 6 to ca. 25 sec.

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Parallax-free

- By installing a special lens in to the scanner lenses-system, parallax-free and orthoscopic images can be generated.

- Distracting incertitude's based on parallax failures are impossible.

- Inaccurate solder joints and connections are even more securely detected and its identification guaranties the manufacturing process effectively.

This Technology is protected by utility model and is used in all modus scanner systems.
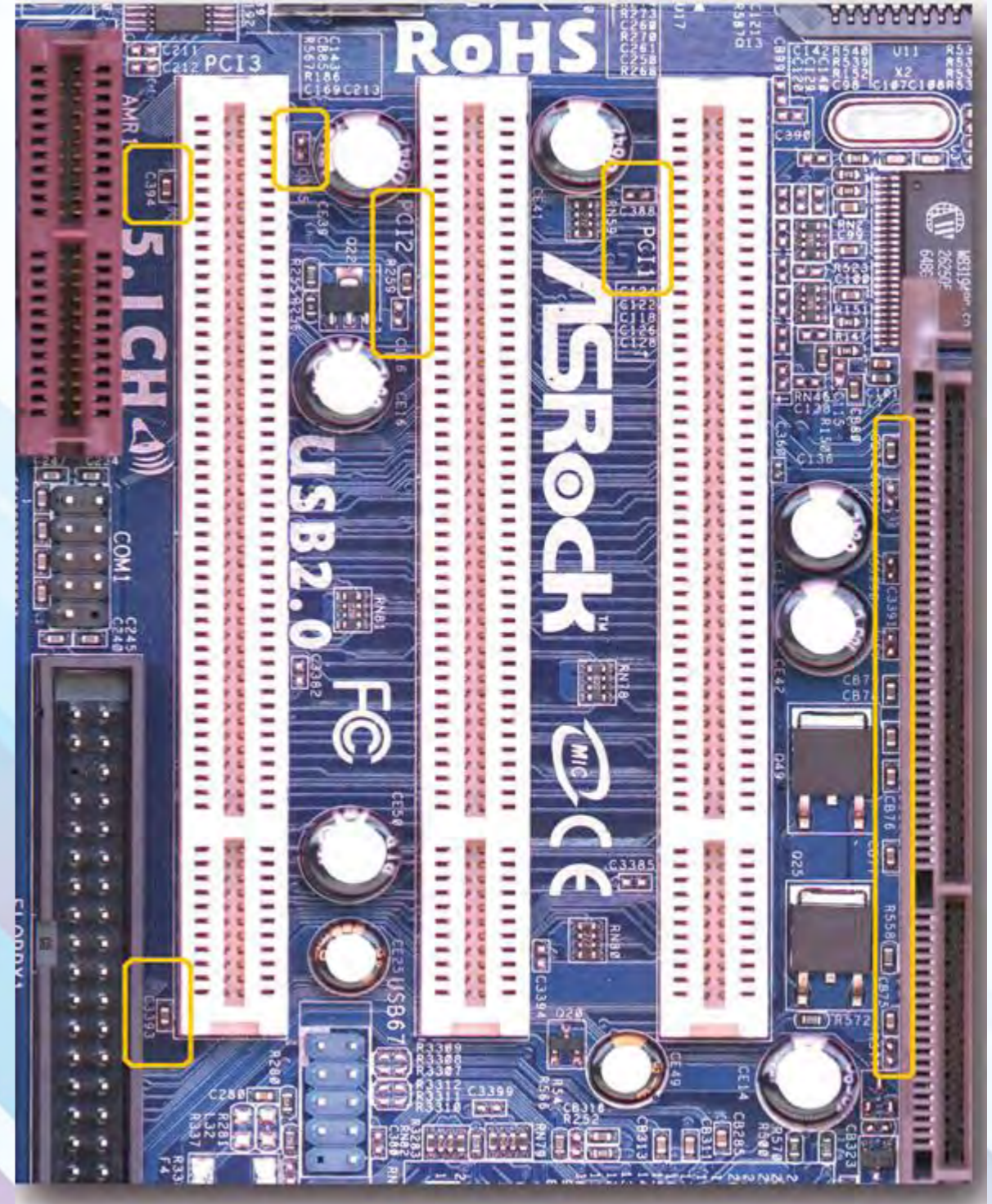
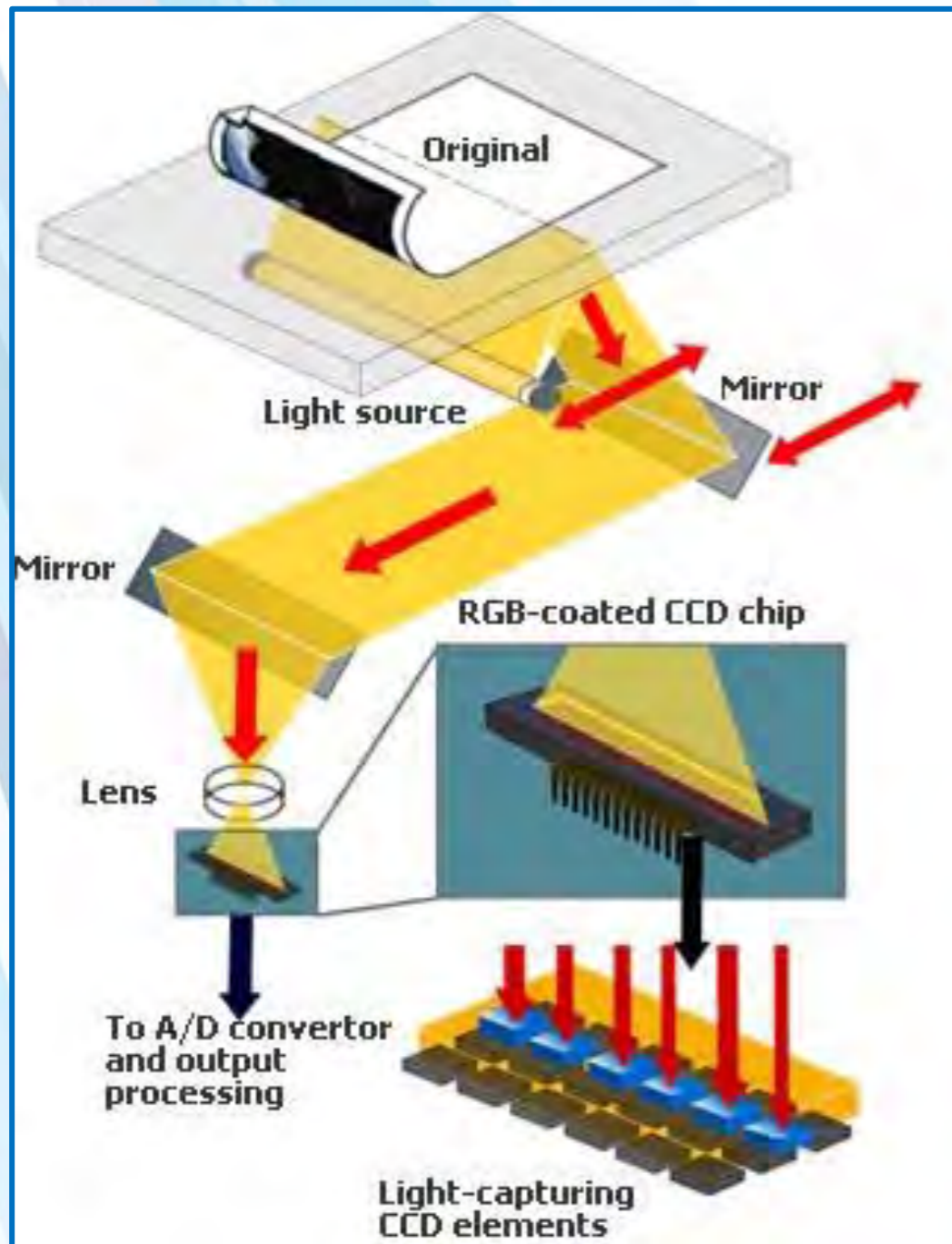## Parallax-free-view

- parallax image view

- paralax-free-image-view

HARDWARE
Innovative and reliable

- nearly maintenance free system.
- MLD1200: fixed optical system, only mirrors and illumination are moving, almost no wear.
- iScan420T: fixed optical system incl. mirrow and illumination, no wear at all.
- Only savety glas should be cleaned regulary.
- MTBF = 1.300.000 Scans
- One-Pass-Scan:
  complete test of the board in one pass scan. Timeing depend on borad size between 6 and 25 sec.
- Latest computer lechnology will be used for reliable inspection performance.

Conformal Coating defects

In order to detect conformal coating defects, it is necessary that the coating material has an UV trace.

The product has to illuminate with UV light and using the fluorescent light for the inspection.

Independent if a PC-board, wire harness or mechanical stuff has to be inspected, those solutions are available even adapted custom made solutions are possible.
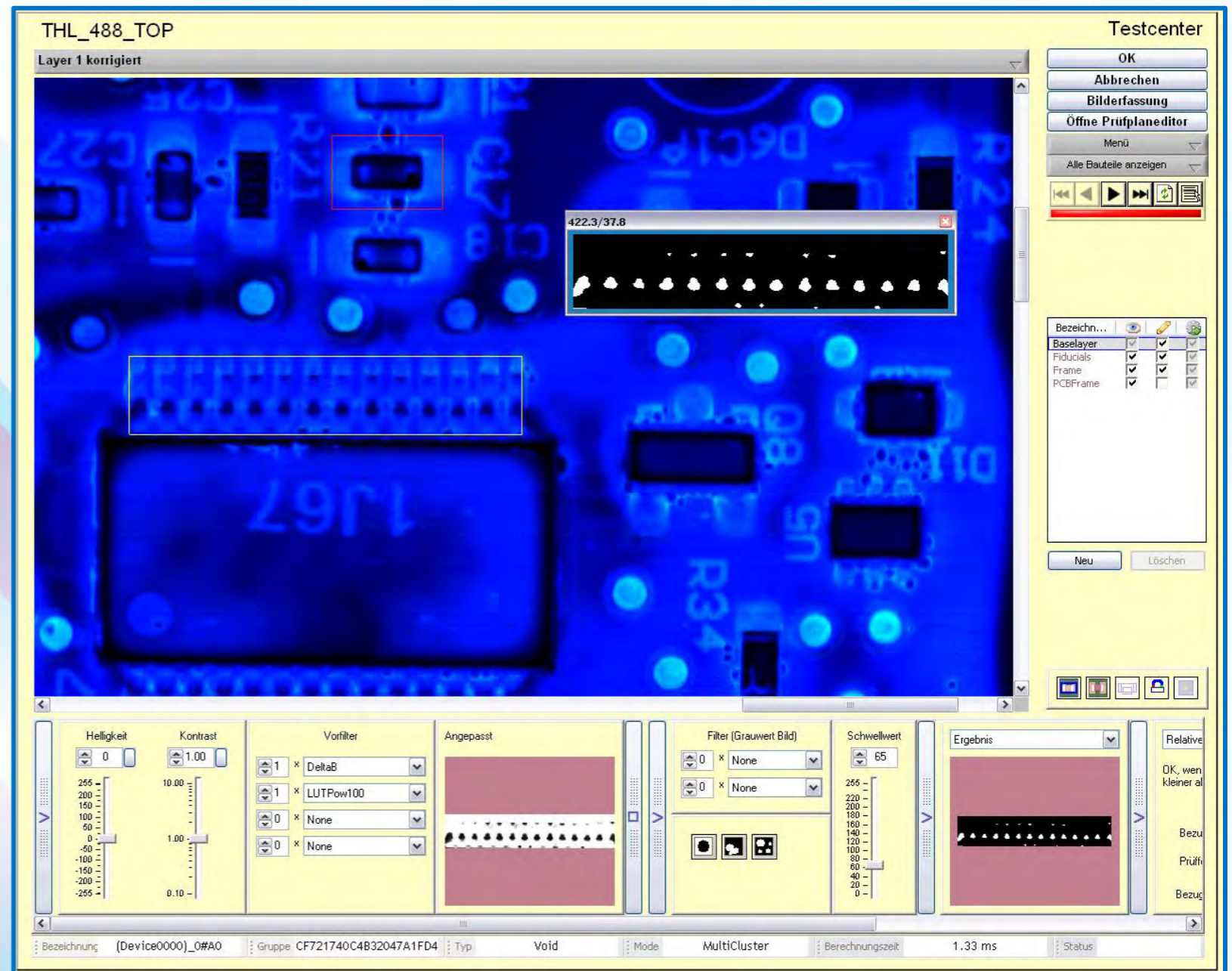
Conformal Coating defects

Typical Failures: at coated areas

• Capillary (Scavening)

Capillary flow in conformal coating is where the coating pulls or run away from certain areas.
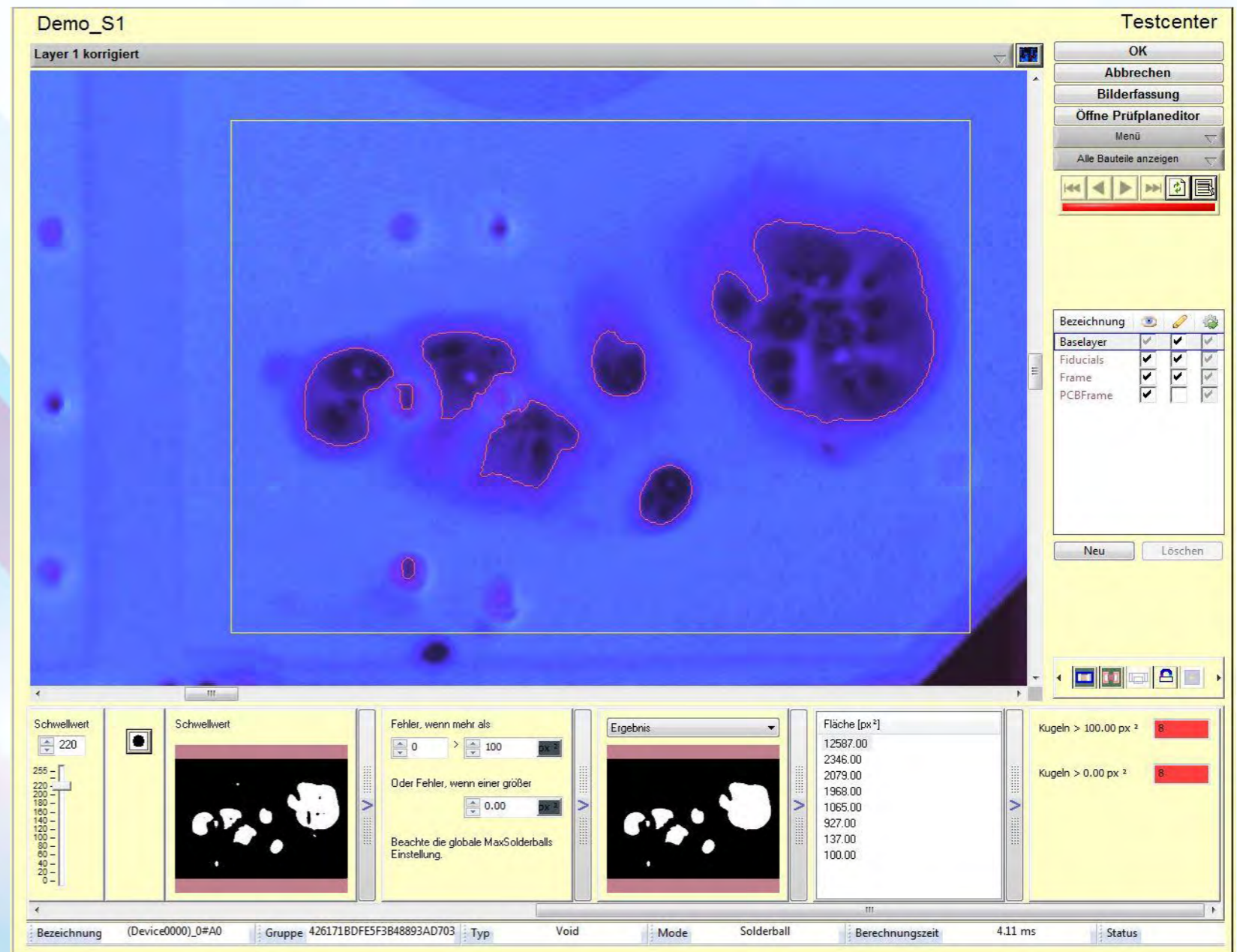
Conformal Coating defects

Typical Failures: at coated areas

• Cracking

Cracking in conformal coating is where a surface fracture in the coating leaving the area below exposed to contamination.

• De-wetting

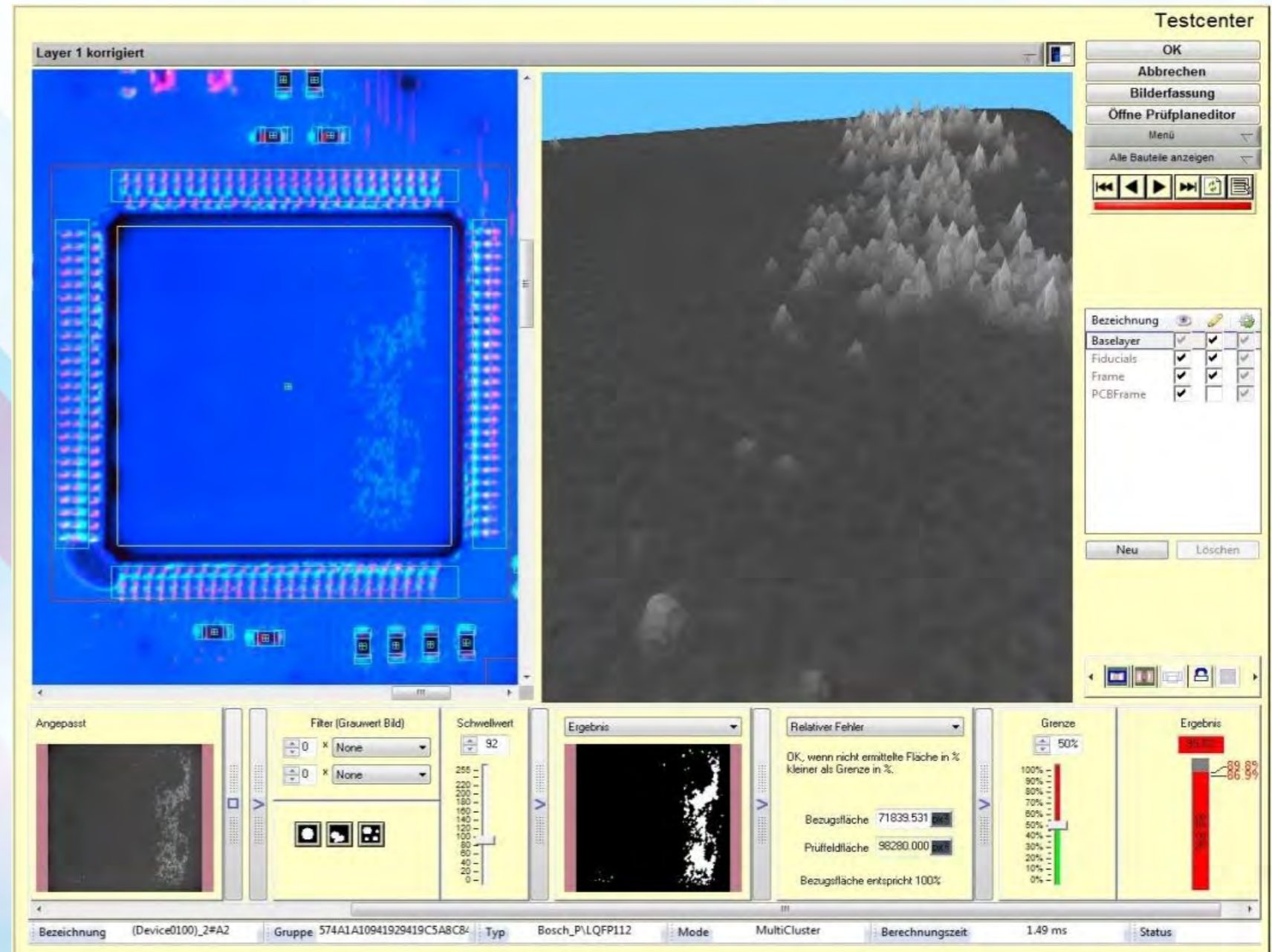Is the tendency of the coating material to refuse to wet the surface.

Conformal Coating defects

Typical Failures: at coated areas

• orange peel

Like wrinkles and irregular coating
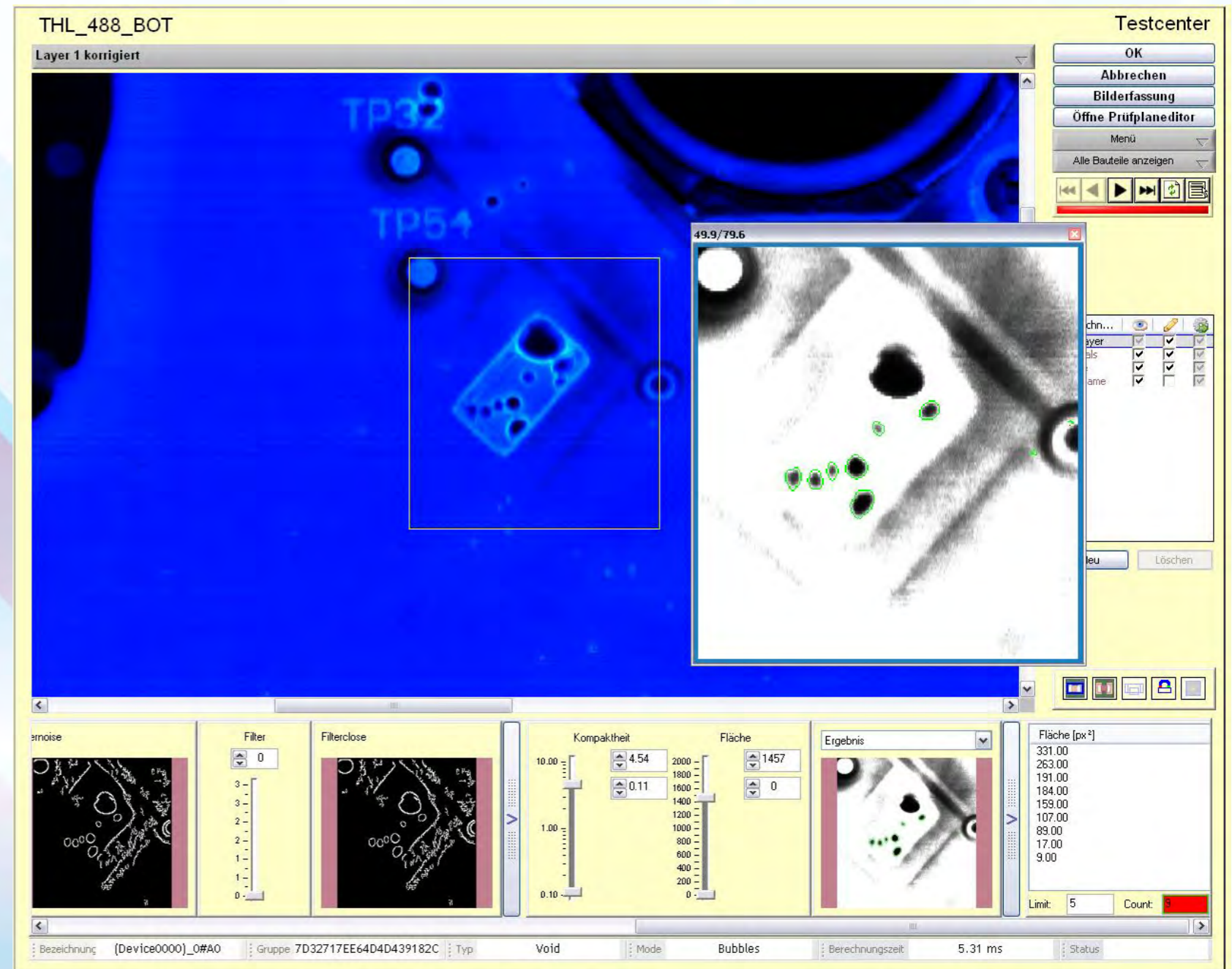
Conformal Coating defects

Typical Failures: at coated areas

• Bubbles, Pin holes

Bubbles are trapped pockets of air under coating. Pin holes are burst bubbles that reach to the surface.

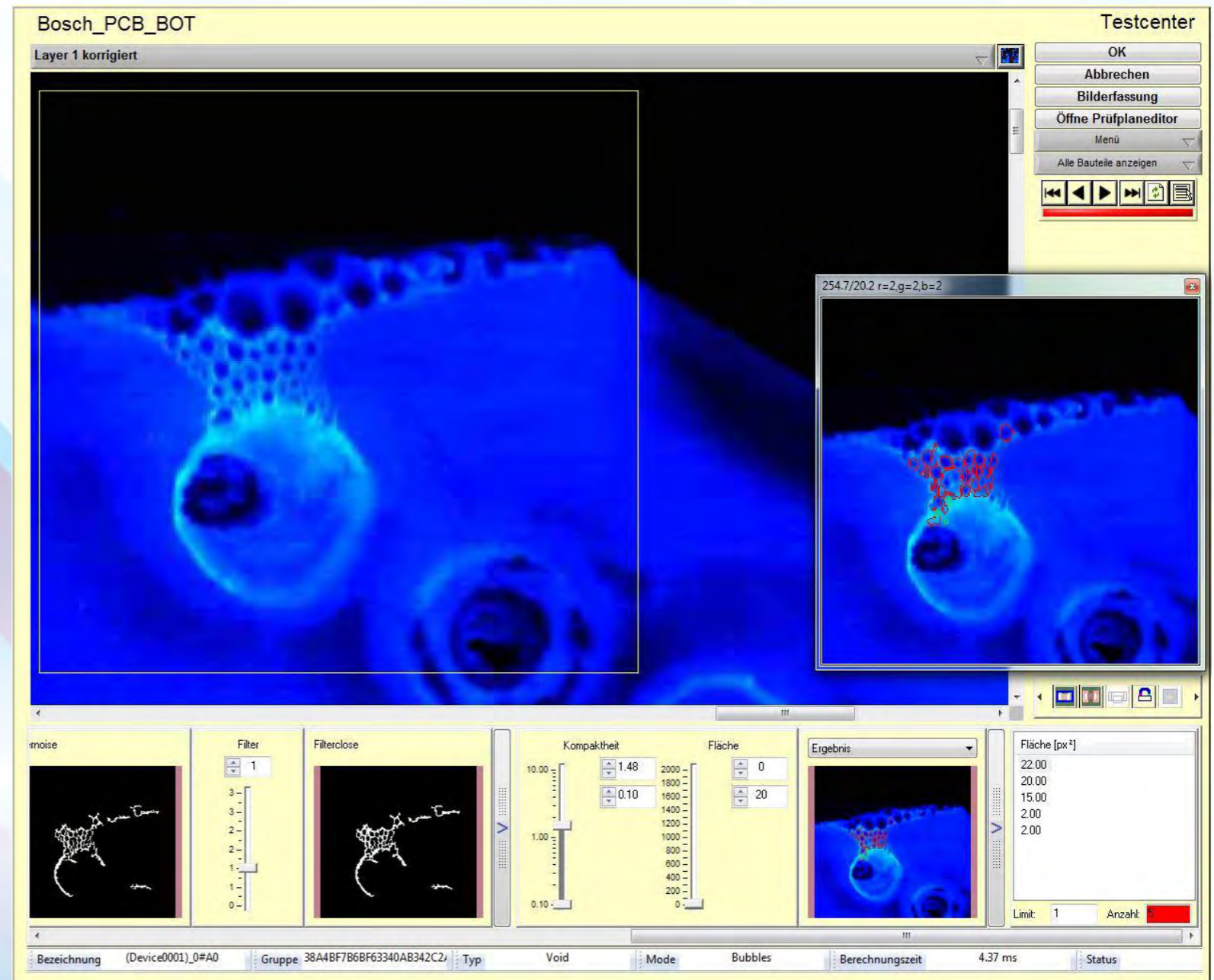**Conformal Coating defects**

Typical Failures: at coated areas

• Foam

Is extreme bubbles .

• Delamination

In conformal coating is where the coating lifts from surface of the PCB, leaving the area below exposed.

Foam can begin to turn into delemination, when the adhesive effect will drop or disapear.
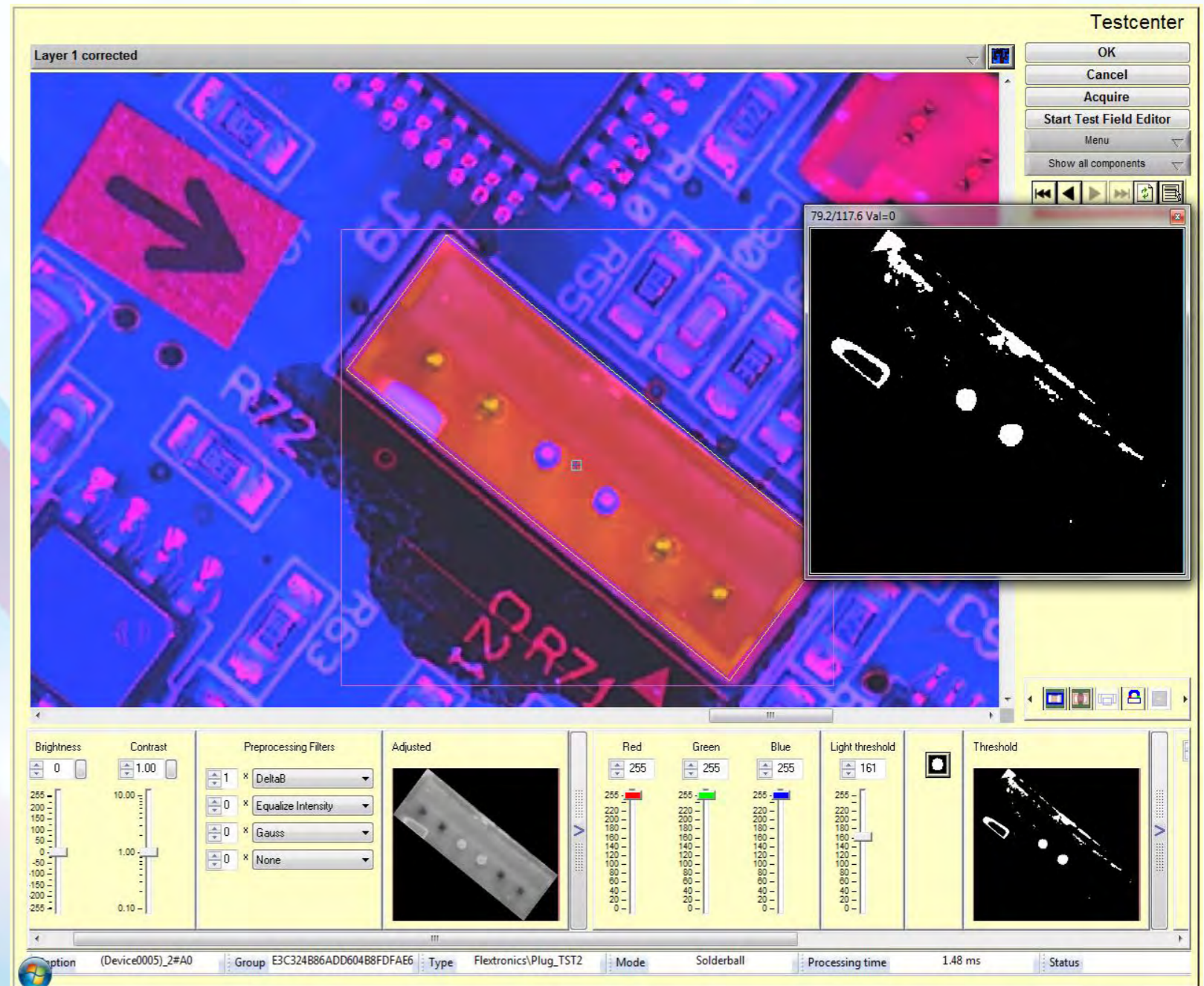
Conformal Coating Inspection (UV) light

Conformal Coating defects

Typical Failures: at coated areas
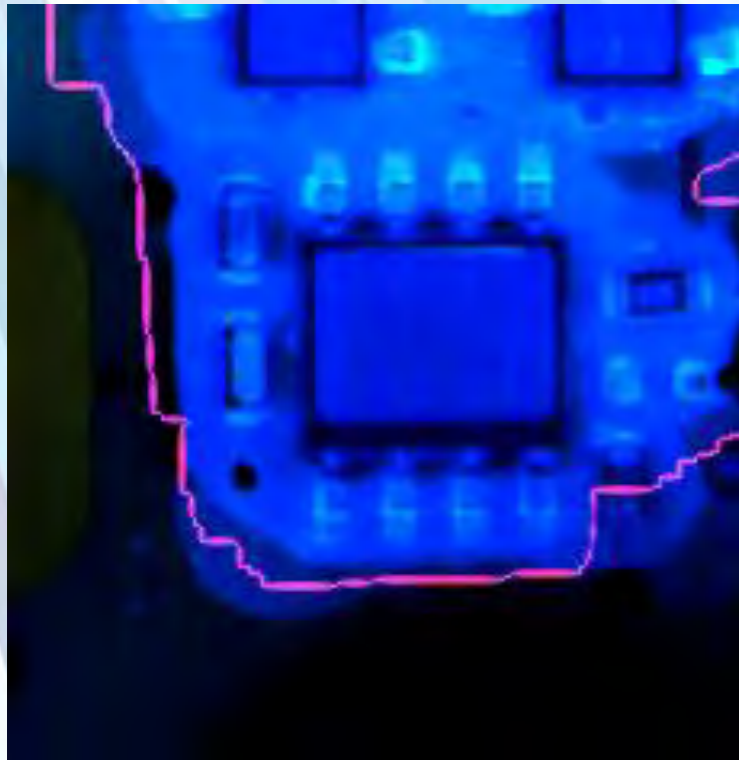
• Splashes inside of connectors

Coating splashes and spots at Components walls and board edges are detected easily.

APPLICATION
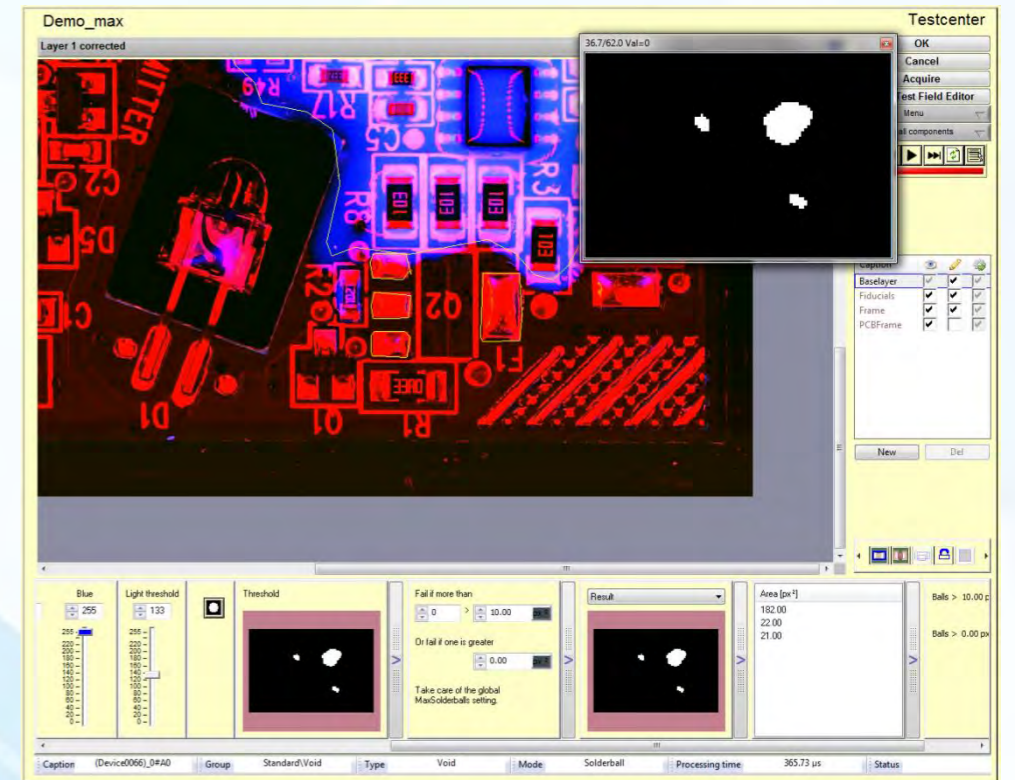## Conformal Coating Inspection (UV) light

Typical features for detecting uncoated areas

Areas on board coated and uncoated, finding area automatically, by wizard
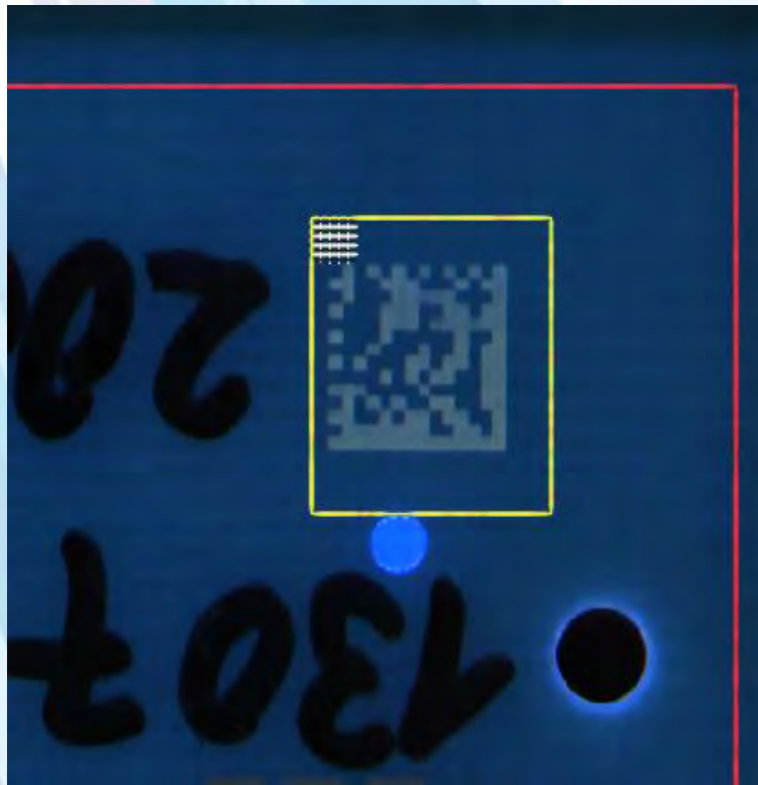

Coating drops visible at non coated area

Keep out zone violation

Conformal Coating Inspection (UV) light
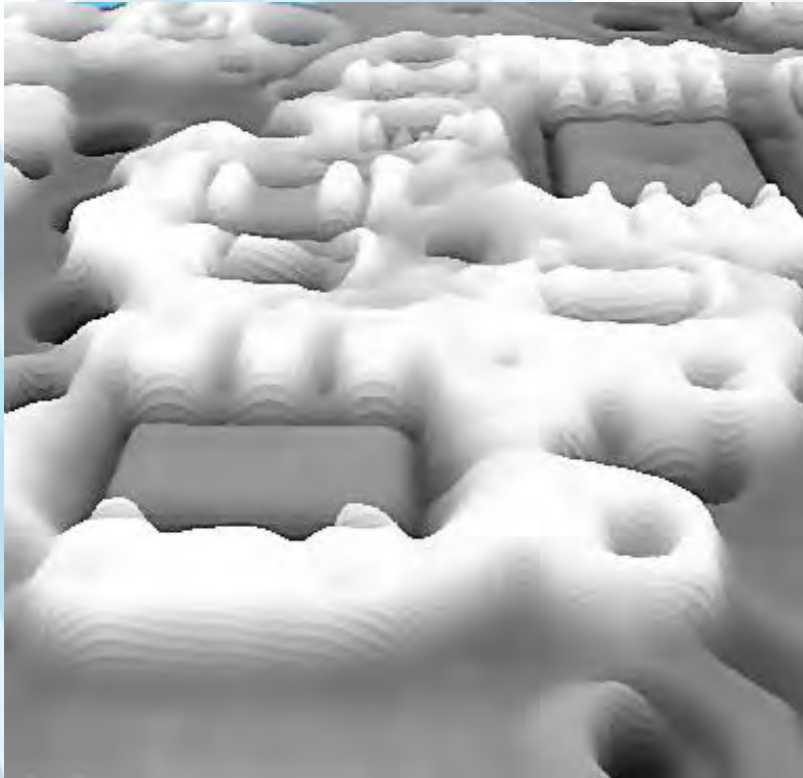
Typical inspection features.

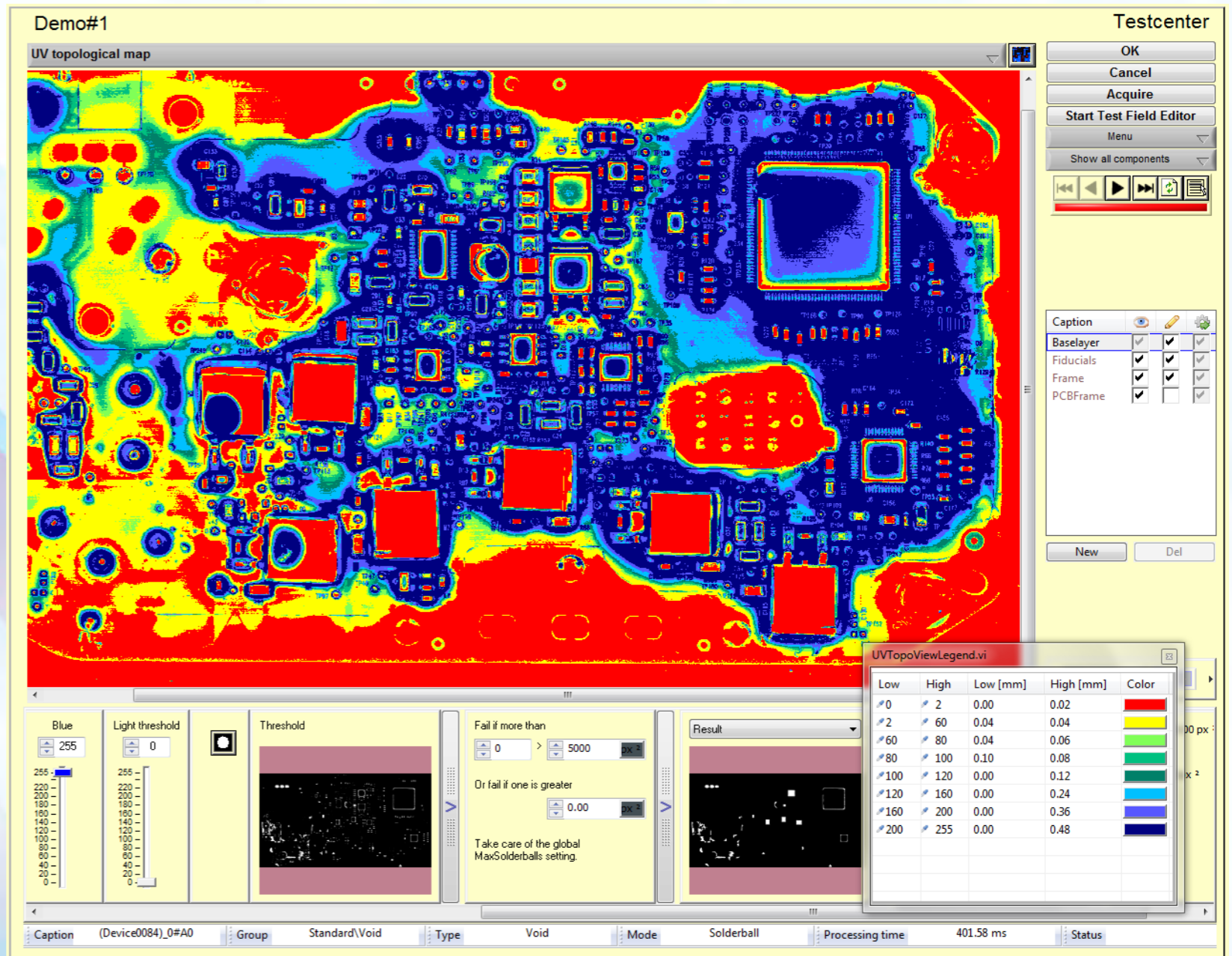Bare or Data Matrix
Code reading

APPLICATION
Conformal Coating Inspection (UV) light

Typical inspection features.

coated area visible at 3D image
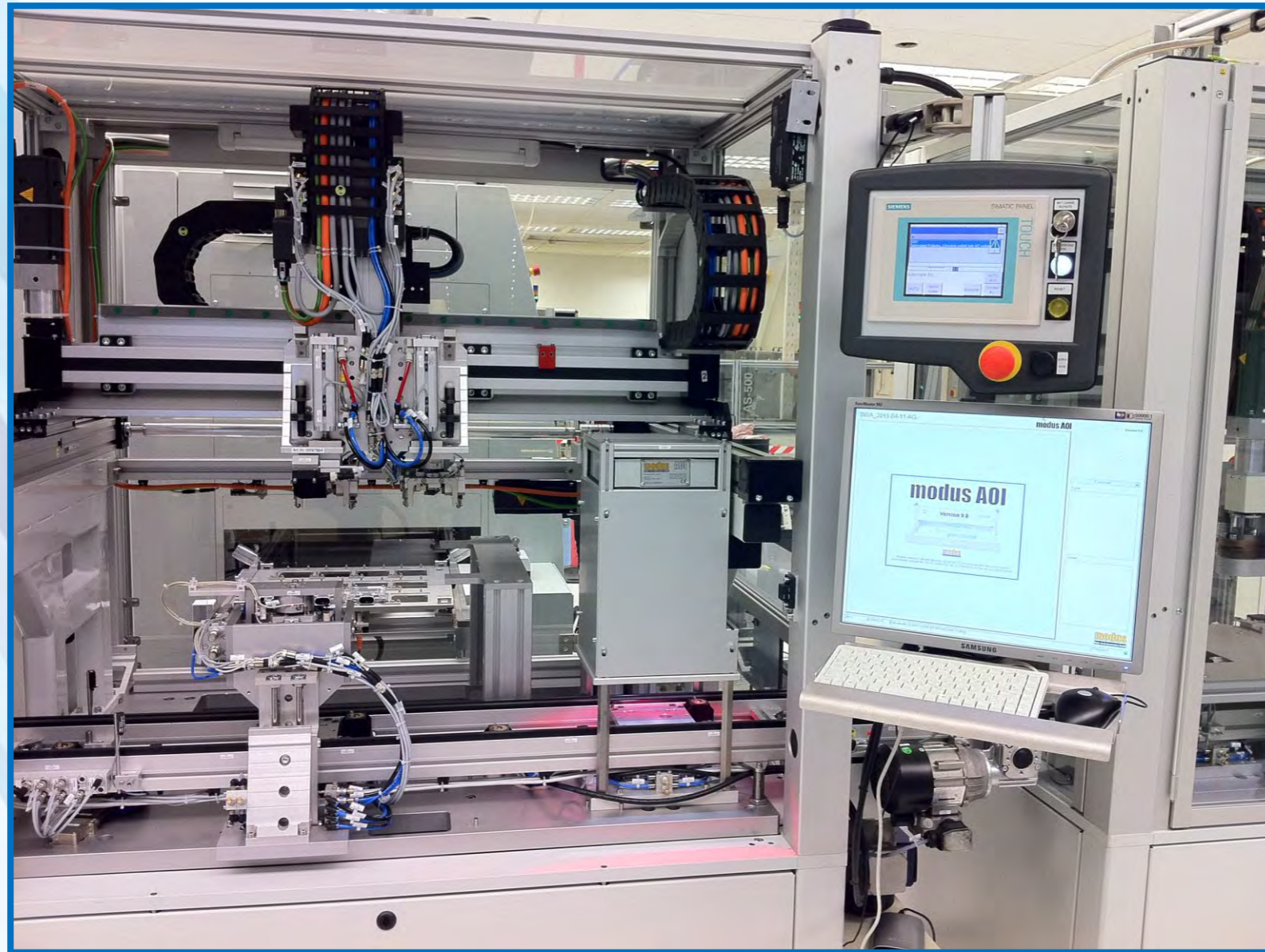or as landscape thickness indicator

ModusAOI S1-IDN

- Operating Range 420 x 550 mm (16.53 x 21.65 in.)
- Twin system for simultaneous inspection for both sides of PCB.
- Component clearance: top up to 100mm (4 inch) bottom 50mm (2 inch).
- Capturing barcodes und Data-Matrix-Codes in any position and number of its advantage
- Simultaneous report of the results from both sides
- This transport module offers a system length of 1200 mm (47.3 inch)
- Two system computers including the modusAOI-Software are included in the delivery
- Also available as IUA (inspection from below) and IOA
  (inspection from above)

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CUSTOMIZED PRODUCTS
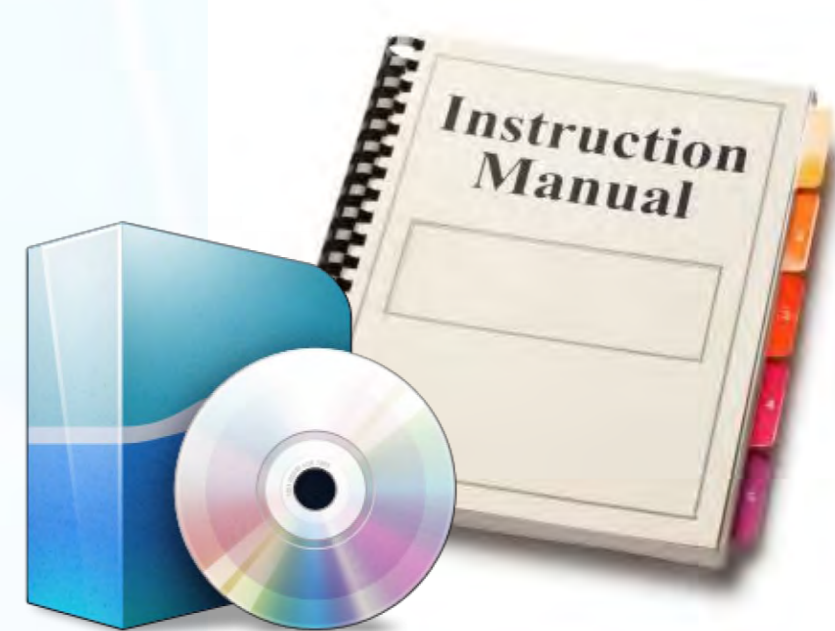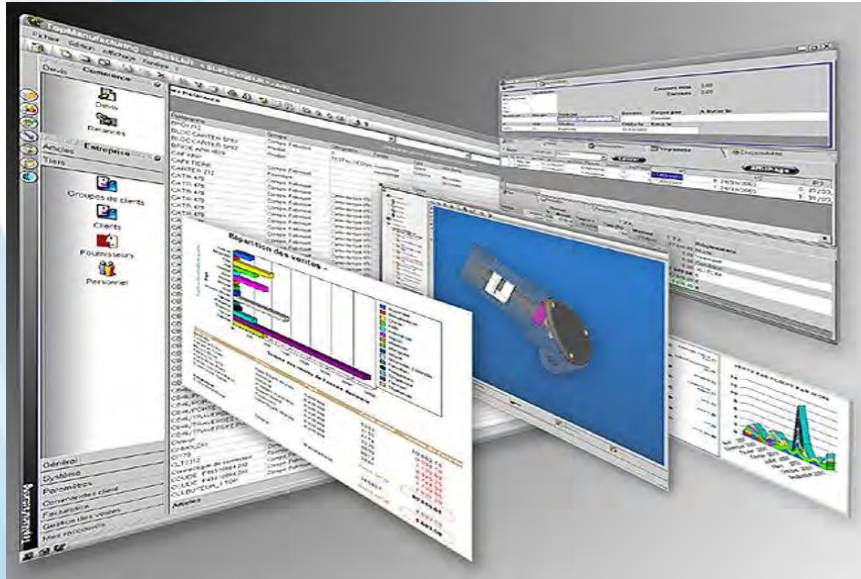## Integration into current production System

ModusAOI MCS10-inline, integration into processing system

- Individual system for inspection of objects at inline operations
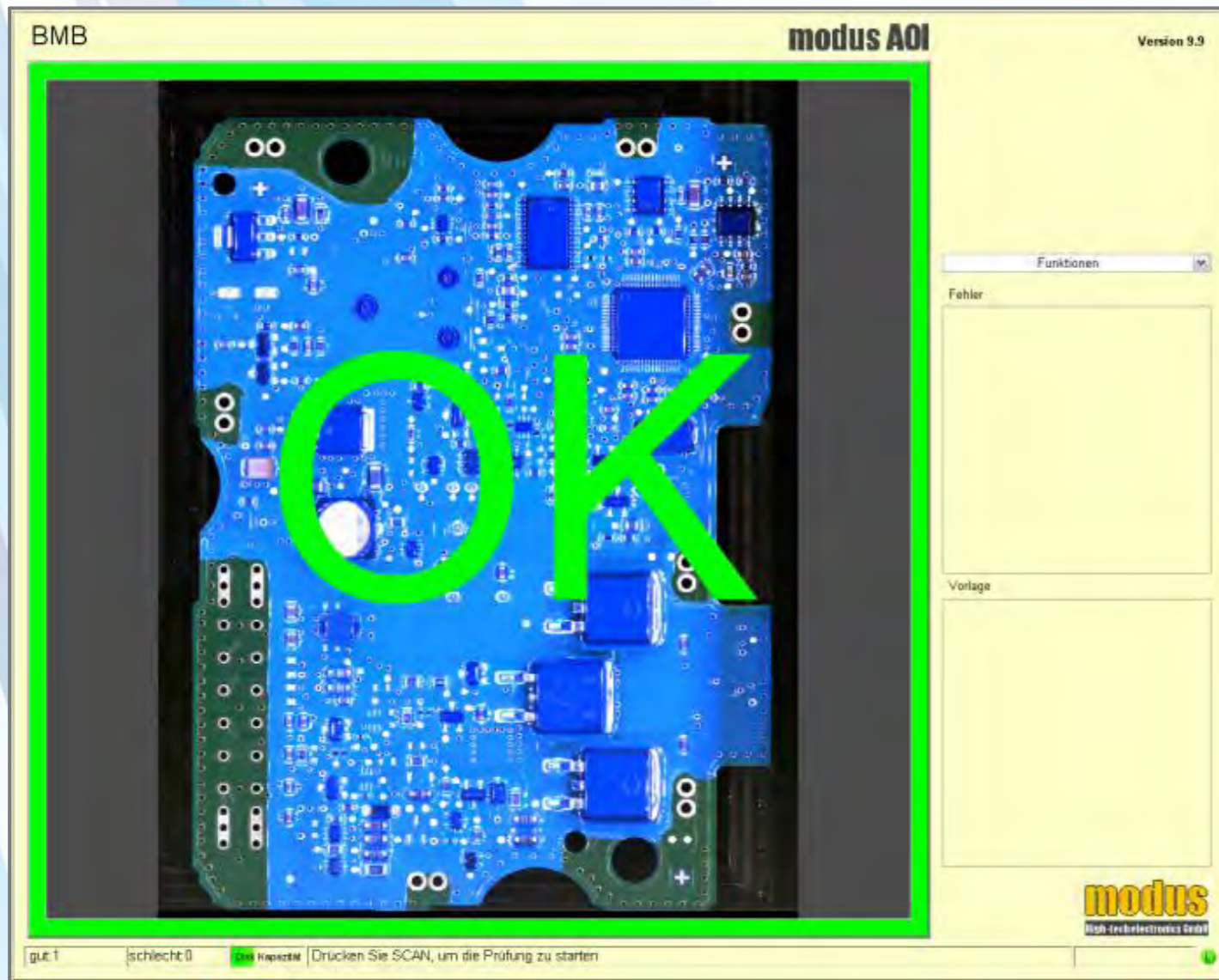
AOI SOFTWARE
Fast and reliable

The actual modusAOI Software supports all image capturing systems of the company modus. Rapid and high-precision image processing is providing a reliable assessment of the test item within a short period of time. Through the new rectification, test plans are now smoothly replaceable between different image capturing systems to achieve maximum flexibility.

- User administration (Function blocking), GUI adjustment

- Internal or external barcode reading and verification with scanner / camera

- Automatic security backup during data writing

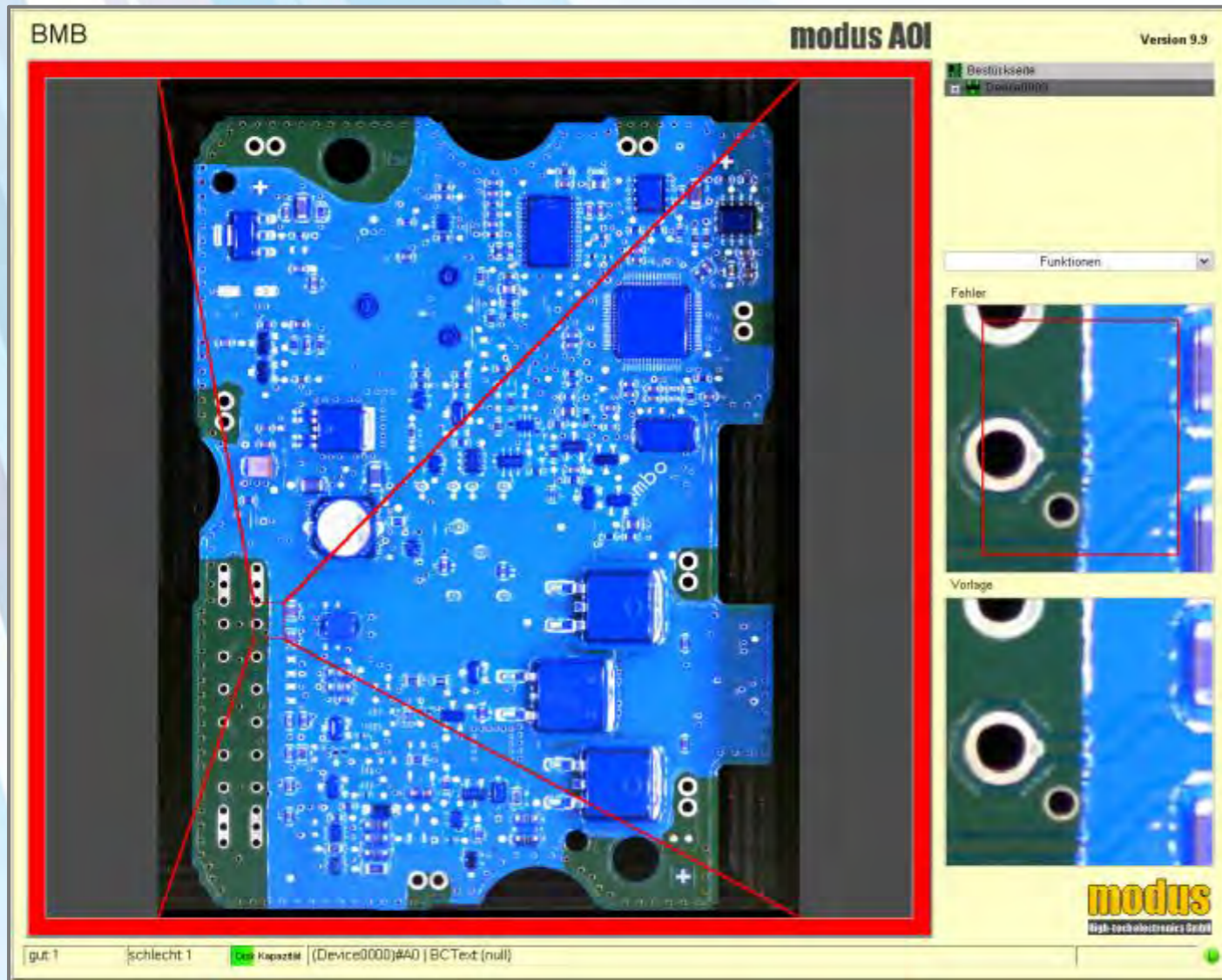- Exact copy interline capability

- Multilingualism

Picture likewise

Easy to operate graphical user interface

- Clearly laid out display of good indication

- Simple to use while processing

- Operator friendly

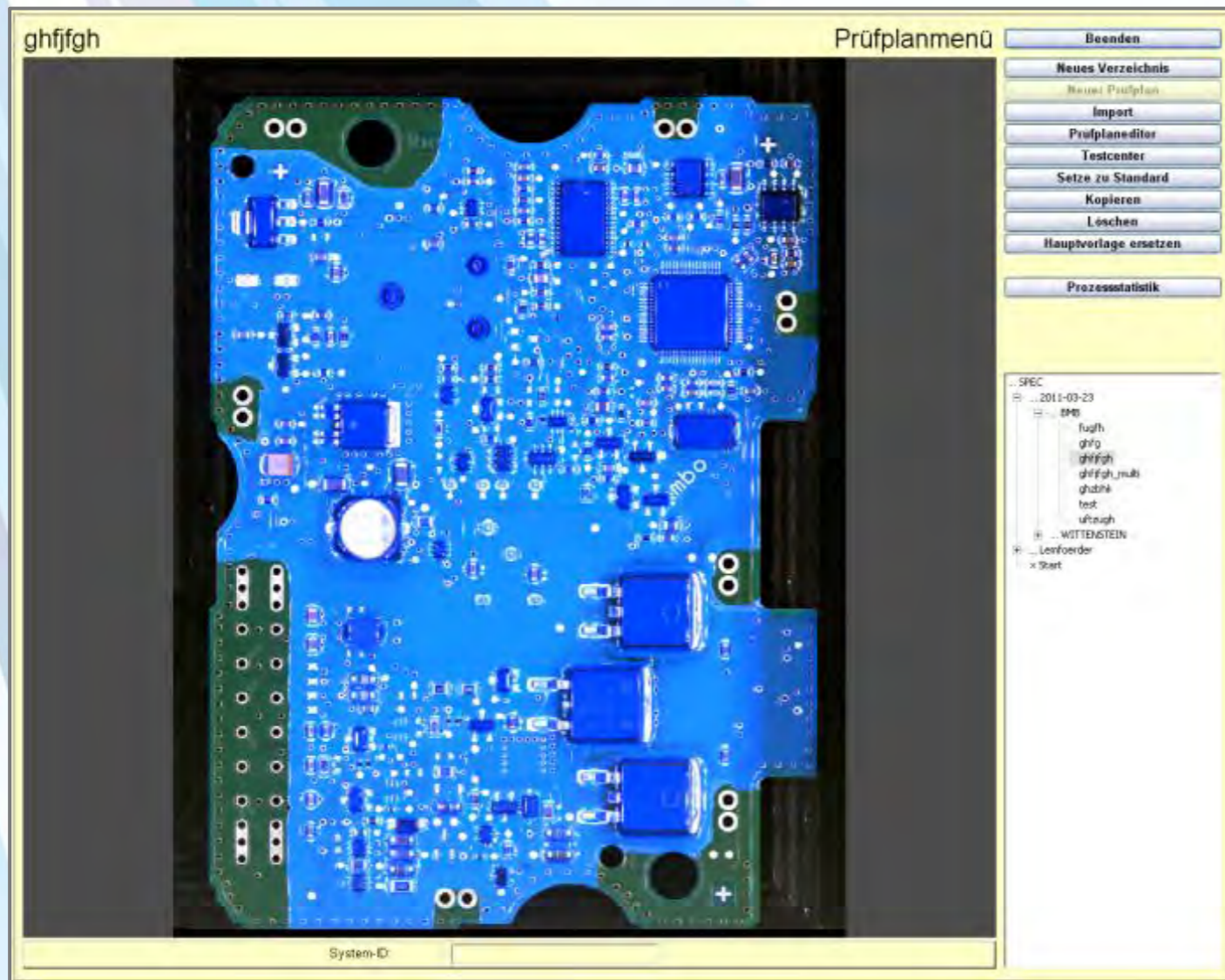# FUNCTION AOI SOFTWARE
Fast and Reliable

Picture likewise

Easy to operate graphical user interface

- Clearly laid out display of failures and good examples

- The type of error will be assigned to the statistics by key press

- Teaching of not experienced users within short time to operate the test interface within a few minutes
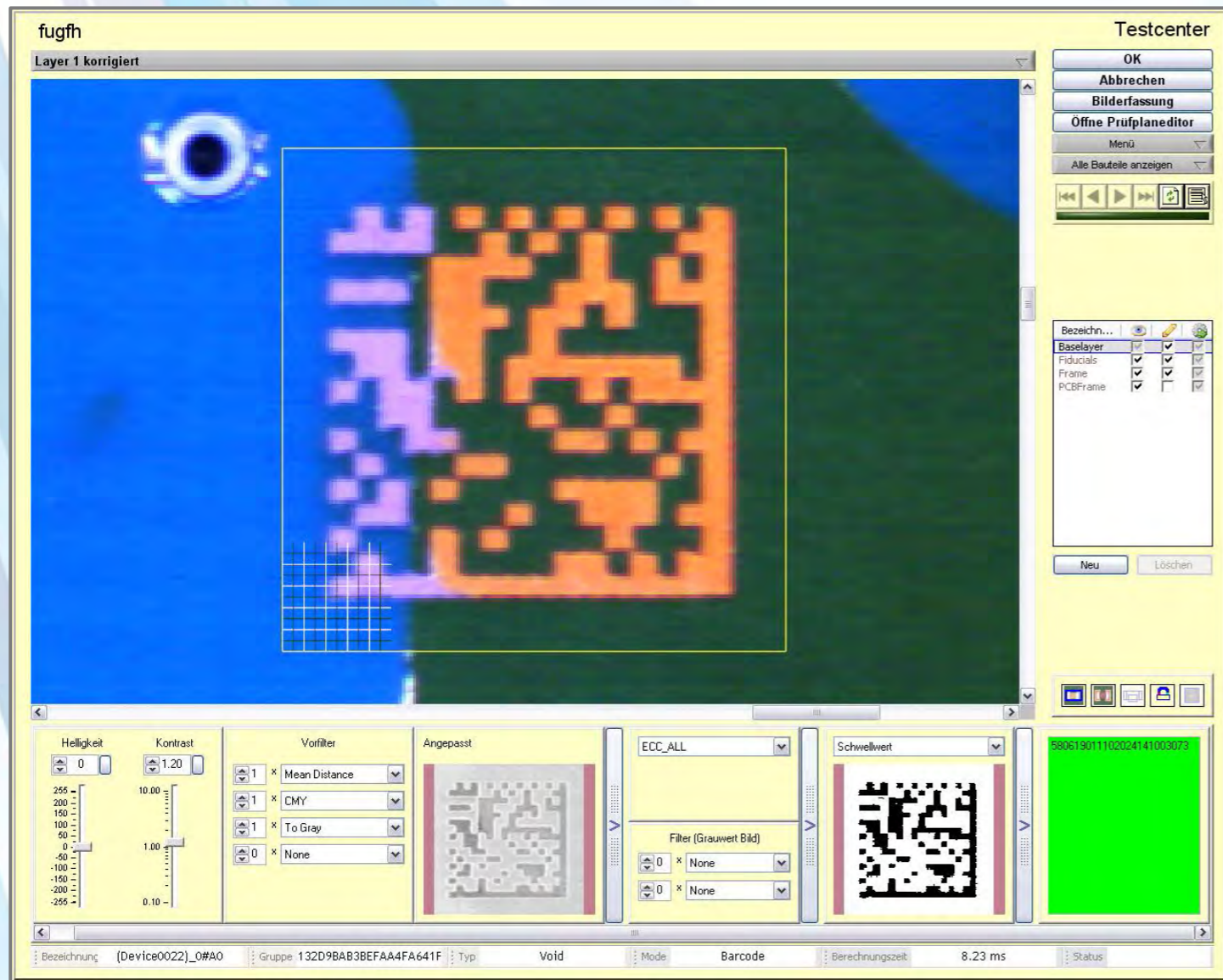
FUNCTION AOI SOFTWARE
Fast and Reliable

Picture likewise

Intuitive test plan creation

- Only one day of training necessary

- Programming a new board for THT-control within 30 minutes

- Easy creation of your own library through test field drawing on the master, which then can be drawn to the library

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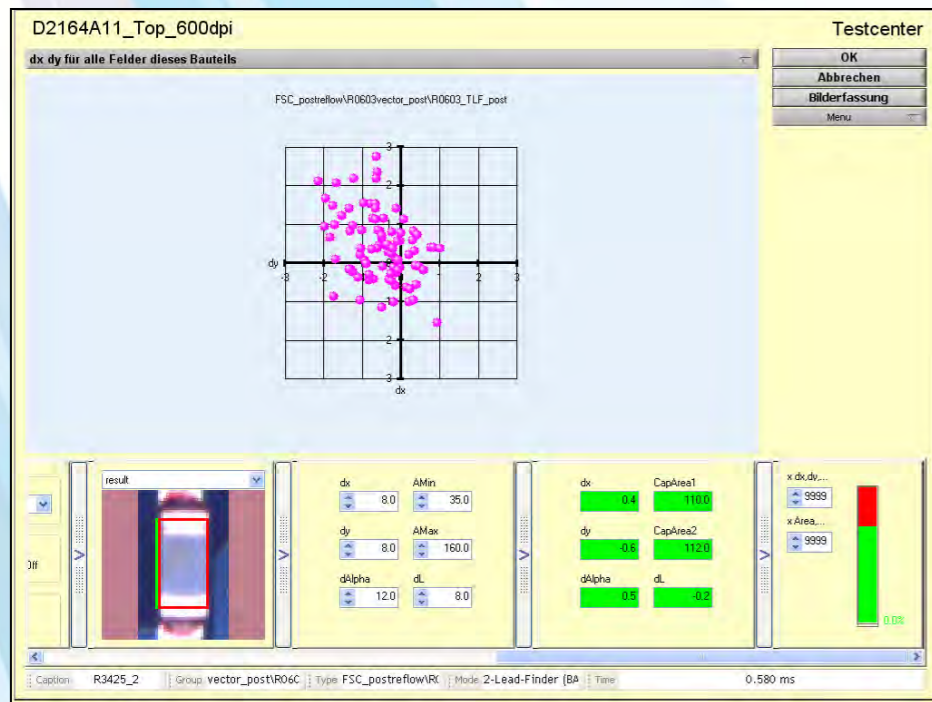# FUNCTION AOI SOFTWARE
Fast and Reliable

Testcenter

- Optimization of test plan parameters
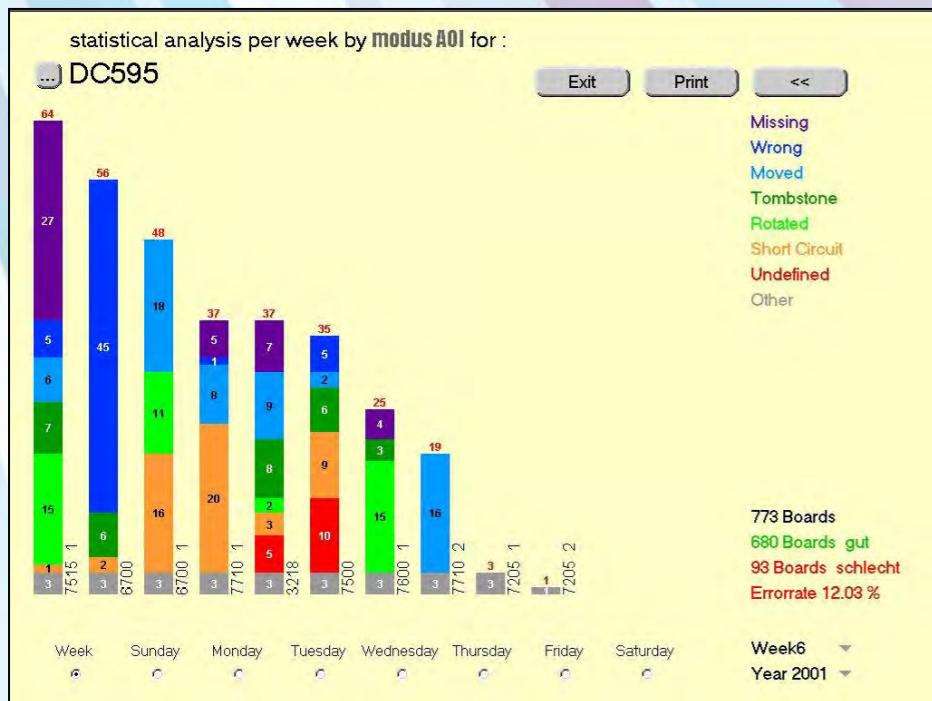- Clear user guidance
- No expertise necessary

Picture likewise

FUNCTION AOI SOFTWARE
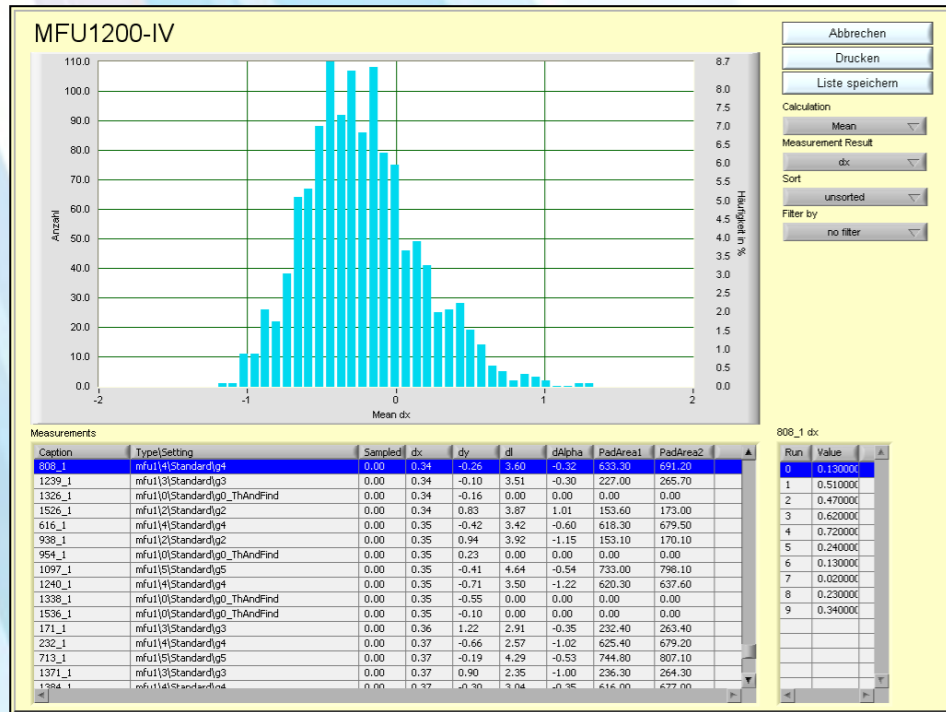## Fast and Reliable

Picture likewise

Picture likewise

Statistic

- Long term statistic

- Traceability:
  Long term assembly documentation with data and failure pictures

- All Full images of the test items can be saved to the documentation

- Test results can be reproduced at any time

FUNCTION AOI SOFTWARE
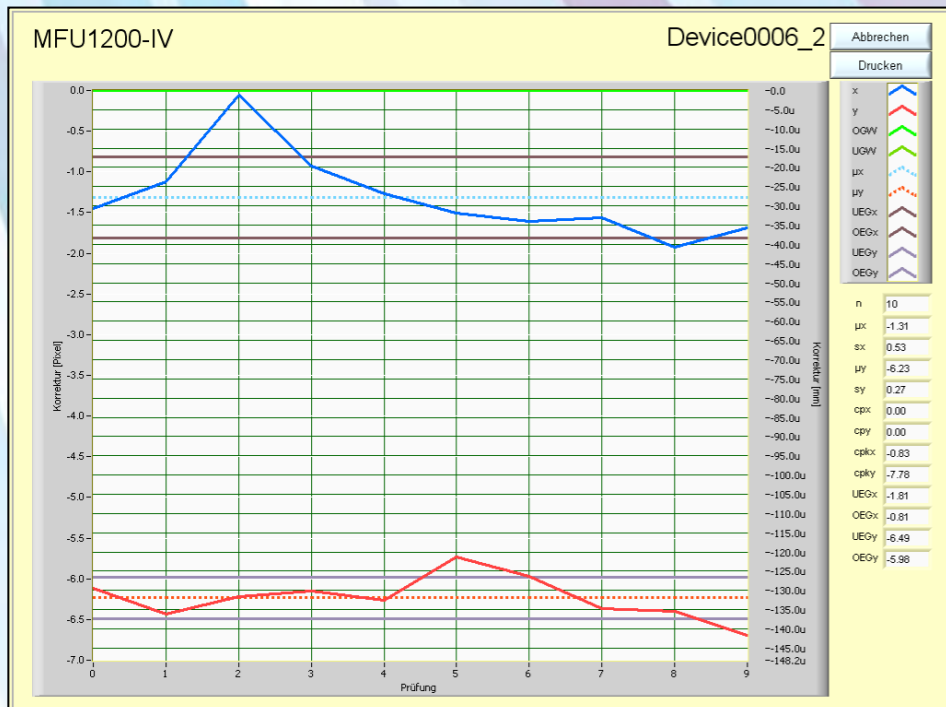## Fast and Reliable

Picture likewise

Picture likewise

Process control

- The running statistic can be realized at any time to control the production

- Direct analysis of manufacturing quality

- Cost savings through fast process improvement

SOLUTIONS...not only product

COMPANY

Seica Automation, located in Seregno (Italy), is part of the SEICA Group, and was founded to provide handling systems for electronics manufacturing able to satisfy every customer requirement.

The Company can supply every kind of automation system for complete production lines, from the simplest to the most complex.

All of our products are manufactured in Italy, under the control of SEICA AUTOMATION R&D and Quality Departments, in full compliance with industry standards.

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