

[www.viztronics.com](http://www.viztronics.com)



## Viztronics – Smart 3D Sensing

3D imaging solutions for industrial inspection & metrology



**Viztronics Smart Solutions.**

PROPRIETARY AND CONFIDENTIAL

上海昊量光电设备有限公司 Phone: 4006-888-532 WeChat: Auniontech Website: [www.auniontech.com](http://www.auniontech.com) E-mail: [info@auniontech.com](mailto:info@auniontech.com)

## Viztronics – Company Vision Statement

### ▶ Our Vision –

- ⊕ **Quality inspection & automation solutions using 3D imaging**

### ▶ Our Mission is to provide:

- ⊕ High resolution 3D imaging for more reliable quality inspection
- ⊕ End to end solutions for process automation & robotic guidance
- ⊕ Solutions for 3D imaging of challenging materials (glass and shiny objects)
- ⊕ Smart defect detection by combining 3D imaging with Deep Learning & AI

**Simple Solutions for Challenging 3D Inspection Problems**

## Our Products



### Micro<sup>2</sup>

#### MICRO SCALE 3D

- PCB Inspection
- Mobile Assembly Inspection
- Mobile Battery Compartment Inspection
- Automated Optical Inspection
- Solder Paste Inspection
- Medical Device Assembly
- SMT Packaging Inspection



### Macro<sup>2</sup>

#### MACRO SCALE 3D

- 3D Industrial Inspection
- Reverse Engineering
- 3D Printing Quality Control
- Face Scanning
- Full body scanning
- Orthopedics
- Dental Moulds



### Robo<sup>2</sup>

#### 3D BIN PICKING & ROBOTIC GUIDANCE

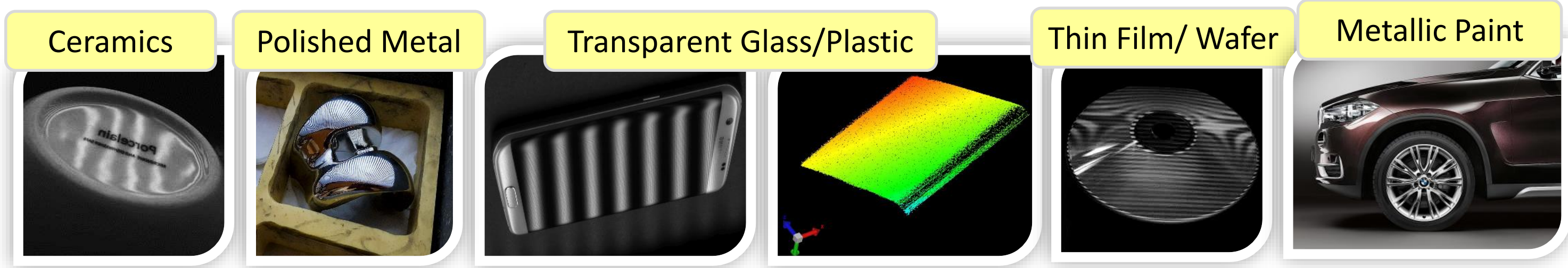
- 3D Bin Picking
- Vision guided robotics
- Closed loop process control



### Trans<sup>2</sup>

#### 3D FOR TRANSPARENT GLASS

- Mobile Glass Screen Inspection
- LCD Screen Inspection
- Automobile Windscreen inspection
- Metal sheet inspection
- Paint quality inspection



Ceramics

Polished Metal

Transparent Glass/Plastic

Thin Film/ Wafer

Metallic Paint

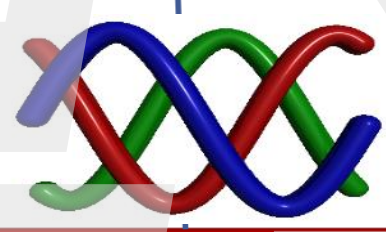
Reflective



Deflectometry

5 to 20  $\mu\text{m}$  resolution

Smart Phaze



Trans<sup>2</sup>



50 to 200 mm FOV

5 to 20  $\mu\text{m}$  resolution

Small FOV

Micro<sup>2</sup>

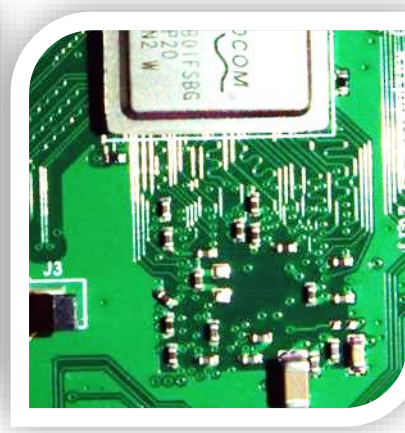
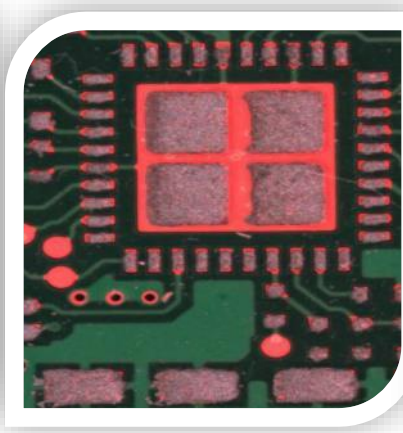
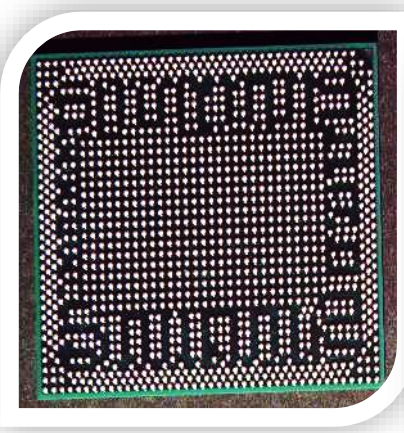
500 to 2000 mm FOV

50 to 200  $\mu\text{m}$  resolution

Bigger FOV



Macro<sup>2</sup>



BGA

S Paste

PCB/AOI

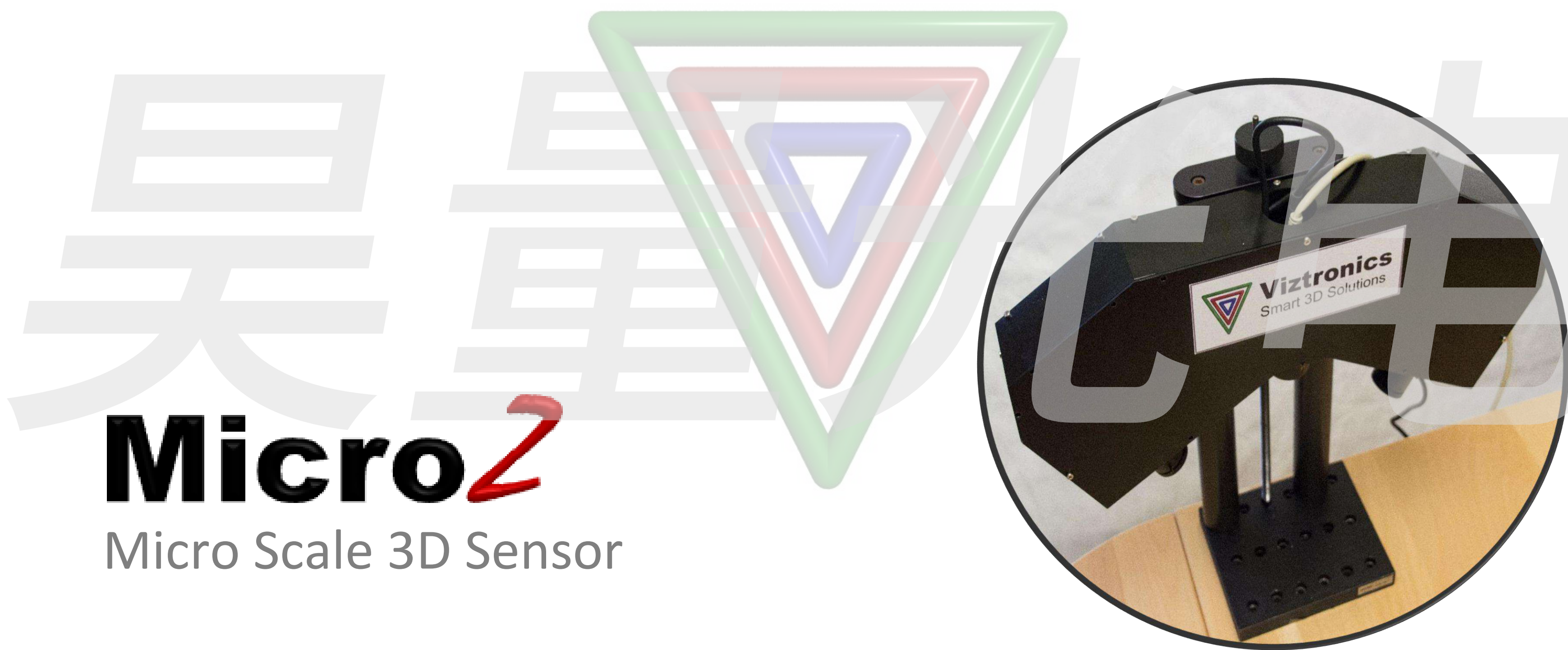
Bearing

Mobile

Aerospace

Rev. Engg

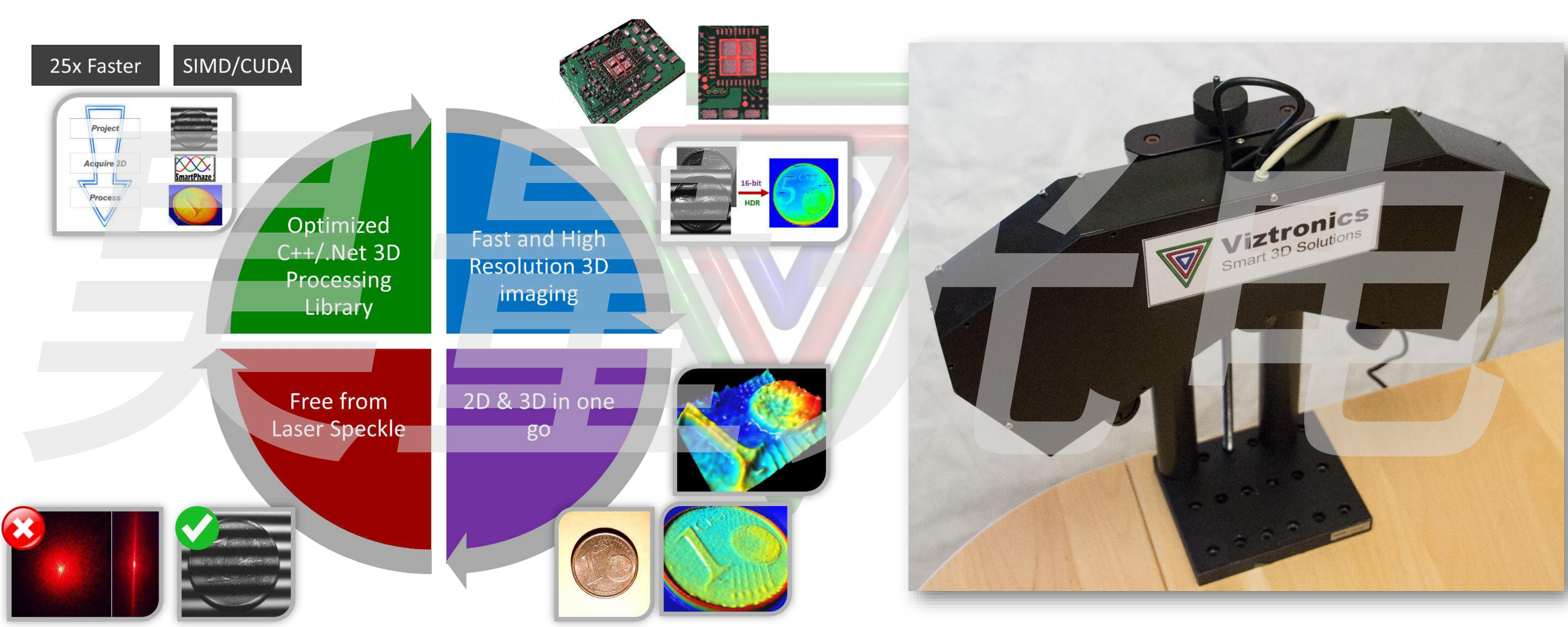
Bin Picking



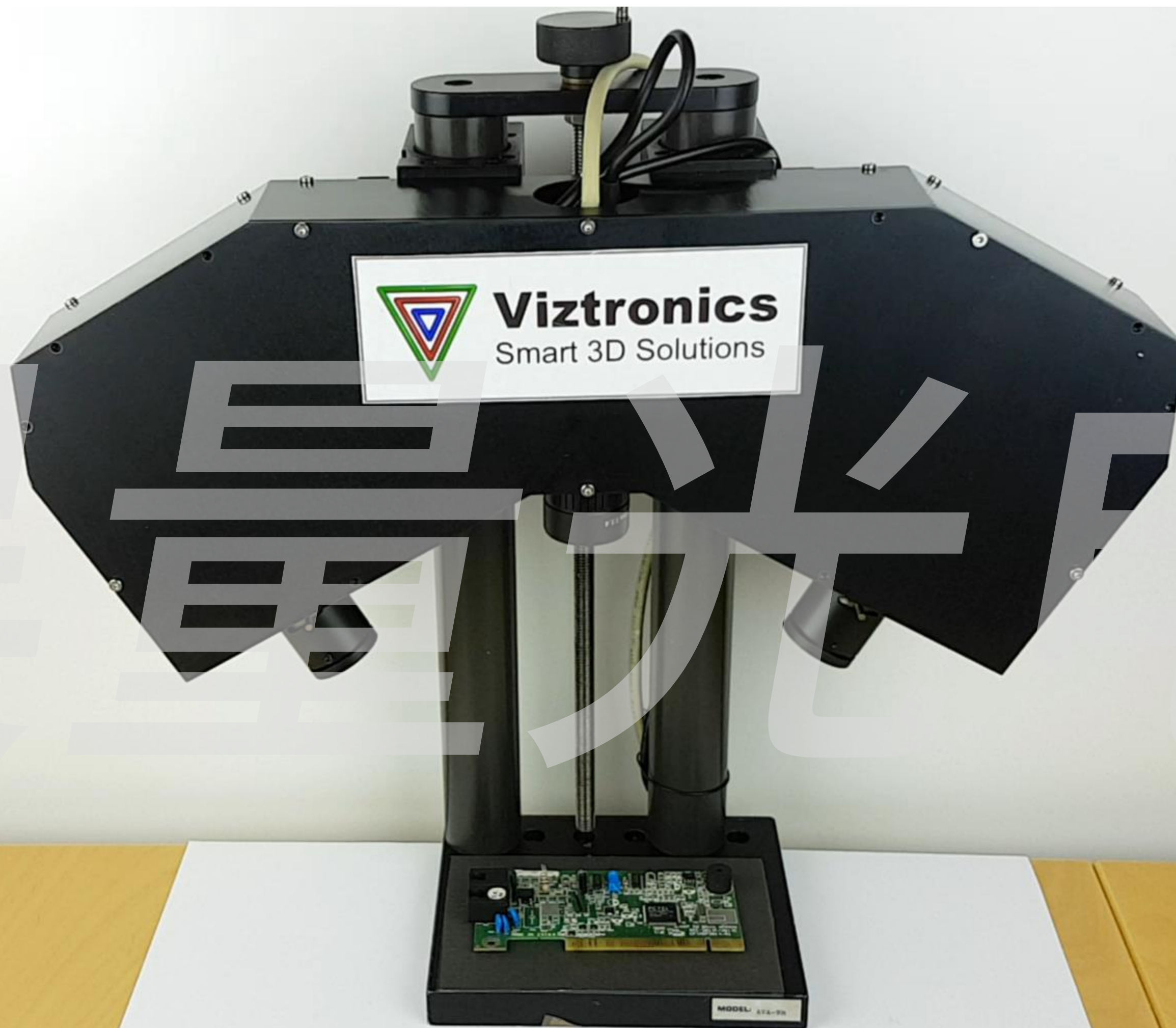
# Micro<sup>2</sup>

Micro Scale 3D Sensor

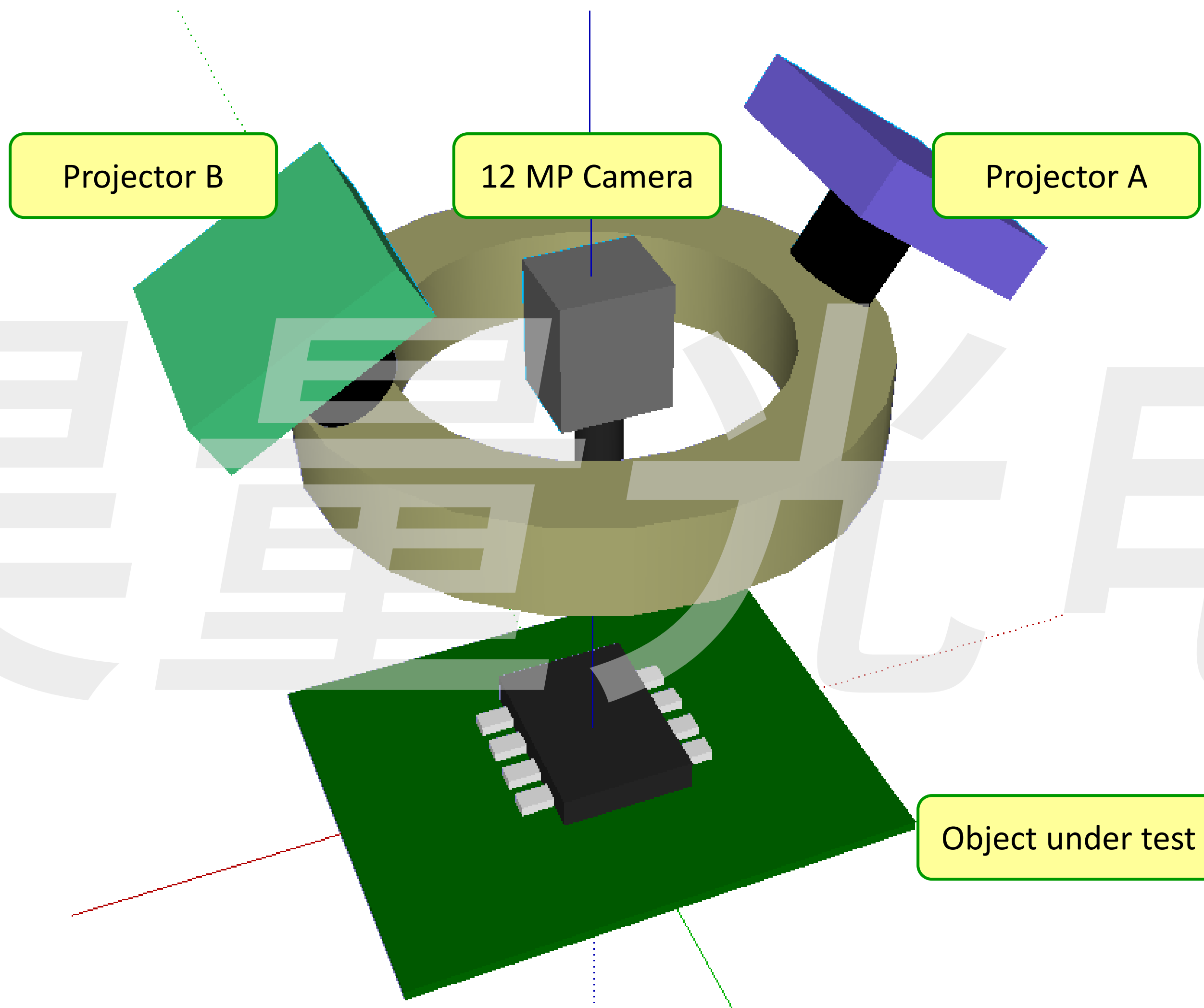
## Micro Scale Inspection for Mobile and PCB markets



# MicroZ – Video of Operation



## Sensor setup

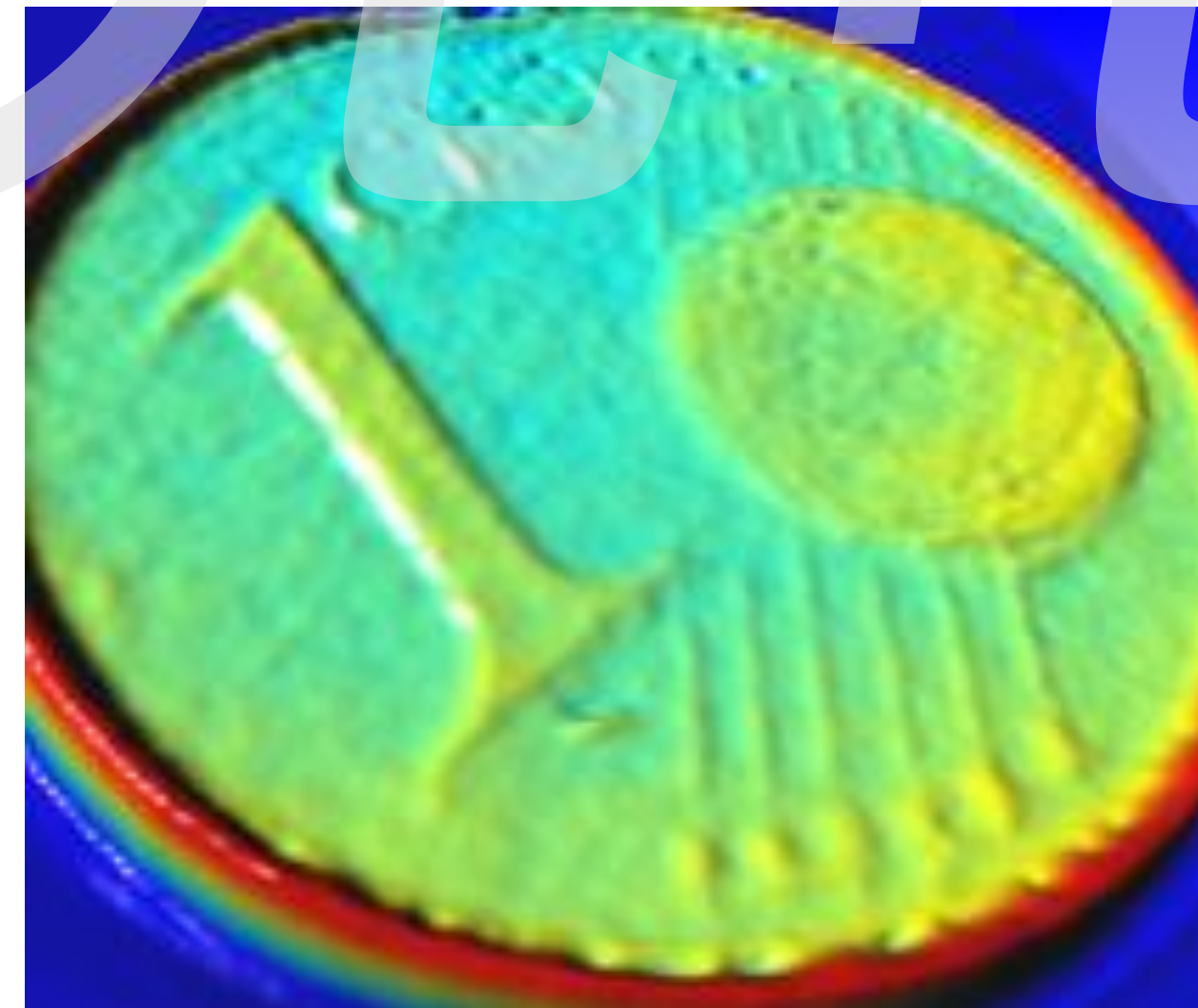
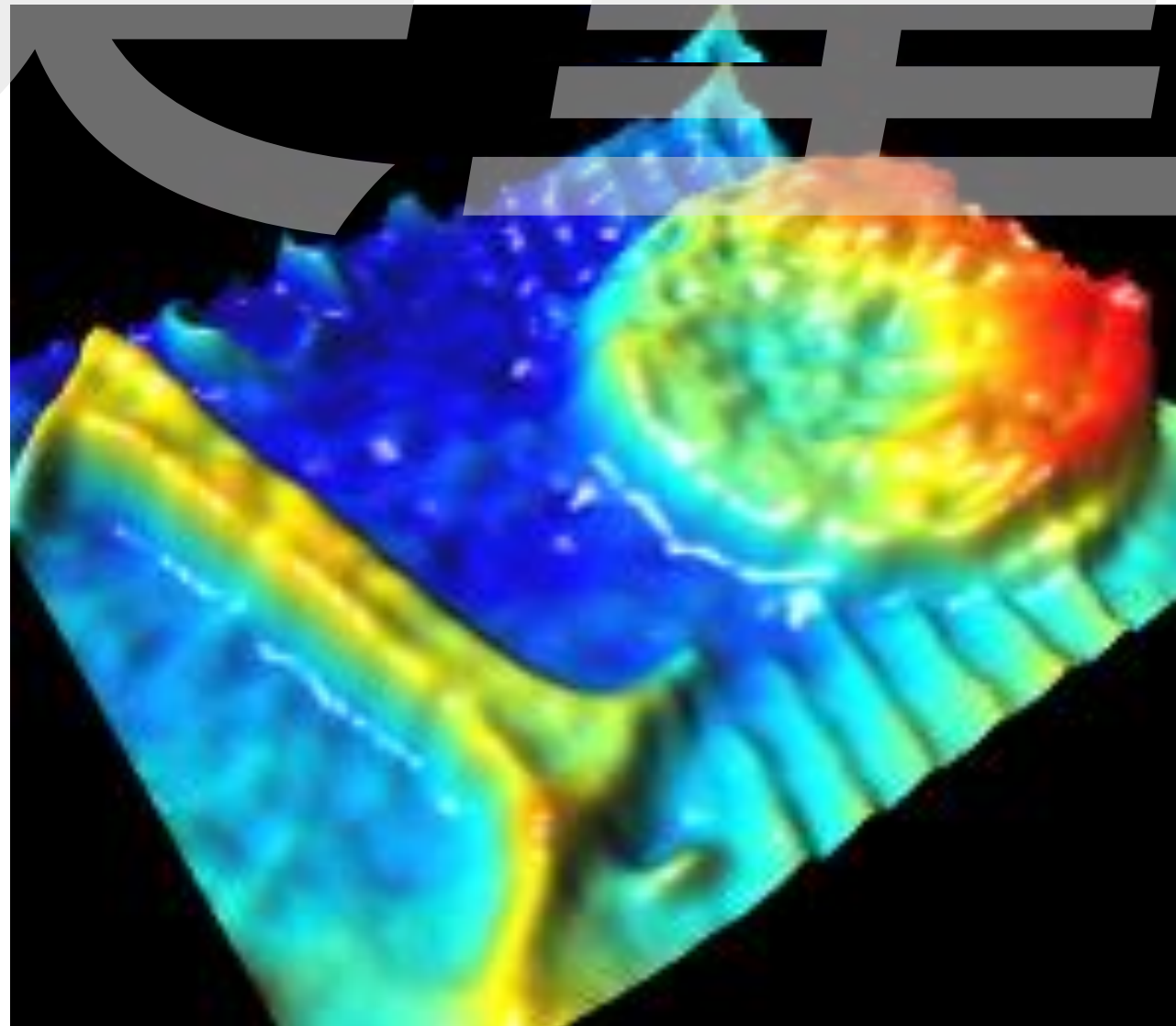
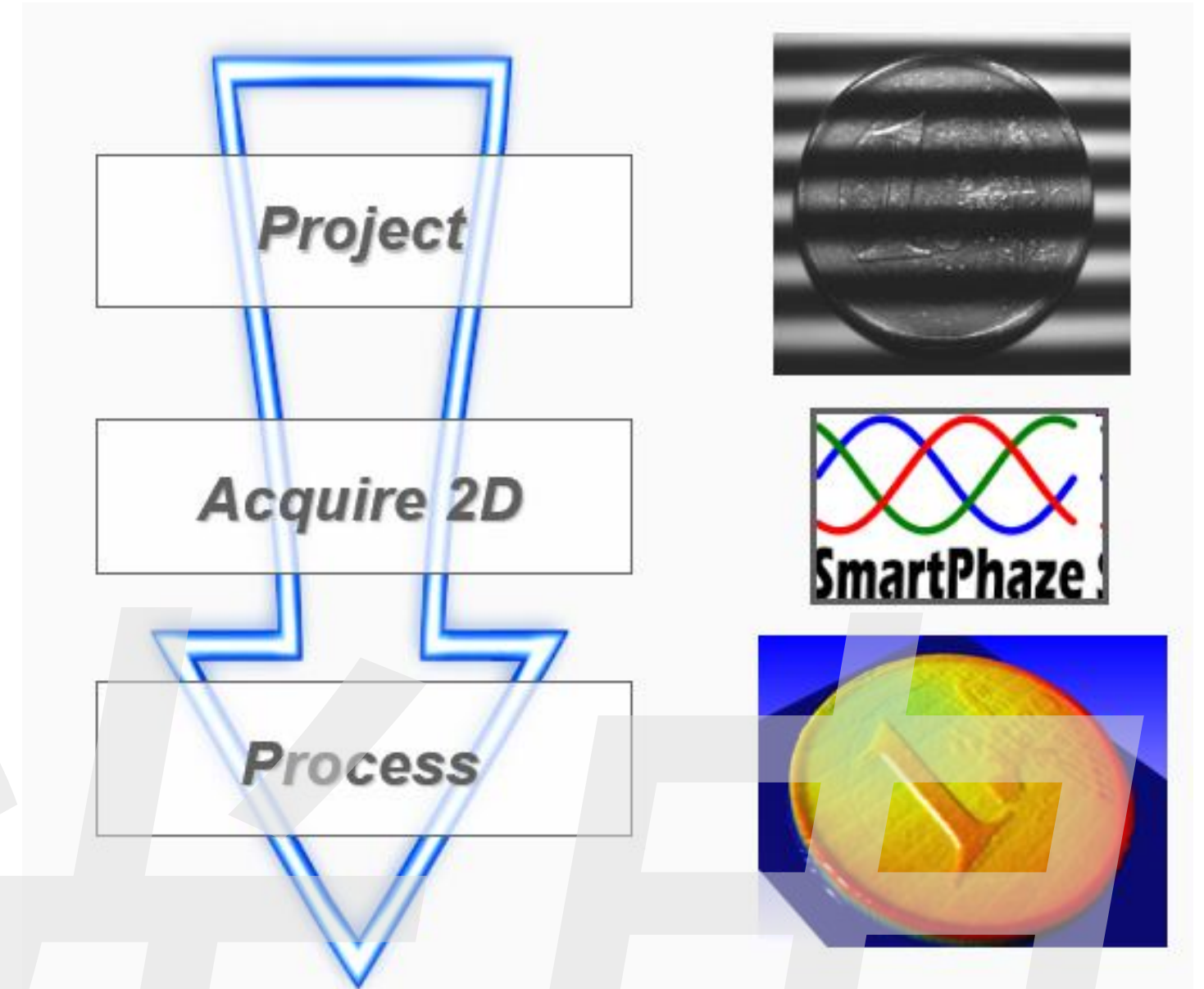
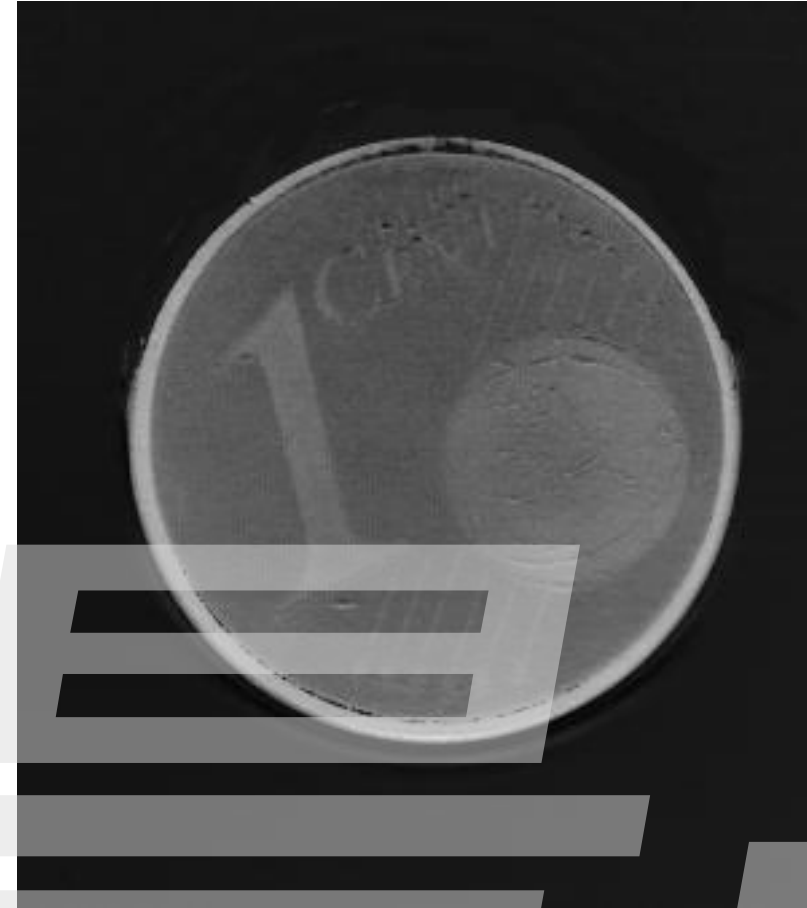




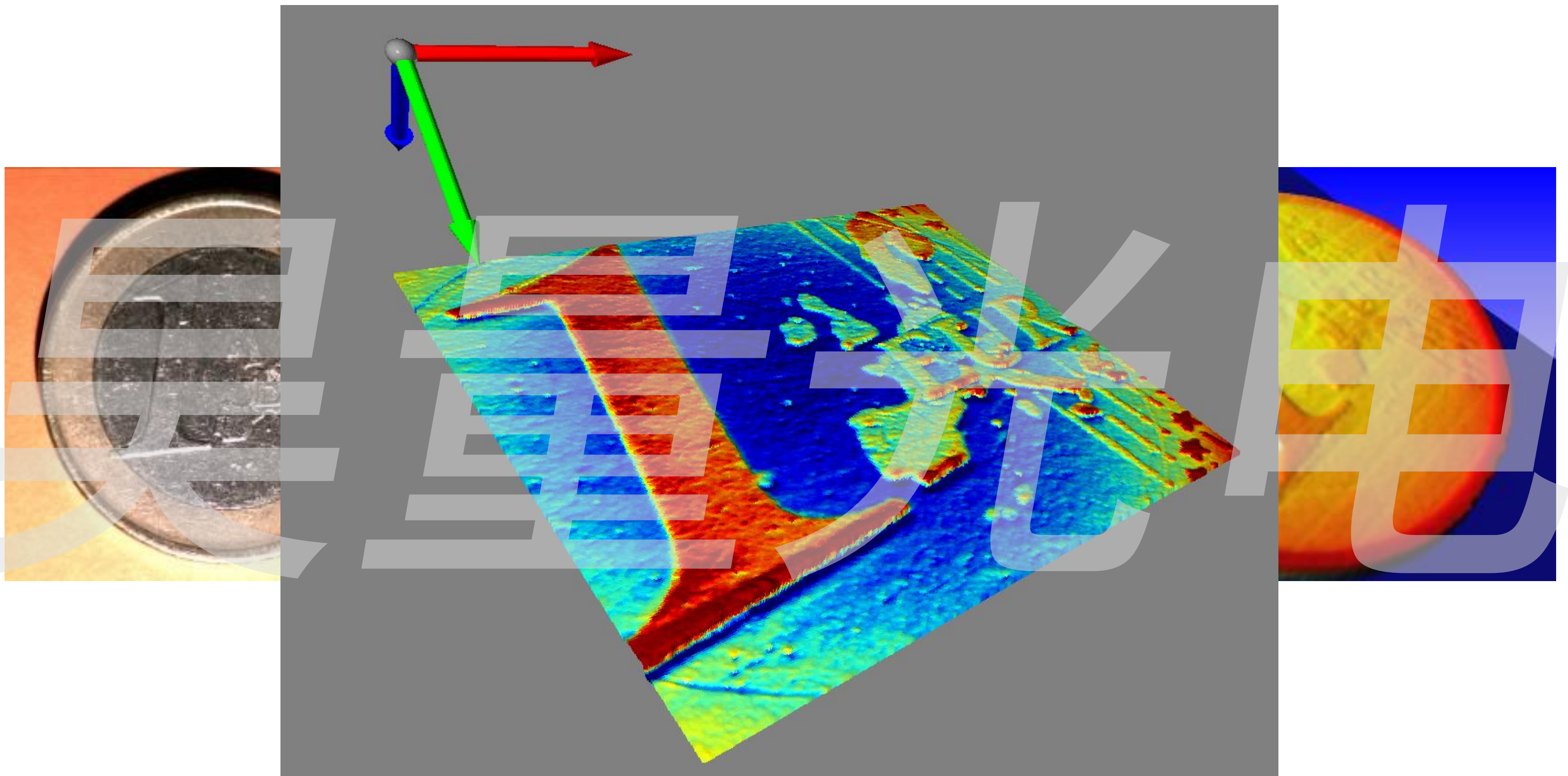
## MicroZ Specs

| Attribute                     | Value                            |
|-------------------------------|----------------------------------|
| Sensor Field of view (FOV)    | 100mm x 75mm                     |
| Camera Resolution             | 12 Mega Pixel                    |
| Camera Connection to PC       | Gigabit Ethernet                 |
| 2D Pixel size (XY Resolution) | 25 $\mu\text{m}$                 |
| 3D Pixel size (Z Resolution)  | 20 $\mu\text{m}$                 |
| 3D Range                      | 20 mm                            |
| 3D acquisition time           | 8 seconds                        |
| Operating System              | Windows 10                       |
| PC Requirements               | Intel i5 or better with 8GB+ RAM |

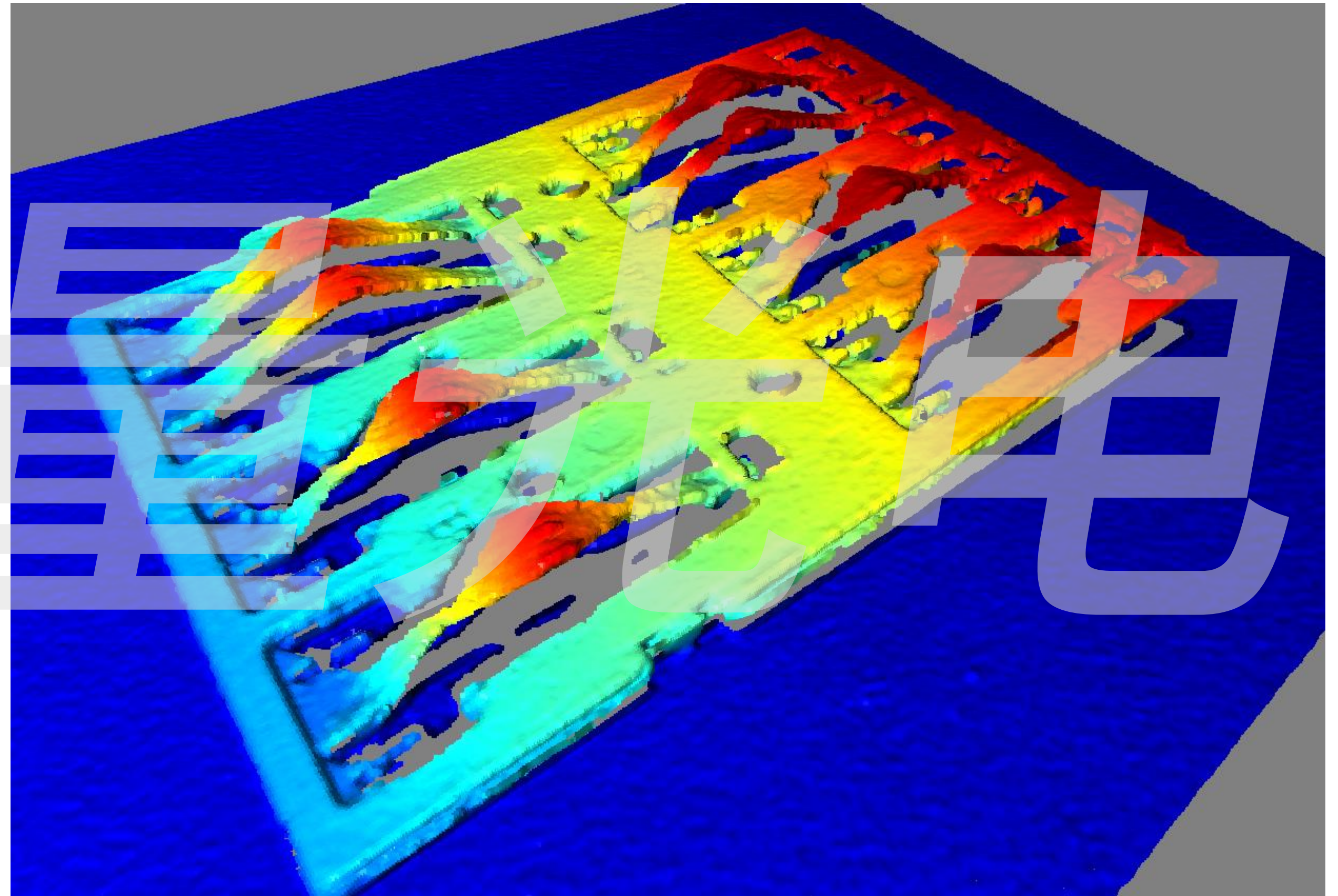
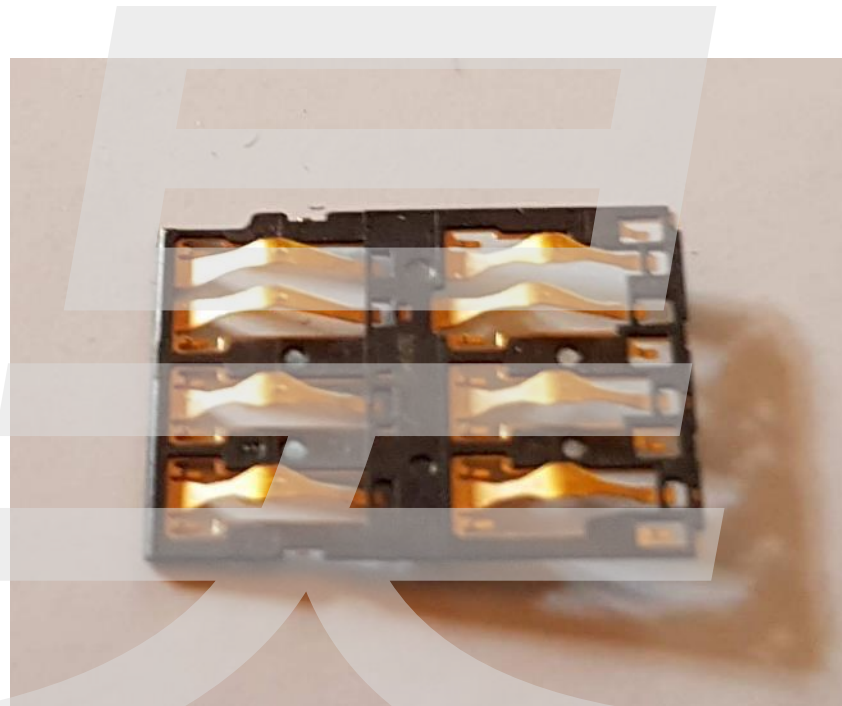
# 3D Image Acquisition Steps



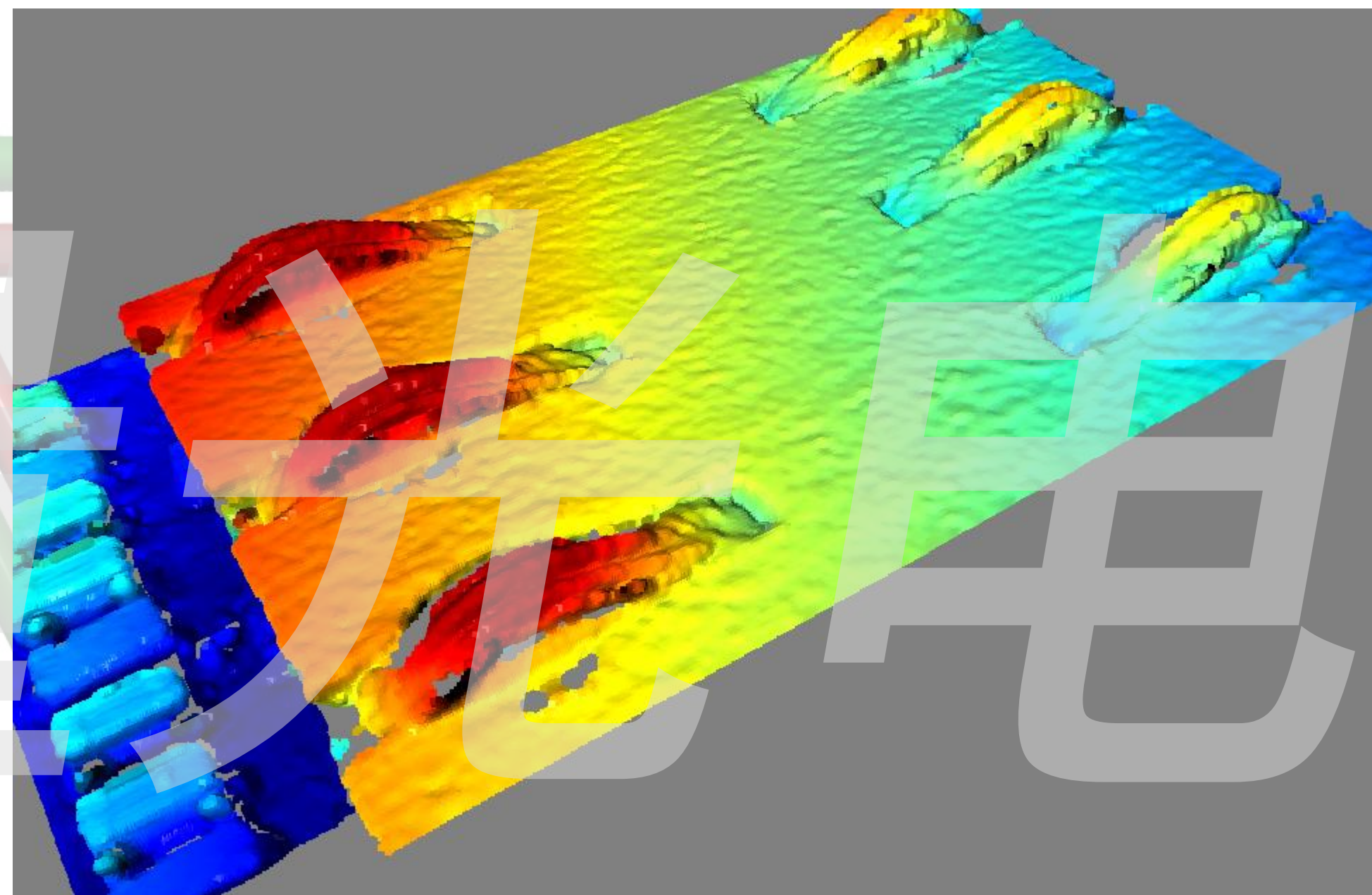
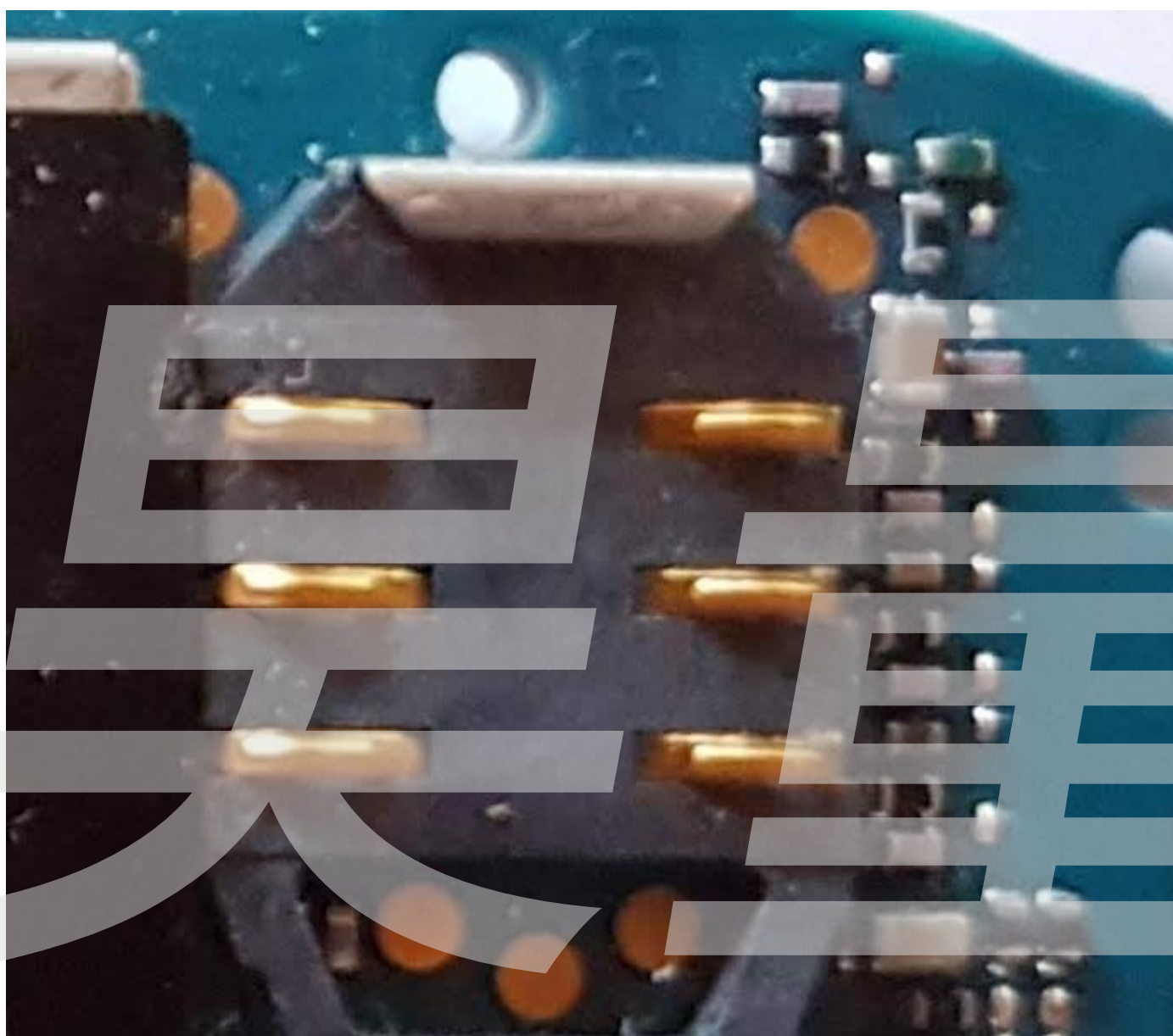
## Example images for Micro-scale inspection



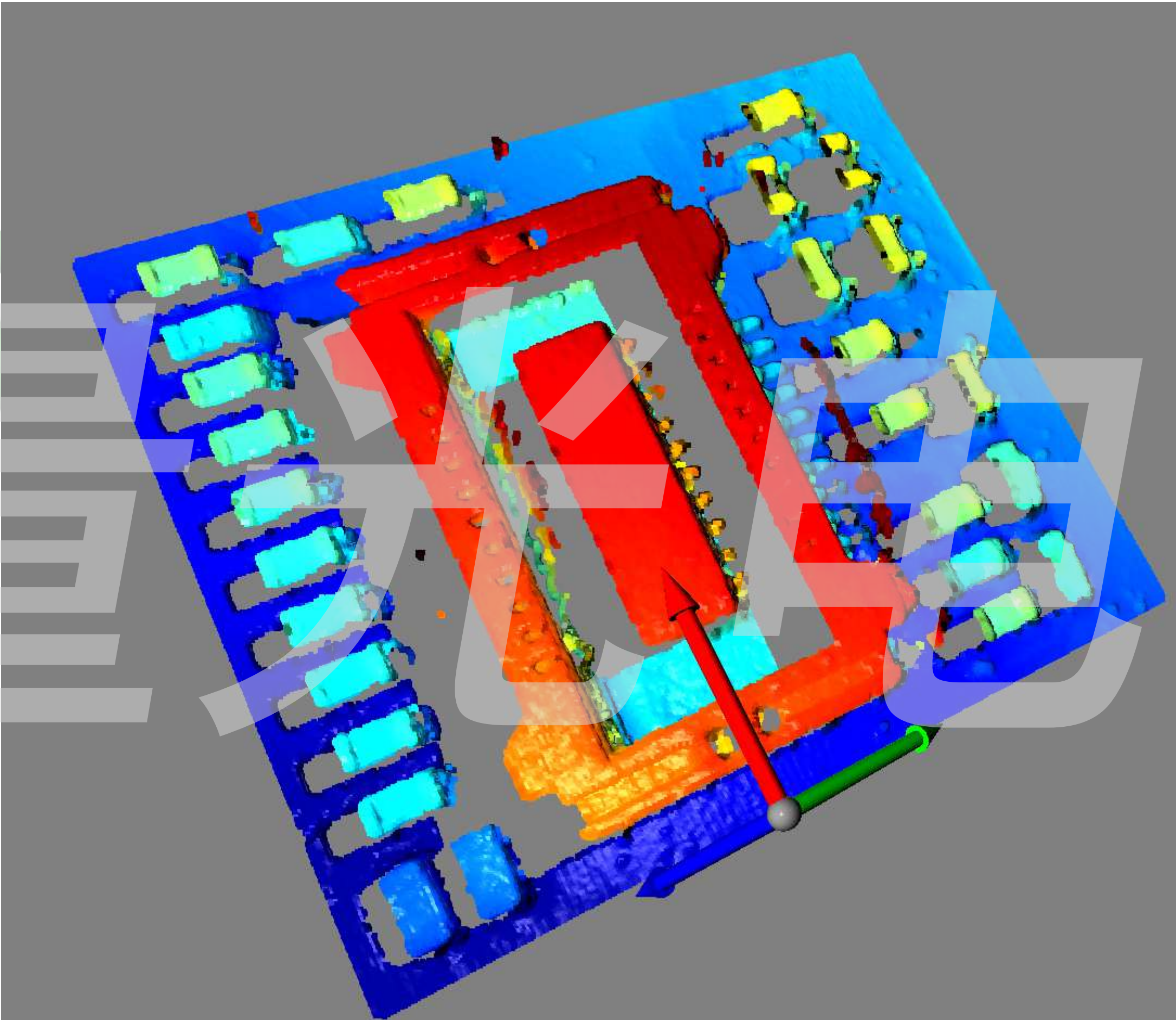
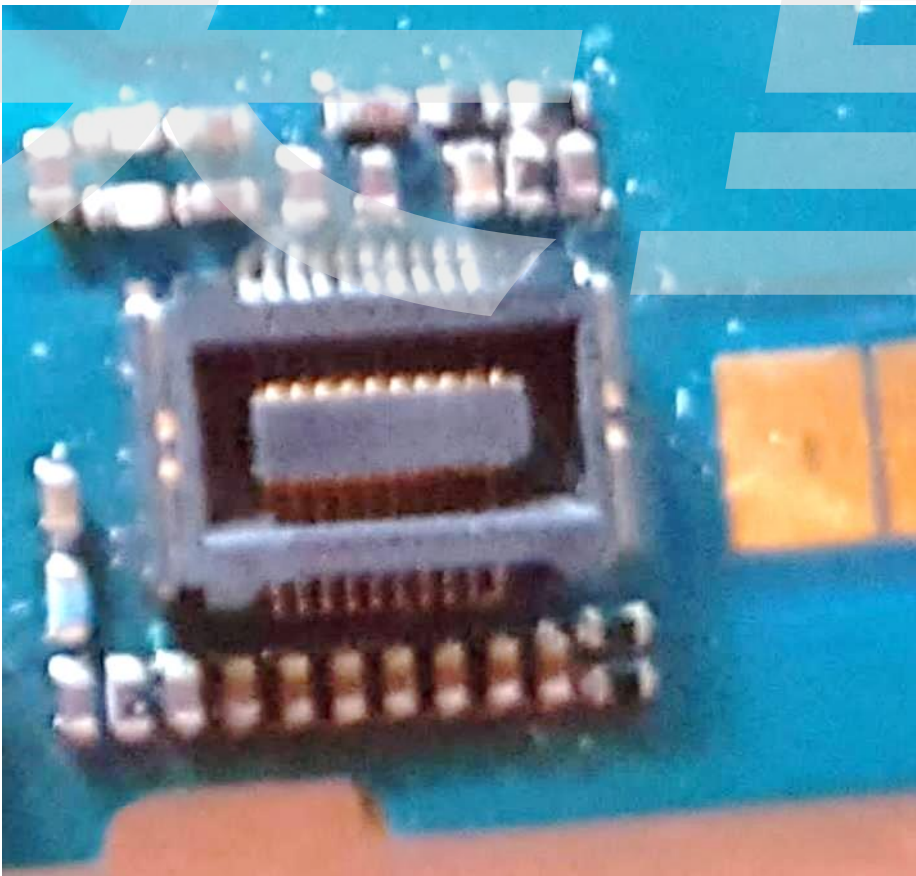
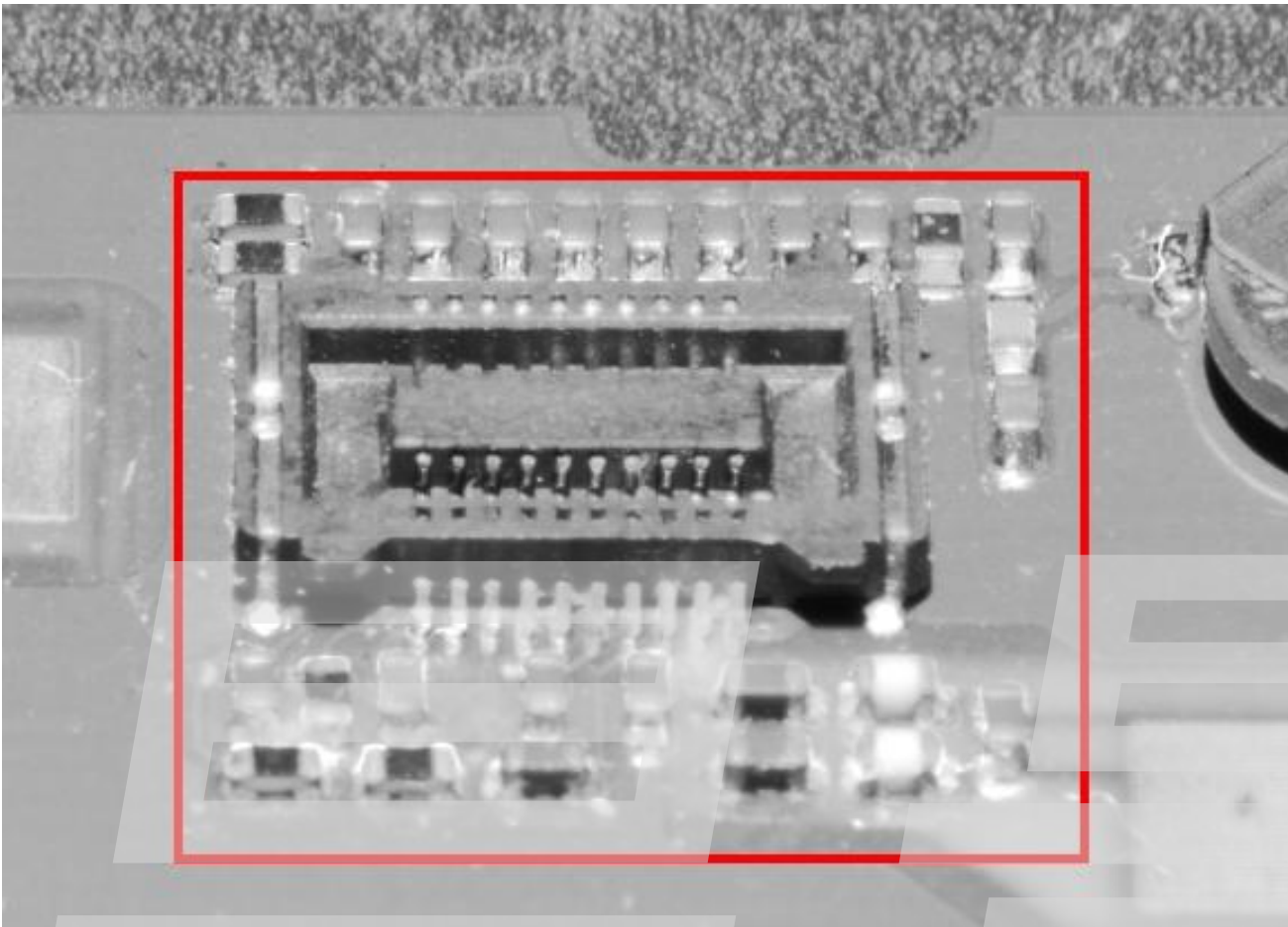
## Example images for Micro-scale inspection – SIM Connector



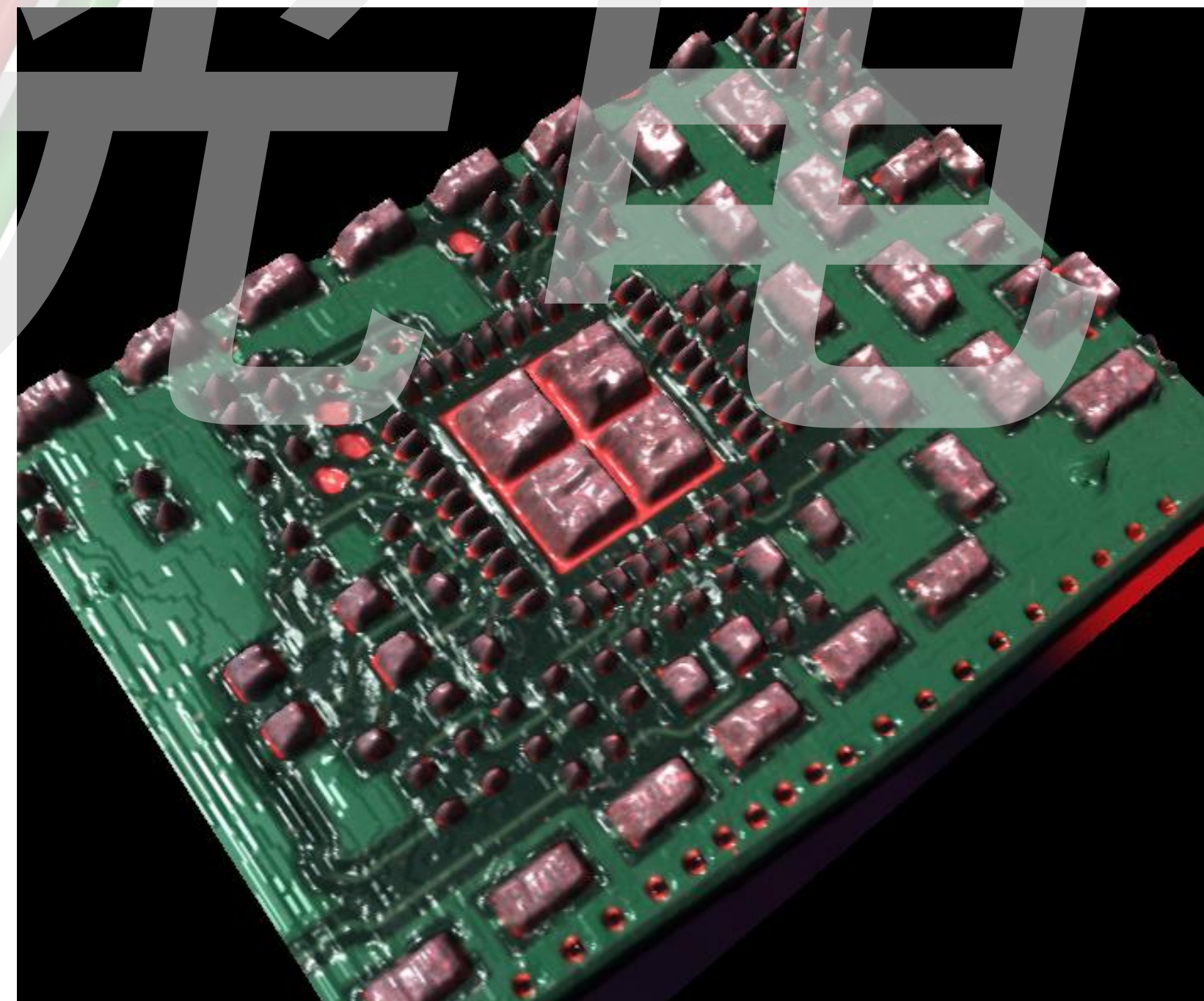
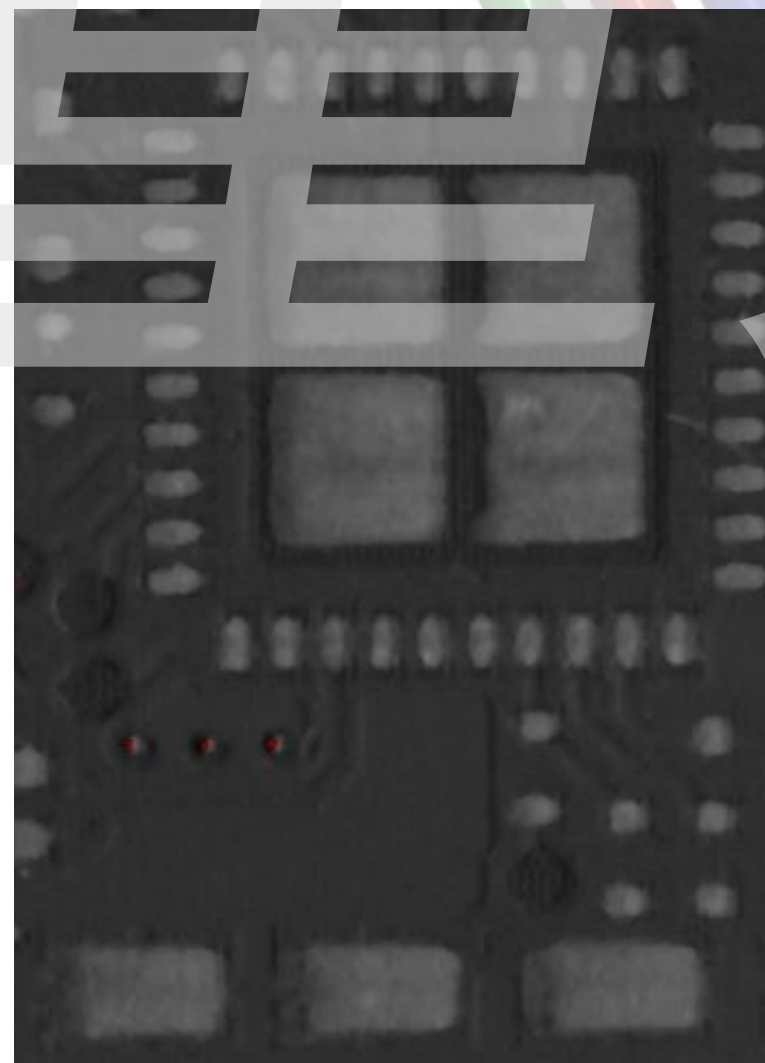
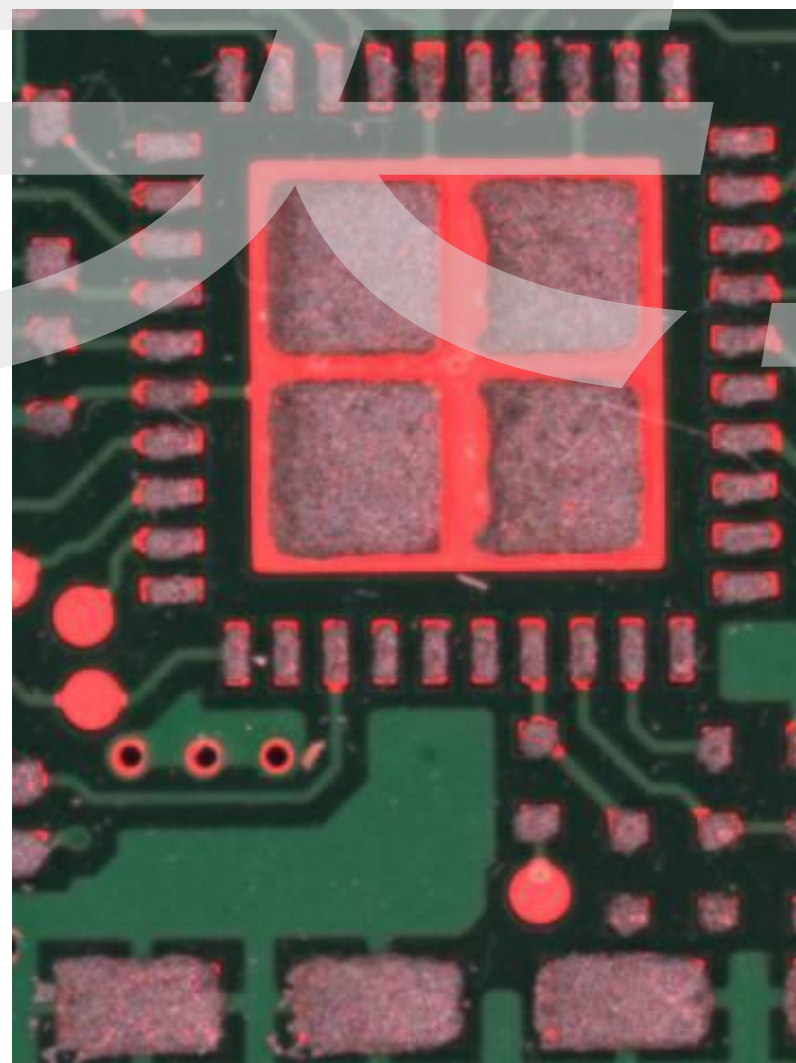
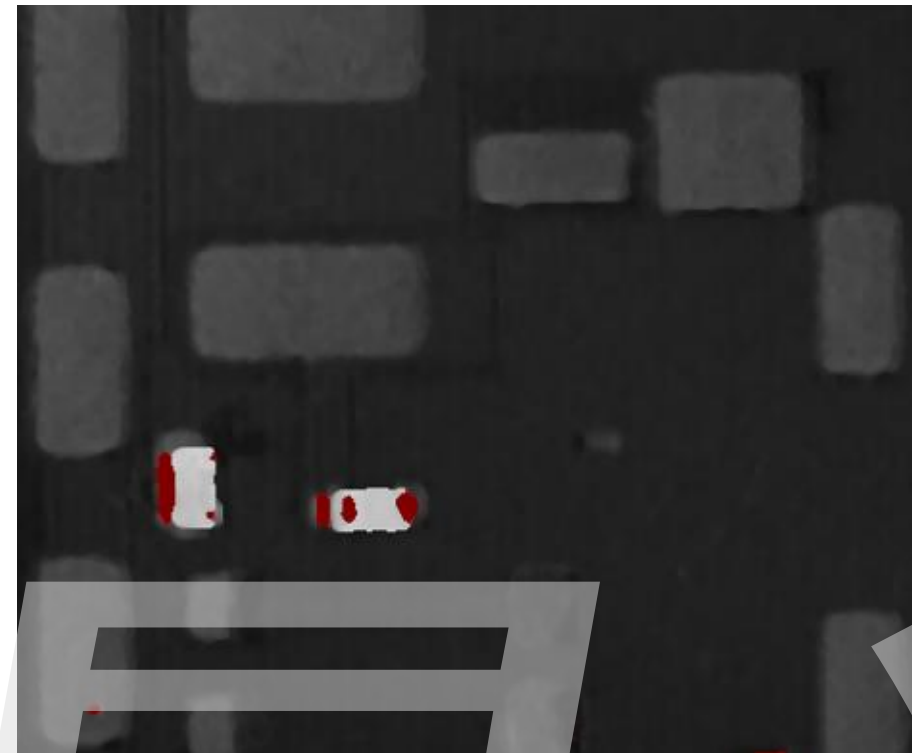
## Example images for Micro-scale inspection – SIM Connector



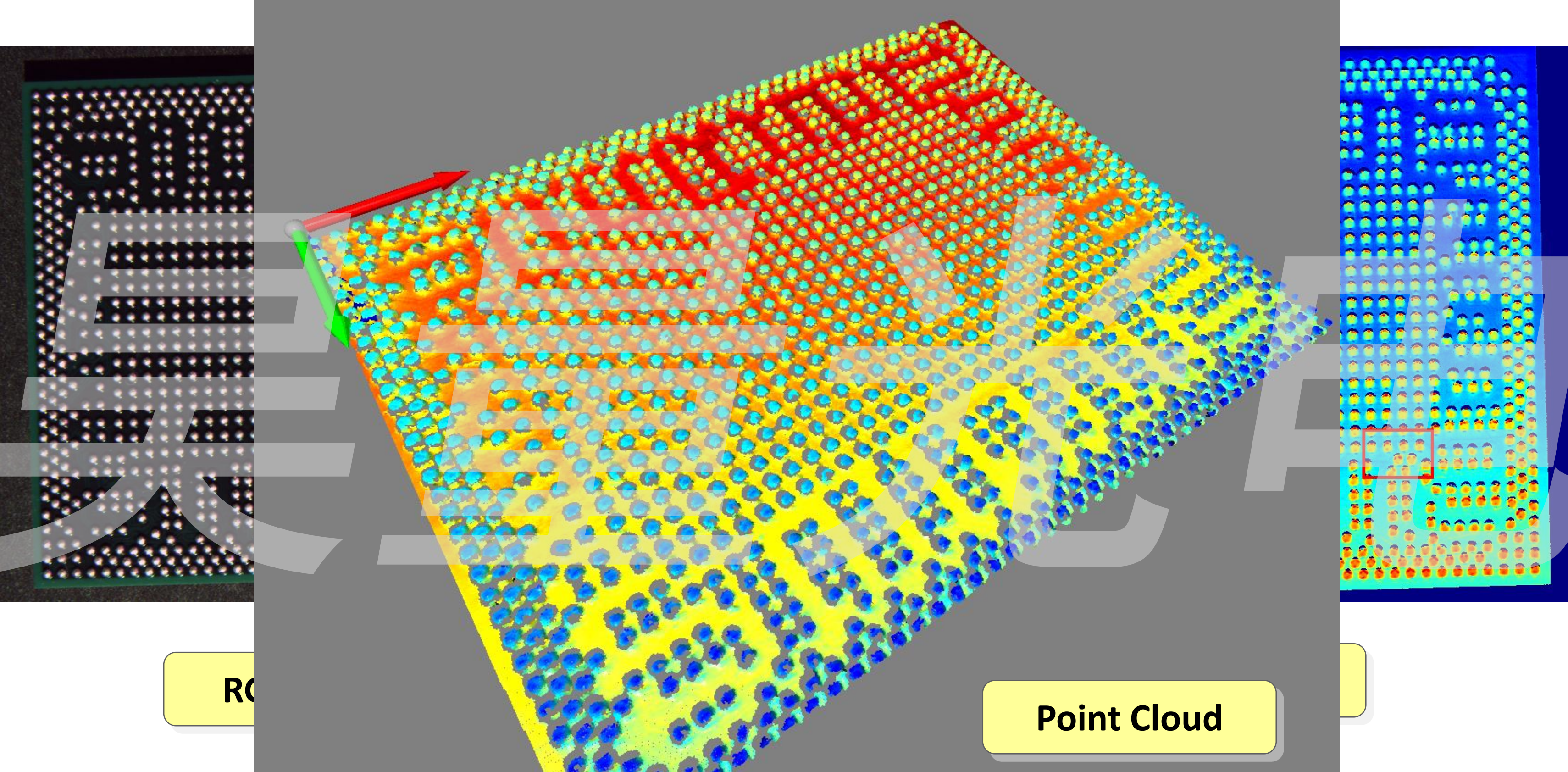
# Example images for Micro-scale inspection – SIM Connector



# Solder Paste Inspection

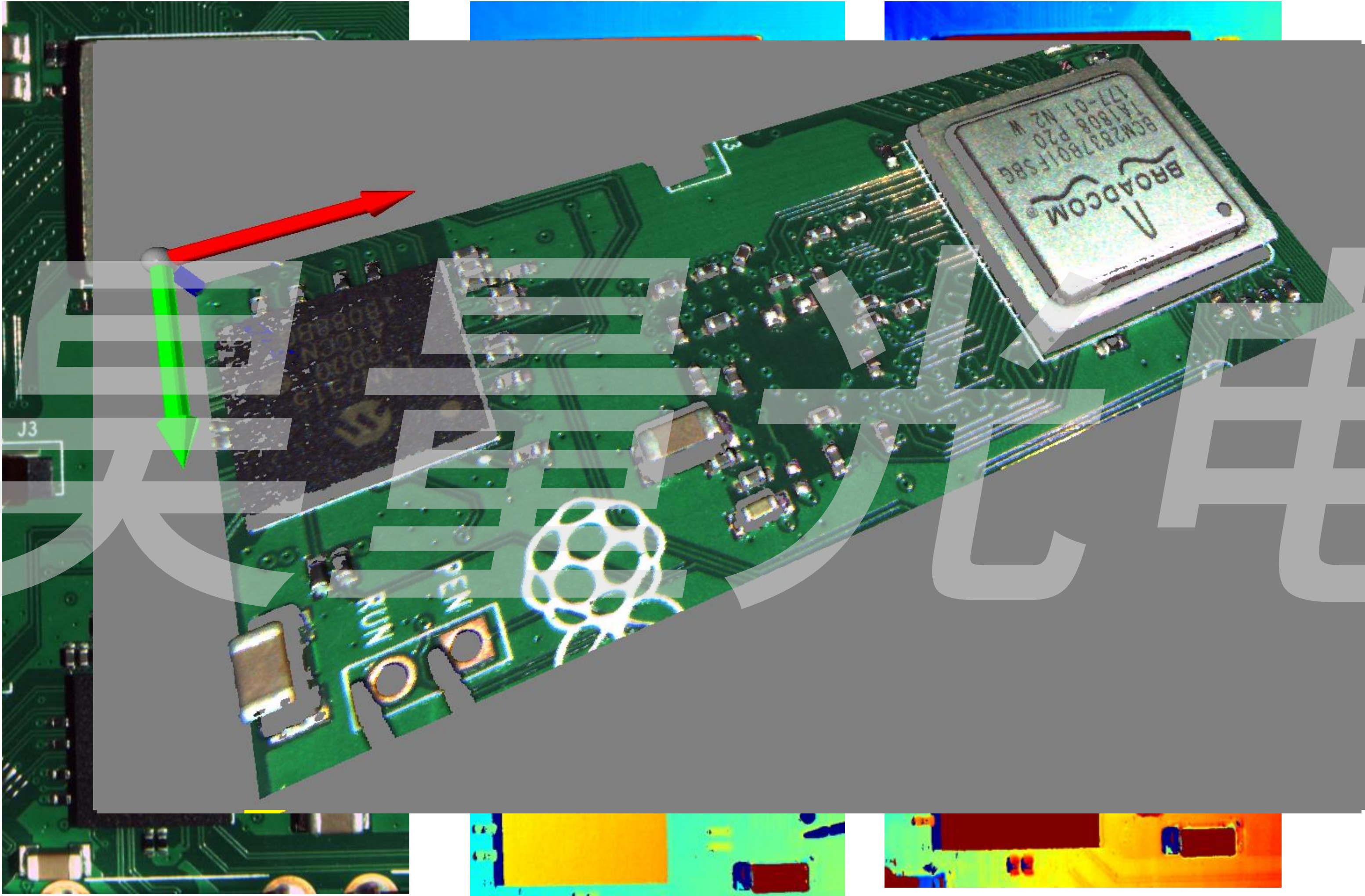


# BGA Inspection





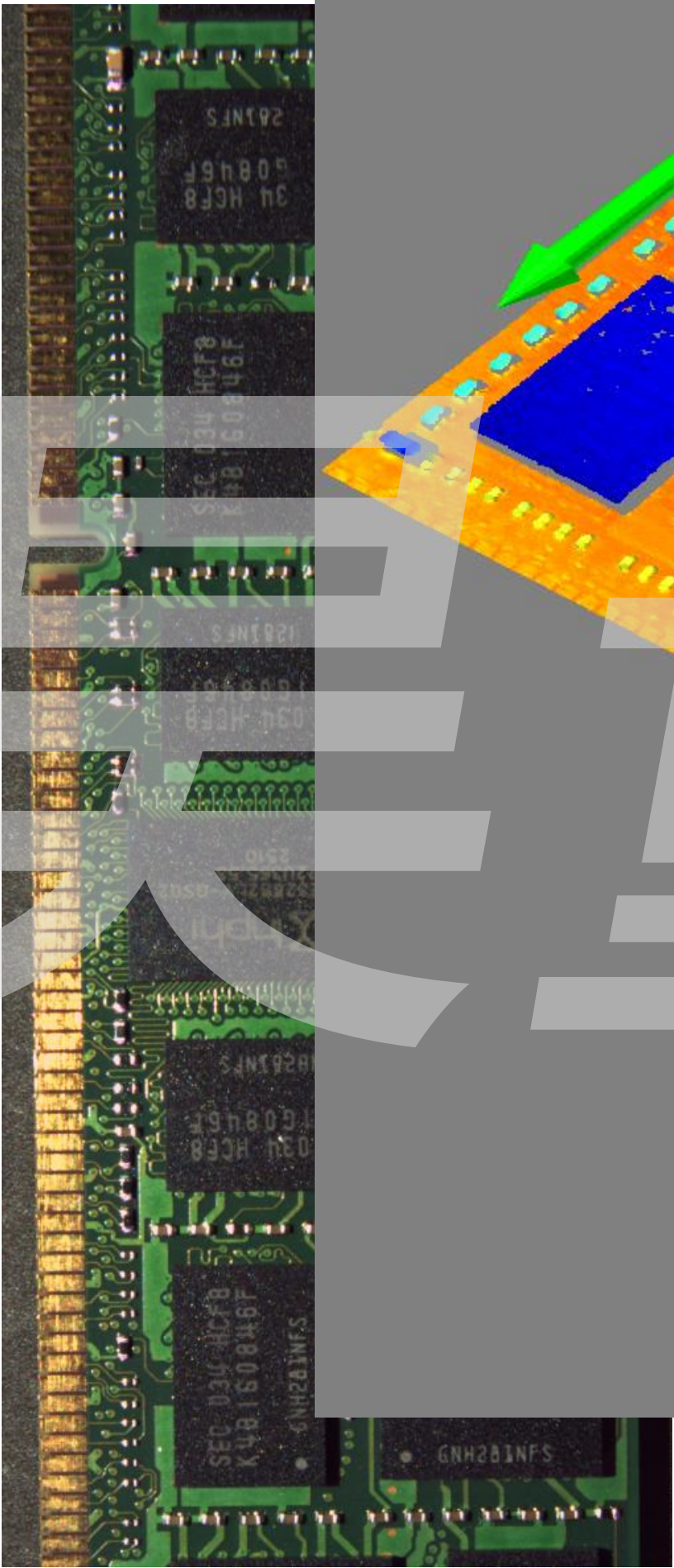
# PCB Assembly



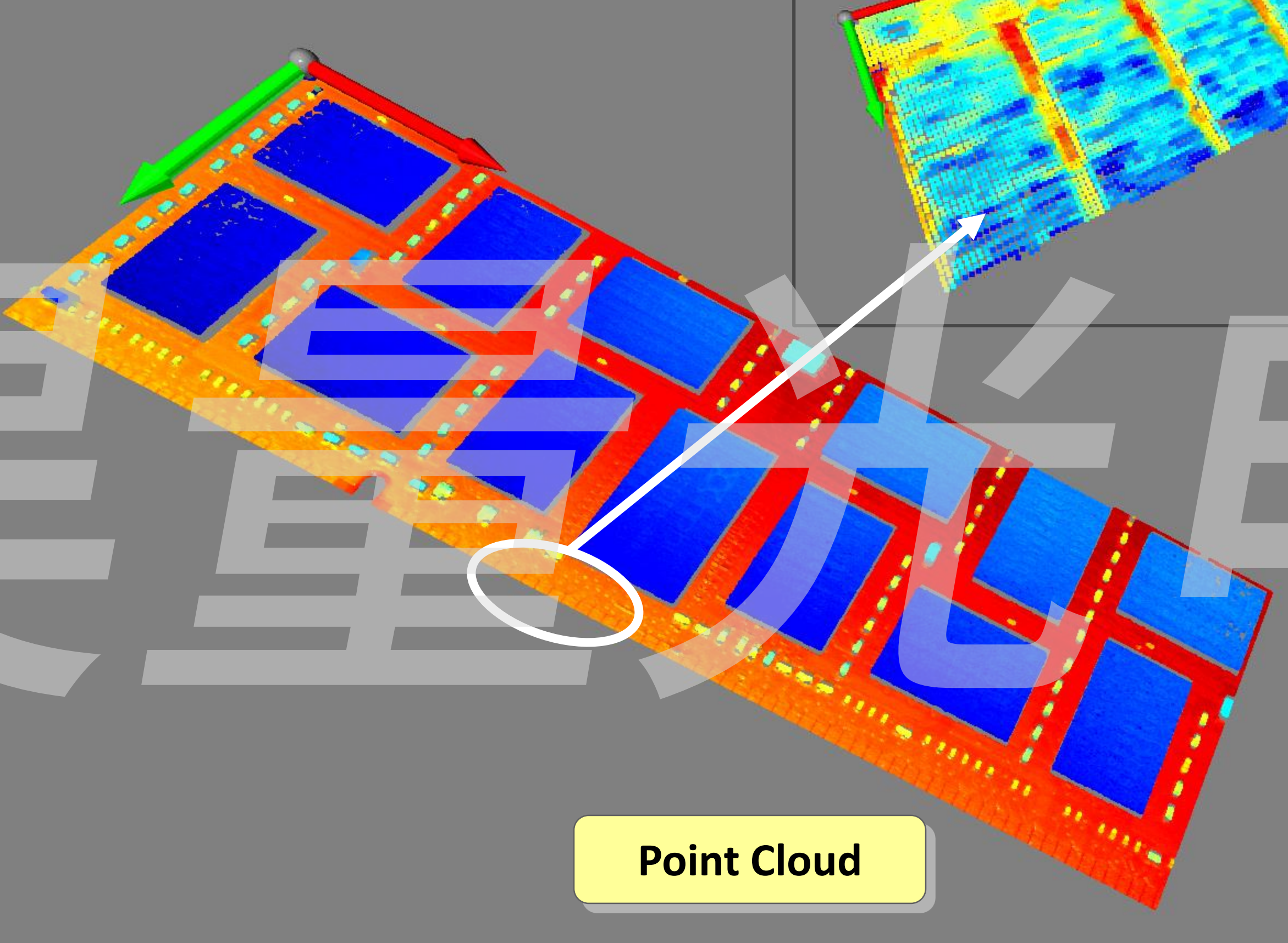
**RGB Image**

**Range Image**

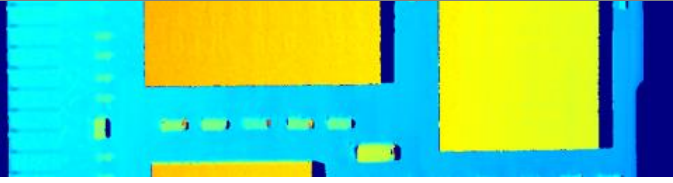
# PCB Assembly



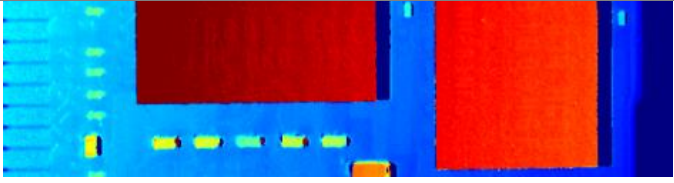
RGB Image



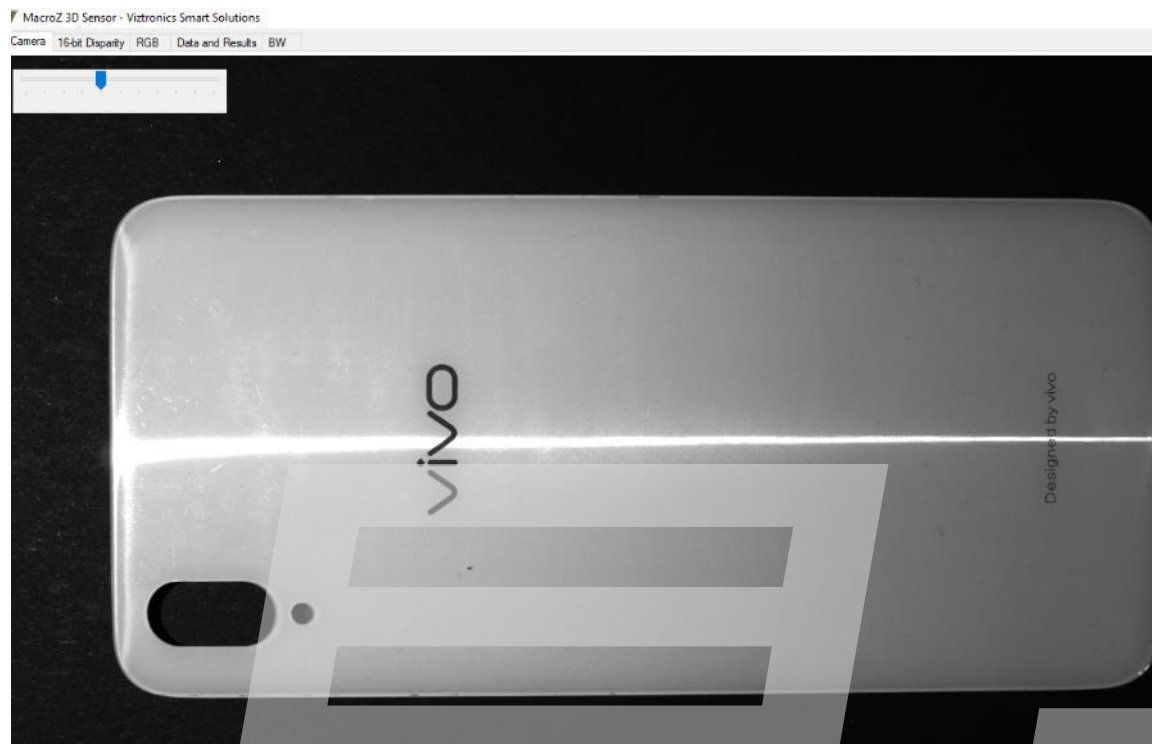
Point Cloud



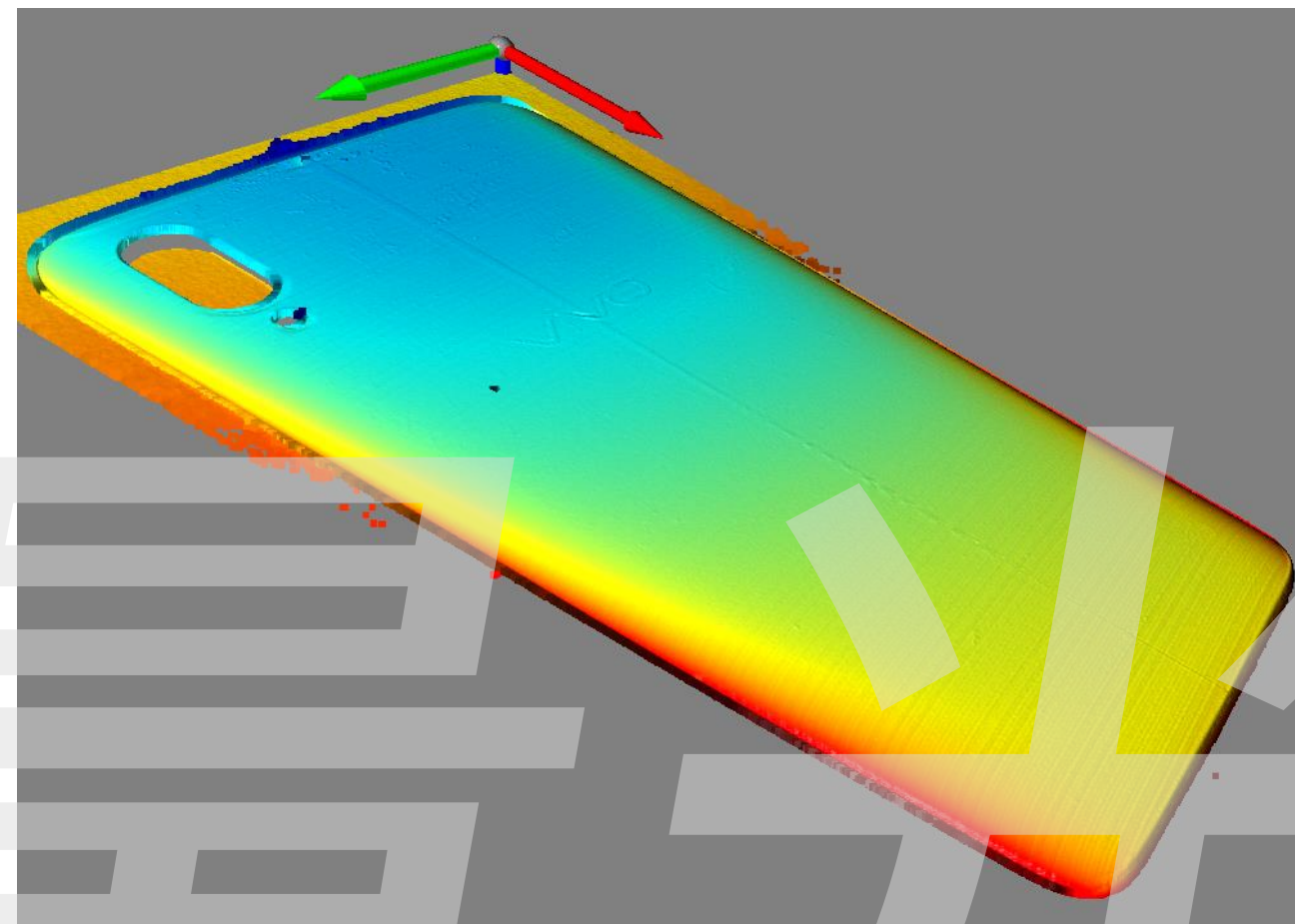
Range Image



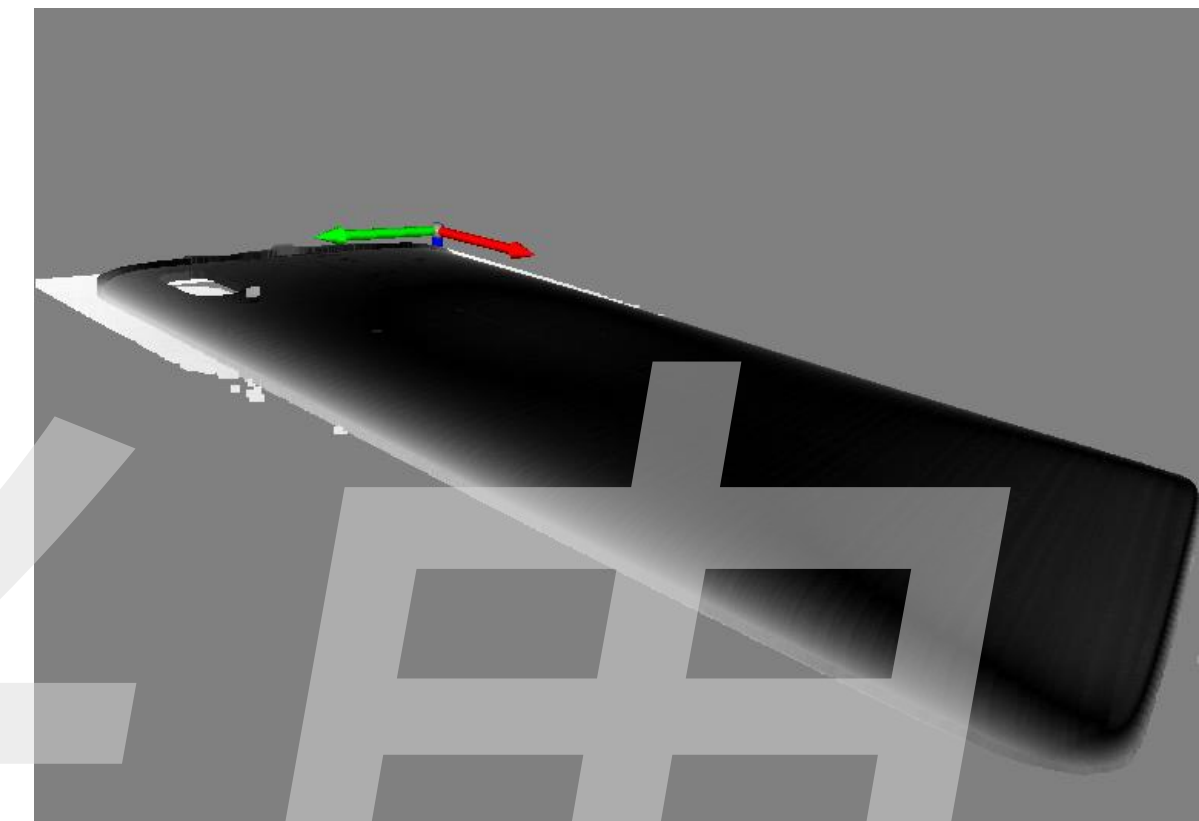
# VIVO Cover Front



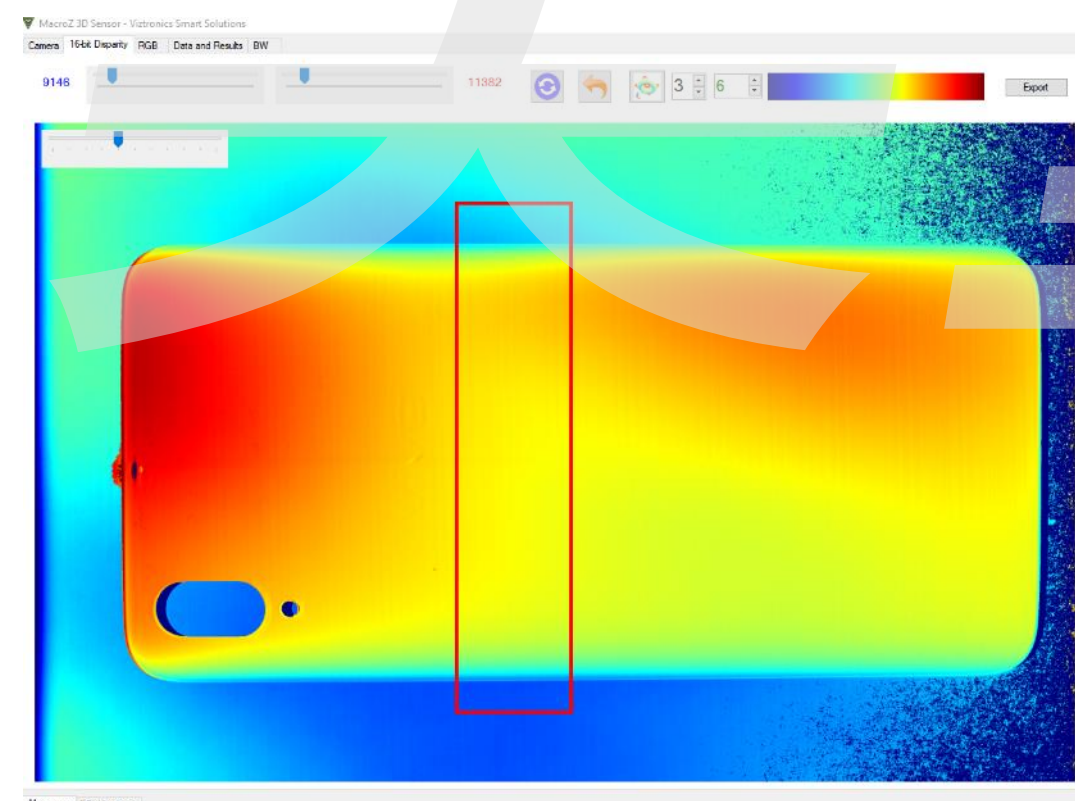
2D Image



3D Point Cloud



Absolute distance from central plane

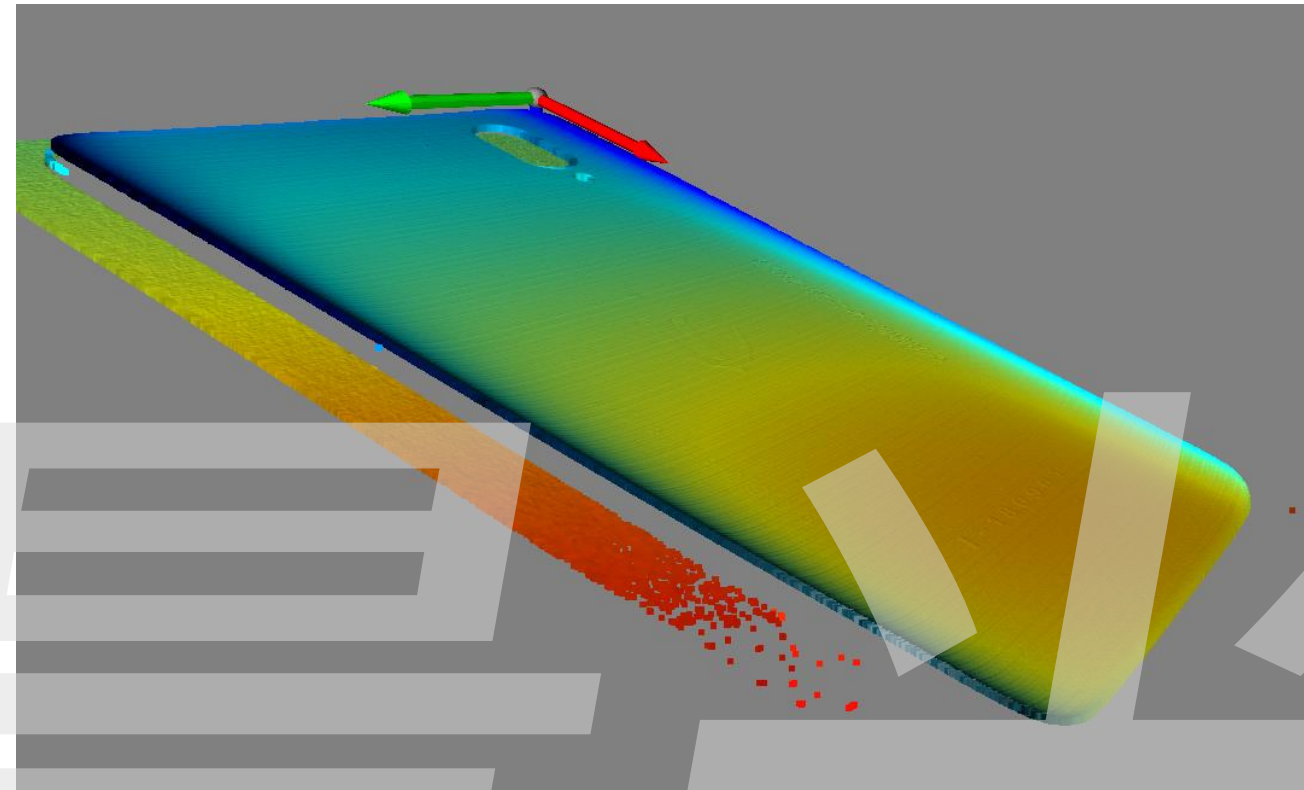


16 bit Range Map

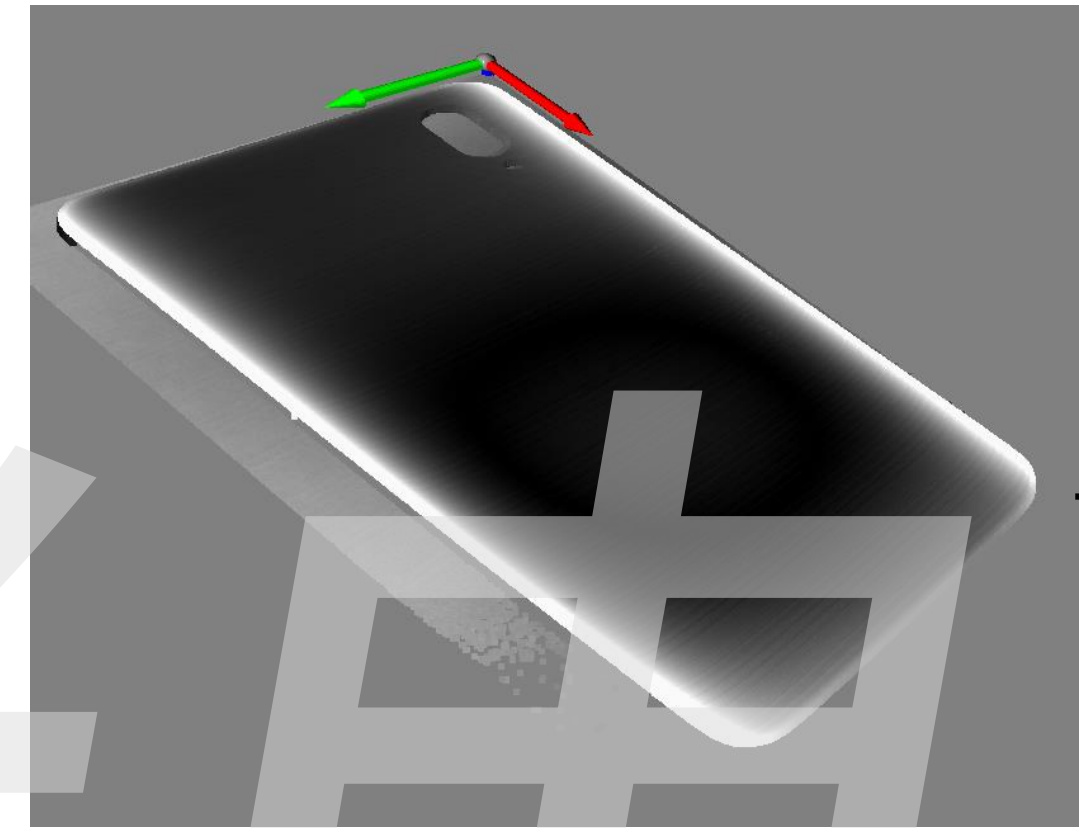
# VIVO Cover Back Side



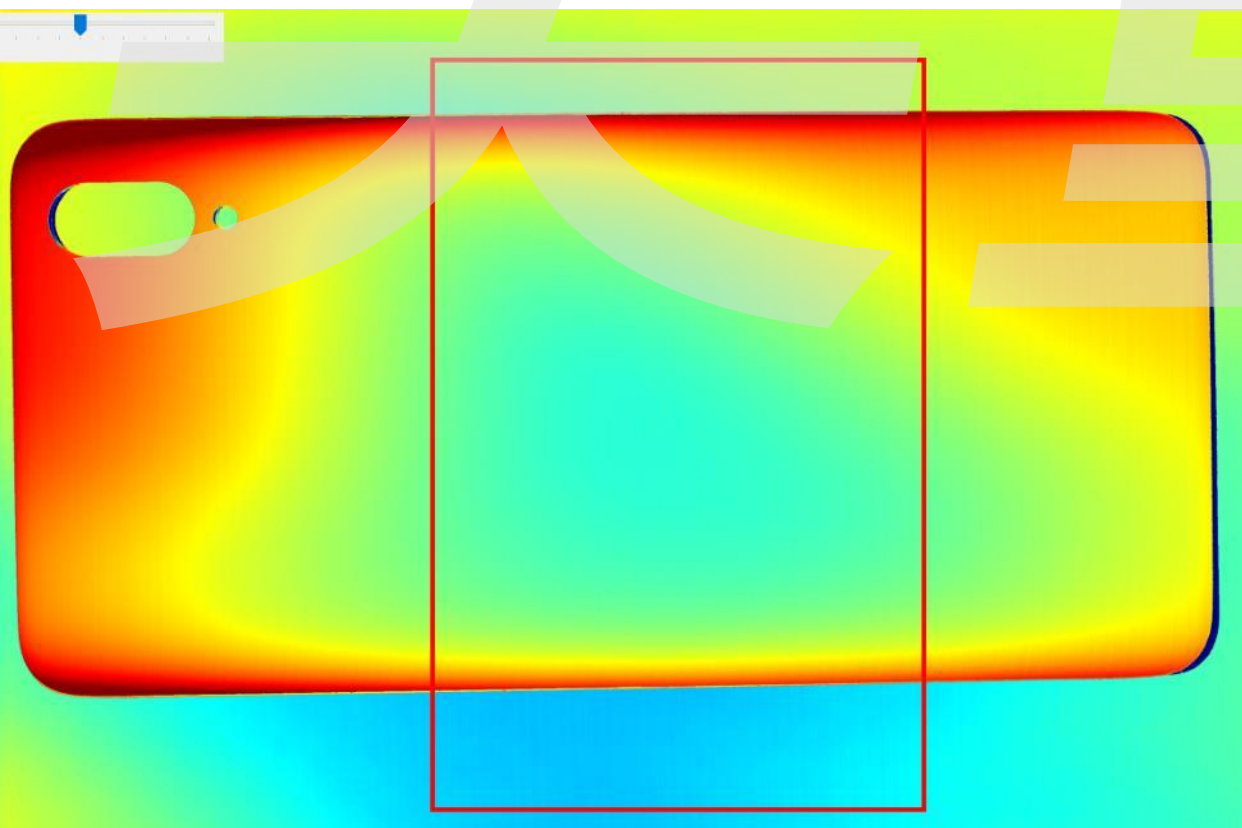
2D Image



3D Point Cloud



Absolute distance from central plane



16 bit Range Map

# Ball Bearing Inspection

