# MAKER-RAY

# AIS Coating-HW

## Inline PCBA Coating Inspection Equipment

MAKER-RAY

AIS401-C

**01 Intelligent and Efficient Programm**
AI automatically identifies irregular programming efficiency coating areas to improve

**02 Multi-scenario Bubble Detection**
Use AI algorithms to ensurehigher bubble detection rateswith intuitive results

**03 High-precision thickness measurement**
Support single point thickness and whole board thickness detection

## SPECIFICATION

| Category | Item | AIS401-C-HW |
|---|---|---|
| Board Info | Dimension | 50* 50mm-510* 460mm  (Large board mode 710* 460mm) |
| | Thickness | 0.5mm-6mm |
| | Height Clearence | 900mm |
| | Max weight | Belt ≤ 3KG / Chain ≤ 10kg |
| | Max Component Height | Top: 35mm, Bottom: 80mm  (Can be customized to 80) |
| | Edge Clearance | 3mm |
| Vision Module | Camera & Light Source | 5MP color high speed camera & UV+W, UV+RGBW(optional) |
| | Resolution & FOV | 5MP: 36mm* 30mm/ 12MP: 60mm* 45mm(optional) |
| | Inspection Speed | 0.23sec/FOV |
| Inspection | Coating Inspection | Less coating, more coating, bubble, splashing, foreign matters, glue width, glue thickness(Option) |
| | Algorithm | AI Algorithm mainly：AI polygon, AI coating, AI bubble, AI foreign matters and bilateral distance detection algorithm |
| | Component Inspection(Option) | Insertion Components and SMD：Wrong part, missing part, polarity, XY offset, angle offset and damage, etc. |
| | Solder Inspection(Option) | Excessive solder, insufficient solder, bridging, colde solder, solder hole, solder balls, no pins and bent pin, etc. |
| | Multiple Inspection Scenarios | Mixed board inspection, multi-panel inspection,  mixed material detection, large board mode detection (optional) |
| Programming | Programming Method | Auto-generates the coated polygon area, auto-configures the coating detection algorithm, and adjusts the parameters |
| | In-line on fly programming and finetuning | Feature allow users perform programming , components changes or parameters updates without stop or distract the active production line. |
| Other Features | Barcode Identification | 1D / 2D barcode & QR code identification(5* 5mm above) |
| | Industrial Computer | CPU：intel i5 | Graphics：Nvidia GTX1050Ti | Memory：32G DDR4 | Storage：256G SSD+2T HDD | Network：1000M network card |
| | Display | 23.8 inch |
| | Operating System | Ubuntu 18.04 LTS 64bit |
| | Communication | Standard SMEMA interface |
| Hardware | Width Adjustment | Manual/automatic |
| | Motion Structure | High precision screw + servo motor |
| | Dimension and Weight | (L*H*W) 1015*1541*1166mm (Tower light excluded)，728Kg |
| | Power Supply and Power | AC 220V. Rate power 380W |
| | Air | 0.4-0.6Mpa |
| | Environmental Requirements | Temperature: 10~45℃. Humidity: 30~85%RH |

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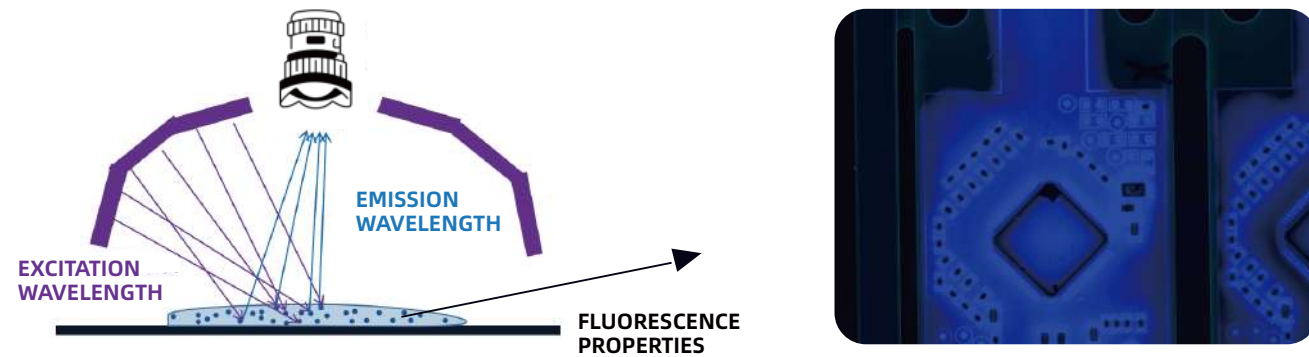NO. 6, YUNPU 4TH ROAD, HUANGPU DISTRICT, GUANGZHOU, GUANGDONG PROVINCE, CHINA

LinkedIn

YouTube

## High-brightness UV light source to clearly reproduce coating images

High-brightness UV light source improves anti-interference ability, optimize glue imaging uniformity and consistency, truly restore the coating glue adhesion. Ensuring detection stability and accuracy
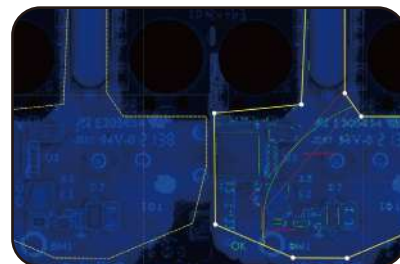
EMISSION WAVELENGTH

EXCITATION WAVELENGTH

FLUORESCENCE PROPERTIES

## AI deep learning algorithm. Intelligently identify coating defects

Built-in algorithm for polygon recognition and detections of bubble, scattered point/foreign matters and others. Auto- identify the c oating area, auto-configure the algorithm and judge defects. Non-require human debugging.
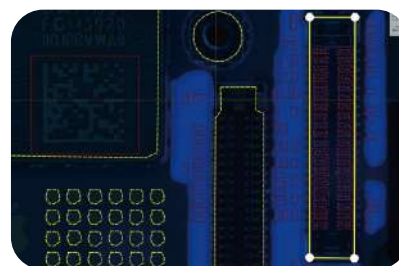
White Bubbles of 100um or Less

Foreign Matters Detection

Orange Peel Detection

## AI Simplified Programming. Auto-Identify Coating Area

AI deep learning polygon algorithm realizes auto-programming for whole-board. One-key identifies the coating area and frame automatically, while generates the same-shape detection frame, effectively dealing with irregular distribution of irregular coating fluids. Fast programming.
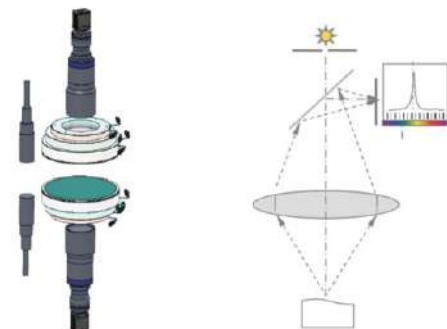
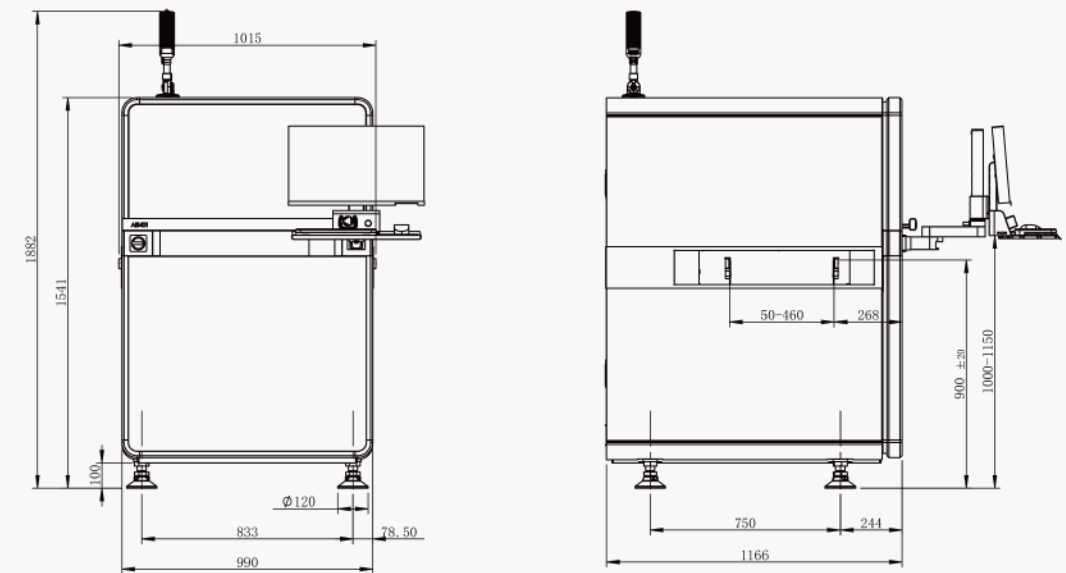Polygon Programming

Bubble Group Detection

## Data Visualization of Glue Thickness (optional)

The point spectrum confocal thickness measurement solution is adopted to infer the thickness of the coating glue by analyzing the changes in the fluorescence signal intensity at different depths. It is non-contact and will not damage the coating. It has higher resolution and can capture subtle thickness changes. The thickness measurement accuracy is within 10um, and the coating quality can be monitored in real time.

**AIS401-C**

1015

1882
1541

100

50~460    268

900 +20
1000~1150

Ø120

833    78. 50

990

750    244

1166

Unit: mm

**Before or After Curving Oven**

| More Coating | Less Coating | Foreign Material | Glue Width | Splashing | Thickness | Bubble |
|---|---|---|---|---|---|---|