



ASI 6060 II Auto Stencil Inspection Machine

祐銓科技股份有限公司

Your Chance Technology Co. Ltd.,

全自動鋼板檢查機簡介

- ASI: Automatic Stencil Inspecting
- 全自動進行實體鋼板與Gerber切割層比對
 - 檢測：少孔、多孔、孔位偏移、孔徑大小異常
 - 手動量測：孔徑面積、真位度、長度、直徑量測
 - 自動張力量測器
 - **鋼板表面凸痕檢出**
- 鋼板最佳檢測AOI機台
 - 鐳射機台切割後、出廠前QC檢測
 - 上線印刷前品質確認
 - 清洗後之錫膏等異物殘留檢測
- 應用產業廣：PCB、半導體、IC封裝測試...

硬體規格 (600mmx 600mm)



尺寸	1922 x 1762 x 1452 (L x W x H) mm
重量(kg)	1050kg
電源	220V/ 20AMP
壓縮空氣	5kg/cm ² , 30L/min
	溫度：10~30度、濕度：35~70%
攝影機	500萬相機
鏡頭	Mega pixel telecentric lens, high contrast illumination
光源	底光,表面光

設備性能

檢測速度	3 frame/sec, 檢測500x500mm約6~7min
檢測範圍	50mmx50mm~600mmx600mm
解析度	3.45um
最小瑕疵檢出	10.35um(最小邊長且非透明殘留物)



標準gerber檔案(.gbx)轉換成影像格式(.bmp)



專利檢測演算法用於比對與分析開孔形狀、位置、尺寸



領先業界之縫圖技術，重現真實鋼板影像



操作簡易：僅需兩按鈕即可全自動檢測

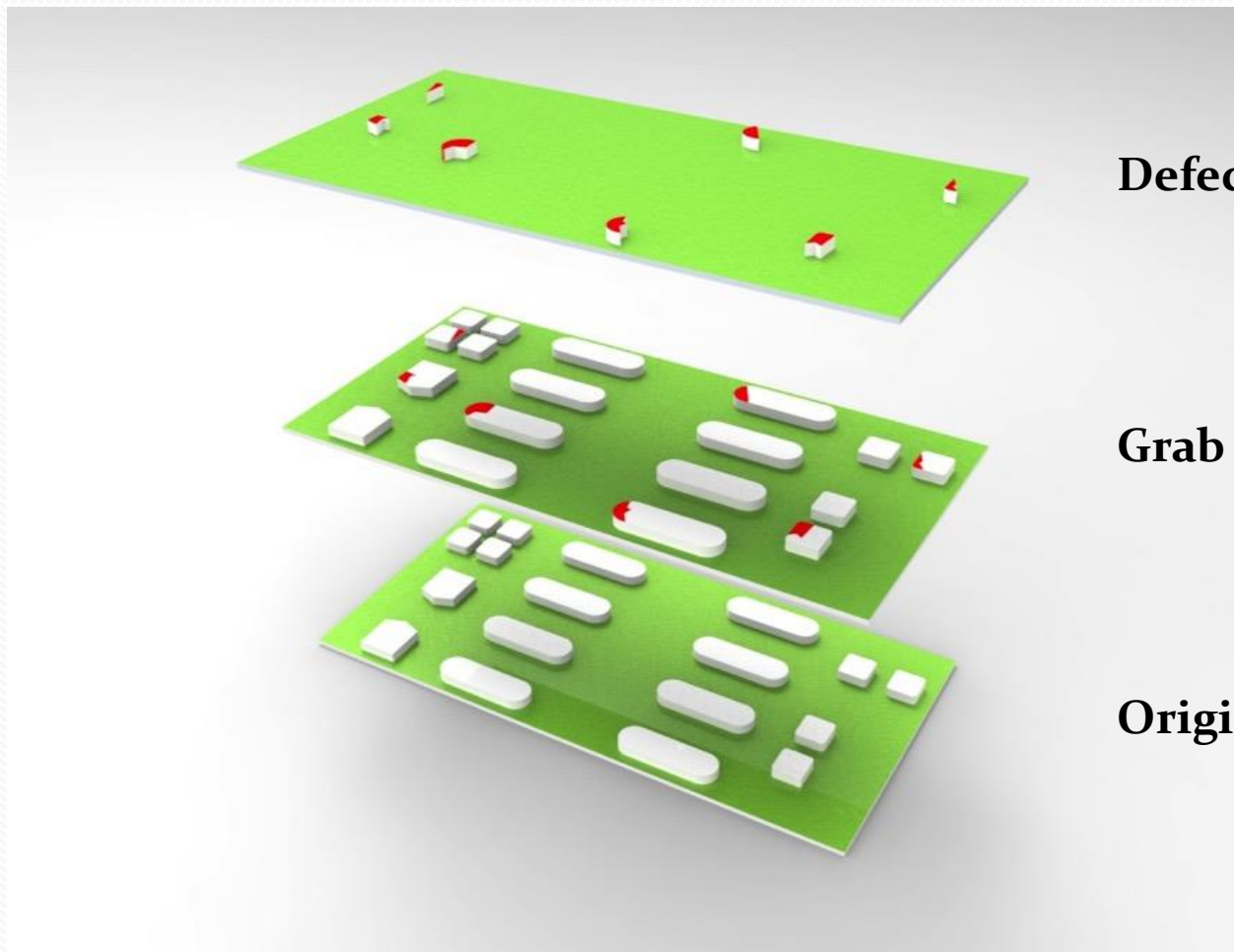


鋼板三點校正：解決鋼板置放與變形問題



業界唯一, 鋼板表面凸痕檢出. 可以檢出半蝕刻上的凹痕

專利檢測演算法



Defect inspection

||

Grab IMG from camera

—

Original Gerber IMG

設備實照



操作介面

The screenshot displays a software interface for PCB layout inspection. The main window, titled "0127T-2", shows a grid of 50 small PCB layout images. Two images are highlighted with white boxes. The right sidebar contains a top-down camera view and a control panel with various buttons and sliders.

Control Panel:

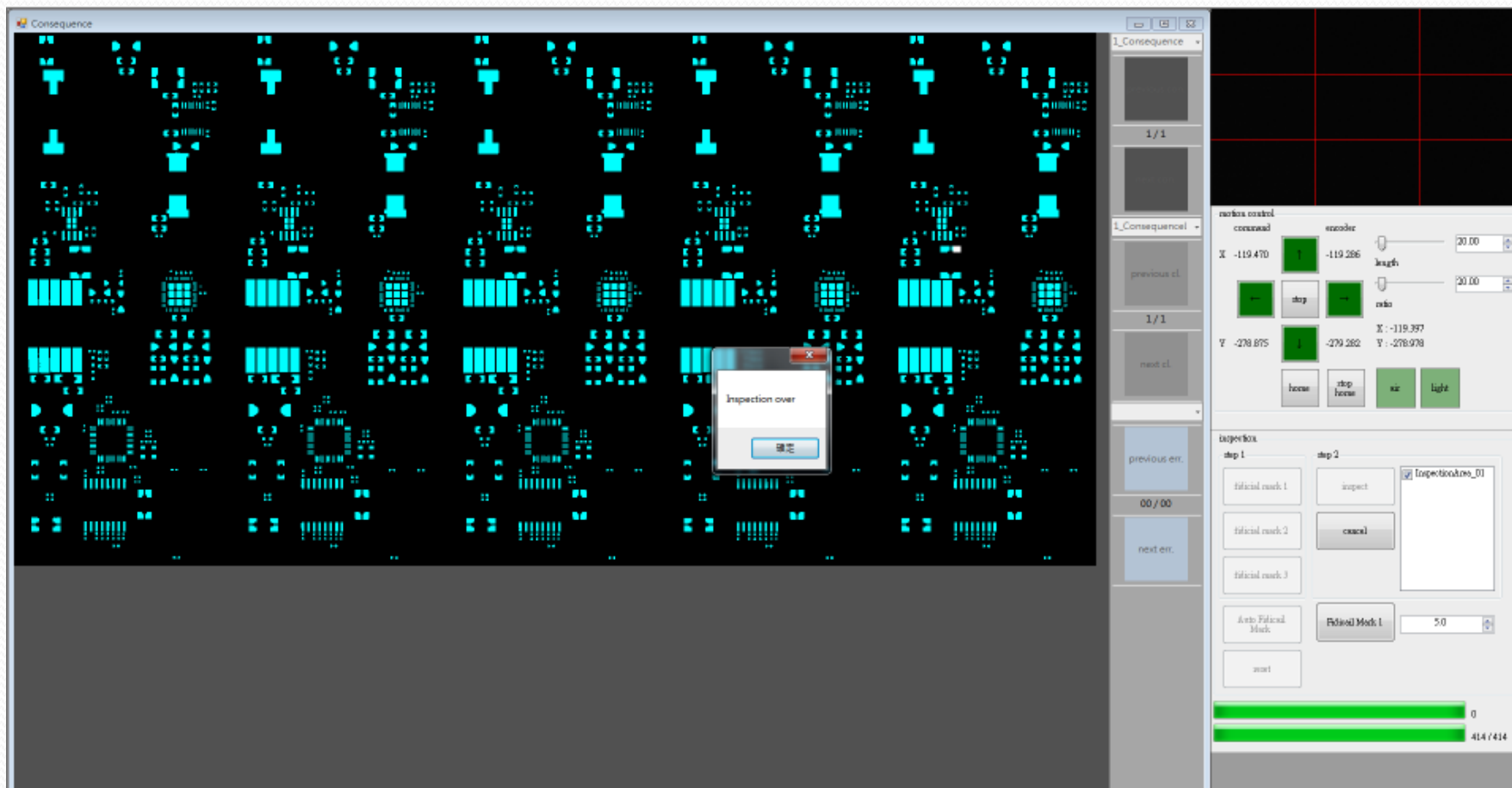
- robot control:** X: -337.741, Y: -270.906
- encoder:** -337.580, -272.186
- length:** 20.00
- ratio:** 20.00
- Buttons:** home, stop, stop home, viz, light

Inspection:

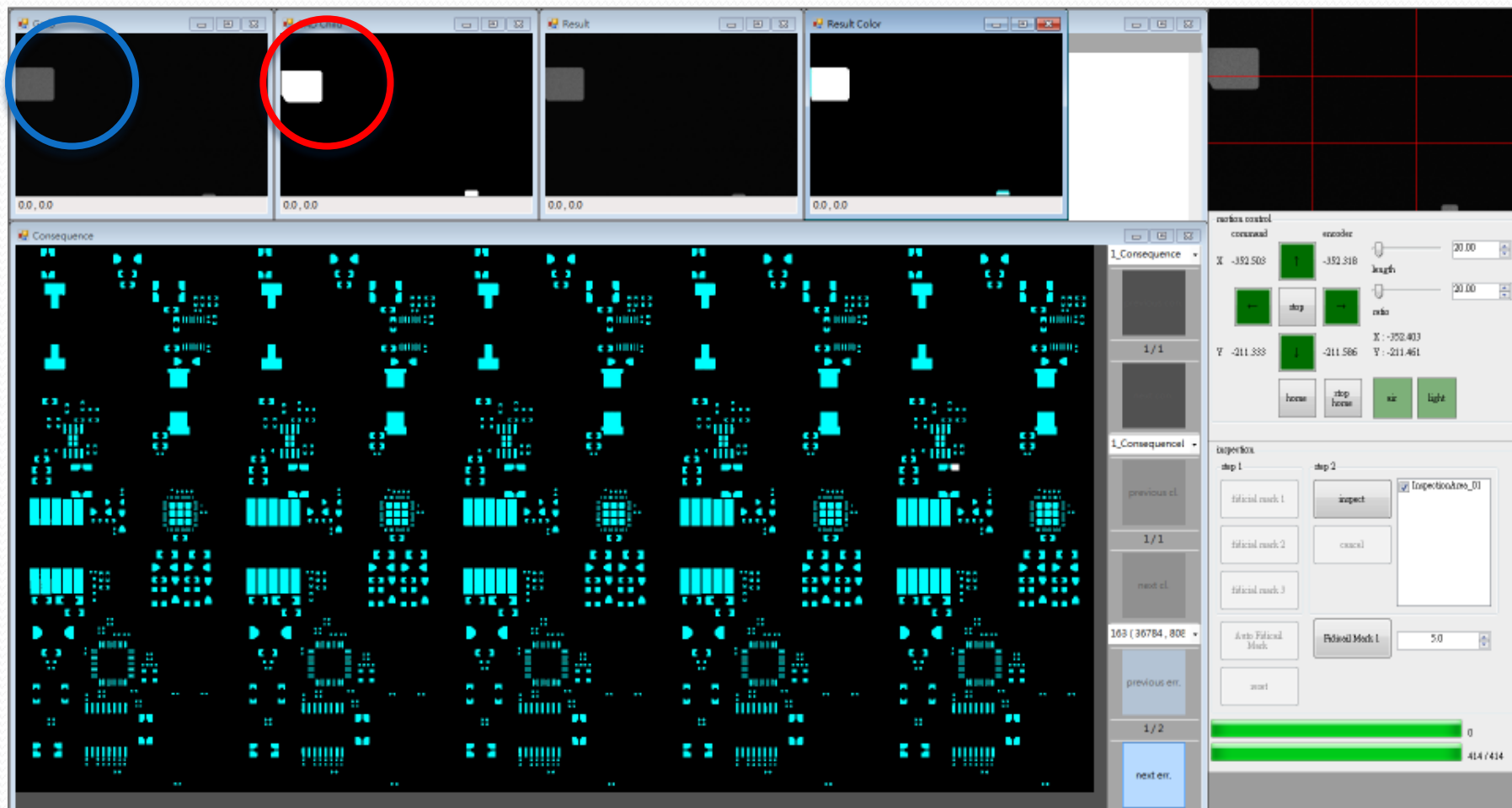
- step 1:** fiducial mark 1, fiducial mark 2, fiducial mark 3, Auto Fiducial Mark, next
- step 2:** inspect, cancel
- Fiducial Mark 1:** 5.0

Status: 0, hmi2

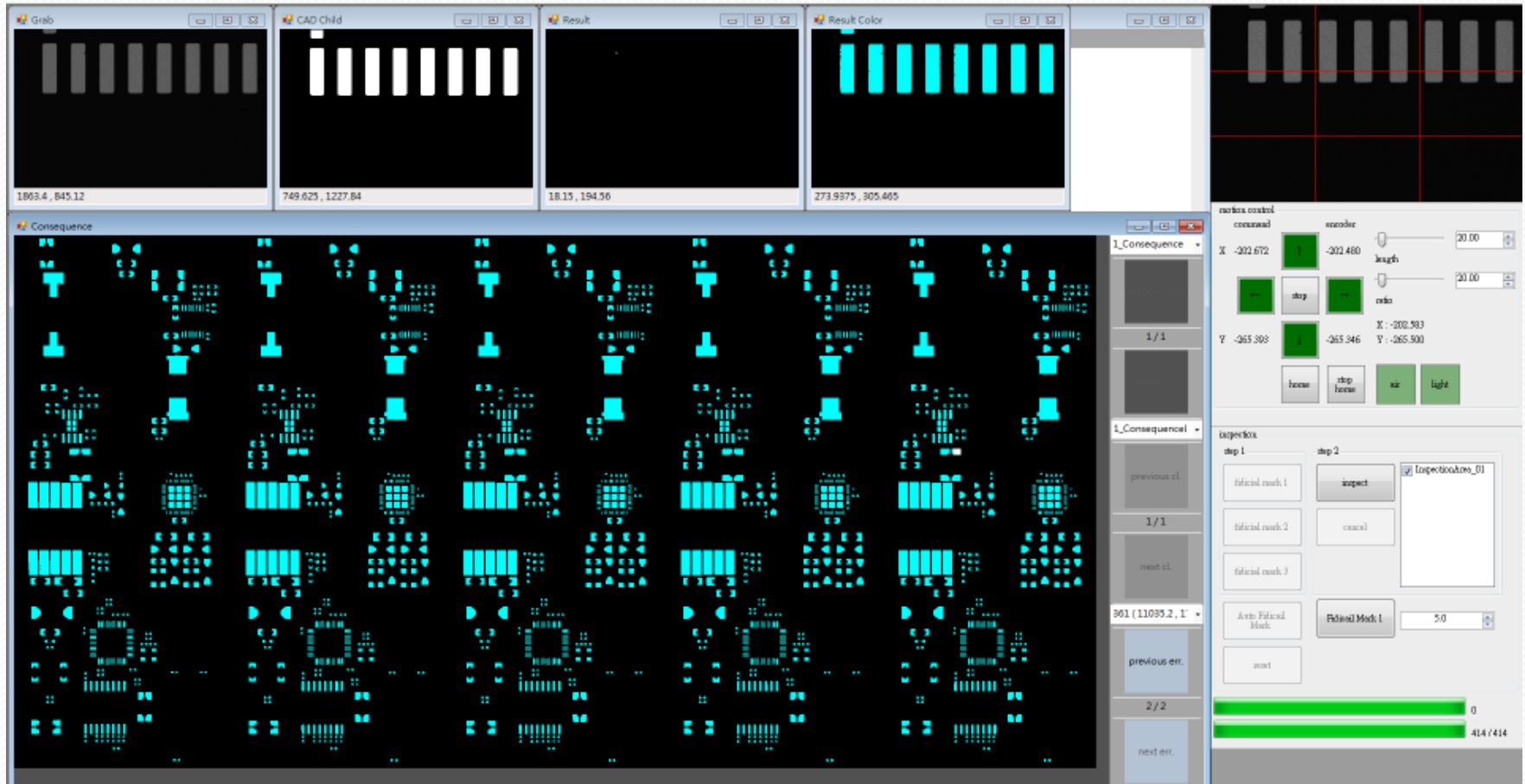
操作介面



操作介面



操作介面

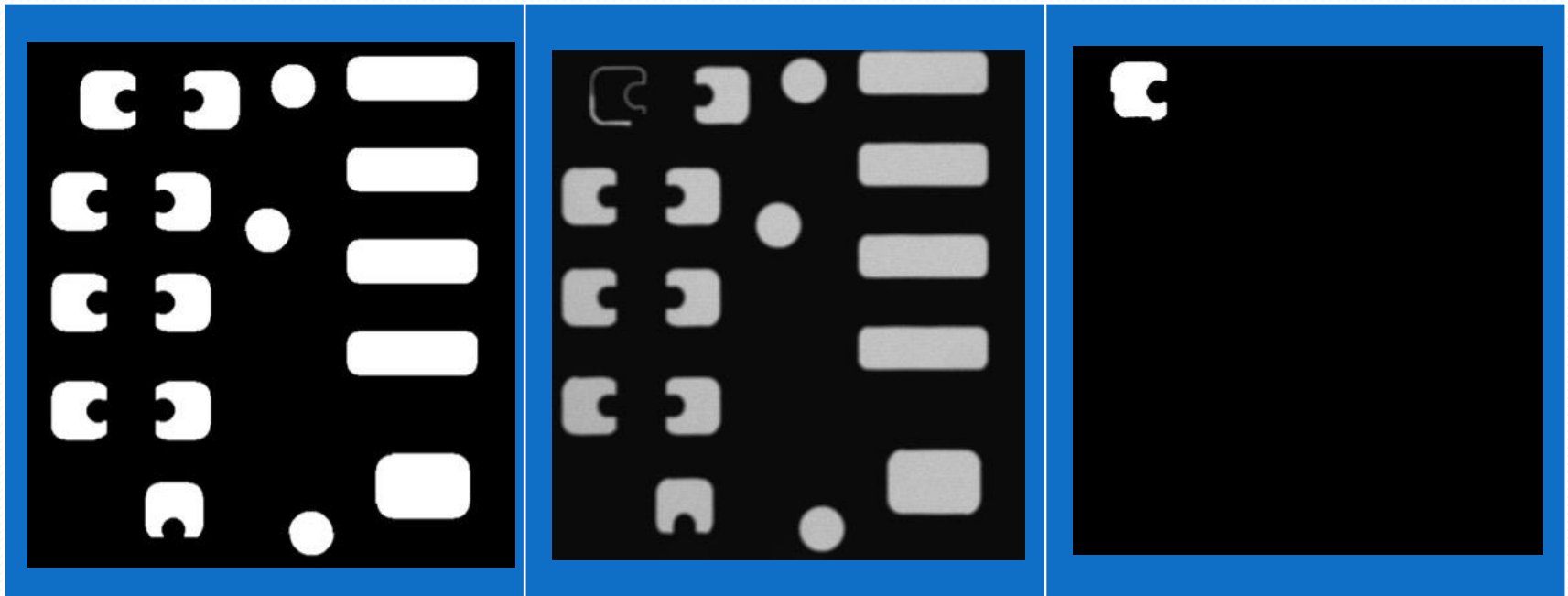


檢出結果1

CAD Image

CCD Image

Result

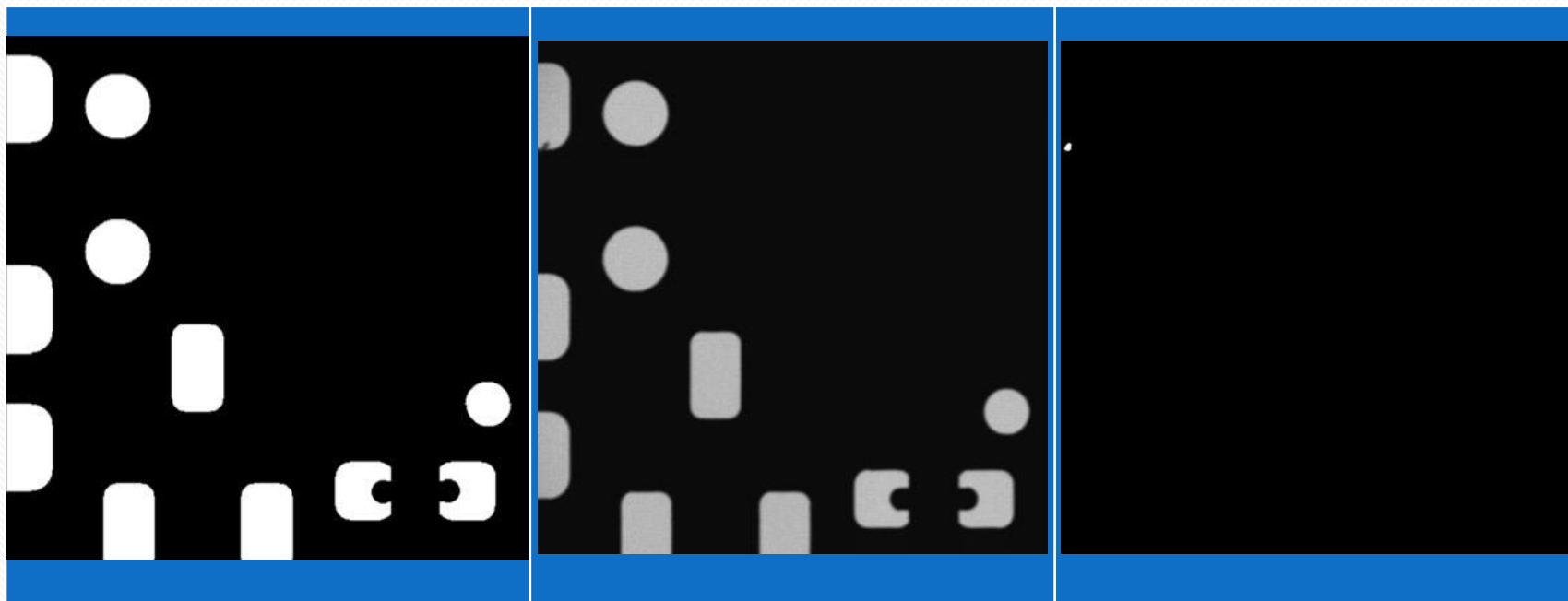


檢出結果2

CAD Image

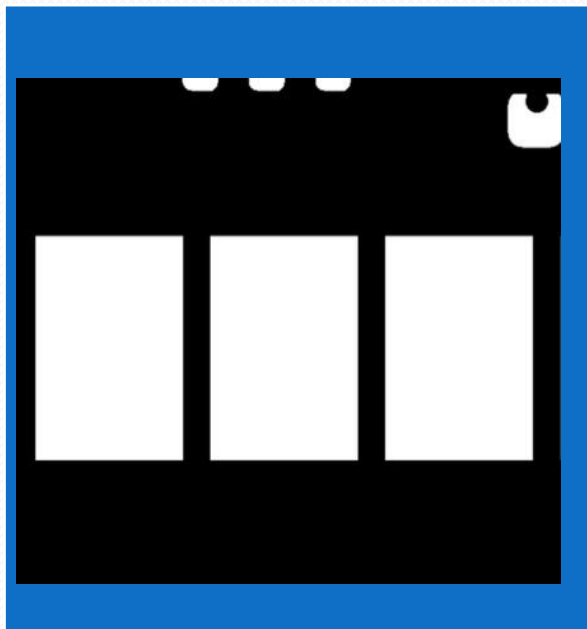
CCD Image

Result

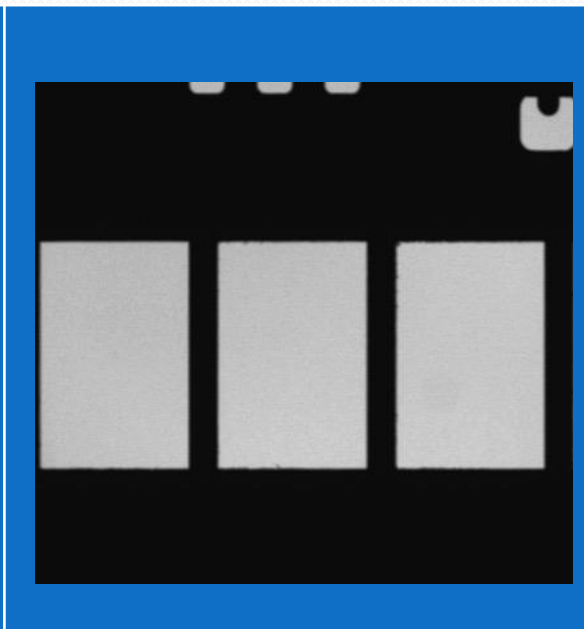


檢出結果3

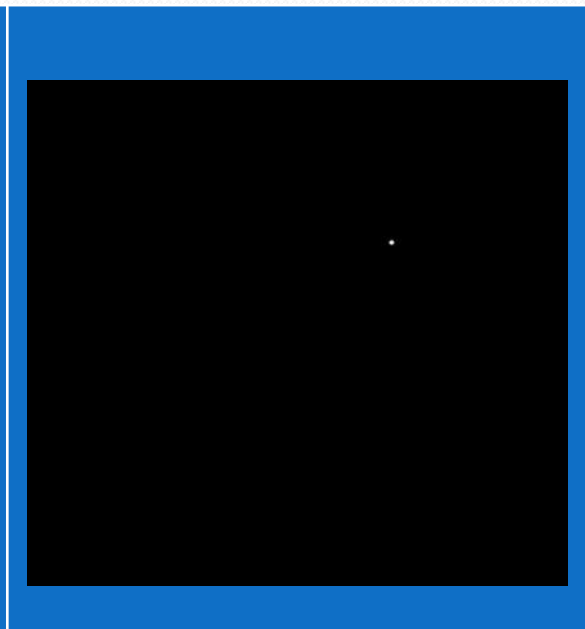
CAD Image



CCD Image

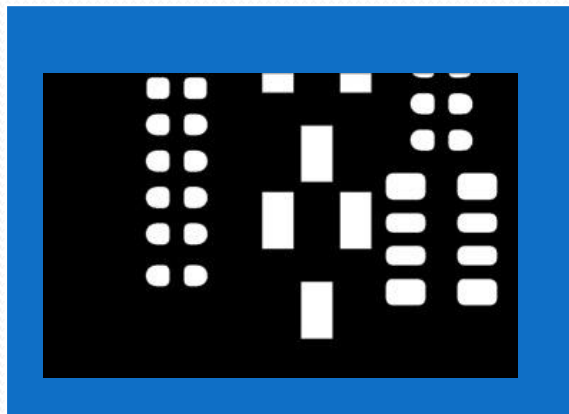


Result

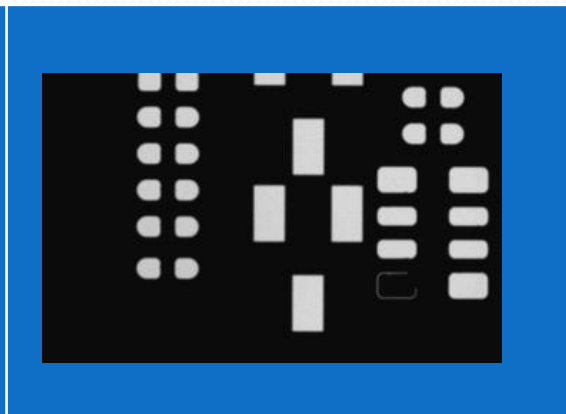


檢出結果4

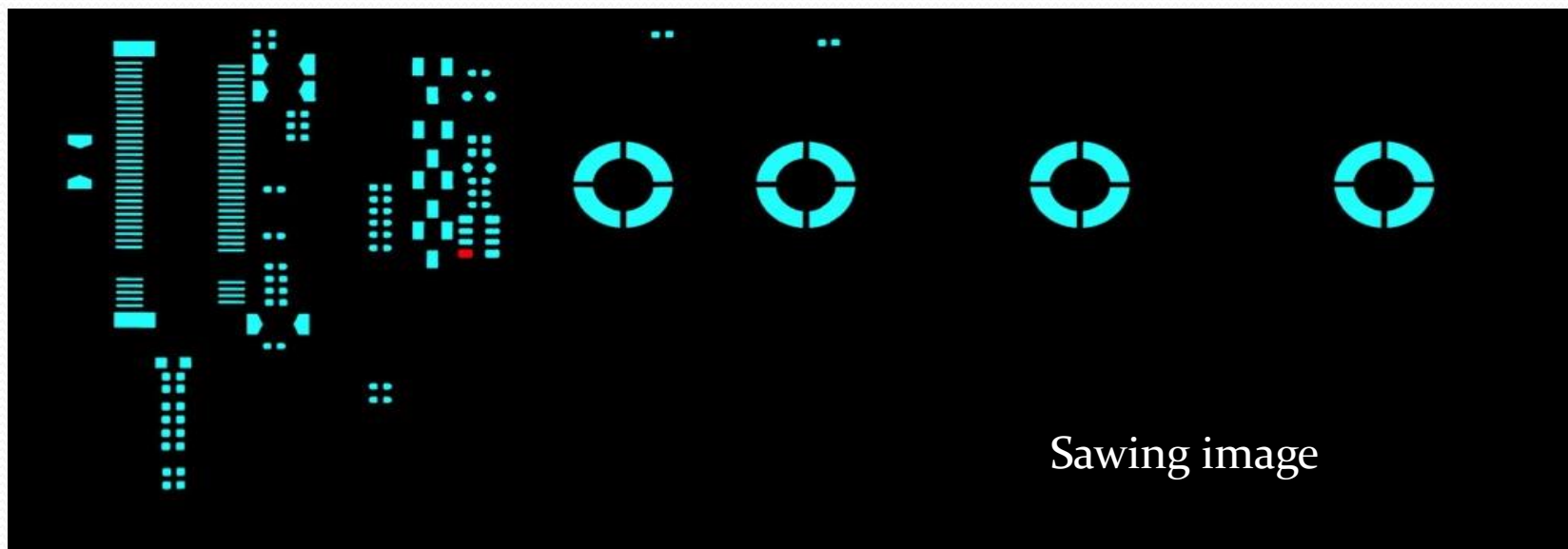
CAD Image



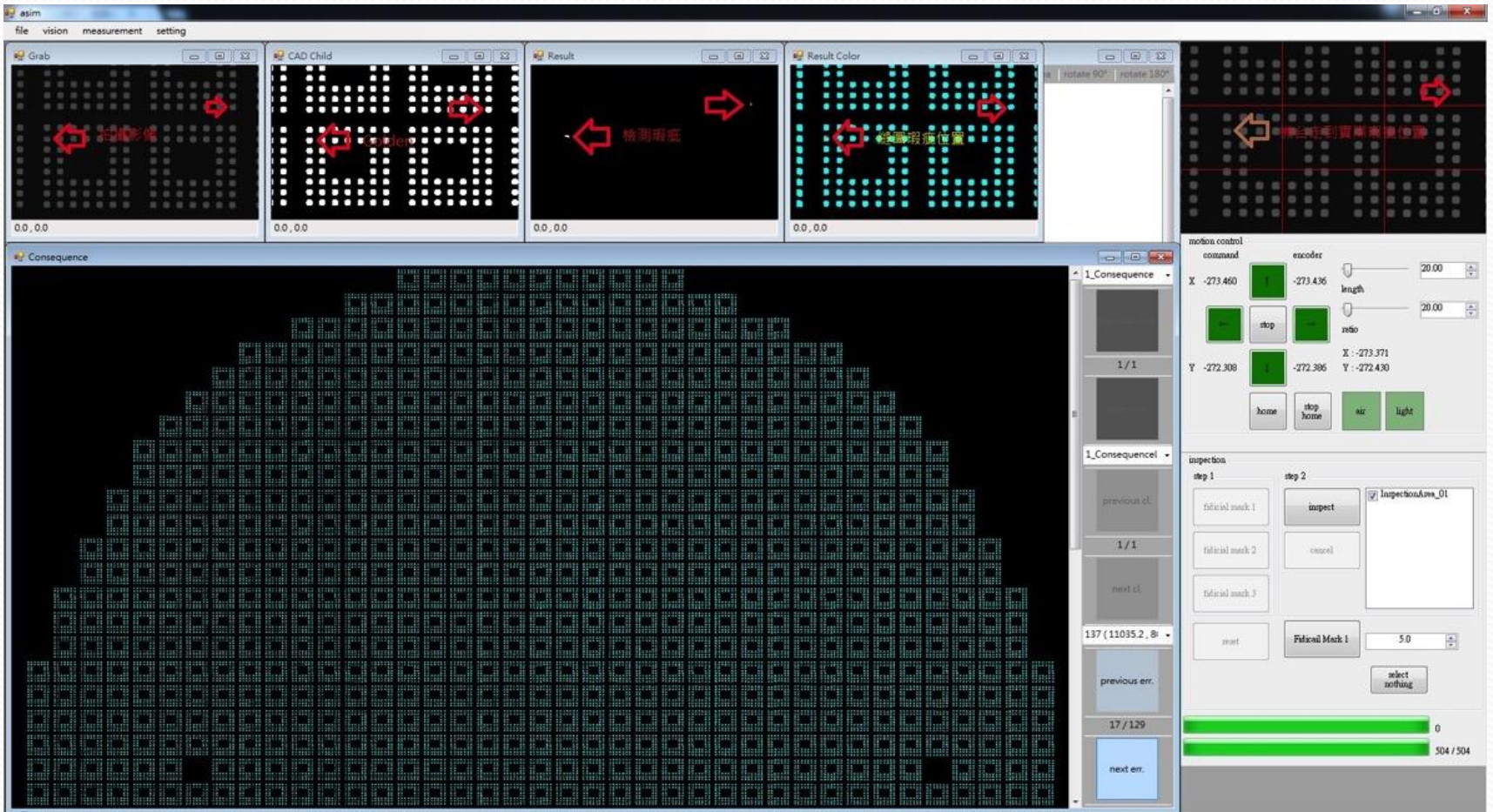
CCD Image



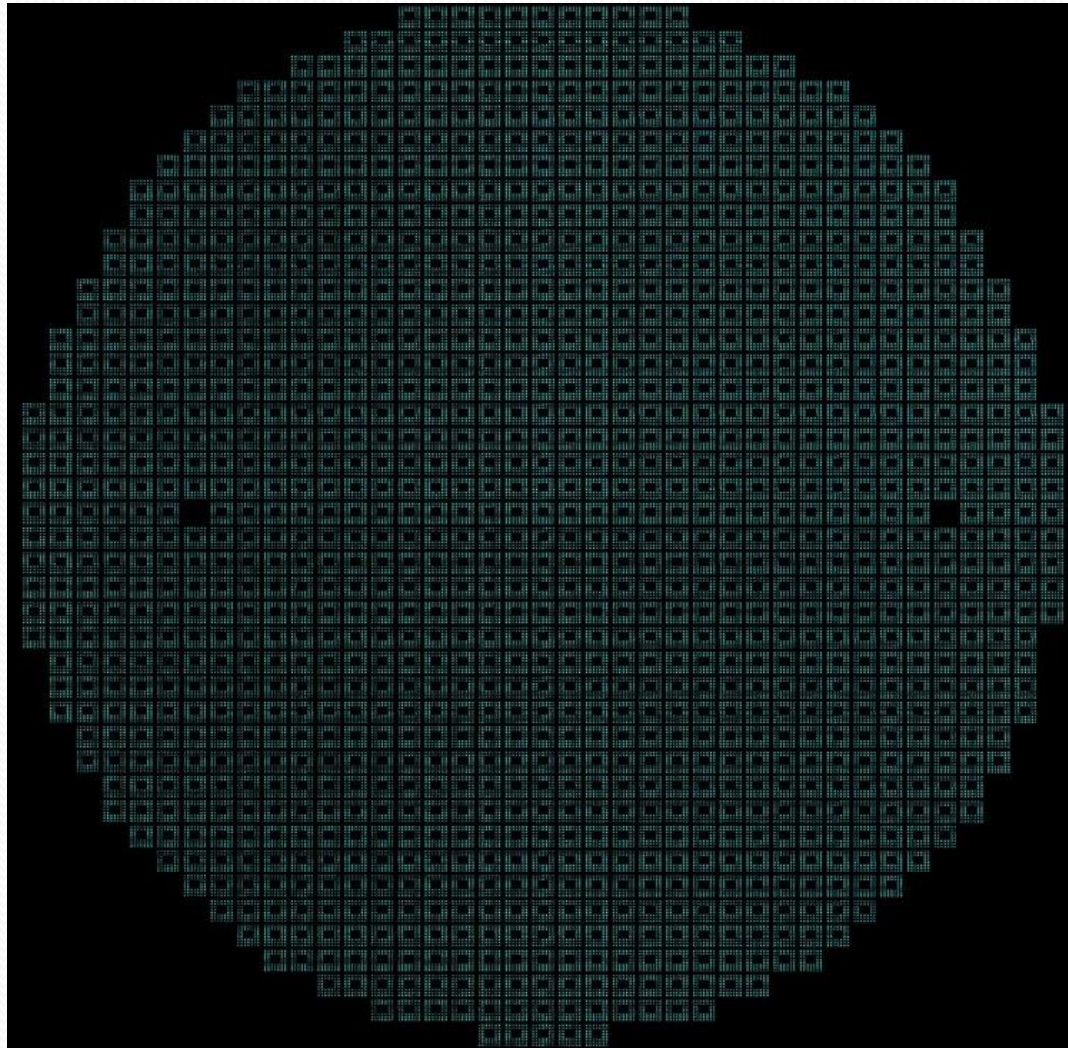
Result



操作程式畫面

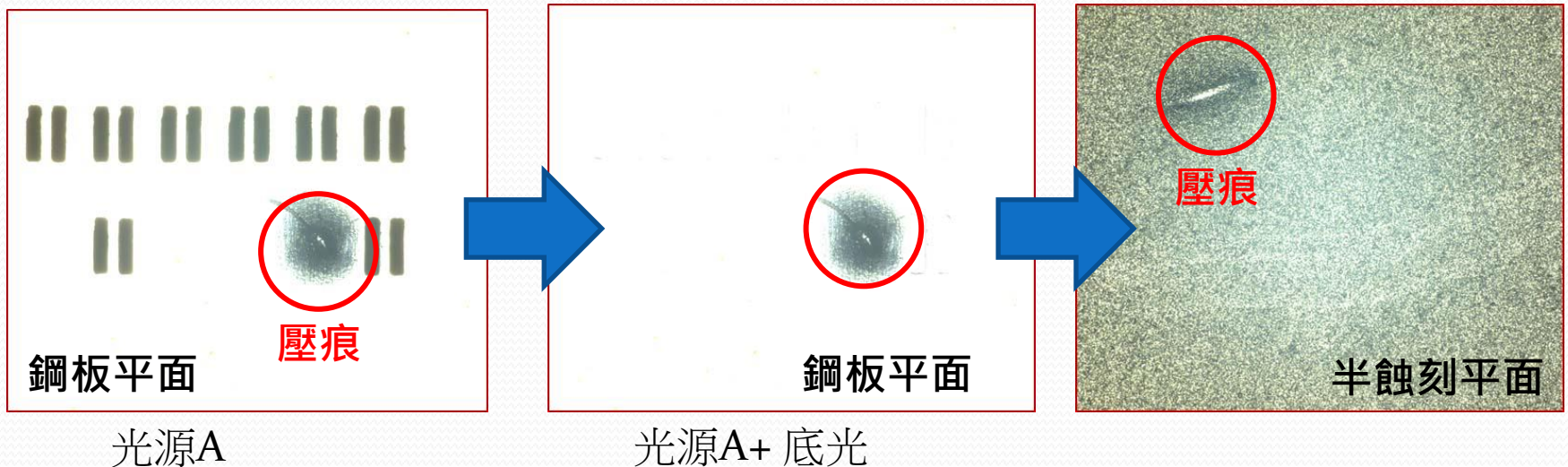


Full View



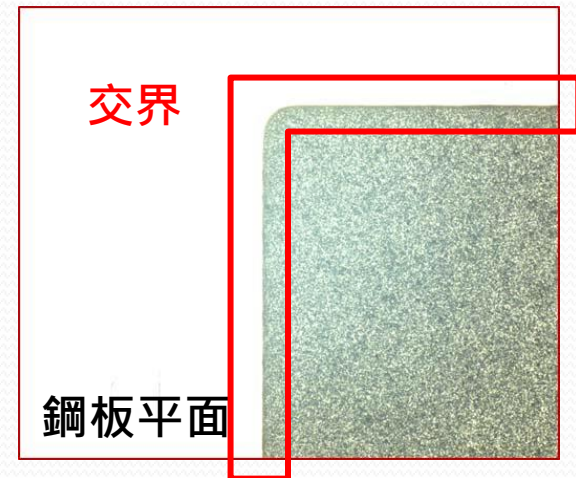
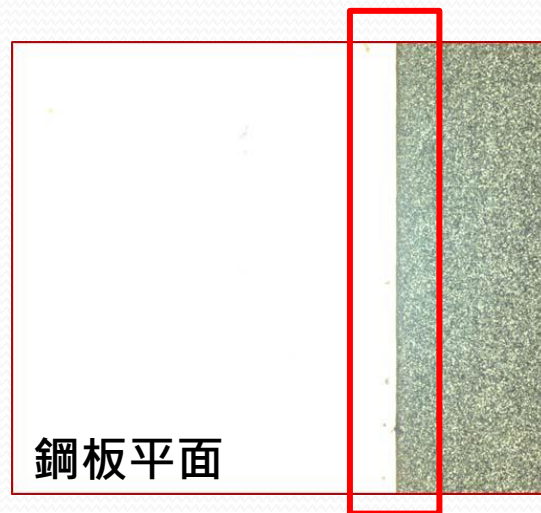
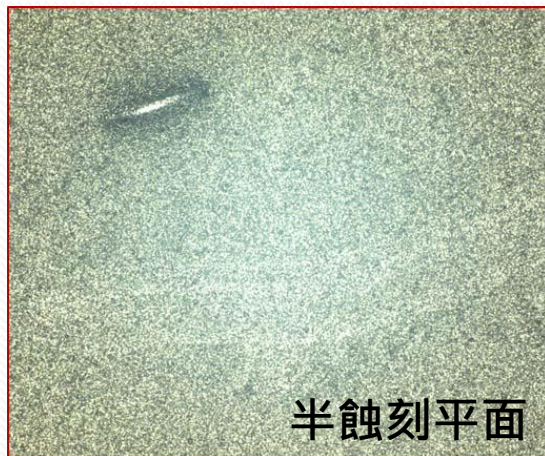
表面凸痕檢出

- 光源A + 底光 (原始底光)
- 鋼板：瑕疵呈現為黑色，白色代表無瑕疵
- 半蝕刻：瑕疵呈現為白色 (邏輯相反)，背景紋路複雜



表面凸痕檢出

半蝕刻區域粗糙紋理造成不易判別，故需採用AI+AOI策略,做為檢測標準



Advantages

	ASI-6060	Others
檢測時間	小於8分鐘(註1)	小於10分鐘
Gerber轉圖時間	小於30秒	大於3分鐘
瑕疵複檢	✓	✗
瑕疵分類	✓	✗
縫圖功能	✓	✗
鋼板三點校正	✓	✗
簡易UI操作	✓	✗
張力量測器	✓	✗
客製化功能	✓	✗
性價比	高	低
表面凸痕檢出	✓	✗

註1：檢測面積約為500x500mm²

項目	人工 (現行方式)	ASI 6060
區域範圍 (300 mm x 300 mm)	V	V
100 % 檢測	No.	Yes
最小檢出	NA	> 35 um
檢測速度	抽檢10區 三位置約 10 Mins (Est.)	100% 全檢 less than 3 mins
檢出率	NA	99 %
對比 Gerber 尺寸量測	No.	Yes
產品問題 (鋼板品檢引起)	Yes	Almost = 0
人力	工程師數人	OP 1 人即可作業
Customer List		PTI, OSE, ChipBond, Innolux....



Thank You

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