

Industrial Camera Compliance Report

for

Fanless Embedded Controller Model: BOXER-6640M

Issued to

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Summary	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass with Deviation (Comment: _____)			
	Test Results Category			
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date

2017/7/10

Approval



Test Engineer

SionWeng

● Specification Verification

Main Specification of Fanless Embedded Controller

Item	Specification	Note
Product Name	BOXER-6640M	
Construction	Aluminum heatsink	
Processor	Intel 7 th Gen. Desktop CPU	
System Memory	DDR4 SO-DIMM x2	
Storage	2.5" HDD x 1	
Front I/O	USB 2.0 x 2 Line-out x 1 RS-232/422/485 x 1 (3000Vdc isolation) HDMI x2 VGA x1	
Rear I/O	10/100/1000base-T x 9 USB3.0 x 8	
Expansion	Full-size card x 1 Half-size card x 1	
Mounting	Desktop / Wall	
Power Input	9~36Vdc	
Operation Temp:	-20~55°C	
Dimension	264 x 186 x 101 mm	

Main Specification of Industrial Camera

Item	Specification	Note
Brand	FLIR (PointGrey)	
Model Name	BFLY-PGE-20E4M-CS	
Sensor	EV76C570	
Max. Image Circle	1/1.8"	
Sensor Type	CMOS	
Resolution (H x V)	2.0MP (1600 x 1200)	
Pixel Size (H x V)	4.5 μ m x4.5 μ m	
Pixel Bit Depth	10 bit	
Frame Rate	50 fps	
Mono / Color	Mono	
Interface	GigE	
Synchronization	External trigger / Ethernet	
Exposure Control	Programmable via camera API	
Digital I/O	N/A	
Power Requirements	12Vdc	
Power Consumption	2.5 W	
Housing Size	30 x 29 x 29 mm	
Lens Mount	C/CS mount	
Housing Temp.	0~45°C	
Lens / Focal Length	16 mm	
Lens / Iris	F1.4~F1.6	
Lens / Working Distance	250 mm	

Camera



Lens



Fanless Embedded Controller



● Setup of Equipment Under Test

The fanless embedded controller is set up to connect four industrial cameras. Run Merlic software in three modes: Alignment, Inspection and Measurement. The test will run for three hours. If there is no frame losing, the result is "Pass".

■ Fanless Embedded Controller

Equipment	Model No.	Brand Name
CPU	Intel Core i3-7101TE	Intel
HDD/SSD	100GB	Toshiba
Memory	DDR4 8GB	Innodisk
Power Supply	120W	FSP
Cable	Cat 6, 100m	
O.S	Windows 10 64-bit	Microsoft
Machine Vision Software	Merlic3	MVtec



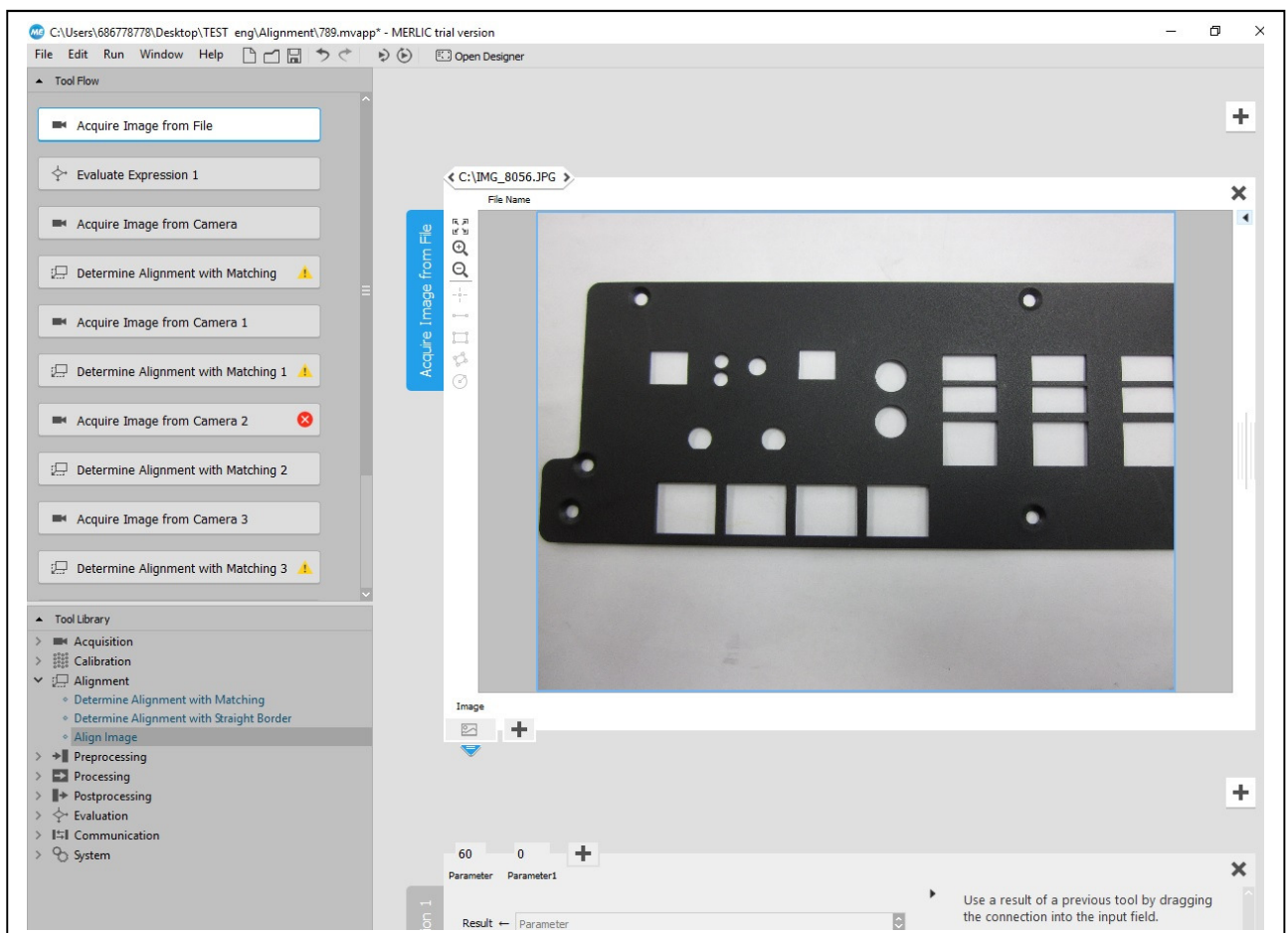
Machine Vision Software: Merlic

Mode	
Alignment	Determine alignment data with matching model
Detect Scratches	Detect and count stains on surfaces
Measurement	Measure the length and direction of selected edge segment.

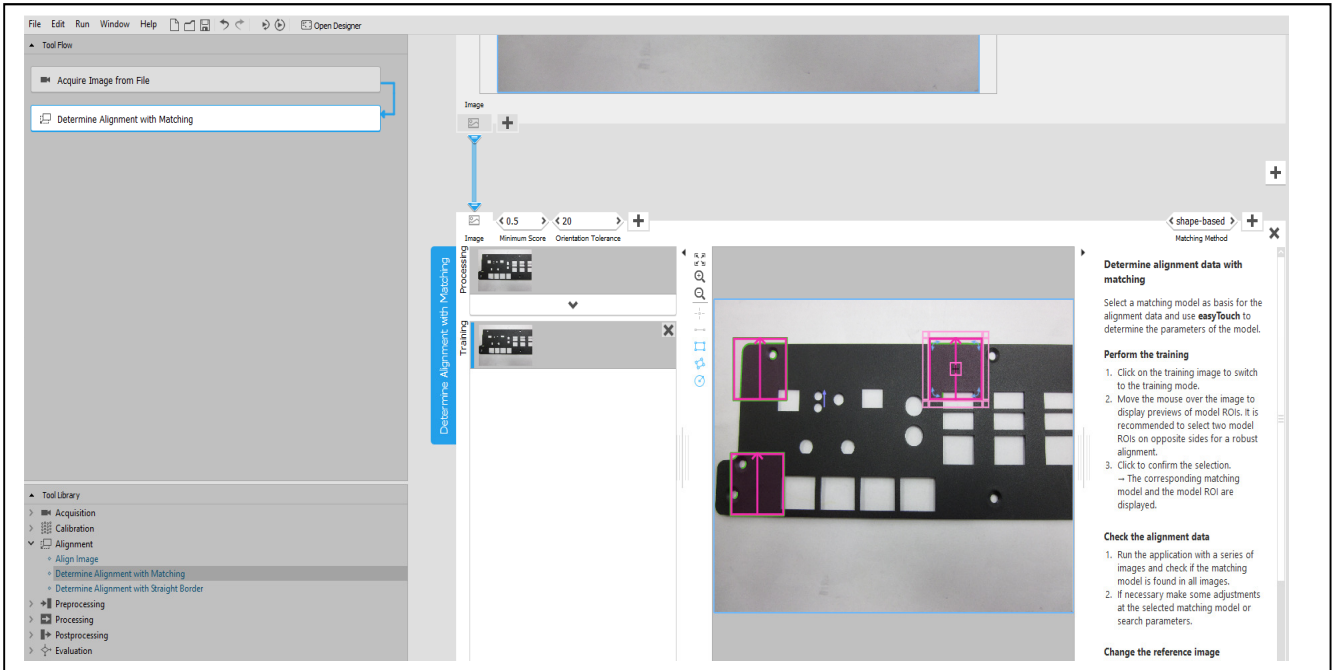
➤ Alignment

Merlic Program

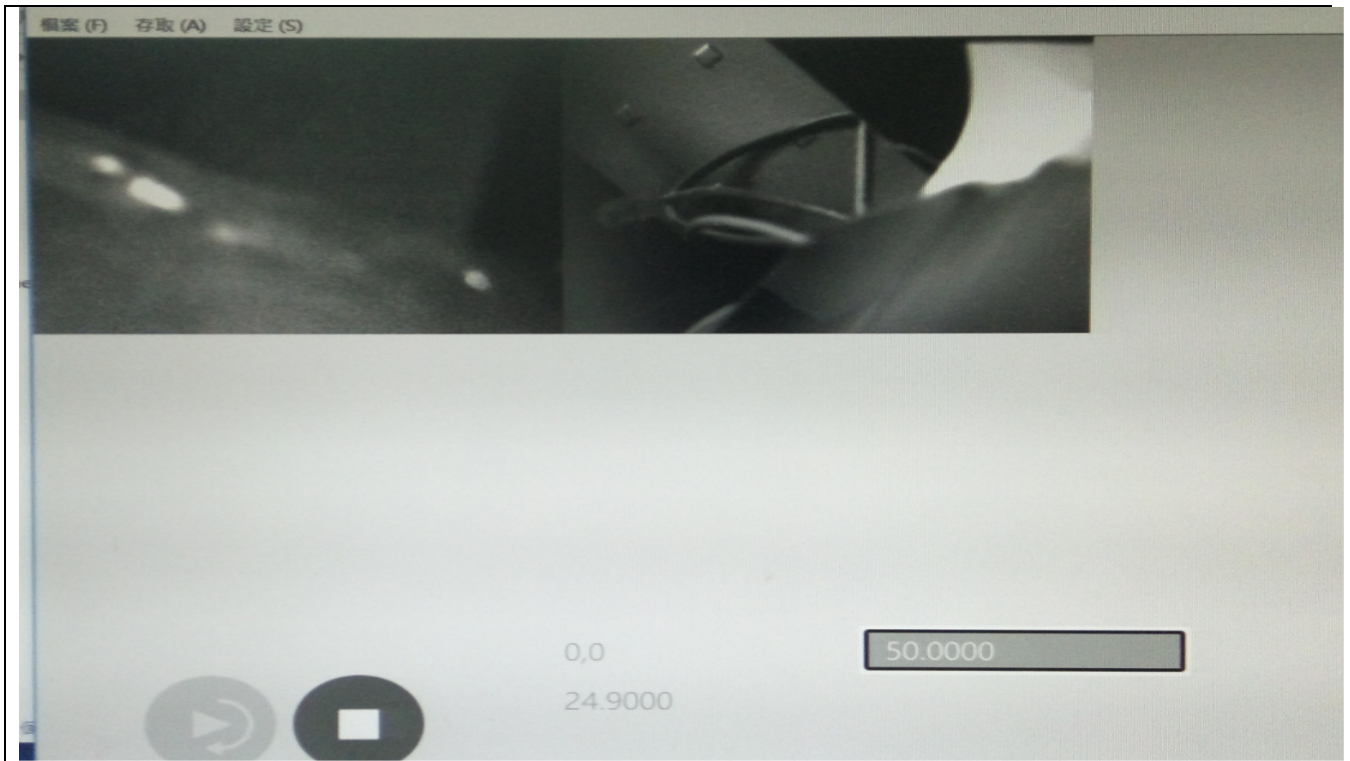
Select the matching model as basis for the alignment data.



Select the matching area.



Test result



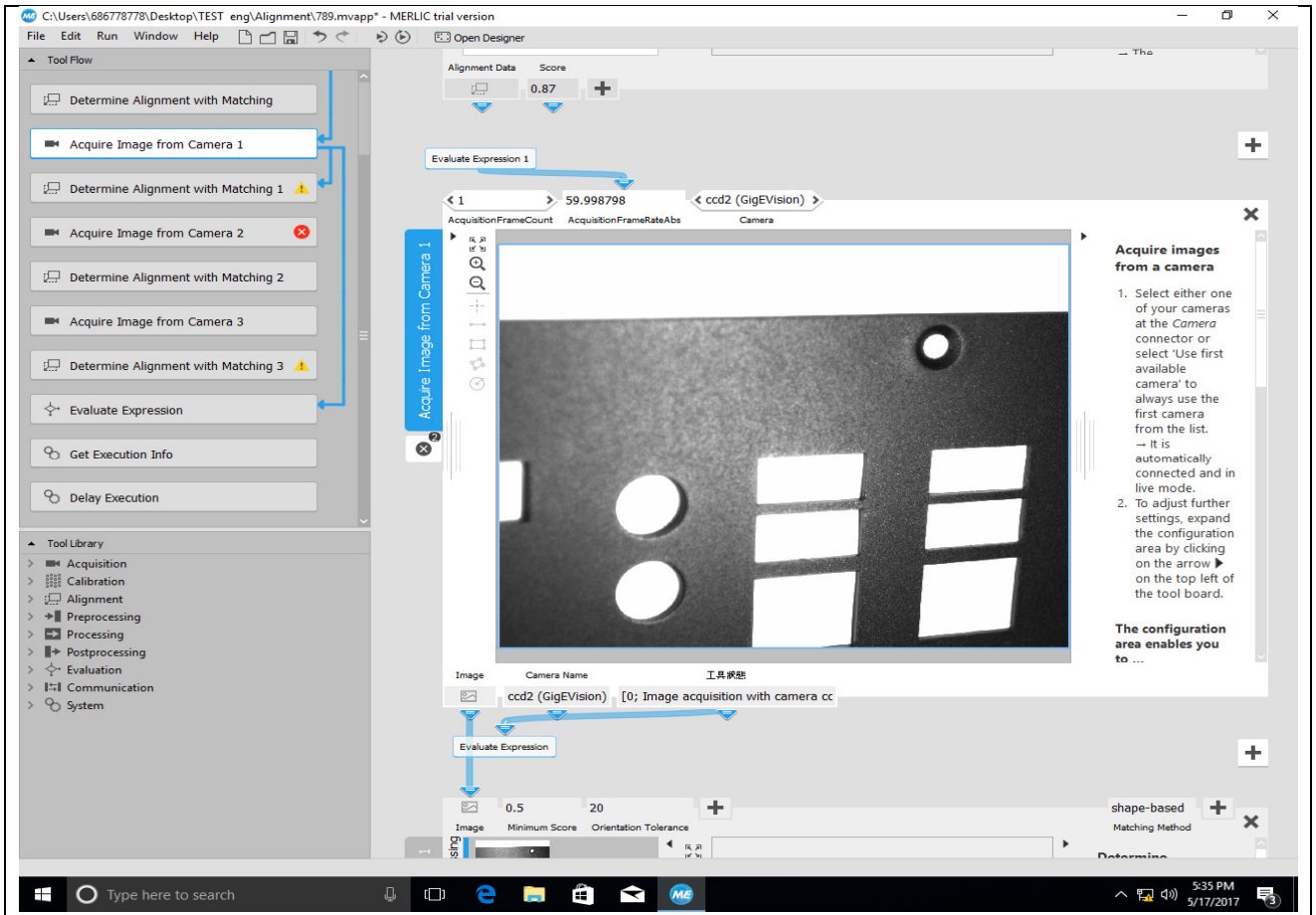
Camera Operating Test

Resolution	Camera quantity	Working frame per second in each camera	Result
1600 x 1200 pixels	2 pcs	50 fps	PASS

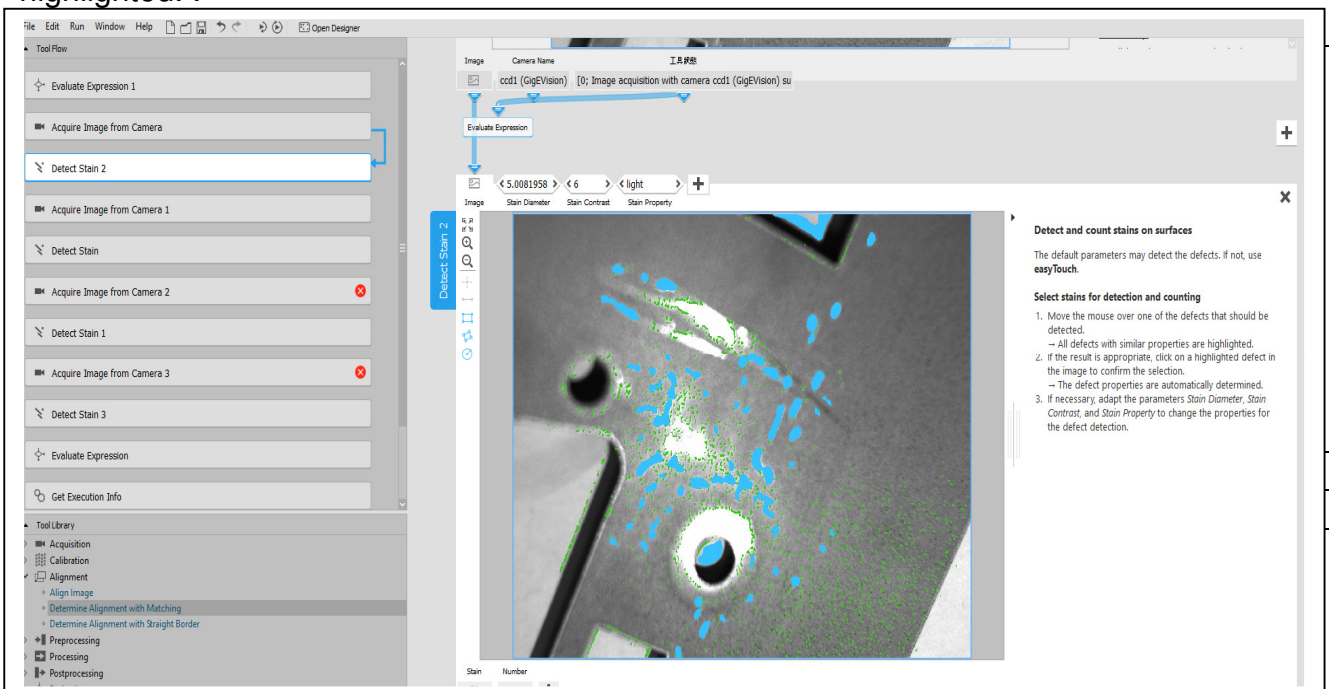
Note:

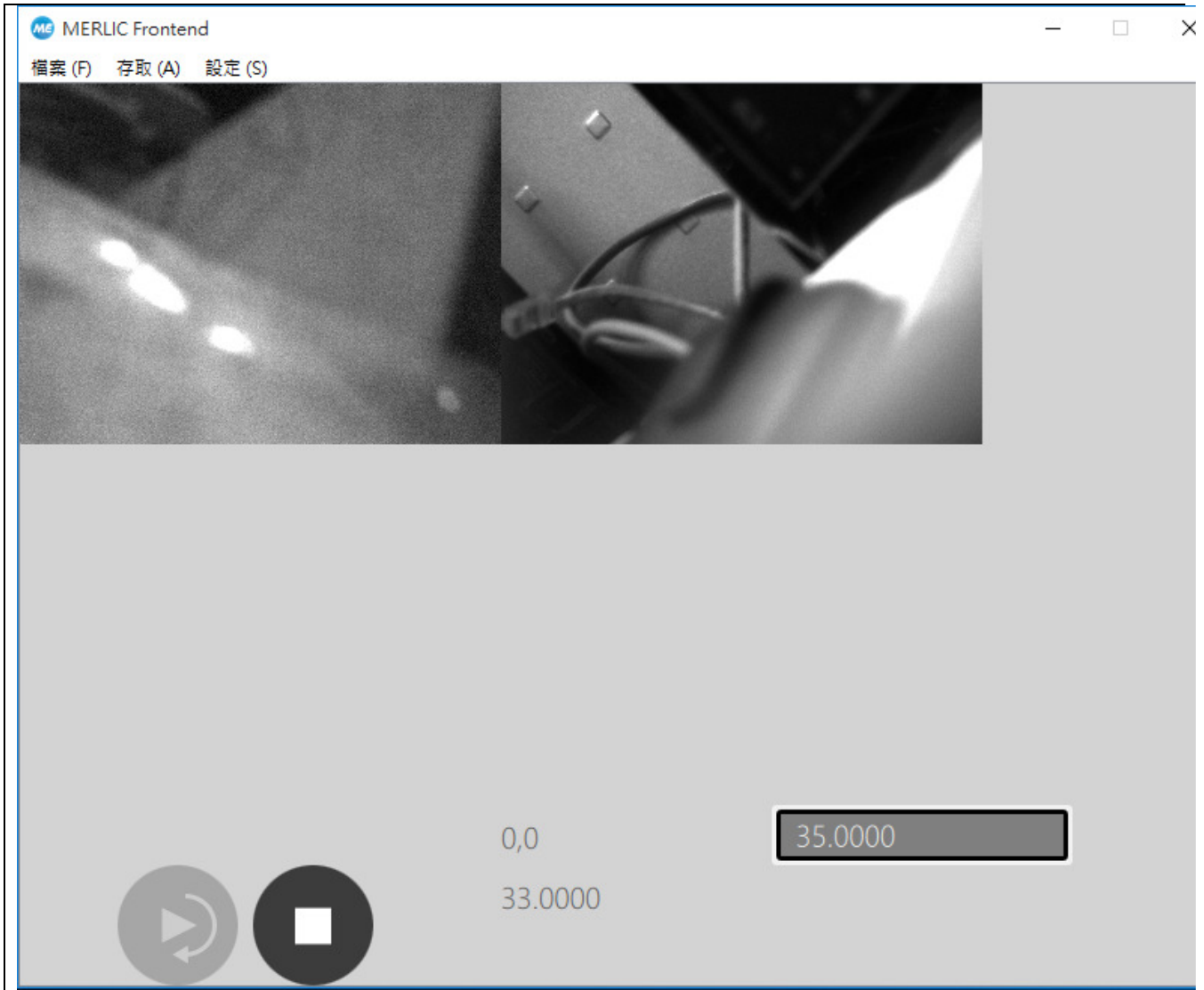
1. The working frame rate is the rate without any image frame loss.
2. The frame rate will be depended on system configuration.

➤ Detect Scratches test



Select stains for detection and counting. All the defects with similar properties are highlighted. .

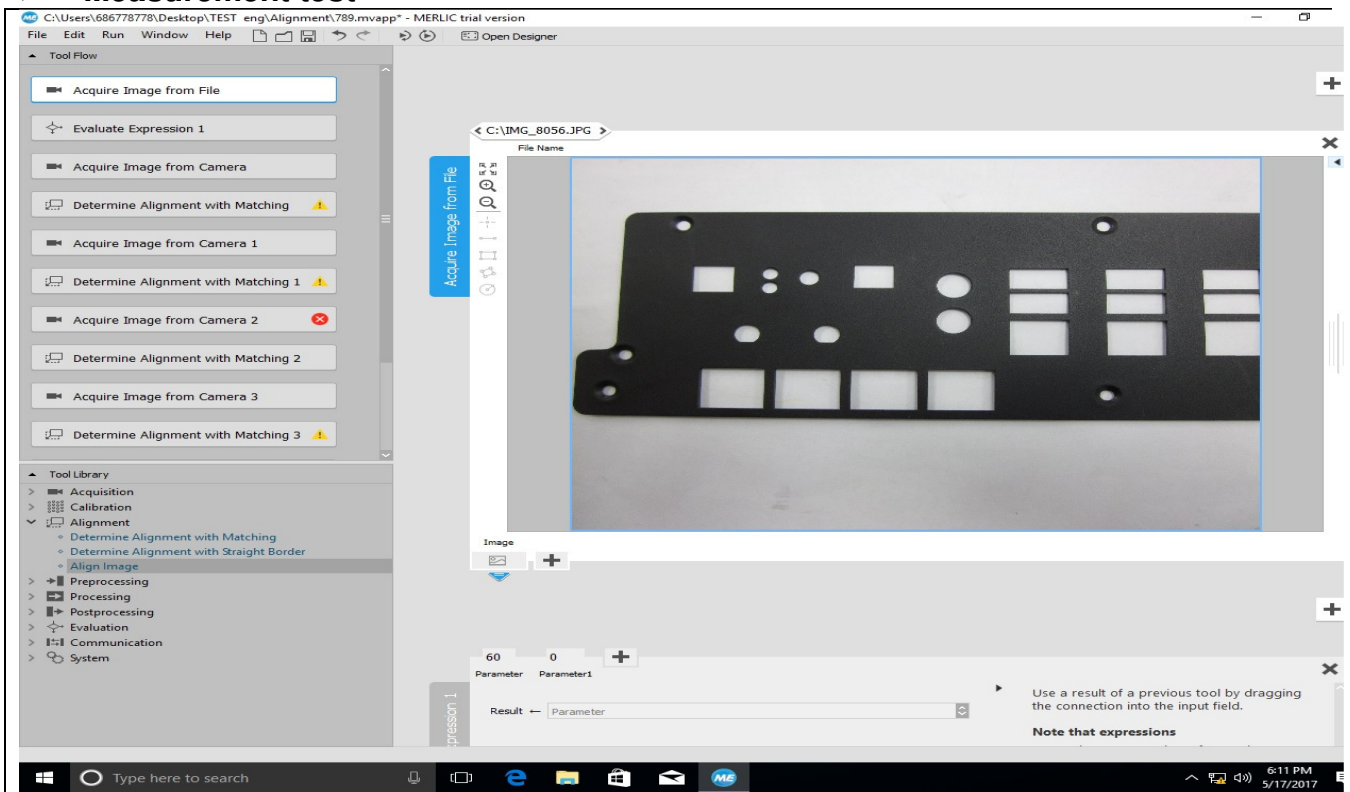




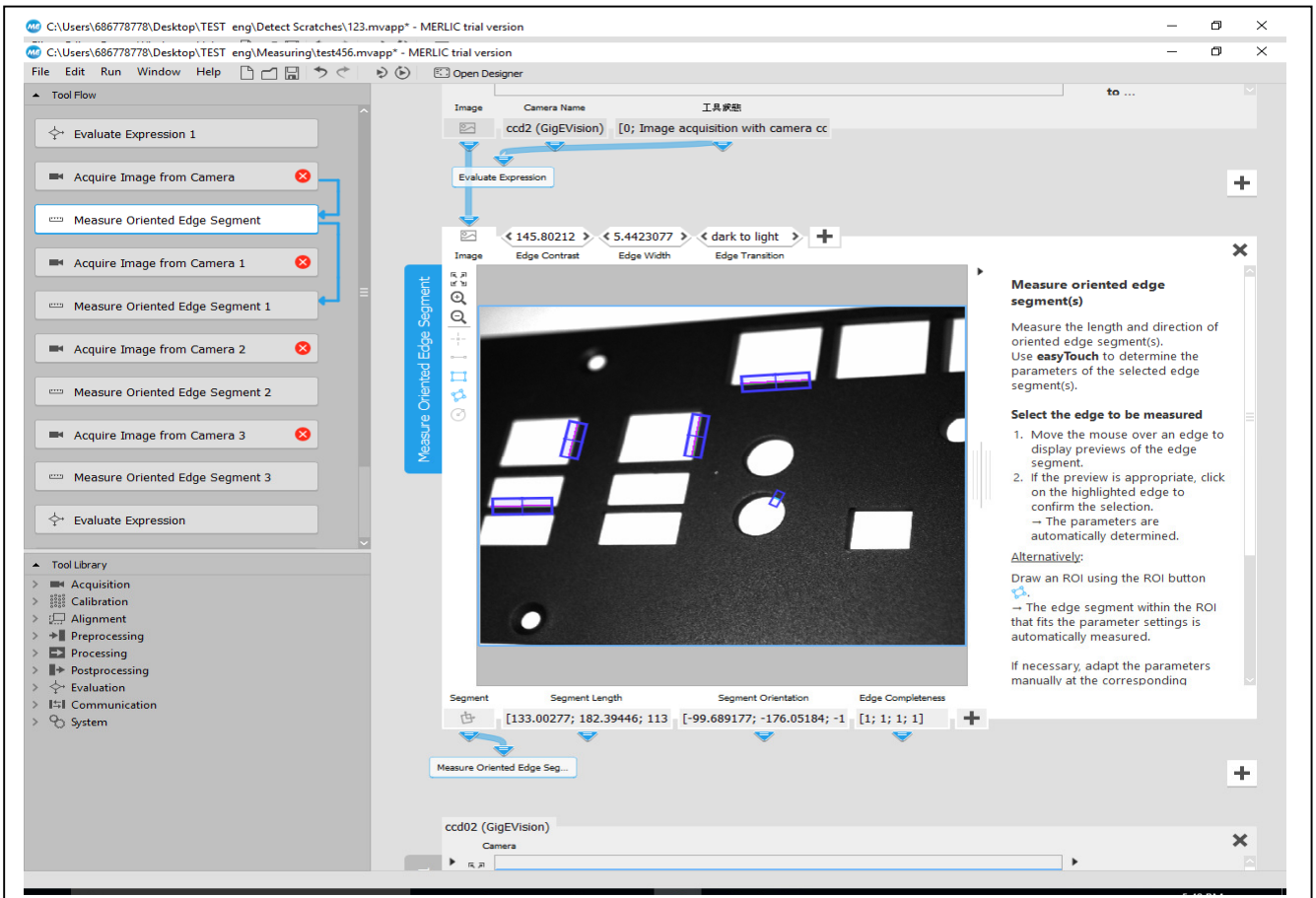
Camera Operating Test Result

Resolution	Camera quantity	Working frame per second in each camera	Result
1600 x 1200 pixels	2 pcs	35 fps	PASS
Note: 1. The working frame rate is the rate without any image frame loss. 2. The frame rate will be depended on system configuration.			

Measurement test



Select the edge to be measured





Camera Operating Test

Resolution	Camera quantity	Working frame per second in each camera	Result
1600 x 1200 pixels	2 pcs	50 fps	PASS

Note:

1. The working frame rate is the rate without any image frame loss.
2. The frame rate will be depended on system configuration.