CRH8508 DOUELE UNIT CCD

CRH8508 DOUELE UNIT CCD

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Check	for overexpose using "pylon Viewer"	56

1.	Please open the CCD recognition software first and connect the
corr	esponding CCD model56
2.	Disconnect the CCD recognition software and CCD hardware56
3.	Open "pylon Viewer" software57
4.	Record the Exposure Time (Raw) value and set it in the CCD recognition
soft	ware59
The in	nage result which be grabbed is black/dark61
[1] T	The image is completely BLACK. No images were grabbed due to an
abn	ormality in the trigger line61
[2] T	The exposure time is set too low, resulting in a dark image. Please refer to
the	PylonViewer to check for overexposure. After adjusting the exposure
time	e, proceed with the training62
[3] T	The light strip is burnt out, resulting in a dark image. Please check the
harc	dware first and replace the light strip. After adjusting it, proceed with the
trair	ning62
[4] T	The light strip cable is not properly connected, resulting in a dark image.
Plea	ase check the hardware first and properly connect the cable. After
adju	usting it, proceed with the training62

Display a warning window	62
Please connect the camera	62
Wrong number of images taken. Please check trigger cable	63
The device initialization failed! The program will be closed soon!	64
I/O initialization failed	65
Failed to OPEN 'COM11'	65
Please train first	66
Incorrect Basler.Pylon.dll	66
EXCEPTION CAUGHT: warning window	66
Replace the socket base	67
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Introduction

The main function of this program is to utilize a single set of CCD to identify the presence of ICs, and to transmit the results back to the Handler. This program communicates with the Handler using the LSI3101 card to trigger imaging and I/O to return the recognition results.

Basic function

- Identify the presence of ICs.
- CCD parameters can be set by the program. For example: <u>Exposure Time</u>, <u>OffsetY</u>, ReverseX and ReverseY.
- Recognition parameters can be set by the program. For example: <u>Color Difference</u>, <u>Matching Ratio</u>, <u>Stitching images pixel</u>, <u>Grabbing images Position</u>, <u>Recognition</u> <u>Area</u>, <u>Sample Position</u>, and <u>Sample Size</u>.
- <u>Create a new profile/Switch profile</u> using Modbus protocol.
- Language switch.
- I/O Settings (SOTP \ SOTN \ EOT \ OK \ NG)

MMain Form description

Upon entering the program, the main interface is as follows, which can be divided into 4 areas:

- A. Title Bar: Includes the window name and the current page window.
- B. Main Function Bar: <u>Socket-based types</u>, <u>Language Selection</u>, Dashboard page, Teach page, Engine page, Login page.

- **C.** Page Content Display Area: Includes Dashboard page content, Teach page content, Engine page content, Login page content.
- **D.** Status Bar: Displays current engine point, image recognition processing time, and image recognition results.

(A)			
MMain - Version 1.4 - [FDashboard]		- 0	×
Dashboard Teach Engine 2x4(X40Y60) - English	-	Login	Exit
Show Result Show Current Image			
CCD Model			
label1			
			40
0			
∽(D)			

Main Function Bar operation DESCRIPTION

Socket-based types

Switching socket base types. X40 indicates a 40mm spacing between each socket in the horizontal axis, and Y60 indicates a 60mm spacing between each socket in the vertical axis.

Dashboard Teach Engine 2x4(X40Y60) - English - Login Exit	
---	--

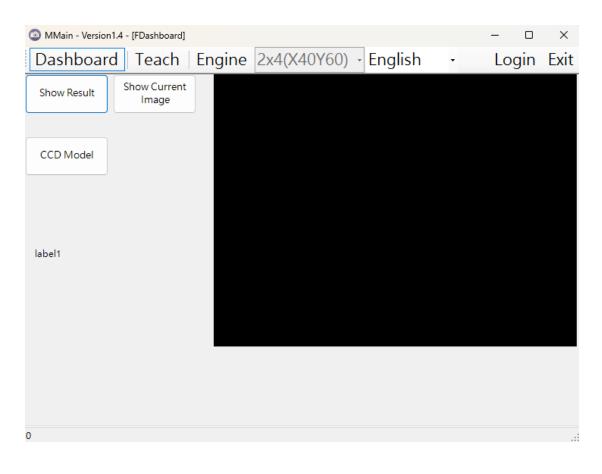
Language switch

Dashboard	Teach	Engine	2x4(X40Y60)	English	-	Login Exit

Page Content Display Area operation DESCRIPTION

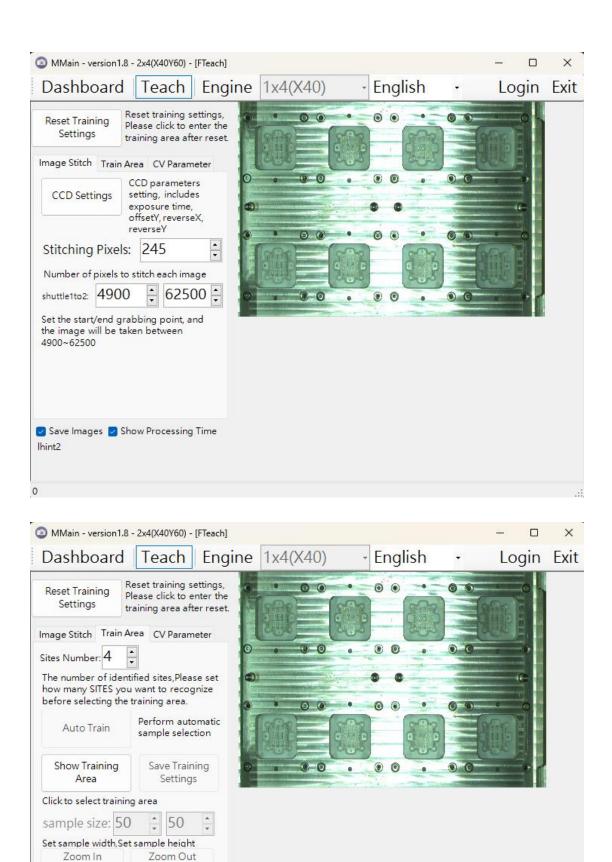
Dashboard page

Includes the CCD model selection window, displays the image and recognition results.



Teach page

Includes the <u>CCD settings</u> window, <u>adjusts the recognition area</u>, <u>sample areas</u>, <u>image</u> <u>recognition parameter settings</u>, Zoom out.



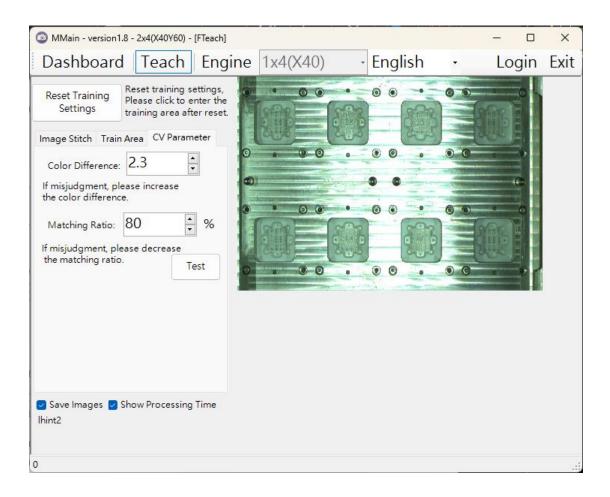
Current image ratio: 100%

Ihint2

0

🗹 Save Images 🔽 Show Processing Time

.d



Engine page

Includes the I/O settings (SOTP, SOTN, EOT, OK, NG), SOTP/SOTN start point settings, and grabbing images interval.

*Take the following picture as an example, The CCD will take the images between 4900~62500 point.

1. SOTP ON -> Grab images starting at **4900** point -> Grab one image every **3065** point -> Grab images until **62500** point -> Image processing -> OK/NG -> EOT (**Take** approximately (62500-4900)/3065 = **19** images, and no error will be <u>reported</u> if the number of images taken is within **19**±3)

2. SOTN ON -> Grab images starting at 62500 point -> Grab one image every -3065 point -> Grab images until 4900 point -> Image processing -> OK/NG -> EOT (Take approximately (62500-4900)/3065 = 19 images, and no error will be reported if the number of images taken is within 19±3)

MMain - version1.8 - 2x4(X40Y60) -	[FEngine]					-		×
Dashboard Teach	Engine	1x4(X40)	- Eng	lish	•	L	ogin	Exit
SOTP	Save	SOTP Sta	art Point	4900		•		
SOTN		SOTN Sta	art Point	62500	-	•		
EOT			Interval	3065	-	•		
ОК		the image	rt/end grabbin will be taken l	between 49		0		
NG		Take a ima	ge every 3065	points				
0								.:

Login page

Login interface, with Engineer and Admin permissions.

Engineer password:39

Admin password:16552978

(Please refrain from logging in as Admin unless necessary.)

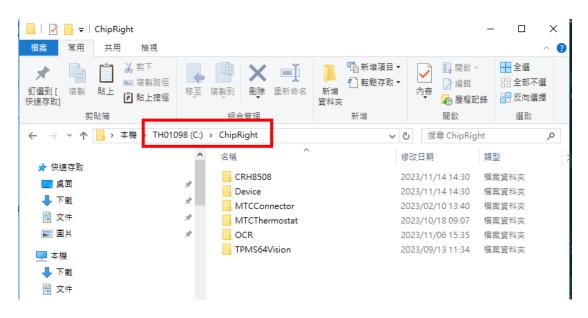
MMain - Version1.4	- [Login]					-		×
Dashboard	Teach	Engine	2x4(X40Y60)	- English	•	Lo	gin	Exit
Account: password:	Engineer **	- ~	<u>.</u>	_				
Login	Can	cel						
-								
0								

CRH8508 SocketVision Training Step

First time using CCD recognition software.

1. Create a folder in <u>C:/</u> and name it "ChipRight".

If it already have one here, please skip this step.



2. Copy the folder provided by R&D to C:/ChipRight

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★ 算鑑到[快速存取] ★ 算量 ★ 算量 ● 上提徑	修至 復製到 ▲ <td>I 新増項目 ▼ 1 輕鬆存取 ▼</td> <td> ▶ ▶ ▶ ▶ ▶ ₩ ₩</td> <td>計 全選 計 全部不選 書 反向選擇</td>	I 新増項目 ▼ 1 輕鬆存取 ▼	 ▶ ▶ ▶ ▶ ▶ ₩ ₩	計 全選 計 全部不選 書 反向選擇
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桌面	★ ^ 名稱 ^	修改	日期 類語	型 기
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💻 本機	provided by R&D			
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剪貼簿	組合管理	新増	開啟	選取
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 ★ 快速存取 ● 桌面 ● 下 文件 ● 本機 ● 本機 ● 文件 ● 本機 ● 文件 ● ○ 一章 異面 □ □ □ □ 	▲ 名稱 CRH8508 Device MTCConnector MTCThermostat OCR SocketVision TPIviS04vision	2 2 2 2 2 2 2 2	023/11/14 14:30 # 023/11/14 14:30 # 023/02/10 13:40 # 023/10/18 09:07 # 023/11/06 15:35 # 023/12/06 09:45 #	通型 字 編 編案 資料 夾 編 編案 資料 夾 編 編案 資料 夾 編 編案 資料 夾 編 編案 資料 夾

- 3. Create a new profile, there are two ways to create profile
 - I. Copy the profile in the template folder

Enter the <u>C:\ChipRight\SocketVision\product</u> folder and there is a template folder. When you want to train, you can copy several profile files to the <u>product</u> folder. DO NOT modify the data in the Template folder.

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檔案 常用 共用 檢視	管理			~ ?
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 Copy the <u>model(folder)</u> you want to train and mark which product it corresponds to later to facilitate switching profile files later. Here the brackets are the actual spacing between sockets (unit: mm)

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♪ 快速存取	^ 名稱 [^]	日期	類型	大小
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ii. Enter the profile folder and modify the JSON file name to be the same as the folder name.

□ □ - 2x4(X40Y60)_XXXXX 福寮 常用 共用 檢視 ★ 第下 5 第下 (1) (1) 10 10 10 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)<	● ●	歷程記錄 💾 反向選擇
← → → ↑ ▲ « SocketVision :	• product • 2x4(X40Y60)_XXXX	4(X40Y60)_XXXXX 🔎
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3 it \+ + - T_	▲ 名稱 修改日期	類型 :
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iii. Open the JSON file and modify the path

2x4(X40Y60)_XXXXX;json - 記事本	-	\times
留案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)		
<pre>% "Start": 5000, "pEnd": 60200, "nStart": 60200, "intervalbit": 3065, "socketindex": "2x4(X40Y60)", "CvFileMame": "C:\\ChipRight\\SocketVision\\produc\\2x4(X40Y60)\\SW_Setting.txt", "pixels12FileMame": "C:\\ChipRight\\SocketVision\\product\\2x4(X40Y60)\\ListPixel1to2.txt", "failImagesPath": "D:\\", "fixsitesNum": 8, "sampleHightsiteSize": 48, "sampleHightsiteSize": 48, "sampleHightsiteSize": 48, "threshold": 500, "offsetT": 520, "coloratio": 8.5, "GrayPixels": 254</pre>		

/////////////////////////////////////	-	×
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)		
<pre>% "pStart": 5000, "pEnd": 60200, "nEnd": 50200, "nEnd": 50200, "intervalbit": 3065, "socketindex": "2x4(X40Y60)", "CvFileName": "C:\\ChipRight\\SocketVision\\product\\2x4(X40Y60)_XXXXX\\ListPixellto2.txt" "pixels12FileName": "C:\\ChipRight\\SocketVision\\product\\2x4(X40Y60)_XXXXX\\ListPixellto2.txt" "pixels2IFileName": "C:\\ChipRight\\SocketVision\\product\\2x4(X40Y60)_XXXXX\\ListPixellto2.txt" "failImagesPath": "D:\\", "fixsitesNum": 8, "sampleHeightsiteSize": 48, "threshold": 0.85, "exposureTime": 500, "offsetY": 520, "GrayPixels": 254 }</pre>		~

iv. Enter <u>C:\ChipRight\SocketVision\config</u>, open the config.json file,

and change productName to the name of the working file just now

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■ 業面			randierForminio.jsc	n	2	023/12/06 09:51	JSON 檔案	
		× s	socketRatioInfo.jsor	ı	20	023/11/03 09:32	JSON 檔案	
🥘 config.json - 記事本	2							-
檔案(F) 編輯(E) 格式	;(O) 檢視(V) i	党明(H)						
{ "productName": }	"2x4(X40Y60)"						

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	▲ 名稱	<u>^</u>	修改日期	頑型 2
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		son	2023/12/06 09·51	SON 檔室
📃 config.json - 記事本				-
檔案(F) 編輯(E) 格式	(O) 檢視(V) 說明(H)			
{ "productName": }	"2x4(X40Y60)_XXXXX"			

- II. Create a new profile in handler
 - i. Enter in the handler, directly enter the new profile file name

CRH8516 Ver:20231130-EN0	2		-				
Main			Output Count			Menu-Ma	ain
	-	Ambient Soak: ## Stop	Input : 0 Total : 0	Norm	al Reset 🧰	主畫面	手動
停機	Start Mo	de : Disable SiteMap Start	Fix1 0 0.0%	Fix2 0 0.0%	Fix3 0 0.0%	教導	規格
On-Line	TrayMap		4	5	6	補正	建檔
	續生產	無料忽略	Autol	Auto2	Auto3		
TTL TTL.t 工作檔: CCD.			0.0%	0.0% 2,R	0.0% 3	1.0.0	
使用者: 四方		•				結束	關機
WorkPress Status 0%[-0.009k Socket Yield E 6 7 A B 2 3	Bin & UPH						

CRH8516 Ver:202311	30-EN02					
Build-WaitTime - [CCI	D.job]				Menu-Buli	d Lot
WaitTime	Other1	Other2	CleanPad	Tab 4	料盤	測試介面
Socket CCD		FileName			分類	燈號
CR-Color_2X	4.cfg				溫度	速度
		the CCD prof			瀏覽	動作時間
CCD profil handler pro		ded directly w	hen switching	(the	存檔	返回
th 2. En	e CCD profil Iter the exist	CCD profile he e ing CCD profil				
	ofile Dk	Apply	Ca	ncel		

ii. Open the CCD vision software, modify the socket-based type

4. Open the CCD vision software and switch the language first.

MMain - Version1.4 - [FDashboard]			- 0	×
Dashboard Teach Engin	e 2x4(X40Y60) ·	English	Login	Exit
Show Result Show Current Image		中文 English		
CCD Model				
label1				
0				.:;

5. Connect the corresponding CCD model.

CCDInterface	×	MMain - Version1.4 - [FDashboard]		- 0	×
Basier scA244		Dashboard Teach Engine 2x4(X40Y60) - English	•	Login	Exit
Basler 6xA244 0-20pm (22455 821)		Show Result Show Current Image			
		CCD Model			
		label1			
		0			

6. You need to log in first. Two levels of authority are set here: Engineer and Admin.

MMain - Version1.4	4 - [Login]				-		×
Dashboard	Teach Engine	2x4(X40Y60)	English	•	Lo	gin	Exit
Account: password:	Admin ~ ******	Logging in as Adr modify the conte			ox.		
Login	Cancel						
0							

7. Enter the handler and modify the linked CCD profile file

Main	130-EN02		Output Count				Menu-Mair	n
	_	Ambient Soak: ## Stop	Input : 0 Total : 0	Norm	al Reset		主畫面	手動
停機	Start Moo	le : 🗌 Disable SiteMap	Fix1 0 0,0%	Fix2 0 0.0%	Fix3 0 0.0%		教導	規格
On-Line	TrayMap		4	5	6	-	補正	建檔
<u>English</u> TTL	繼續生產	無料忽略	Autol	Auto2	Auto3	-		顯示
	TTL.ttl CCD.job		0.0%	0.0%	0.0% 3			
使用者:	四方	•					結束	關機
$E_{5} \odot E_{6}$	5(-0.009kg/cm2] seter Bin & UPH → 7 → 8 → 2 → 0 → 3 → 4							

Build-WaitTime - [CCD.job]	Menu-Bulid	
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CR-Color_2X4.cfg	温度	速度
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	存檔	返回
	1718	26104
Ok Apply Cancel		

CRH8516 Ver:20231130-EN02

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0	1]					料盤	測試介面
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							瀏覽	動作時間
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-							存檔	返回
and then	the CCD prof	ile file will b	e loaded					
directly w	hen switchir	g the handle	er profile					
		Ŭ						
file.								
	Ok	Apply	1	Canc				
		Apply						

		分類	燈號	
		溫度	速度	
		瀏覽	動作時間	
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◆ 儲存檔案			×	
Name CCD.job				
Save	ancel			
After saving, return to the main form of the handl	ler firs	st, and		

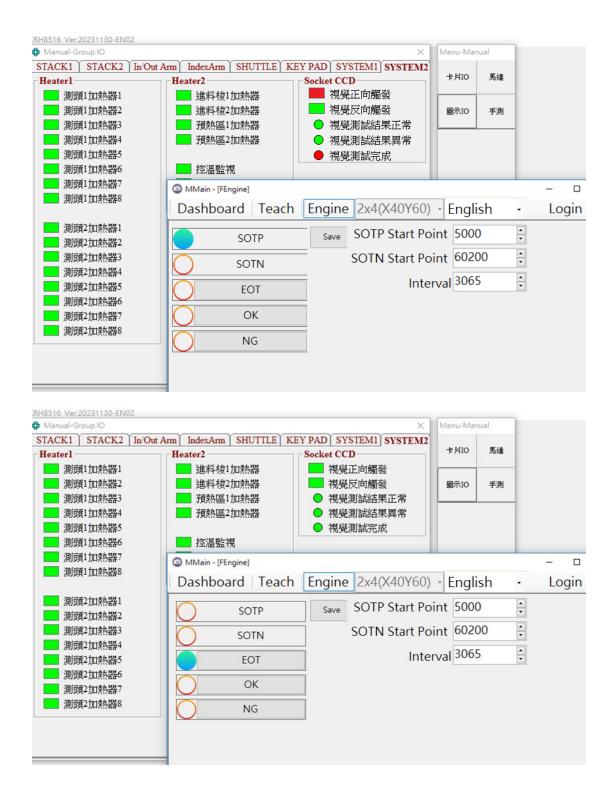
then check whether the profile file name has been changed.

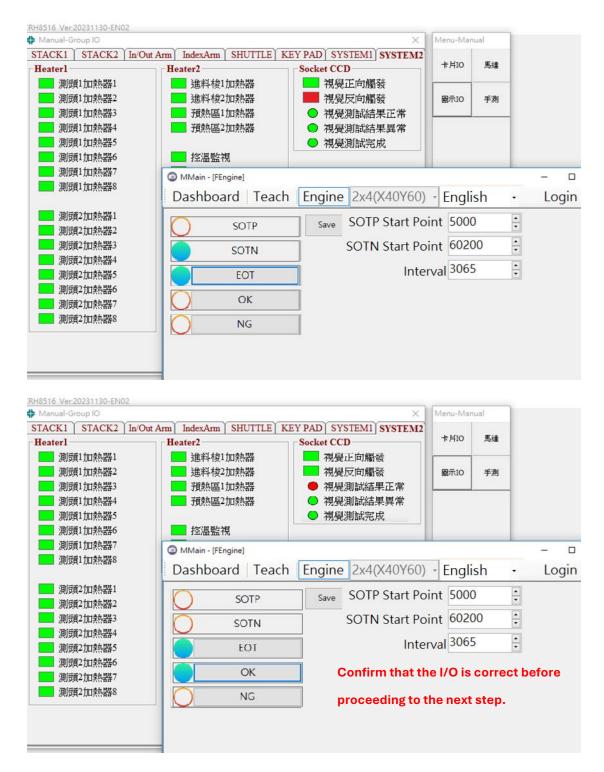


RH8516 Ver:202311					
uild-WaitTime - [CC	-			Menu	-Bulid Lot
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the ne	xt step			存権	當 返回
	Ok	Apply	Cancel		
	Ok	Apply	Cancel		

8. Check whether the I/O settings are correct

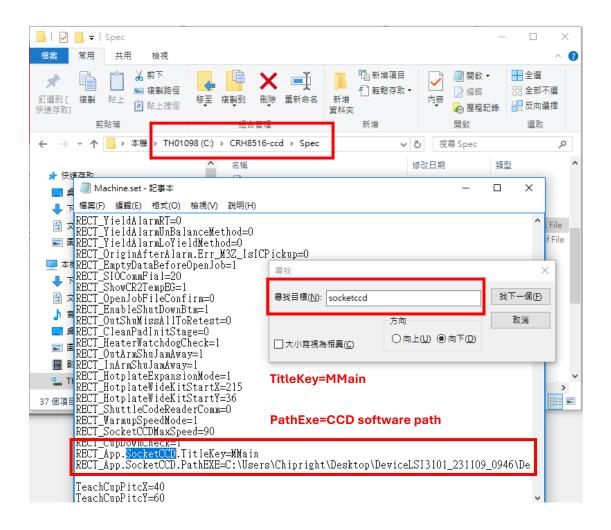
Manual-Group IO	X Menu-Manual
TACK1 STACK2 In/Out Heater1 測頭1加熱器1 測頭1加熱器2 測頭1加熱器3 測頭1加熱器3 測頭1加熱器4 測頭1加熱器5 測頭1加熱器6	 Am IndexAm SHUTTLE KEY PAD SYSTEM: SYST
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測度到2加熱器1 測度2加熱器2 測度2加熱器3 測度2加熱器3 測度2加熱器4 測度2加熱器5	SOTP Save SOTP Start Point 5000 \$ SOTN SOTN Start Point 60200 \$ EOT Interval 3065 \$
測頭2加熱器6 測頭2加熱器6 測頭2加熱器7 測頭2加熱器8	





9. Confirm whether the Handler's CCD button is connected to the correct path.

(Note: If there are any changes here, you need to restart the handler)



Training Step

log in

You need to log in first to have the permission to access the training interface.

MMain - Version1.4 ·	- [Login]					- 0	×
Dashboard	Teach	Engine	2x4(X40Y60)	- English	-	Login	Exit
Account: password: Login	Can	~				Login	LAIT
0							

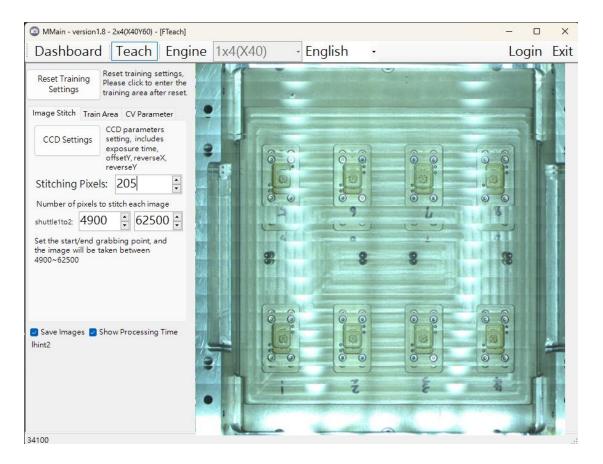
MMain - Version1.4 - [Login]		– – × '
Dashboard Teach Engine 2x4(X40Y60) - English	-	Login Exit
Account: Engineer password: Login Cancel		
0		.:;

Training with CCD Recognition Software

I. Move the shuttle first.

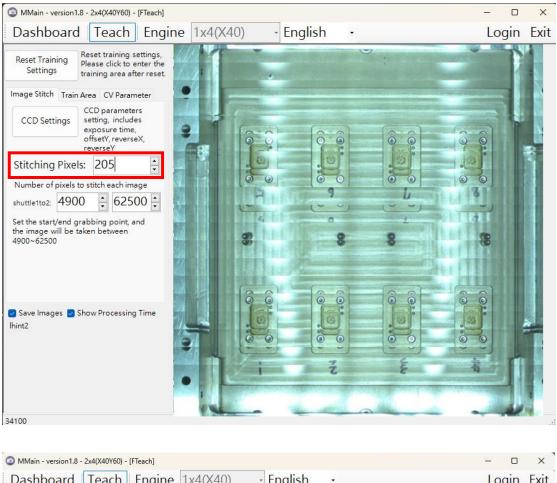


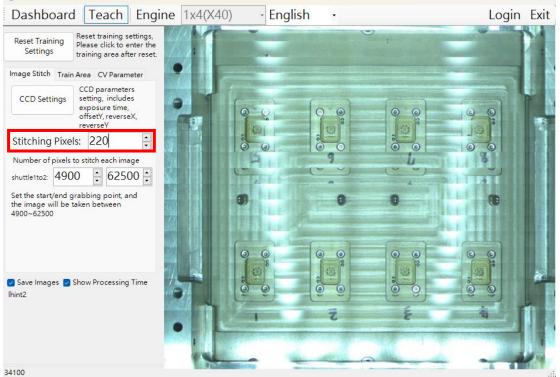
II. Close the warning window before seeing the stitching image.

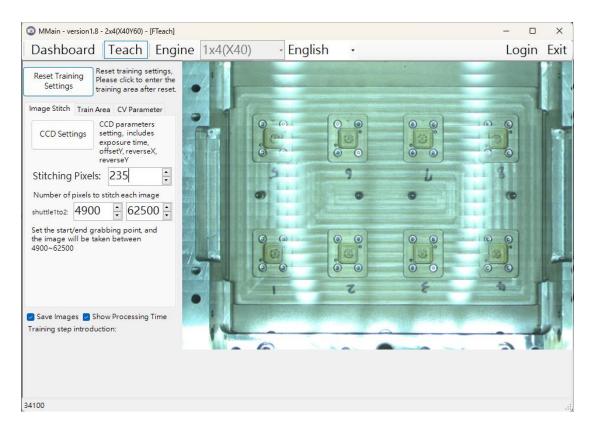


- III. Image Stitching Settings
 - i. You can see that the proportion of the result is incorrect. Adjust the "Stitching Pixels"

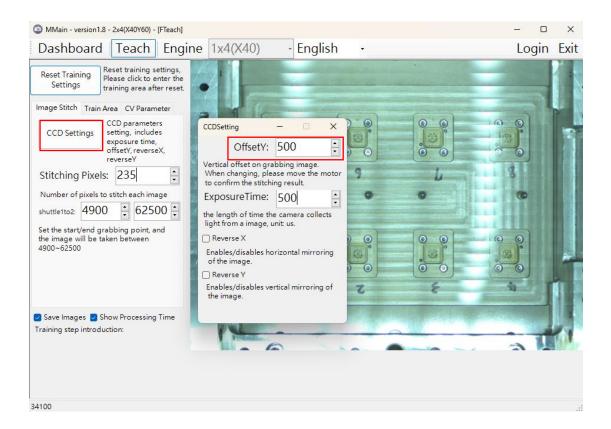
You can see the stitching results immediately

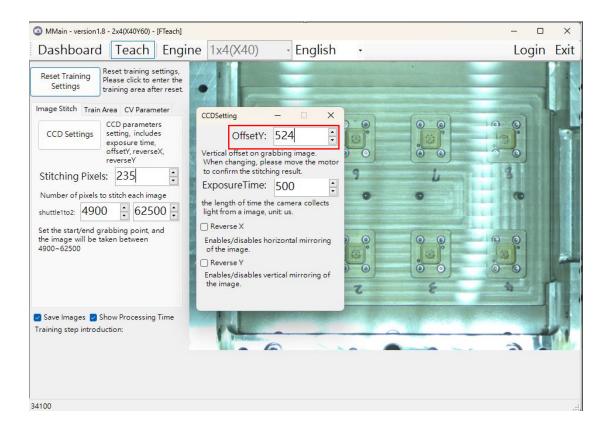






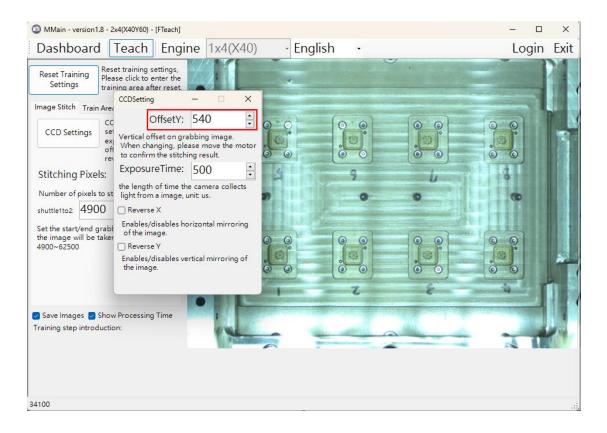
ii. You can clearly see that there are splicing lines one by one. Adjust the
 <u>OffsetY</u> here to try to make the lighting in the middle of the image.





Move the shuttle and see the stitching image result

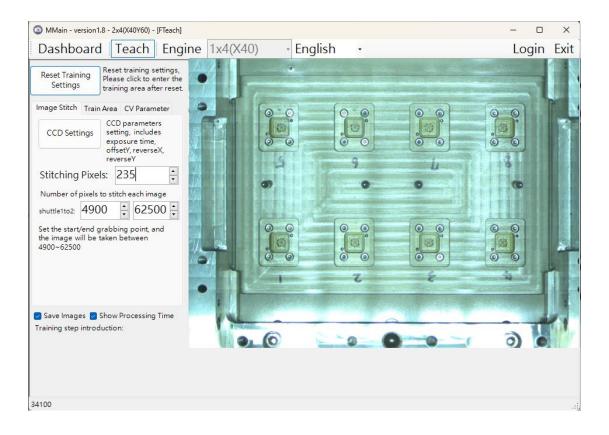
Dashboard Teach Eng	gine 1x4(X40)	- Engli	sh •	Log	gin Exi
Reset Training Settings Reset training settings, Please click to enter th training	e Ala	-			
CCD Settings ext vertical offset or exp when changing, offs to confirm the st rev Stitching Pixels: Stitching Pixels:	e the camera collects				
Save Images Show Processing Time Training step introduction:				Ţ	



Move the shuttle and see the stitching image result

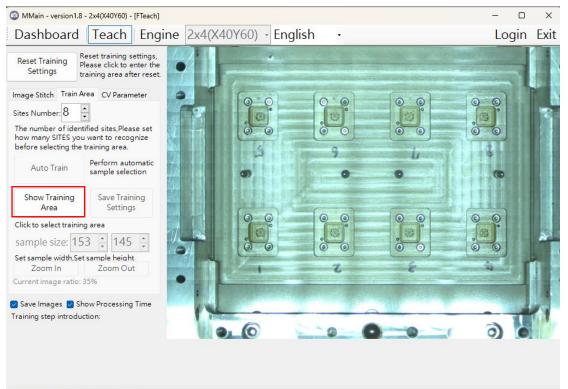
MMain - version1	.8 - 2x4(X40Y60) - [F	Teach]				- 0	×
Dashboard	l Teach	Engine	1x4(X40)	- En	glish •	Logir	n Exit
Image Stitch Tre CCD Settings Stitching Pix Number of pixe shuttle1to2: 42 Set the start/enc	Reset training set Please click to en CCDSetting OffsetY /ertical offset on g When changing, p to confirm the stitc ExposureTime he length of time : light from a image Reverse X Enables/disables 1 of the image.	ter the 540 : 540 : 540 : 500 the camera co , unit us.	e motor		3 9 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
Save Images S Training step introd	a contra a contra contra a serie de la	ïme	10.	Ó	-0-1	0	

You can move the shuttle several times to confirm whether it is covered by the machine.

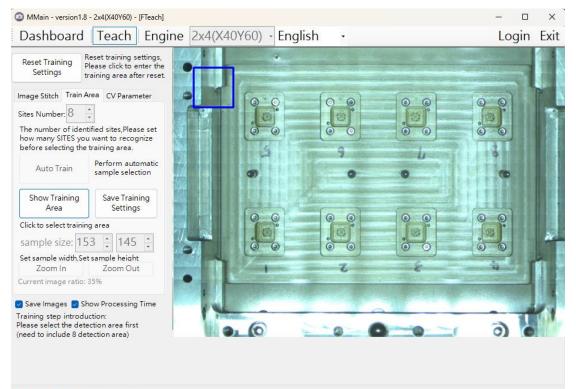


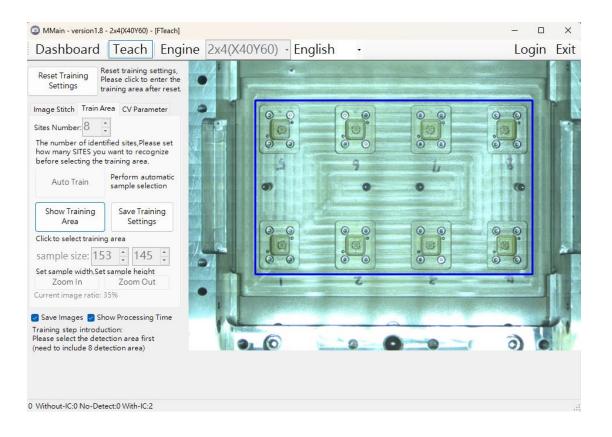
- IV. Training Area Settings
 - i. Click "Show Training Area" to proceed with the training.

click "Reset Training Settings" to reset all training area configurations.

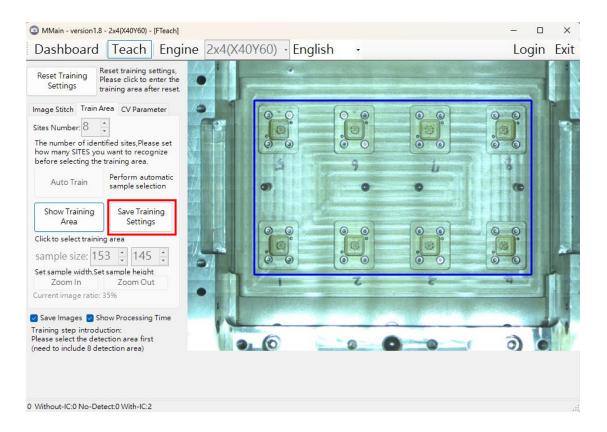


0 Without-IC:0 No-Detect:0 With-IC:2





ii. After adjusting, click "Save Training Setting".

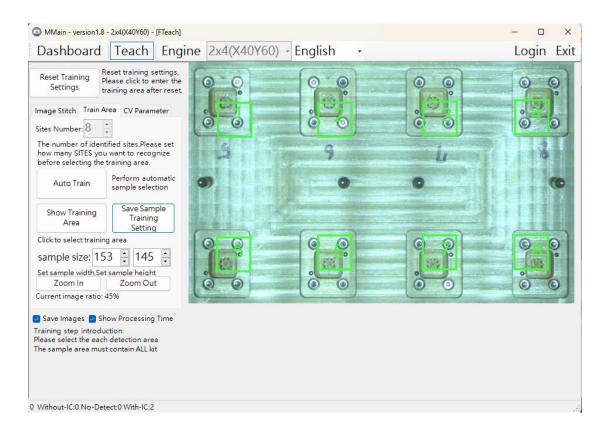


MMain - version1.8 - 2x4(X40Y60) - [FTeach]				<u>199</u>		×
Dashboard Teach Engin	e 2x4(X40Y60)	English	-	l	_ogin	Exit
Reset Training Settings Reset training settings, Please click to enter the training area after reset.	0	00	0	0	0	9
Image Stitch Train Area CV Parameter Sites Number: 8	00			0		ο
The number of identified sites,Please set how many SITES you want to recognize before selecting the training area.	5	9	1		64	
Auto Train Perform automatic sample selection	•	•	0	₹¶1		•
Show Training Area Save Sample Training Setting		and a second		-211		
Click to select training area	00	00	0	0	0	
Set sample width,Set sample height Zoom In Zoom Out Current image ratio: 45%	00		0	0	0	ο
 Save Image Fails 42.8 Save Images Show Processing Time Training step introduction: Please select the each detection area The sample area must contain ALL kit 						*
0 Without-IC:0 No-Detect:0 With-IC:2						

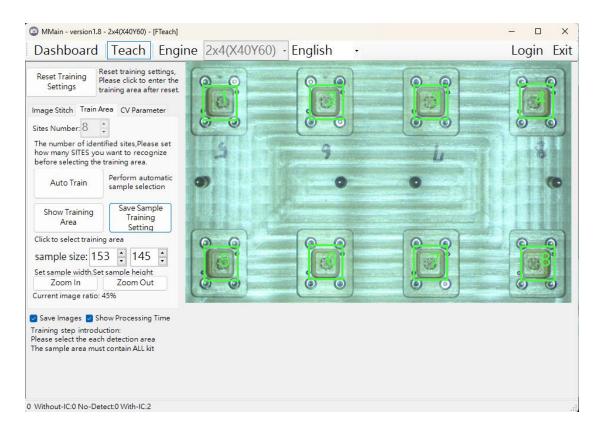
iii. Select the sample training area.

1. AutoTrain

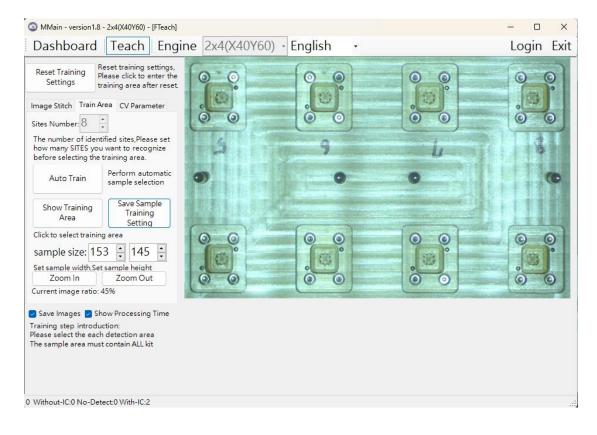
Reset Training Settings Image Stitch Train Area CV Parameter Sites Number: 8 +			
Dec.			00
The number of identified sites,Please set how many SITES you want to recognize before selecting the training area.	9	L	21131
Auto Train Perform automatic	•	0	œ
Show Training Area Setting		0	
Click to select training area sample size: 153 145 Set sample width.Set sample height Zoom In Current image ratio: 45%			



Move the small green boxes over the samples.



2. Manually select samples.

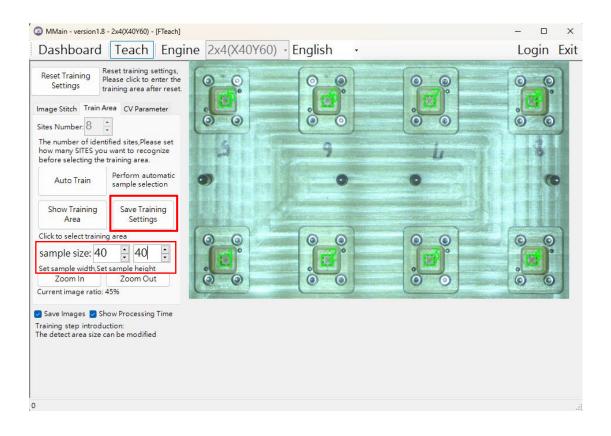


Click on the center of samples.

MMain - version1.8 - 2x4(X40Y60) - [FTeach]				– 🗆 X
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Reset Training Settings Settings Reset training settings, Please click to enter the training area after reset.	0	00	00	0
Image Stitch Train Area CV Parameter Sites Number: 8	00			00
The number of identified sites,Please set how many SITES you want to recognize before selecting the training area.	2	9	L I	1
Auto Train Perform automatic sample selection	•	0	0	C
Show Training Area Save Sample Training Setting				
Click to select training area sample size: 153 🔹 145 🔹 Set sample width Set sample height Zoom In Zoom Out				
Current image ratio: 45%	Contraction			
✓ Save Images ✓ Show Processing Time Training step introduction: Please select the each detection area The sample area must contain ALL kit				
0 Without-IC:0 No-Detect:0 With-IC:2				

MMain - version1.8 - 2x4(X40Y60) - [FTeach]			- 🗆 X
Dashboard Teach Eng	gine 2x4(X40Y60) - English -		Login Exit
Reset Training Settings Image Stitch Train Area CV Parameter				
Sites Number: 8 * The number of identified sites,Please set how many SITES you want to recognize before selecting the training area.	4	9	60)	
Auto Train Perform automatic sample selection	0	0	0	C
Show Training Area Click to select training area sample size: 153 - 145 - Set sample width. Set sample height Zoom In Zoom Out Current image ratio: 45%				
Save Images Show Processing Time Training step introduction: Please select the each detection area The sample area must contain ALL kit				
0 Without-IC:0 No-Detect:0 With-IC:2				.:

iv. Adjust the size of the sample, and after adjusting, click "Save Sample Training Setting" or "Save Training Settings".



V. Image recognition parameter settings – Color Difference
Matching Ratio

"Matching Ratio" - Match the grabbed image with the sample, the result lower than set value (Matching Ratio) will be filtered out. Ratio that are too high or too low may lead to false positives.

"Color Difference" - Compare the total color difference between the grabbed image and the sample. If the total amount of color difference compared is higher than the set value (Color Difference), it means there is IC; if the total amount of color difference compared is lower than the set value (Color Difference), it means there is no IC.

MMain - version1.8 - 2x4(X40Y60) - [FTeach]				– 🗆 X
Dashboard Teach Engin	ie 1x4(X40)	• English •		Login Exit
Reset Training Settings Reset training settings, Please click to enter the training area after reset. Image Stitch Train Area CV Parameter Color Difference: 3.0 •				
If misjudgment, please increase the color difference.	2	9	4	
Matching Ratio: 80 * % If misjudgment, please decrease the matching ratio. Test	•	•	•	e
Save Images Show Processing Time Ihint2				
0 Without-IC:4 No-Detect:0 With-IC:0				.:j

- i. Move the shuttle, and check which parameters lead to NG.
 - 1. Matching Ratio NG, decrease the setting value (Matching Ratio).

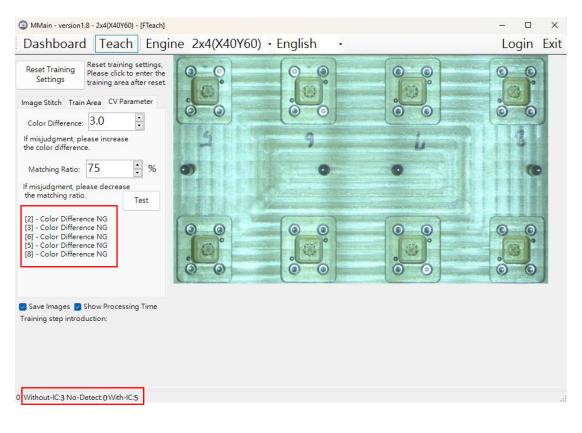
(If these parameters are set too high, it will become overly sensitive in recognition, leading to false positives)

(2) MMain - version1.8 - 2x4(X40Y60) - [FTeach]				<u></u>		×
Dashboard Teach Engi	ne 2x4(X40Y60) ·	English •		Log	gin	Exit
Reset Training Settings Settings Settings	0			0	0	
Image Stitch Train Area CV Parameter	00	00	00	0	0	
Color Difference: 3.0	2	3	L		1	1
Matching Ratio: 80 🔺 %	0		0	111	0	
If misjudgment, please decrease the matching ratio.		provine and	- Contraction of the			
 Matching Ratio NG - Color Difference NG - Color Difference NG - Matching Ratio NG - Color Difference NG 				0	0))0	
Save Images Show Processing Time Training step introduction:						
0 Without-IC:0 No-Detect:5 With-IC:3						

Decrease the set value (Matching Ratio), the following are two methods to verify the setting value.

MMain - version1.8 - 2x4(X40Y60) - [FTeach]			- 🗆 X
Dashboard Teach Engi	ne 2x4(X40Y60)) • English •	Login Exit
Reset Training Settings Reset training settings, Please click to enter the training area after reset. Image Stitch Train Area CV Parameter Color Difference: 3.0 * If misjudgment, please increase the color difference. * Matching Ratio: 75 * If misjudgment, please decrease the matching ratio. %		3	
 [1] - Matching Ratio NG [3] - Color Difference NG [6] - Color Difference NG [2] - Matching Ratio NG [4] - Matching Ratio NG [5] - Matching Ratio NG [7] - Matching Ratio NG [8] - Color Difference NG 2 Save Images Show Processing Time Training step introduction: 			
0 Without-IC0 No-Detect:5 With-IC3			

Click the "Test" button •



• Move the shuttle

Move the shuttle and verify if the recognition count in the status bar below matches the DUT.

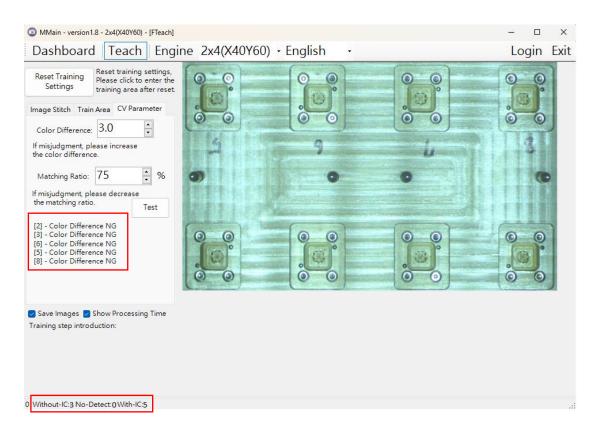


If "Without-IC" is inconsistent, decrease the Matching Ratio and move the shuttle again until the "Without-IC" count in the status bar below matches the DUT.

If "Without-IC" is consistent, then increase the matching ratio until reaching the threshold of inconsistency.

2. Color Difference NG, increase the setting value (Color Difference).

(If these parameters are set too low, it will become overly sensitive in recognition, leading to false positives)



Decrease the set value (Color Difference), the following are two methods to verify the setting value.

- MMain version1.8 2x4(X40Y60) [FTeach] \times Dashboard Teach Engine 2x4(X40Y60) · English Login Exit Reset training settings, Please click to enter the Reset Training 0 0 0 0 0 0 0 0 Settings training area after reset. 的 10 02 200 Image Stitch Train Area CV Parameter 0 0 0 0 0 0 (\circ) Color Difference: 5.0 4 If misjudgment, please increase the color difference. i i • % Matching Ratio: 75 0 0 10 If misjudgment, please decrease the matching ratio. Test [2] - Color Difference NG
 [3] - Color Difference NG
 [6] - Color Difference NG
 [5] - Color Difference NG
 [8] - Color Difference NG 0 0 0 0 0 \odot 0 0 8 10 0 0 0 0 0 ۲ 0 0 🕑 Save Images 💟 Show Processing Time Training step introduction: 0 Without-IC:3 No-Detect:0 With-IC:5
- Click the "Test" button

(3) MMain - version1.8 - 2x4(X40Y60) - [FTeach]				- 0	×
Dashboard Teach Engi	ne 2x4(X40Y60)	- English -		Login	Exit
Reset Training Settings Settings Reset training settings, Please click to enter the training area after reset.	0			00	
Image Stitch Train Area CV Parameter	00				
Color Difference: 5.0		(0)	(0)		J
If misjudgment, please increase the color difference.	7	9	L I	1-4	
Matching Ratio: 75 🔶 %	0	0	0	0	•
If misjudgment, please decrease the matching ratio. Test					
0 Without-IC:8 No-Detect:0 With-IC:0					.:

• Move the shuttle

Move the shuttle and verify if the recognition count in the status bar below matches the DUT.



If "Without-IC" is inconsistent, increase the Color Difference and move the shuttle again until the "Without-IC" count in the status bar below matches the DUT.

If "Without-IC" is consistent, then decrease the Color Difference until reaching the threshold of inconsistency.

- ii. Move the shuttle, and there is no NG
 - 1. Increase the setting value (Matching Ratio)

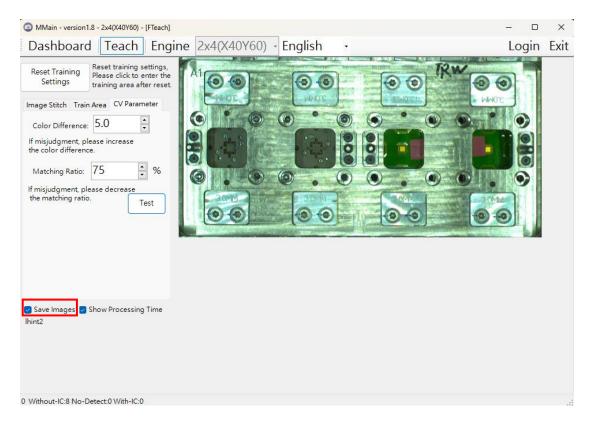
Increase the setting value (Matching Ratio) and move the shuttle until reaching the threshold of inconsistency.

2. Decrease the setting value (Color Difference)

decrease the setting value (Color Difference) and move the shuttle until reaching the threshold of inconsistency.

Other Parameters

Save Images Settings



It will save NG images.

Image file: D:\SocketVision\FailData

Stitching Pixels

The meaning is how many pixels each image needs to overlap.

For example, suppose there are 10 images of 1920*300. The movement of the shuttle causes the image to move only in the Y-axis.

The Stitching Pixels is set to 150, and the upper and lower images are stitched together.

Modify this parameter to see the stitching results immediately.





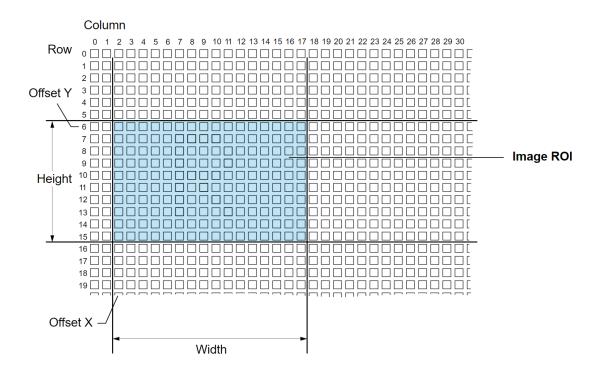
CCD parameters

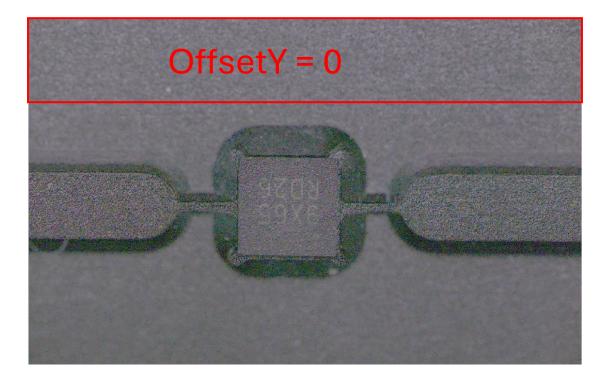
Due to the need for image stitching, the image size is changed to Width*Height (1920*300)

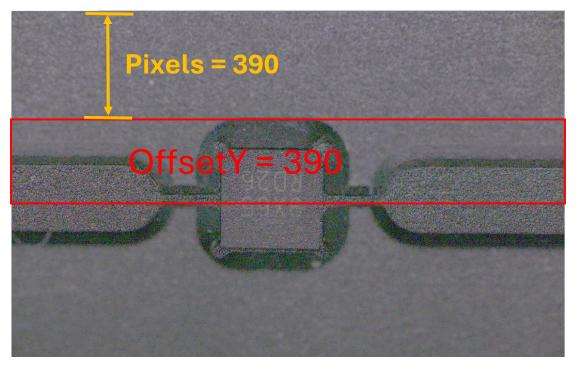
OffsetY

OffsetY - Vertical offset from the top of the sensor to the region of interest (area of interest) (in pixels).

Attention: The image of ROI location may be obscured by the machine or overexposed. Be sure to adjust this parameter.







Exposure Time

Exposure Time - the length of time the camera collects light from your sample.

Unit: us (The CCD recognition software can set the maximum value to 5000us)

ReverseX

Enables/disables horizontal mirroring of the image. The pixel values of every line in a captured image will be swapped along the line's center.

ReverseY

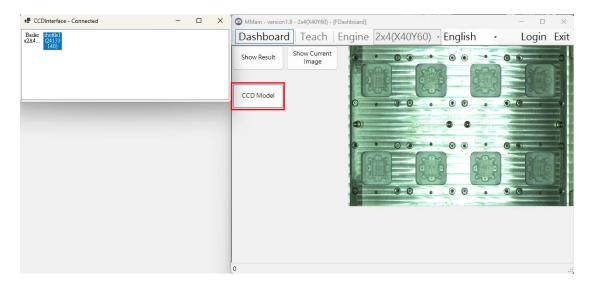
Enables/disables vertical mirroring of the image. The pixel values of every column in a captured image will be swapped along the column's center.

Exception Handling

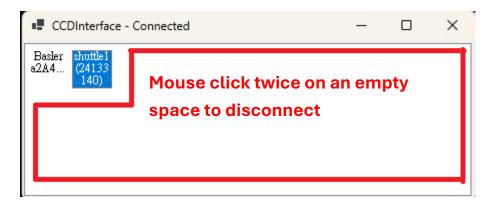
Check for **overexpose** using "pylon Viewer"

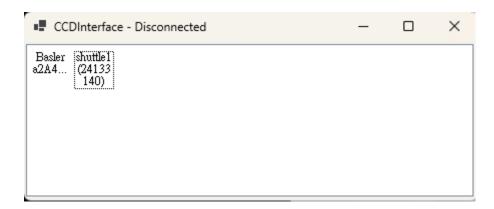
 Please open the CCD recognition software first and connect the corresponding CCD model.

Purpose: Set CCD hardware parameters



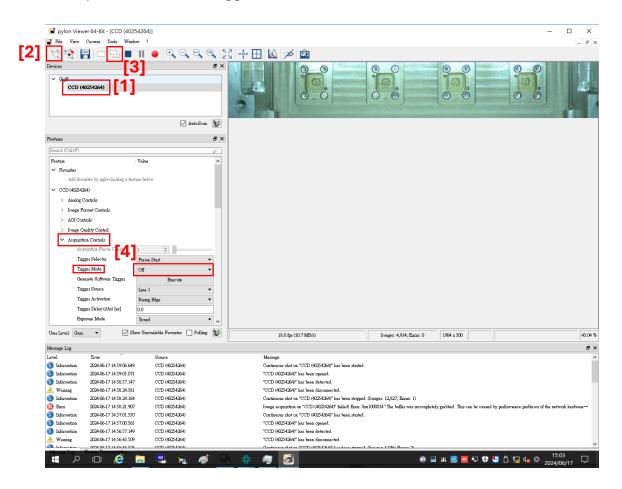
2. Disconnect the CCD recognition software and CCD hardware





- 3. Open "pylon Viewer" software
 - I. Preset CCD parameters
- [1] Click on the corresponding CCD model
- [2] Connect to CCD hardware
- [3] Click on the "continuous Shot"

[4] Acquisition Control-> Trigger Mode -> set to Off

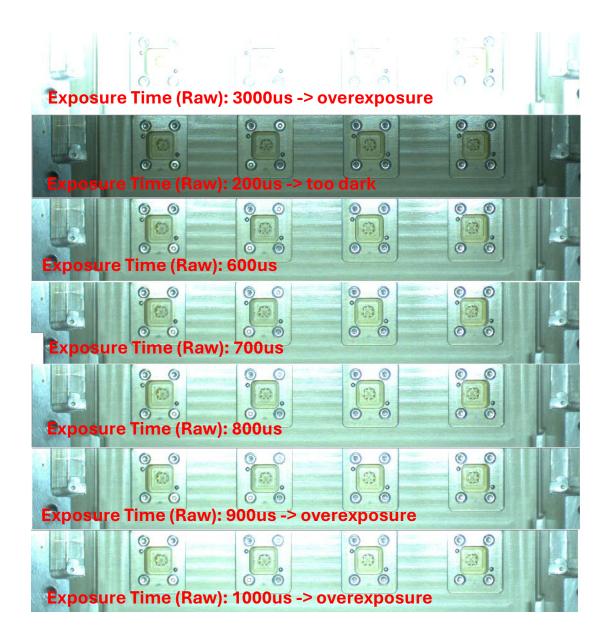


II. Set Exposure Time (Raw)

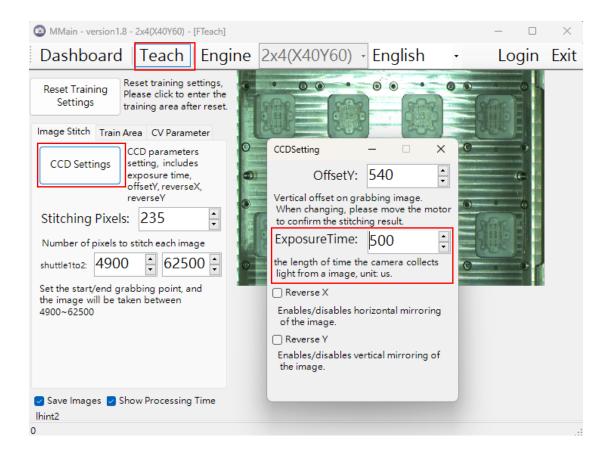
Path: Acquisition Control -> Exposure Time (Raw)

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Pylon Viewer 04-Bit - [CCD (40234204)] File View Camera Tools Window ?			
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> Image Format Controls			
> AOI Controls			
> Image Quality Control			
Acquisition Controls		ornition cof	hwara catting
Acquisition Frame Count 1 ‡	500 => CCD reco	Selition Sol	lware setting
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Generate Software Trigger Essecute			
Trigger Source Line 1 💌			
Trigger Activation Rising Edge 🗸			
Trigger Delay (Abs) [us] 0.0	The CCD recogn	lition softwa	are can set
Exposue Mode Timed 💌			
Exposue Auto Off 👻			
Exposue Time (Abs) [us] 500.0	the maximum va	alue to 5000	us
Esposue Time (Raw)			
Readout Time (Abs) [us] 6249.0			
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Message Log			8 X
Level Time Source	Message		1
Information 2024-06-17 14:59:06.649 CCD (40254264)	Continuous shot on "CCD (40254264)" has been started.		
Information 2024-06-17 14:59:05.071 CCD (40254264)	"CCD (40254264)" has been opened.		
Information 2024-06-17 14:58:57.147 CCD (40254264) ▲ Warning 2024-06-17 14:58:24.381 CCD (40254264)	"CCD (40254264)" has been detected. "CCD (40254264)" has been disconnected.		
Montaing 2024-06-17 14:58:24:561 CCD (40254264) Information 2024-06-17 14:58:24:164 CCD (40254264)	CCD (40234234) has been disconnected. Continuous shot on "CCD (40254254)" has been stopped. (In	neges: 12,827: Ennus: 1)	
3 Encr 2024-06-17 14-58-21-907 CCD (40254264)			a be caused by performance problems of the network hardware
Information 2024-06-17 14:57:01.550 CCD (40254264)	Continuous shot on "CCD (40254264)" has been started.		· · · ·
Informatica 2024-06-17 14:57:00.565 CCD (40254264)	"CCD (40254264)" has been opened.		
Information 2024-06-17 14:57:00.565 CCD (40254264) Information 2024-06-17 14:56:57.149 CCD (40254264)	"CCD (40254264)" has been detected.		
Information 2024-06-17 14.57:00.565 CCD (40254364) Information 2024-06-17 14.56:57.149 CCD (40254364) Muning 2024-06-17 14.56:43.509 CCD (40254364)	"CCD (40254264)" has been detected. "CCD (40254264)" has been disconnected.		
Information 2024-06-17 14:57:00.565 CCD (40254264) Information 2024-06-17 14:56:57.149 CCD (40254264)	"CCD (40254264)" has been detected.		安 🗣 🛂 凸 🔛 4g 英 2024/06/17 📿

Please use Exposure Time (Raw)±100 as increment.



- 4. Record the Exposure Time (Raw) value and set it in the CCD recognition software.
 - I. Close the "pylon Viewer"
 - II. Open the CCD recognition software
 - III. Set the CCD parameter exposure time

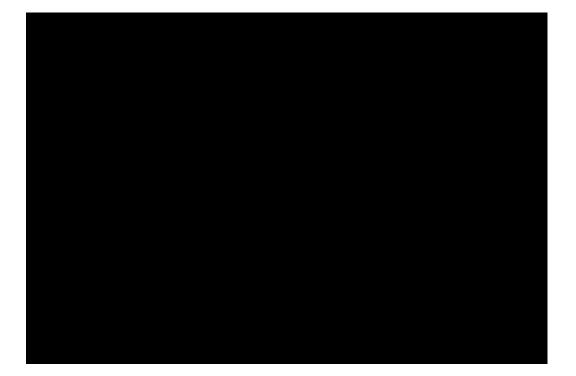


The image result which be grabbed is black/dark

The following situations may occur:

[1] The image is completely BLACK. No images were grabbed due to an abnormality in the trigger line.

Trigger line anomaly: Please reinsert the CCD power cable (which includes the trigger line) and check if the cable is damaged. If there is any damage, you will need to replace it with a new CCD power cable.



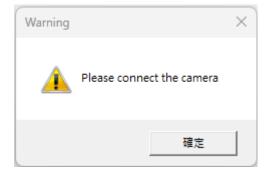
[2] The exposure time is set too low, resulting in a dark image. Please refer to <u>the PylonViewer to check for</u> <u>overexposure</u>. After adjusting the exposure time, proceed with the training.

[3] The light strip is burnt out, resulting in a dark image.Please check the hardware first and replace the lightstrip. After adjusting it, proceed with the training.

[4] The light strip cable is not properly connected, resulting in a dark image. Please check the hardware first and properly connect the cable. After adjusting it, proceed with the training.

Display a warning window

Please connect the camera



The possible scenarios are as follows:

[1] Due to a trigger line anomaly, the CCD hardware and CCD recognition software were disconnected during operation. Please reconnect and check the trigger line.
Trigger line anomaly: Please reinsert the CCD power cable (which includes the trigger line) and check if the cable is damaged. If there is any damage, you will need to replace it with a new CCD power cable.

[2] The CCD hardware is not ready (not powered on, cable not connected, or CCD hardware IP not properly configured).

[3] When using the CCD recognition software for the first time, you need to select the CCD model. Once the model is selected, it will automatically connect to the corresponding CCD model in future sessions.

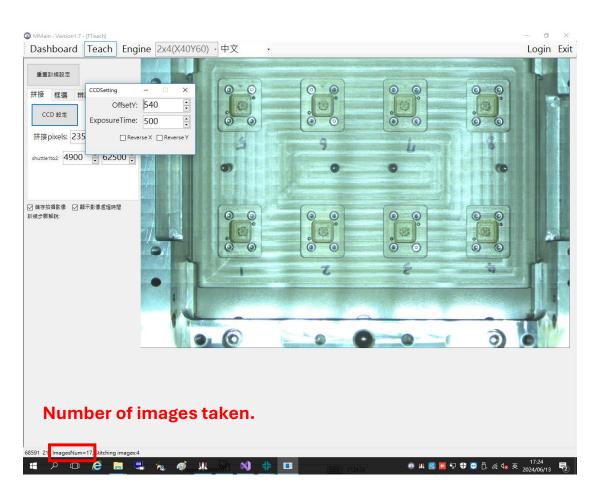
Wrong number of images taken. Please check trigger

cable



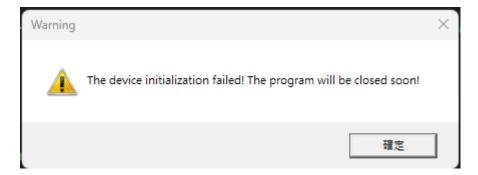
Determine if there is a trigger line anomaly based on the number of images taken. If the count is zero or if an incorrect number of images is taken, this warning window will be displayed. Please refer to the Engine page.

Trigger line anomaly: Please reinsert the CCD power cable (which includes the trigger line) and check if the cable is damaged. If there is any damage, you will need to replace it with a new CCD power cable.



The device initialization failed! The program will be

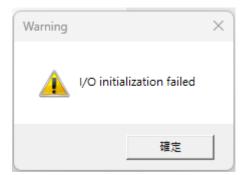
closed soon!



Initialization failed when opening the program. Please send the folder back to R&D for analysis.

path: C:\ChipRight\SocketVision

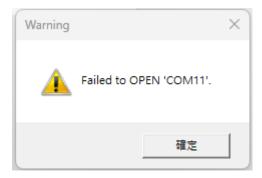
I/O initialization failed



Initialization failed when opening the program. Please send the folder back to R&D for analysis.

path: C:\ChipRight\SocketVision

Failed to OPEN 'COM11'



Use RS232 Comport for communication with the handler (CCD: COM11, handler: COM10). The possible scenarios for a connection failure are as follows:

[1] COM11 is not connected.

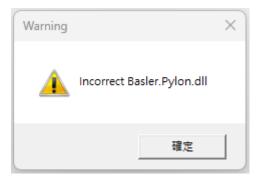
[2] The CCD software was not properly closed, causing it to remain connected to COM11. A computer restart is required.

Please train first



If there are no training images yet, this warning window will pop up. Please proceed with the training.

Incorrect Basler.Pylon.dll



Please contact R&D to replace it with the correct CCD software DLL.

EXCEPTION CAUGHT: warning window



Indicates that another application is currently connected to the CCD hardware. You can restart the CCD network and reconnect.

※ Note: If there are other error messages starting with "Exception caught," please take a screenshot and save it.

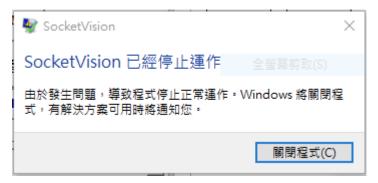
Replace the socket base

Each time you replace the socket base, please connect the corresponding CCD profile. Refer to "<u>Creating/Connecting profile</u>" (P.15~P.20) for details.

For example, a 2x4 socket base corresponds to a 2x4 CCD profile; a 1x4 socket base corresponds to a 1x4 CCD profile.

Afterward, proceed with the training steps.

SOCKETVISION crashes



Please send the folder back to R&D for analysis.

path: C:\ChipRight\SocketVision

path: D:\SocketVision\failData\Current Date

Other CCD software anomalies

Please send the folder back to R&D for analysis.

path: C:\ChipRight\SocketVision

path: D:\SocketVision\failData\Current Date