

NEXIOT

nexvic

**VIC7000
Training**



Garry Huang
Application Engineer

System Architecture

- VIC-7100
- VIC-7300

Software Installation

- VMWare
- VIC7000

Build Project

- Get IP
- Login
- New Project
- Get Data
- Font Learning
- Target
- Page & Recognition
- Play Project
- Database
- Protocols
- Control
- Script

Outline

System Architecture

- VIC-7100
- VIC-7300

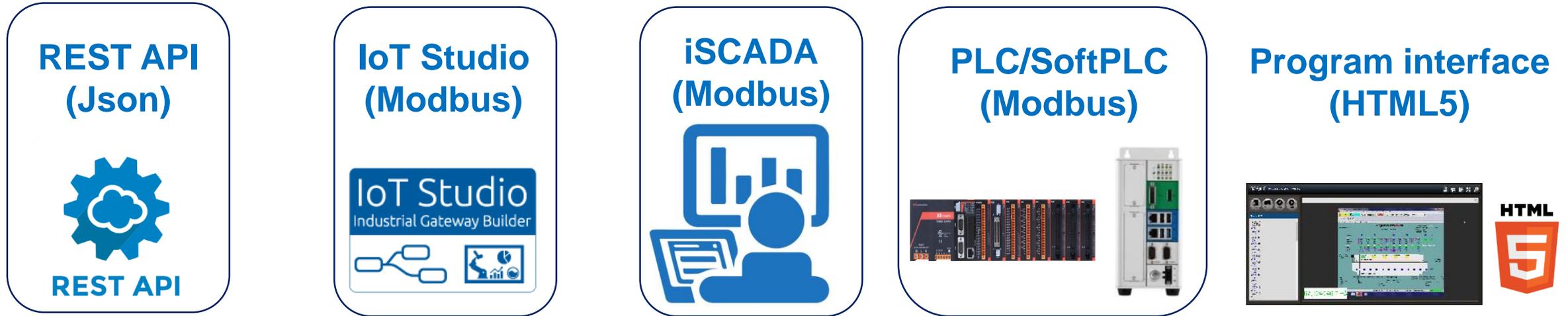
Software Installation

- VMWare
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System Architecture – VIC7100



Existing Equipment



Vision Signal Converter

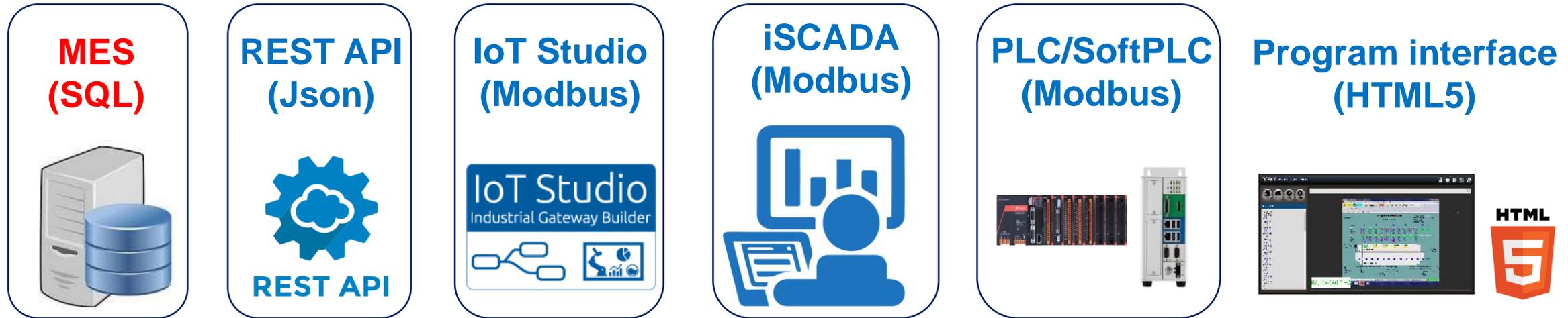


Optical Character Recognition Analysis



VIC7100

System Architecture – VIC7300



Existing Equipment



Vision Capture Card



Optical Character Recognition Analysis



VIC7300



Outline

System Architecture

- VIC-7100
- VIC-7300

Software Installation

- VMWare
- VIC7000

Build Project

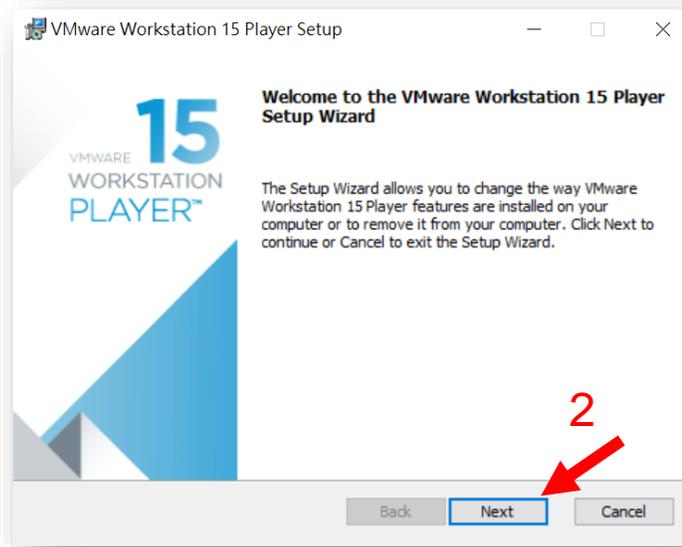
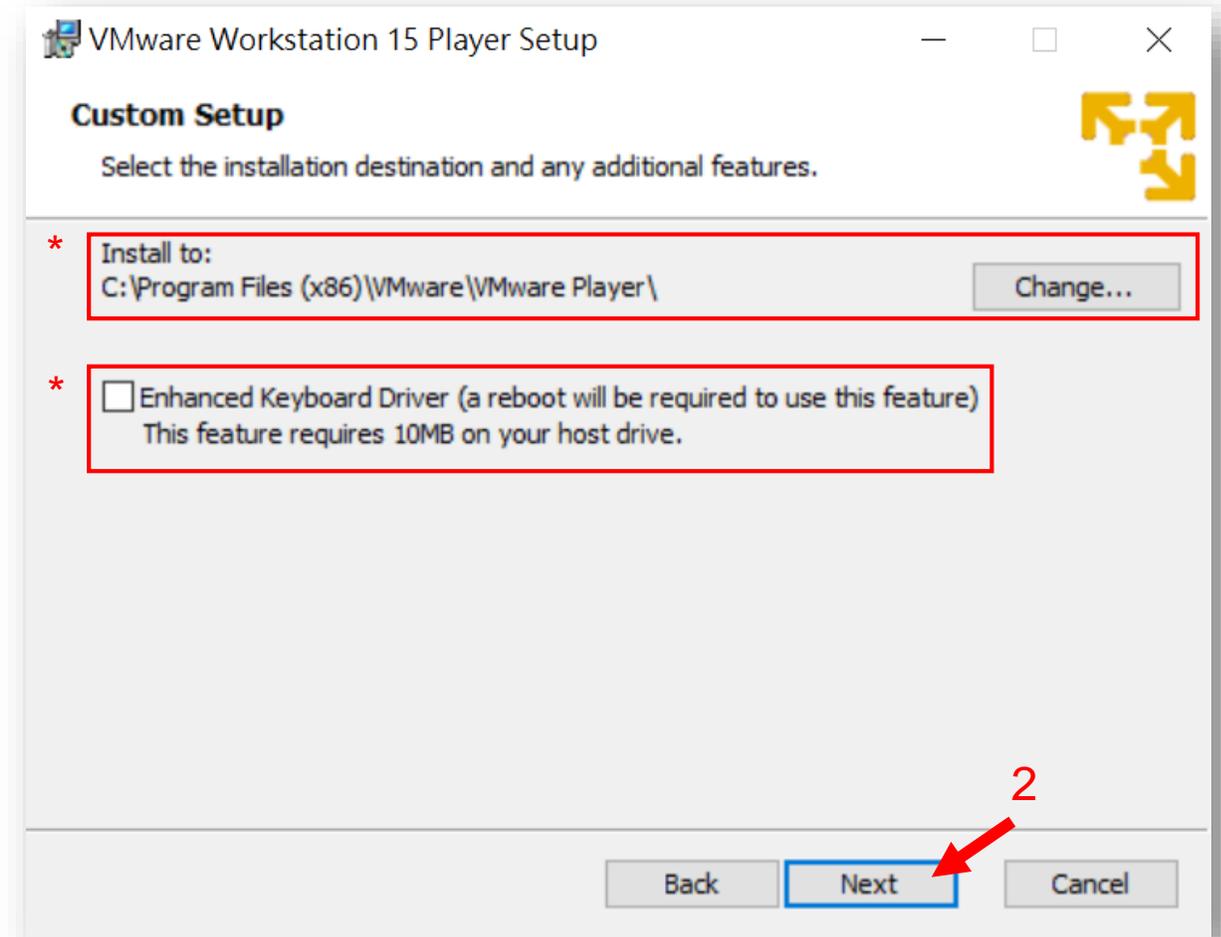
- Get IP
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Software Installation – VMware

- **Install VMware Workstation Player**

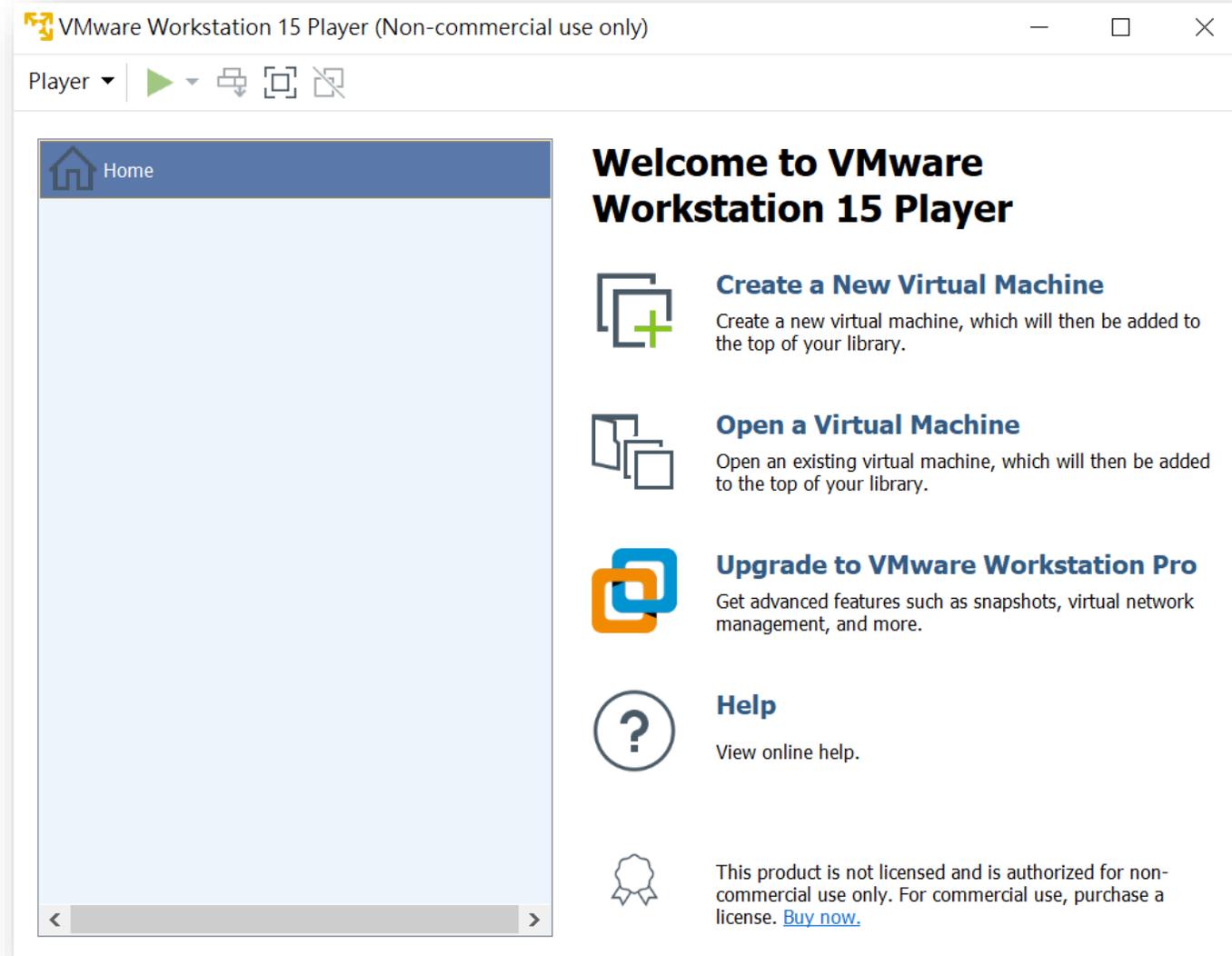
1. Execute **VMware-player-15.0.2-10952284** (Run as administrator)

2. Click **Next** until installation finished
change the installation path (*) if needed
Enhanced Keyboard Driver (*) is not required



Software Installation – VMware

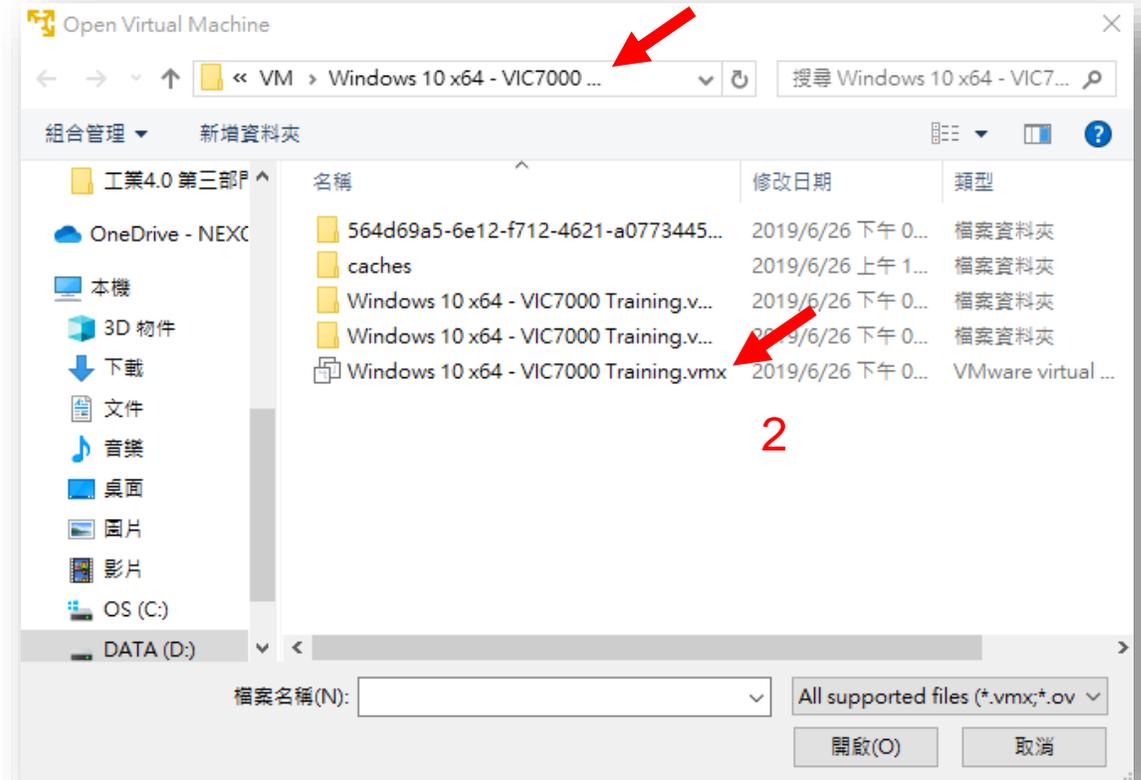
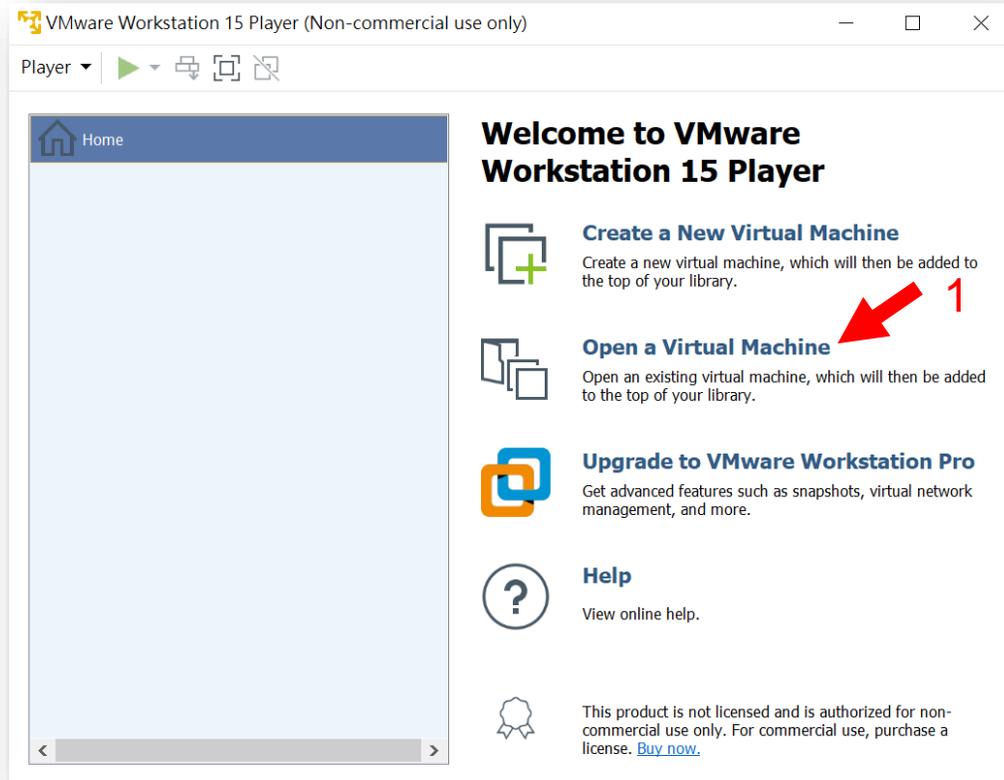
- Execute VMware Workstation Player



Software Installation – VMware

- **Play Virtual Machine**

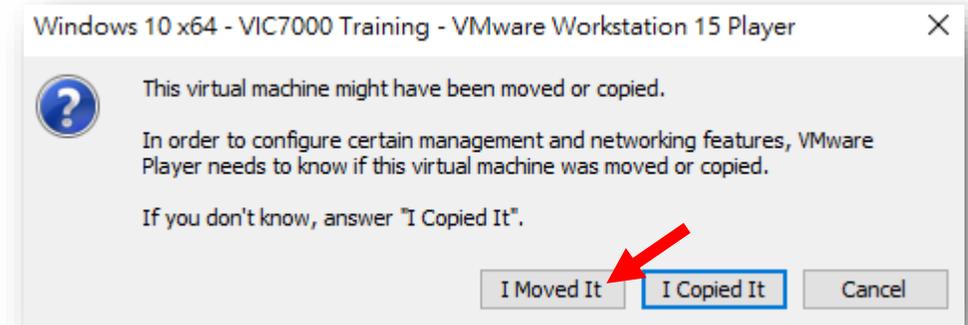
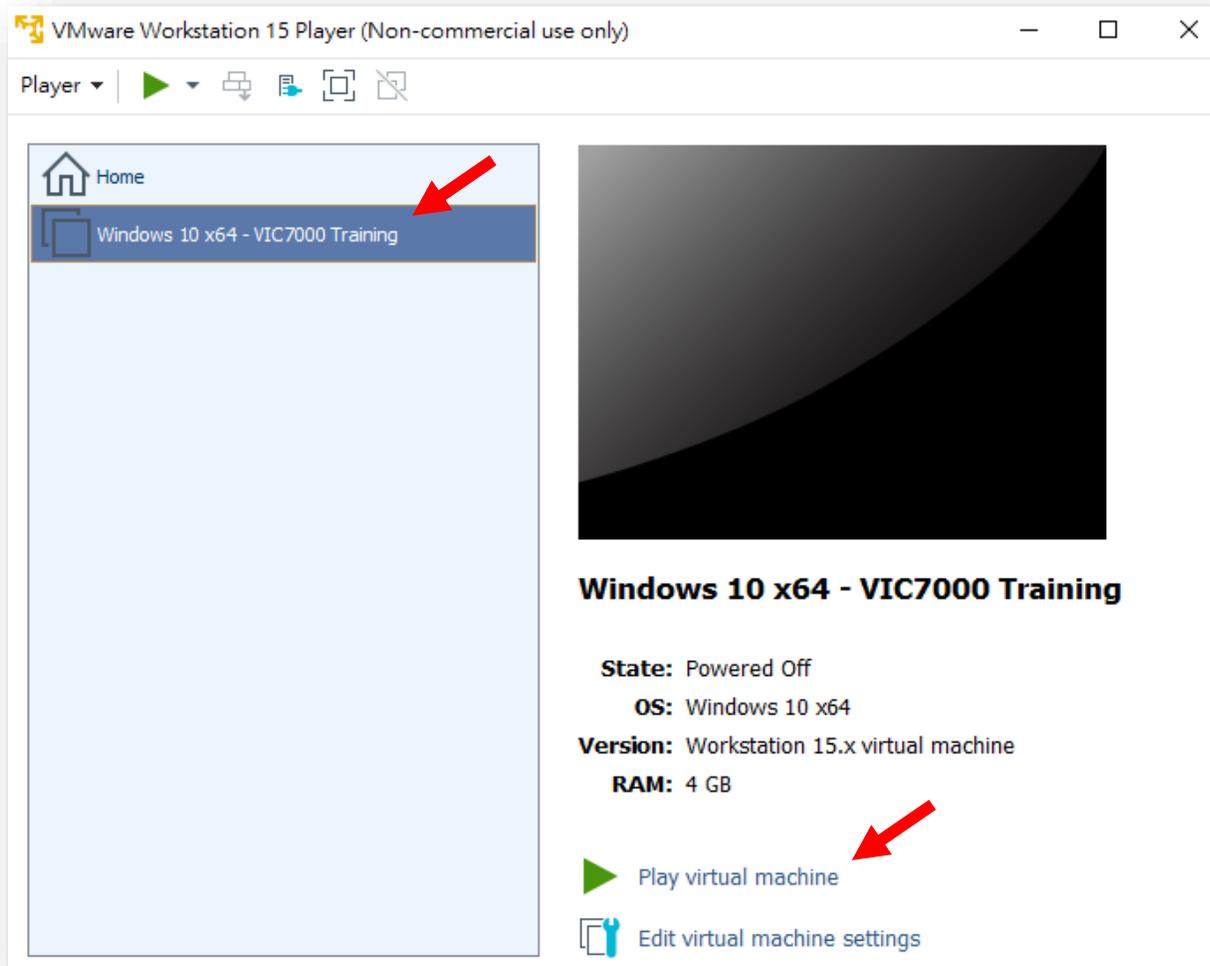
1. **Play VM** : Click on **Open a New Virtual Machine** → Choose **Windows 10 x64 – VIC7000 Training.vmx** in the folder named **Windows 10 x64 – VIC7000 Training**



Software Installation – VMware

- **Play Virtual Machine**

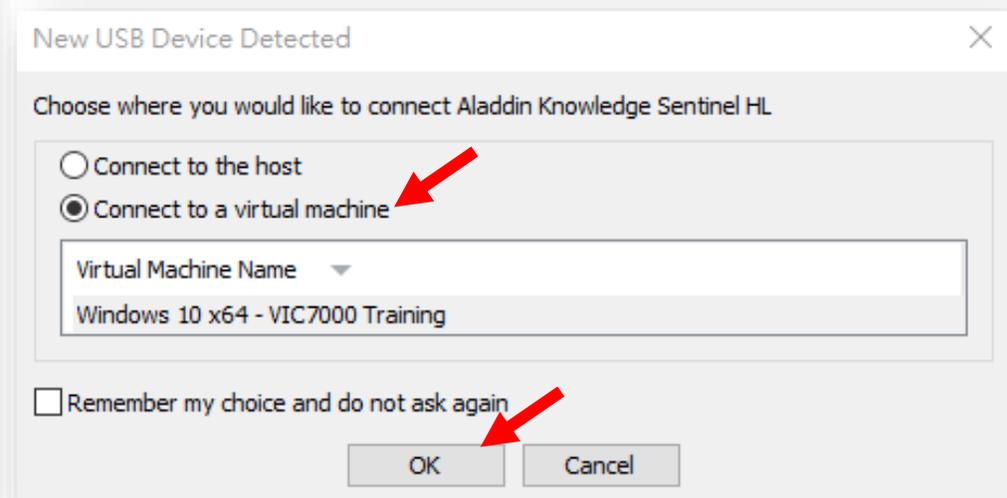
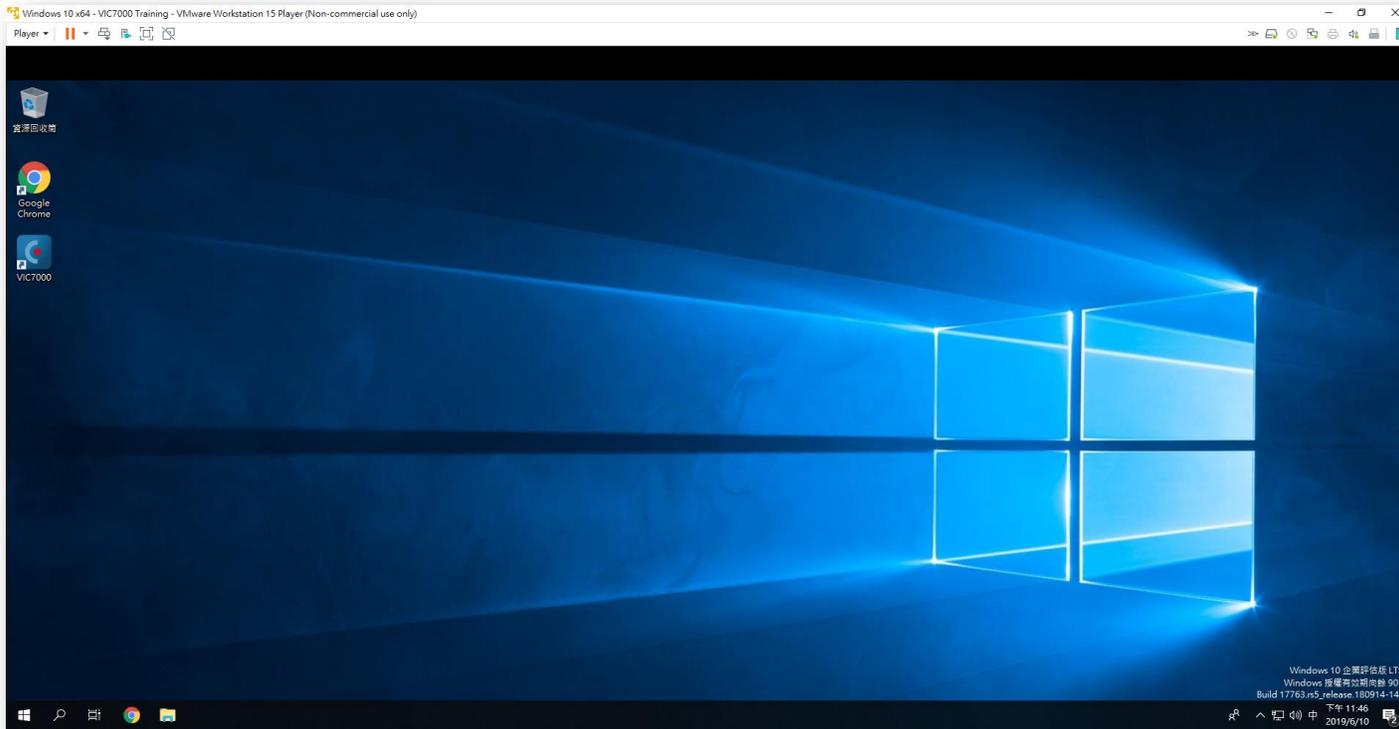
2. **Play VM** : Select the new VM → Click **Play virtual machine** → Click **I Moved It**



Software Installation – VIC7000

- **Execute VIC7000**

1. **Plug in Training Dongle** : Choose **Connect to a virtual machine**

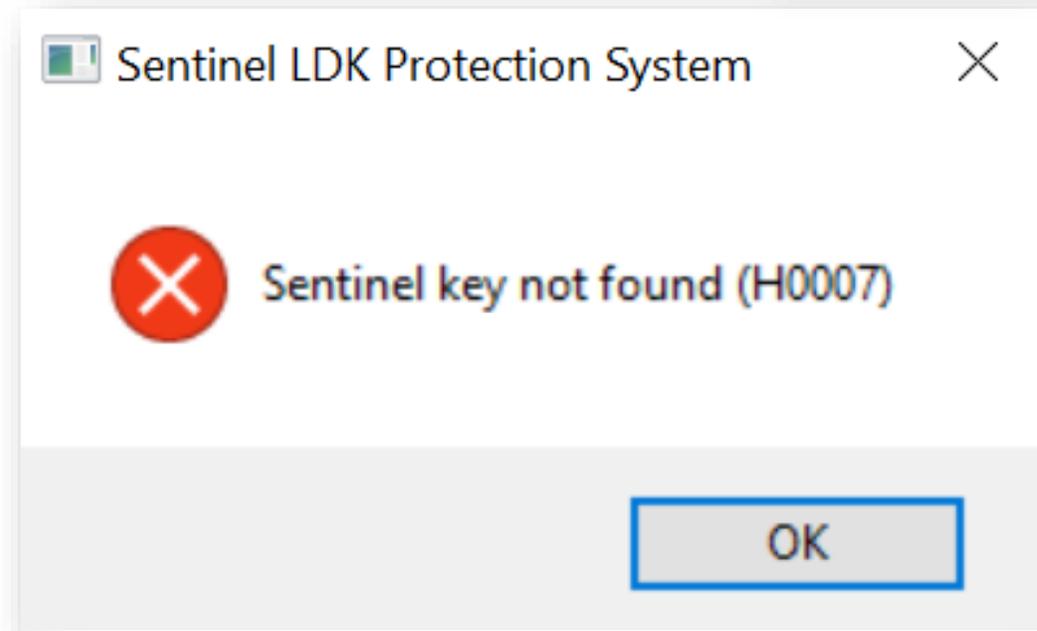
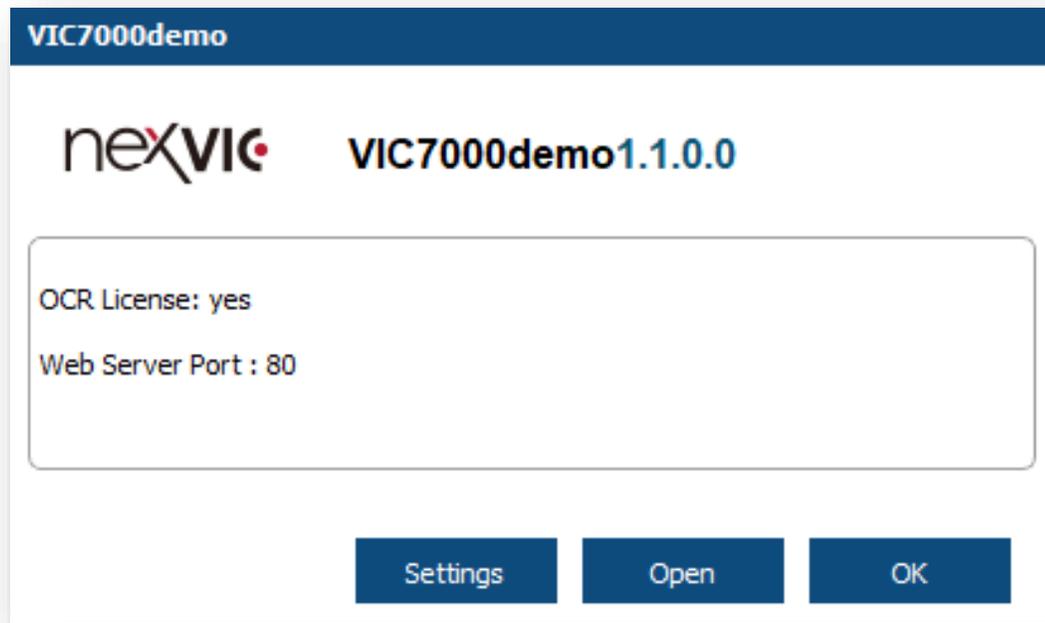


Software Installation – VIC7000

- **Execute VIC7000**

2. **Execute VIC7000** : Click the shortcut of VIC7000 on your desktop

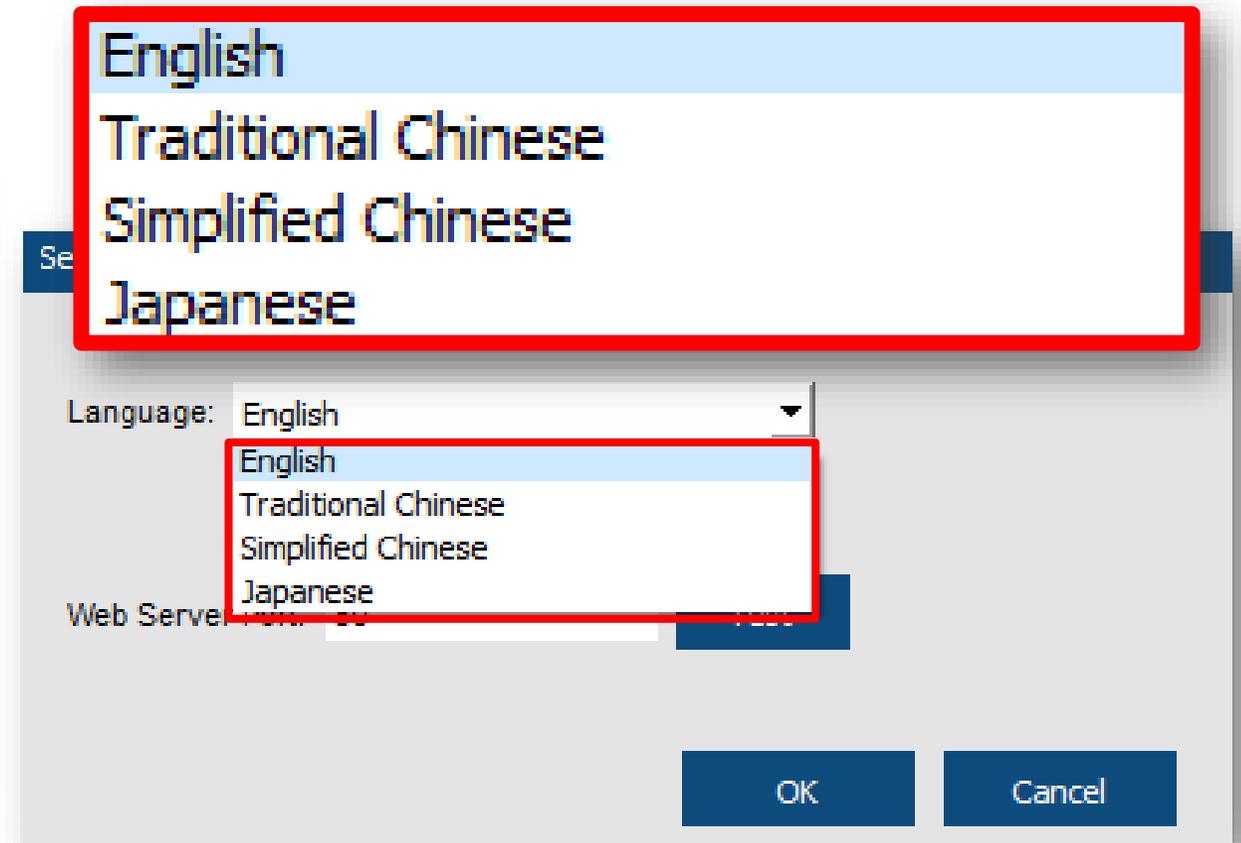
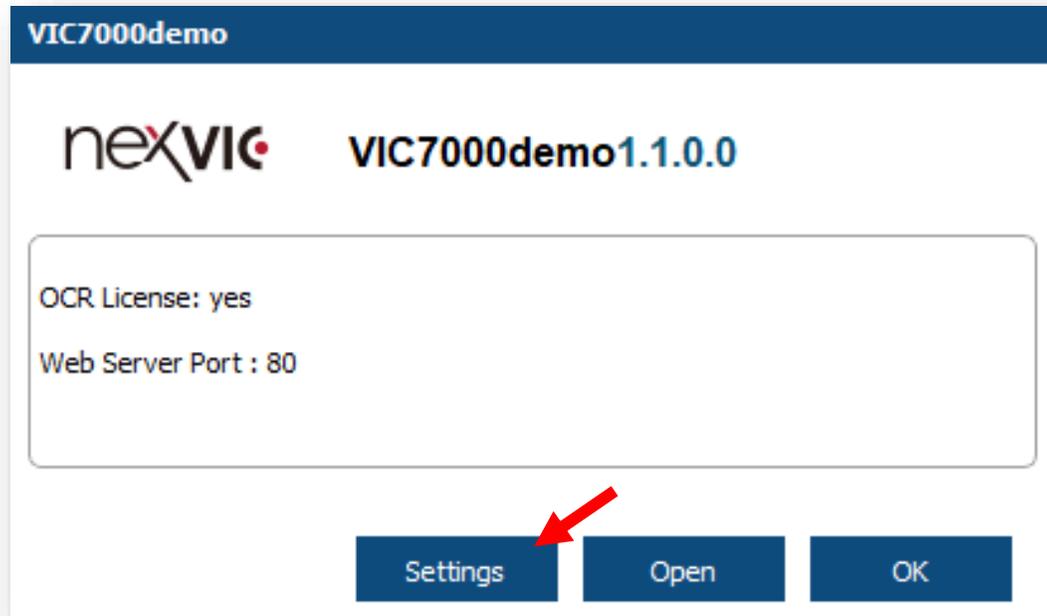
If an error window shows up, you need to check whether the USB dongle is actually plugged in, lit, linked to the VM or not.



Software Installation – VIC7000

- **Language**

Click **Settings**, and choose a suitable software language

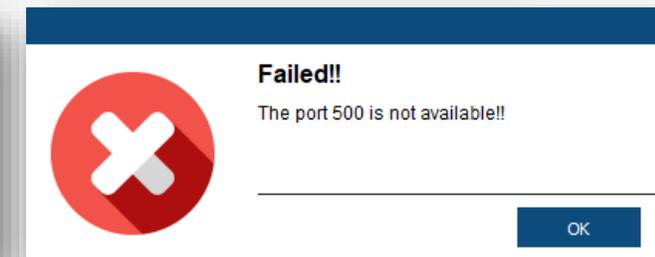
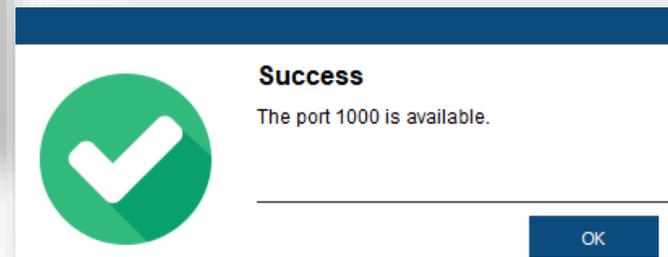
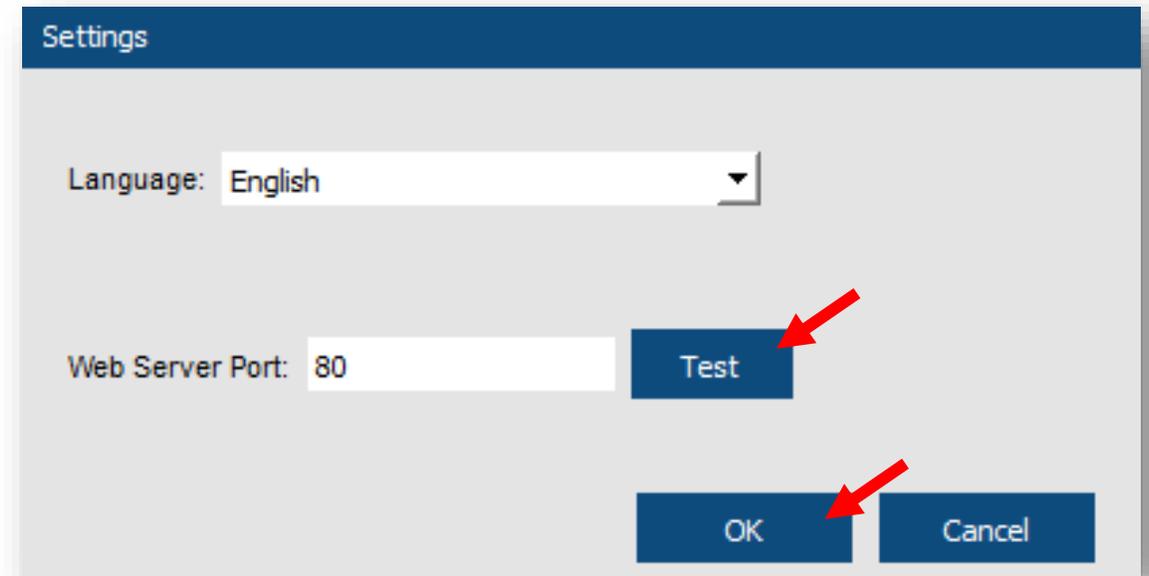
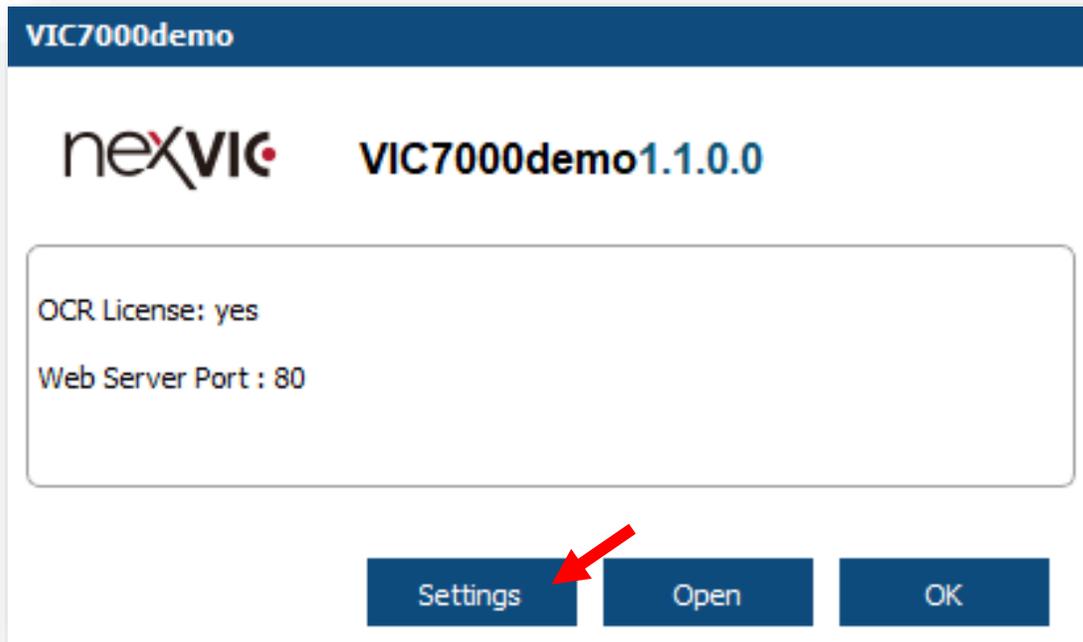


Software Installation – VIC7000

- **Port**

Click **Settings** → **Web Server Port**. Default port is **80**.

To set a new port, please make sure that it is available. Click on **Test** to check, hit **OK** to continue.



System Architecture

- VIC-7100
- VIC-7300

Software Installation

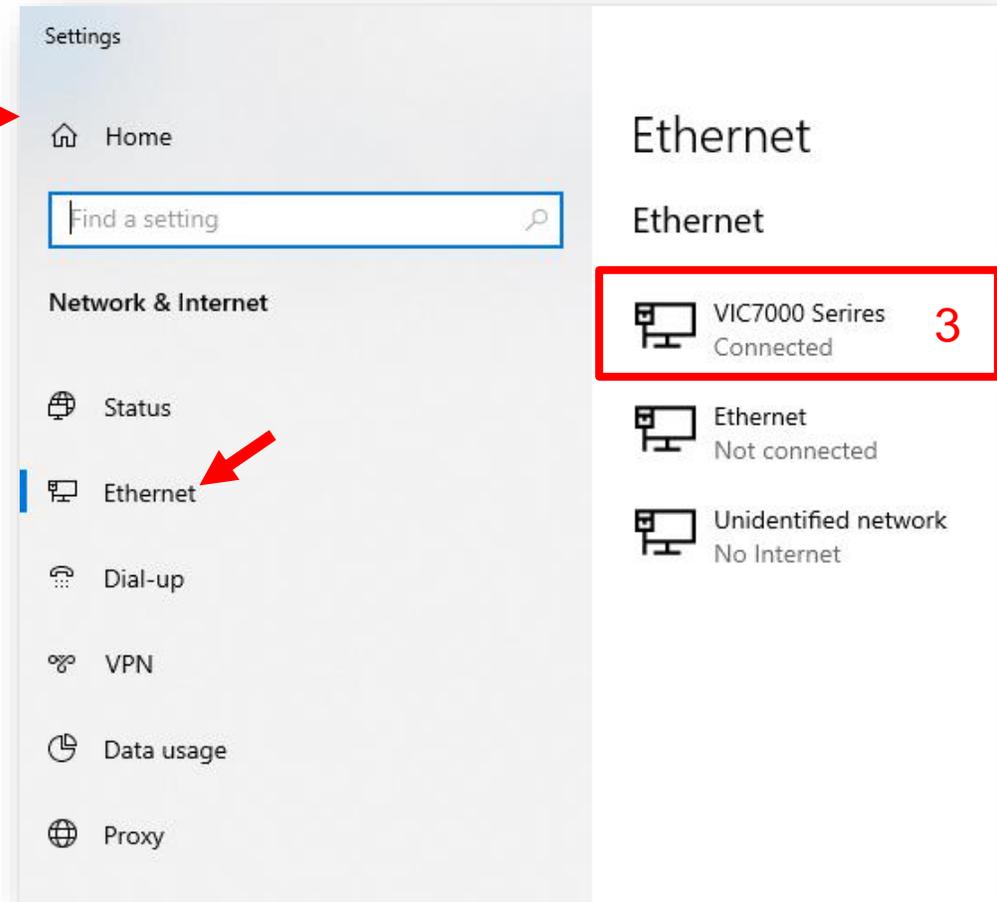
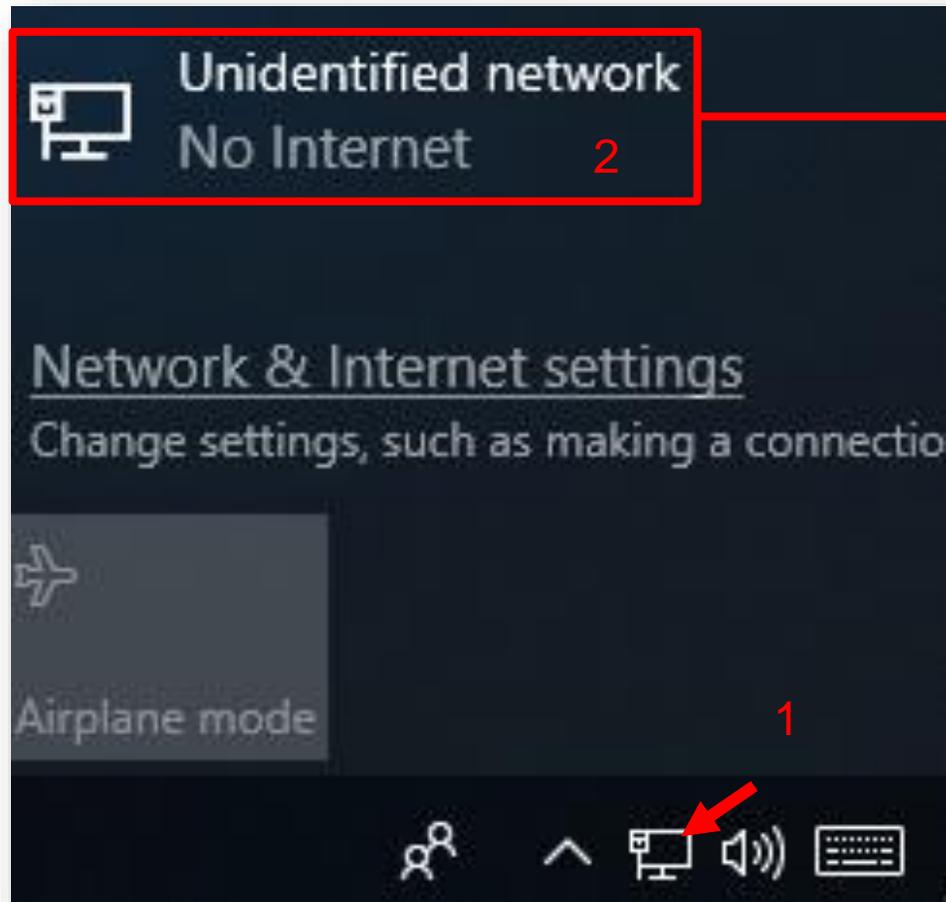
- VMWare
- VIC7000

Build Project

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Build Project – Get IP

- **Get IP – Virtual Machine**
 - **Get Remote IP:** Go to the **network status** page then select used connection in **Ethernet**



Build Project – Get IP

- **Get IP – Virtual Machine**

- **Get Remote IP : IPv4 address** is the IP address of VIC7000 server as shown below

Properties

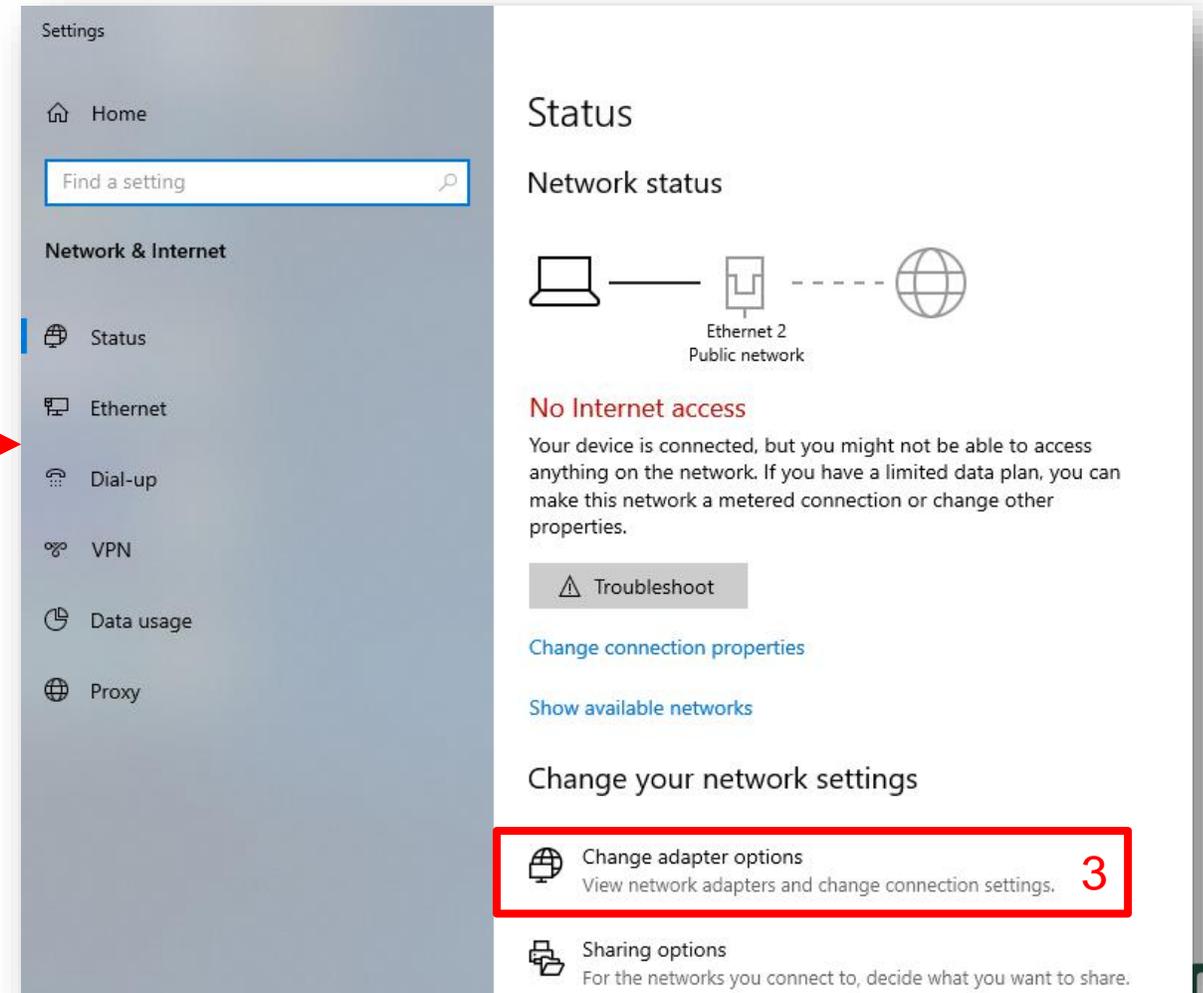
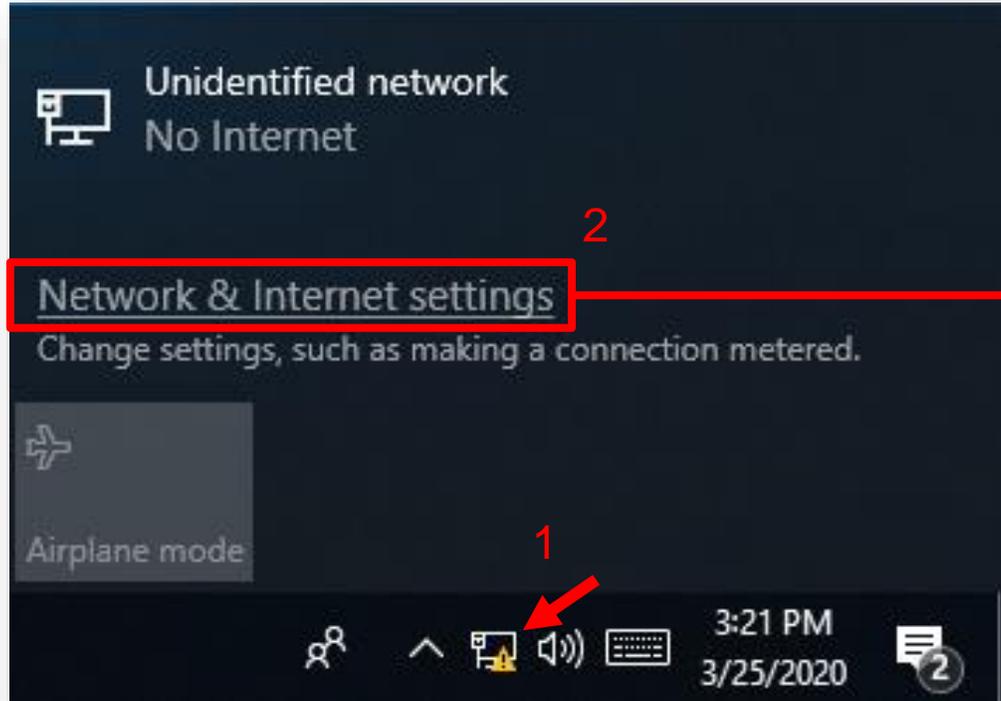
Link-local IPv6 address:	fe80::404a:b44f:57e8:7c71%6
IPv4 address:	4 10.12.1.153
IPv4 DNS servers:	10.1.1.2 10.1.1.6
Manufacturer:	Intel Corporation
Description:	Intel(R) I210 Gigabit Network Connection #2
Driver version:	12.15.22.6
Physical address (MAC):	00-10-F3-87-3F-C4

Copy

Build Project – Get IP

- **Get IP – Real Machine**

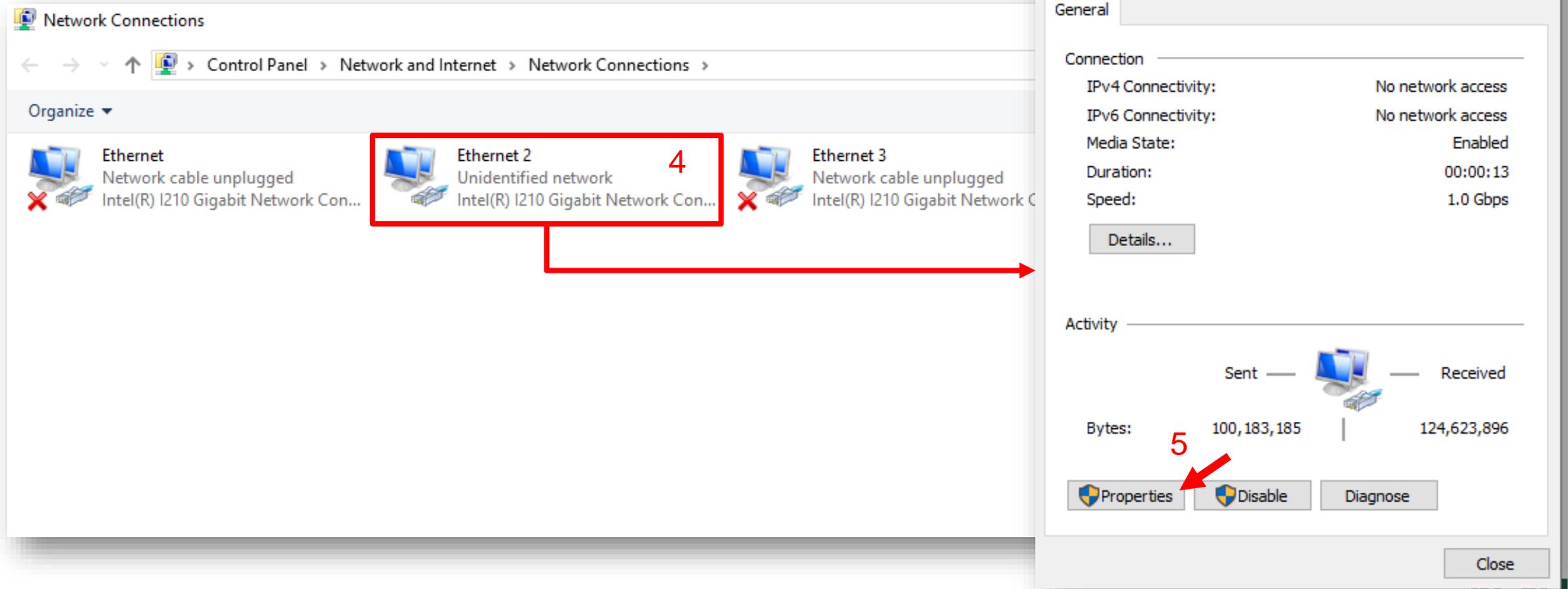
- **Set Static IP** : Click on **Network & Internet settings**, the Setting window will appear, then choose **Change adapter options**



Build Project – Get IP

- **Get IP – Real Machine**

- **Set Static IP** : Double-click on **desired adapter**, the **Status** of the adapter window will appear, then click on **Properties**



Build Project – Get IP

- **Get IP – Real Machine**

- **Set Static IP** : Double-click on **Internet Protocol Version 4 (TCP/IPv4)**, set **IP address** and

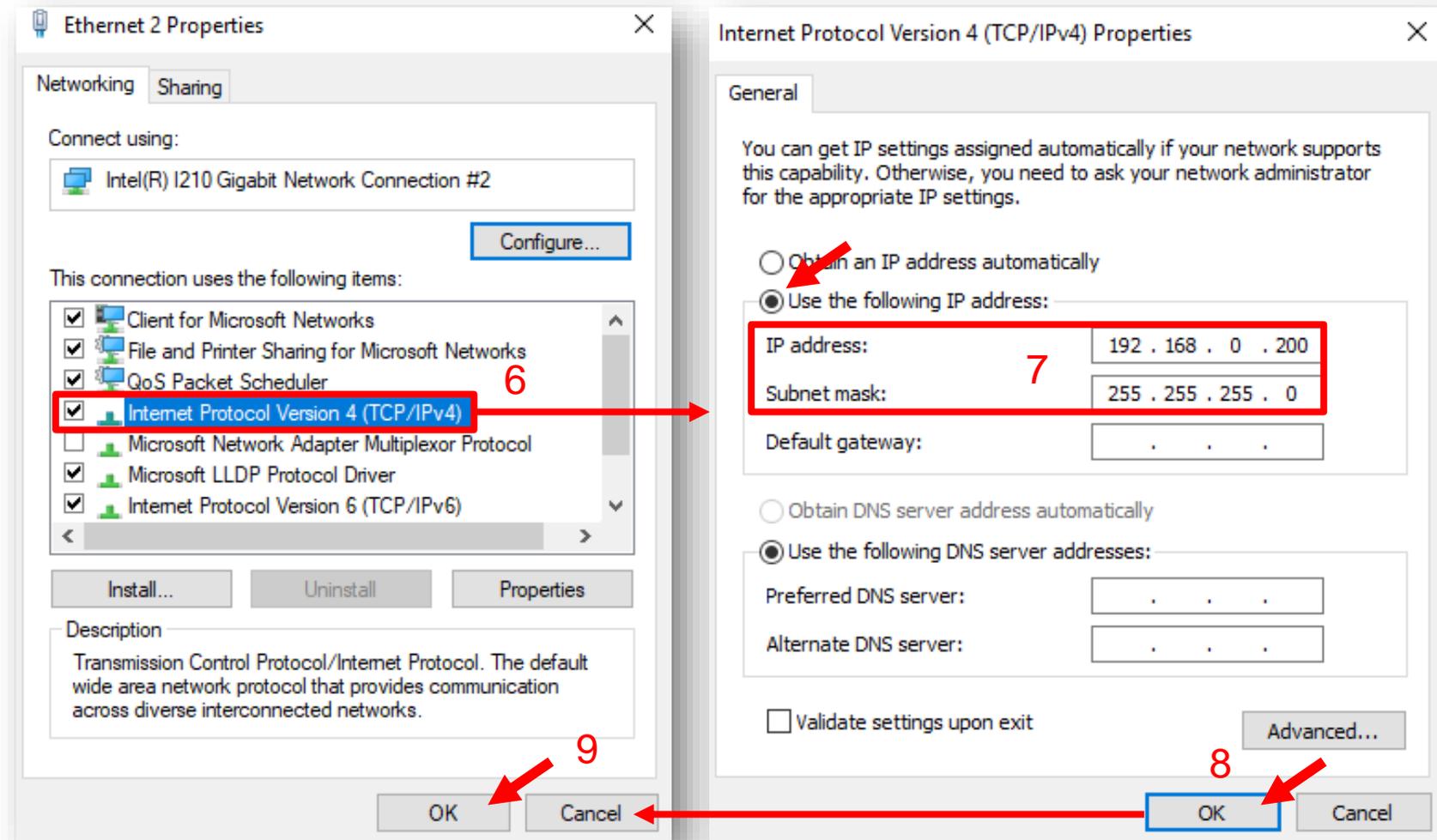
Subnet mask

Finally, click on **OK**

The set IP address must be in the domain same with the IP address of the connecting computer

In other words, the first three fields must be the same

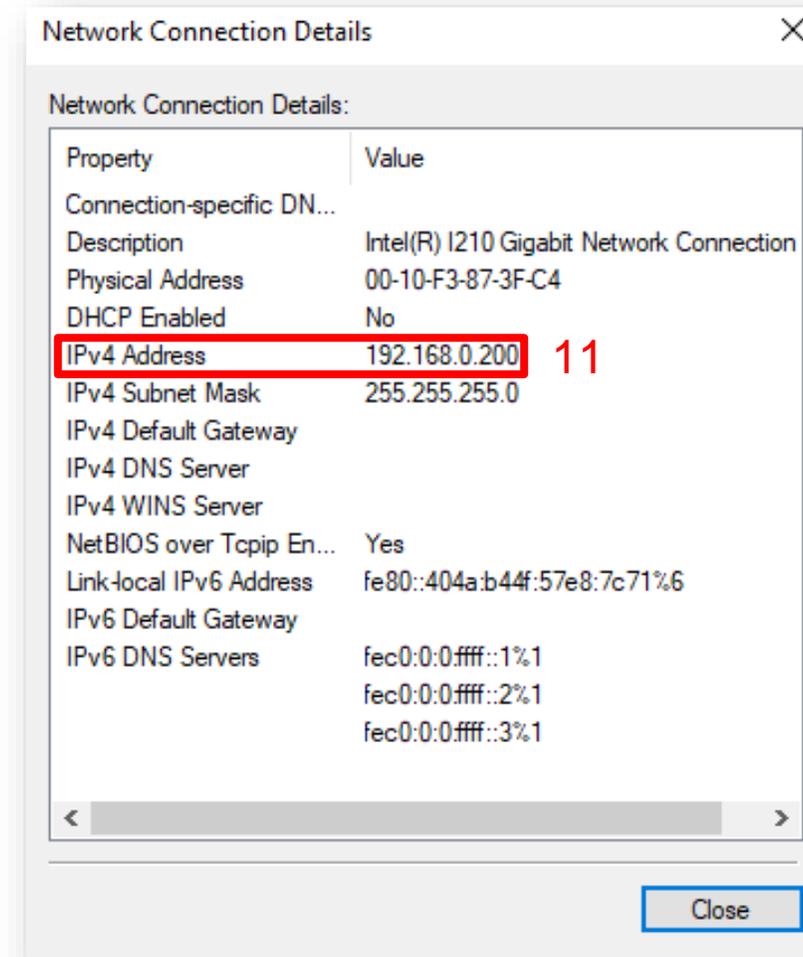
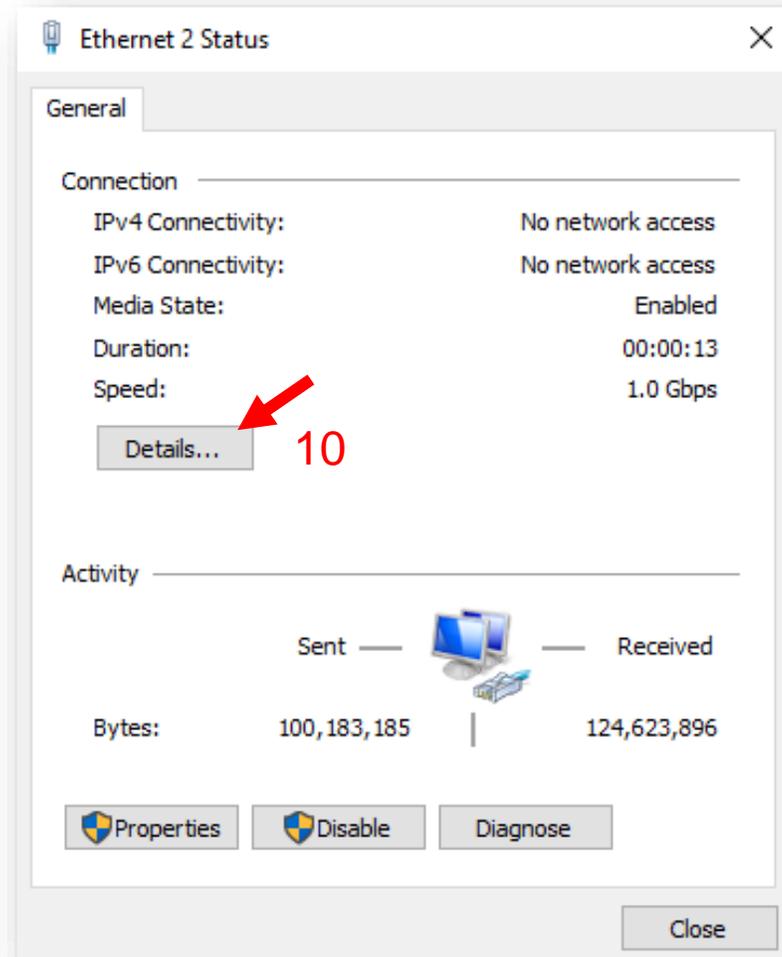
For this example, the IP address of a connecting computer must be 192.168.0.n, with n ranges from 1 to 255 and must not be repeated



Build Project – Get IP

- **Get IP – Real Machine**

- **Set Static IP** : Click on **Details...** in Status window, then set IP address will appear

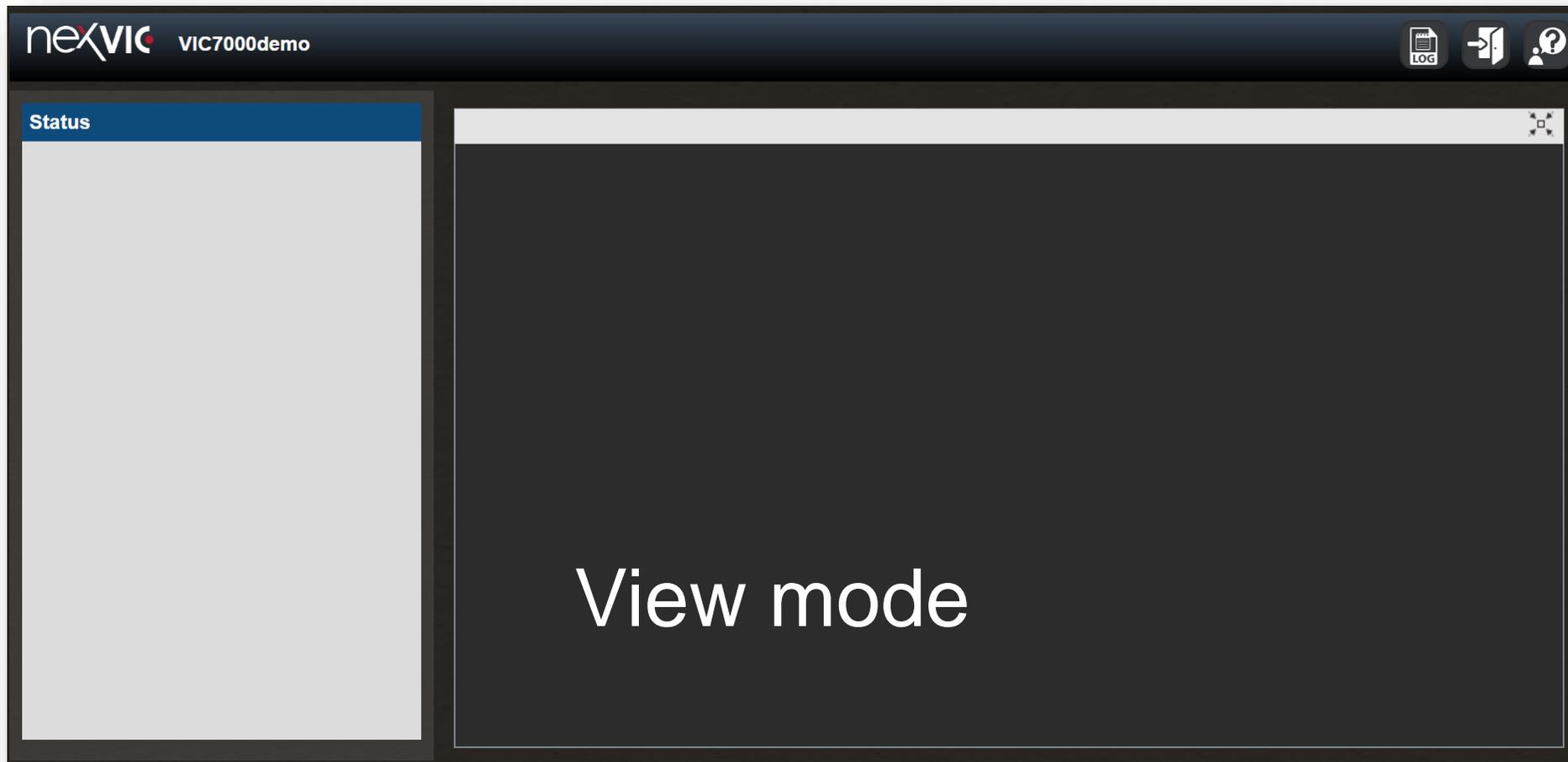


Build Project – Login

- **Entry to VIC7000**

1. **Open browser** : Google Chrome or Microsoft Edge
2. Enter **Server IP:port** in **URL field** : By default, port is not required

 192.168.133.136



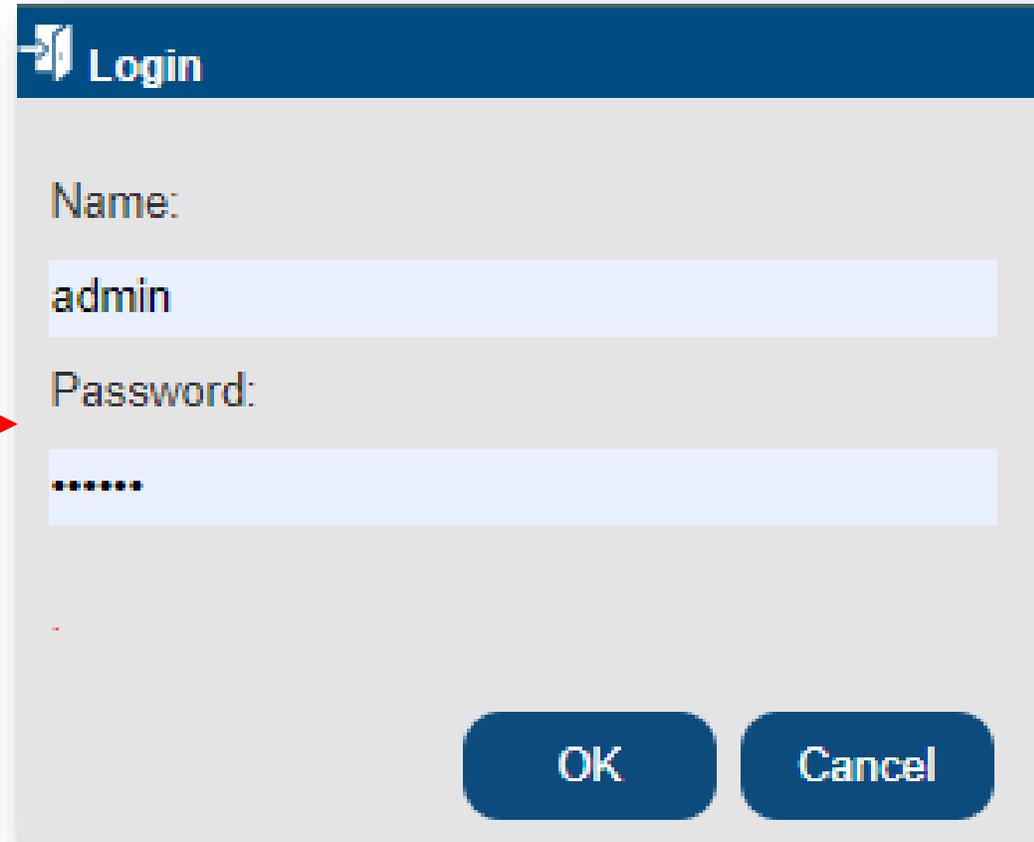
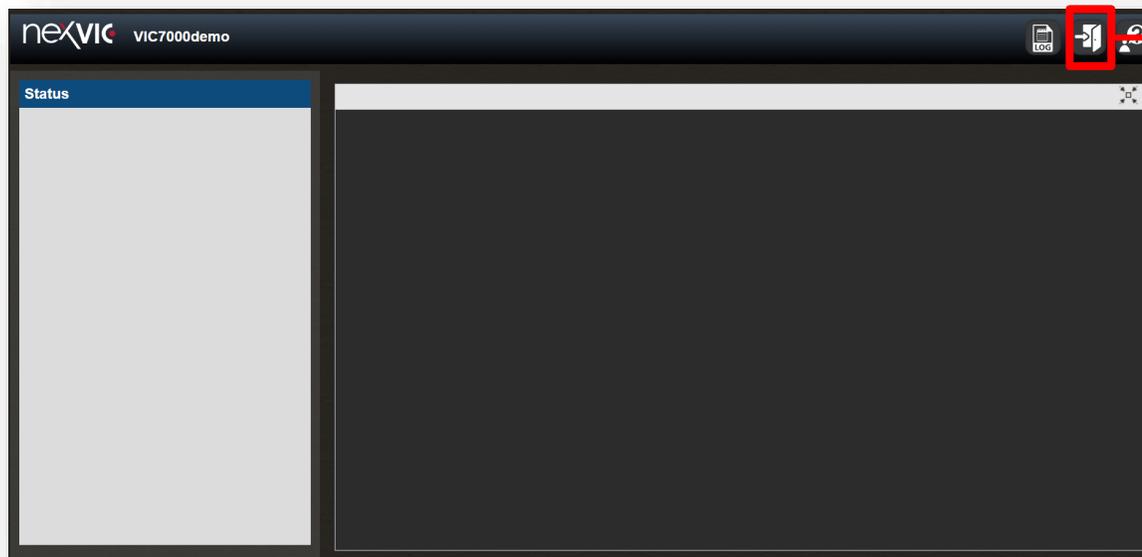
Build Project – Login

- **Login VIC7000**

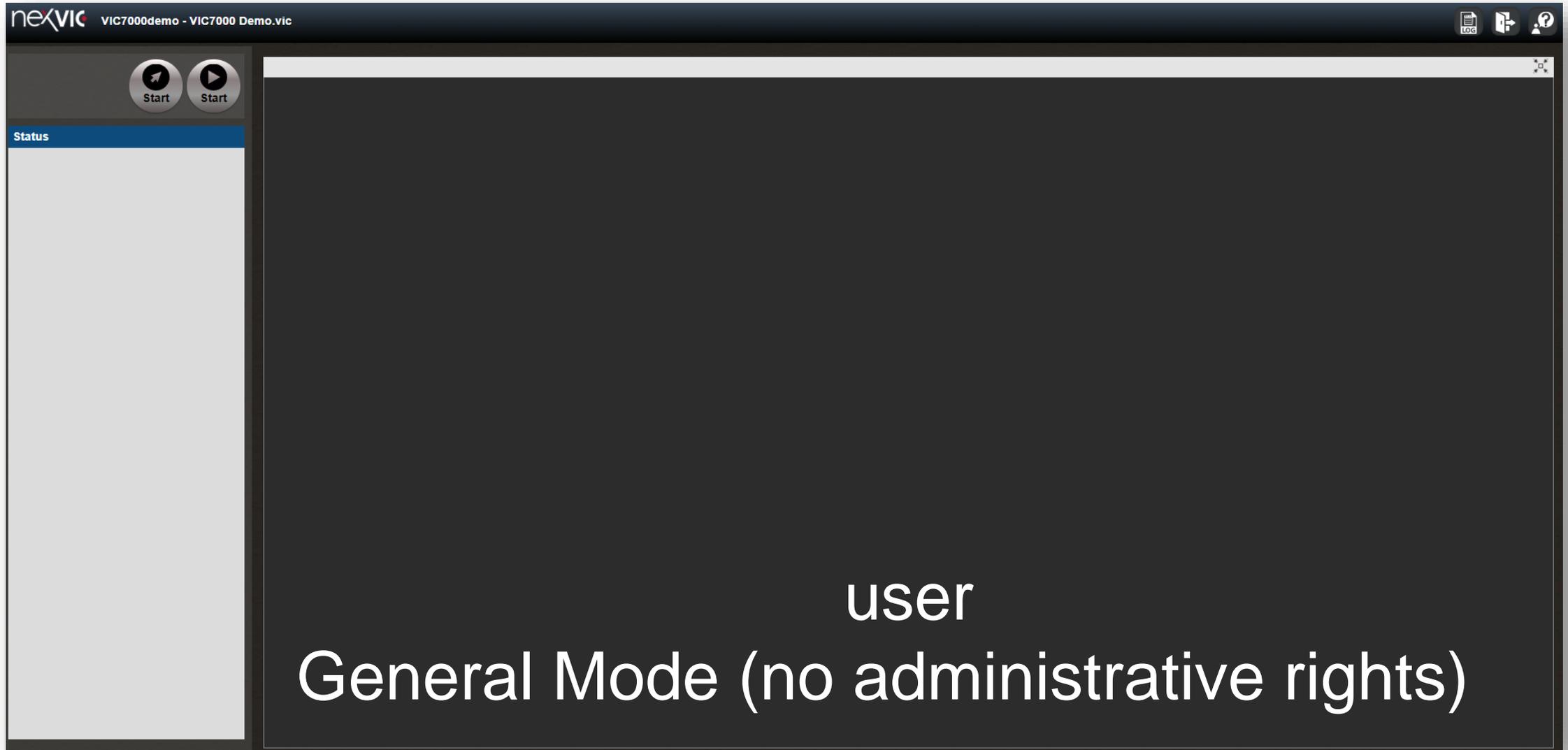
1. Click Login button in the top-right corner
2. Enter user or administrator name and password

User name is **user**, administrator name is **admin**, and their default password is **123456**

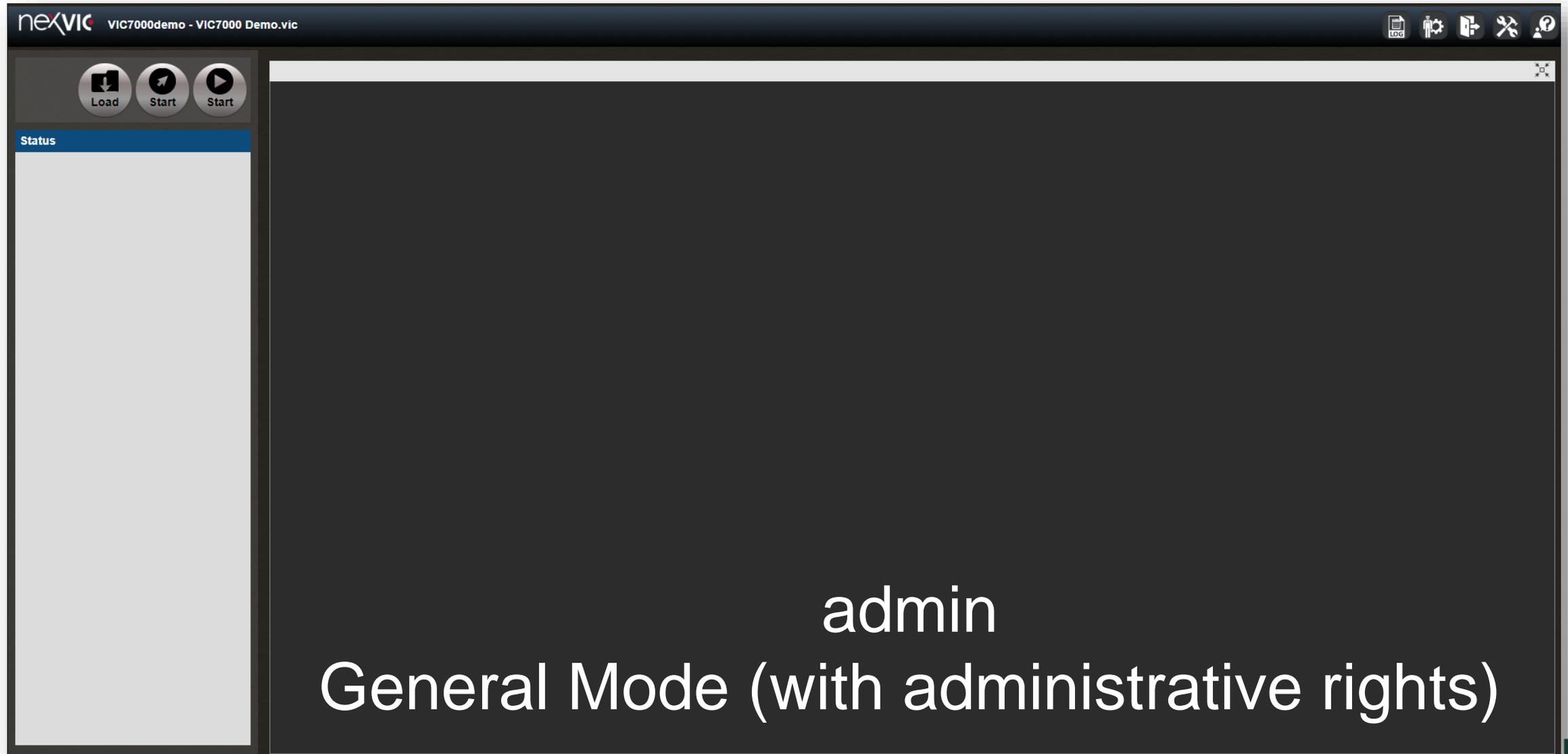
If an admin logs in and stays idle for more than 30 mins, he will be forced to logout

A 'Login' dialog box with a dark blue header containing a right-pointing arrow icon and the text 'Login'. Below the header, there are two input fields: 'Name:' with the text 'admin' entered, and 'Password:' with a masked password '.....'. At the bottom right, there are two blue buttons: 'OK' and 'Cancel'.

Build Project – Login



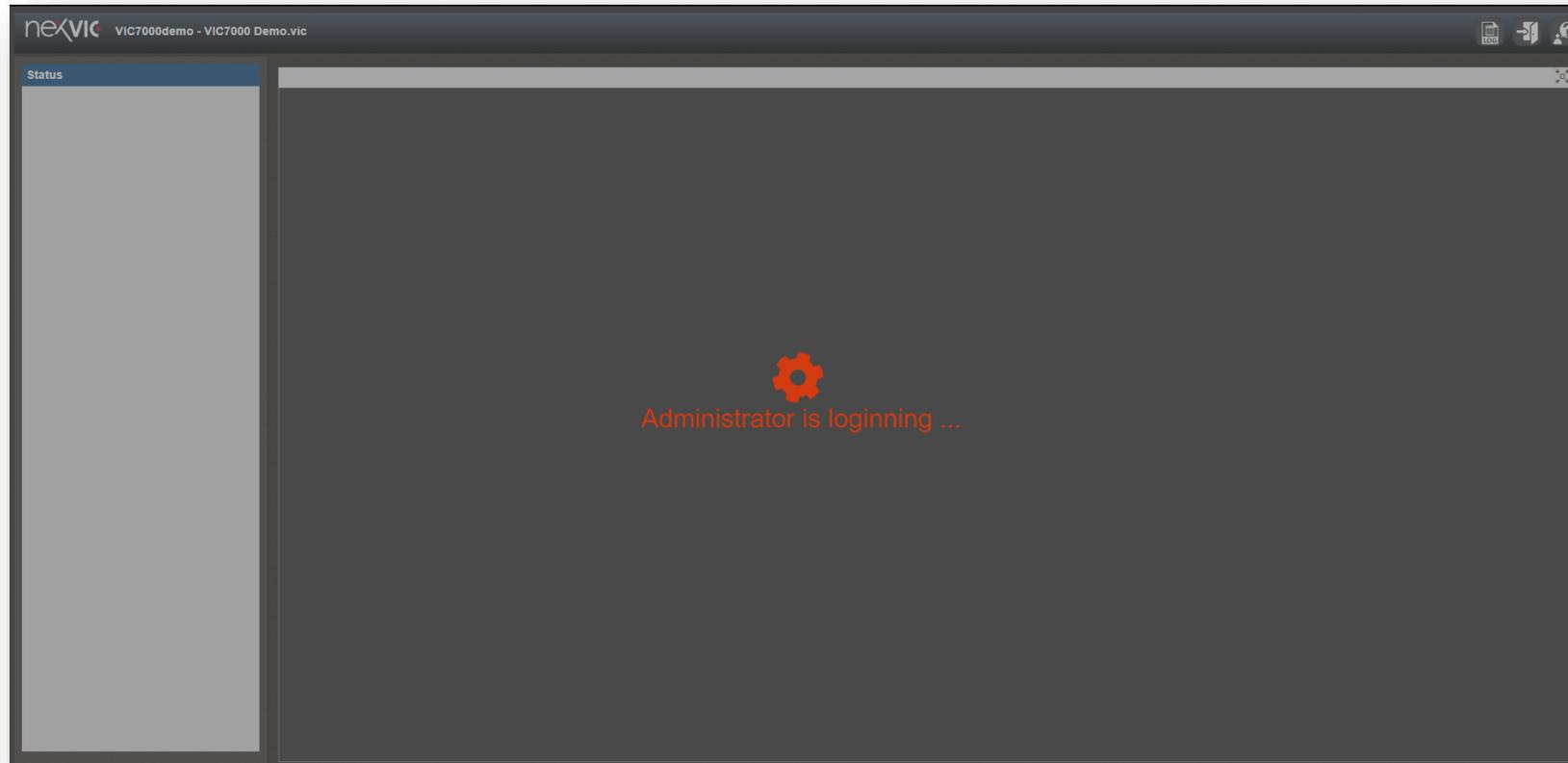
Build Project – Login



Build Project – Login

- **Login Limits**

- Allow up to **16 users** to monitor the operation of VIC7000 in General Mode without administrative rights and View Mode at the same time
- While **the administrator** logging in VIC7000, other users cannot login, monitor, or operate VIC7000

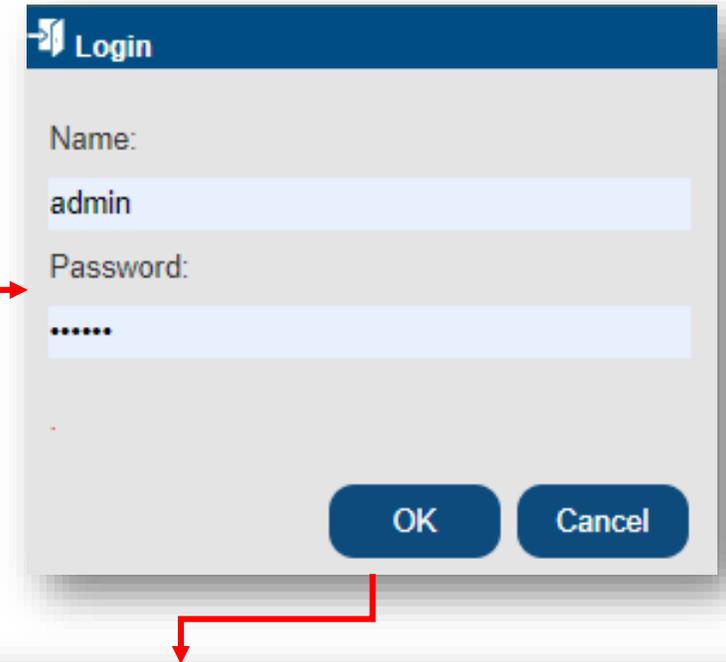


Build Project – Login

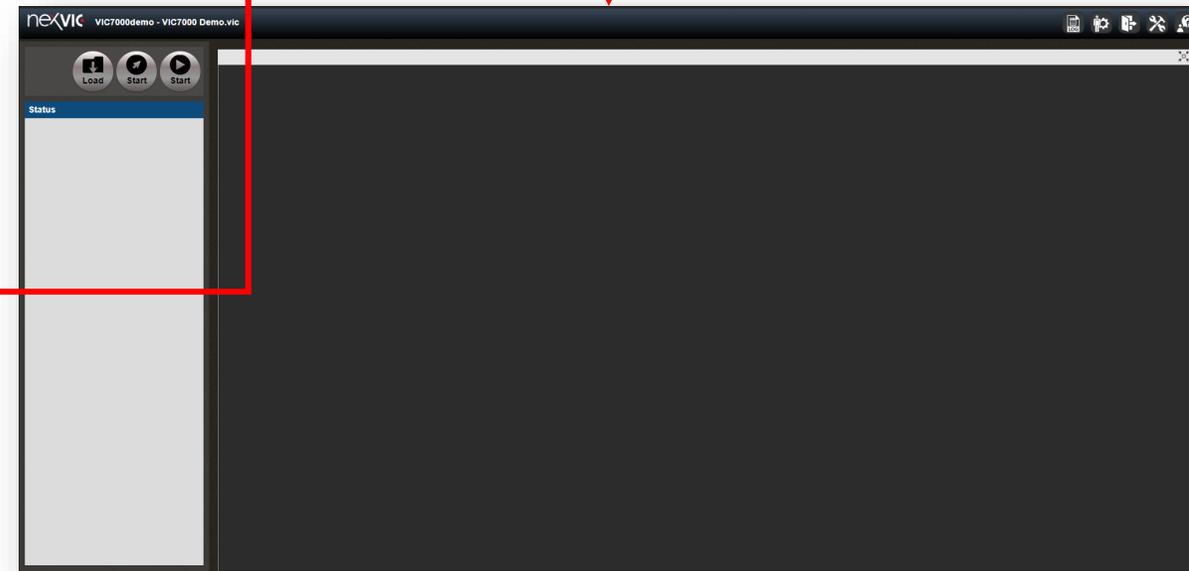
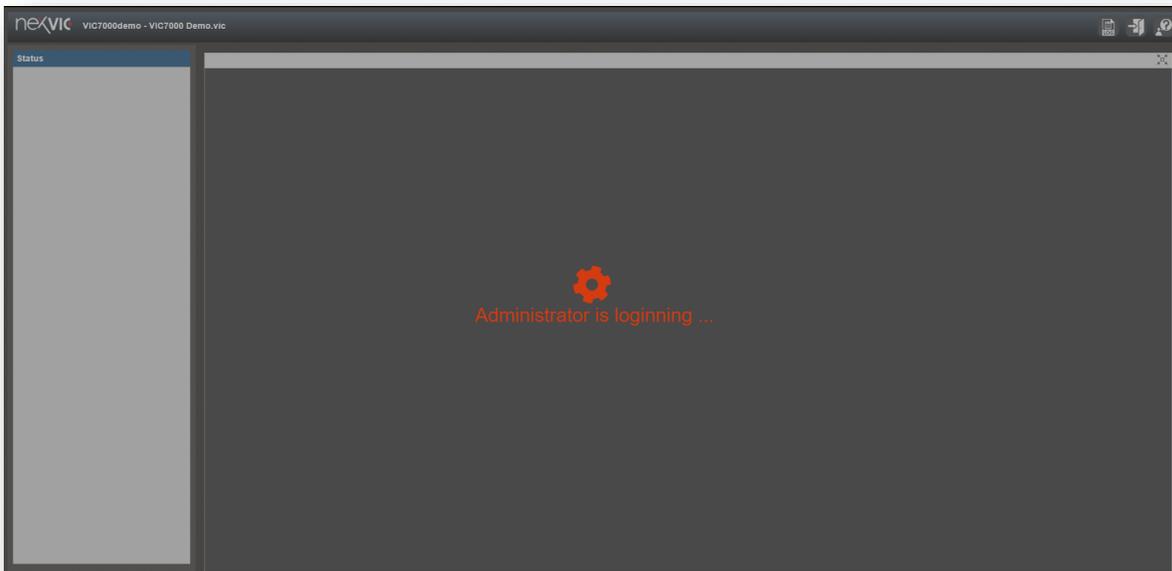
- **Replace Login**

1. Click anywhere on the interface : A login window will show up
2. Enter administrator name and password
3. Click OK

When an administrator successfully logs in, the current administrator will be forced to logout.



A screenshot of a 'Login' dialog box. The dialog has a blue header with the text 'Login'. Below the header, there are two input fields. The first is labeled 'Name:' and contains the text 'admin'. The second is labeled 'Password:' and contains a series of dots. At the bottom right of the dialog, there are two buttons: 'OK' and 'Cancel'.



Build Project – Login

- **Buttons**

1. Database (only for 7300)
2. Load Project
3. Start/stop control
4. Start/stop project
5. Log
6. Administrator mode
7. Logout
8. System settings
9. About



Build Project – Login

- **Log**

- Record important software information
- Classified recording message
- Export as .txt
- Export path is the download path of the browser



System Log

1/2 Module All From Pick a date To Pick a date Reset

[6/28/2019, 12:37:19] [socket] A Client connected to server.(127.0.0.1, total connections: 2)

[6/28/2019, 12:37:19] [socket] A Client connected to server.(127.0.0.1, total connections: 3)

[6/28/2019, 12:57:16] [file] Acquisition starts

[6/28/2019, 12:57:20] [file] Acquisition stops

[6/28/2019, 13:00:59] [socket] A Client connected to server.(192.168.133.1, total connections: 1)

[6/28/2019, 13:07:17] [file] Acquisition starts

[6/28/2019, 13:07:29] [file] Acquisition stops

[6/28/2019, 13:07:47] [file] Acquisition starts

[6/28/2019, 13:08:20] [file] Acquisition stops

[6/28/2019, 13:10:48] [file] Acquisition starts

[6/28/2019, 13:23:10] [file] Acquisition stops

[6/28/2019, 13:23:32] [file] Acquisition starts

[6/28/2019, 13:23:56] [modbus] A modbus connected to server.(192.168.133.1, total connections: 1)

[6/28/2019, 13:24:04] [file] Acquisition stops

Module All

All

ajax

file

modbus

project

socket

tcp

webserver

Export Clear Cancel



另存新檔

本機 > 下載

組合管理 新增資料夾

快速存取

- 桌面
- 下載
- 文件
- 圖片
- pserver
- DATA (D:)
- Monitor Rec
- Application Sto
- Meeting

檔案名稱(N): log.Wed Jun 26 2019 16_03_01 GMT+0800 (台北標準時間).txt

存檔類型(T): Text Document (*.txt)

存檔(S) 取消

log.Wed Jun 26 2019 16_03_01 GMT+0800 (台北標準時間).txt - 記事本

```
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)
<2>[2019/6/27 上午2:01:01][webserver]WebServer start at port 80.
<1>[2019/6/27 上午2:01:53][system]System quits
<2>[2019/6/27 上午2:02:03][webserver]WebServer start at port 80.
<0>[2019/6/27 上午2:02:49][socket]A Client connected to server.(192.168.133.1, total connections: 1)
<0>[2019/6/27 上午2:02:59][ajax]Admin signed in.(192.168.133.1)
<2>[2019/6/27 上午2:03:03][project]Load project.(VIC7000 Demo.vic)
<0>[2019/6/27 上午2:03:03][project]Load project successfully. (VIC7000 Demo.vic)
<0>[2019/6/27 上午2:03:04][socket]A Client disconnected.(192.168.133.1, total connections: 0)
<0>[2019/6/27 上午2:03:05][socket]A Client connected to server.(192.168.133.1, total connections: 1)
<0>[2019/6/27 上午2:03:06][file]Acquisition starts
<0>[2019/6/27 上午2:03:13][file]Acquisition stops
<0>[2019/6/27 上午2:05:45][file]Acquisition starts
<0>[2019/6/27 上午2:12:20][file]Acquisition stops
<2>[2019/6/27 上午3:09:14][ajax]time out to force signing out
<0>[2019/6/27 上午3:19:48][ajax]Admin signed in.(192.168.133.1)
<0>[2019/6/27 上午3:19:49][file]Acquisition starts
<2>[2019/6/27 上午3:50:43][ajax]time out to force signing out
<0>[2019/6/27 上午4:35:43][ajax]Admin signed in.(192.168.133.1)
<0>[2019/6/27 上午4:36:03][socket]A Client connected to server.(192.168.133.1, total connections: 2)
<0>[2019/6/27 上午4:41:26][file]Acquisition stops
<0>[2019/6/27 上午4:41:28][project]Load project.(VIC7000 Demo.vic)
<0>[2019/6/27 上午4:41:29][project]Load project successfully. (VIC7000 Demo.vic)
<0>[2019/6/27 上午4:41:29][socket]A Client disconnected.(192.168.133.1, total connections: 1)
<0>[2019/6/27 上午4:41:30][socket]A Client disconnected.(192.168.133.1, total connections: 0)
<0>[2019/6/27 上午4:41:31][socket]A Client connected to server.(192.168.133.1, total connections: 1)
<0>[2019/6/27 上午4:41:31][socket]A Client connected to server.(192.168.133.1, total connections: 2)
```

Build Project – Login

- **System Settings**

- UI Language - English, Traditional Chinese, Simplified Chinese, Japanese
- Change Password
- Auto Load Project
- Reset Project
- Left Mouse Button To Move Canvas
- Auto Load Page Image
- System Load
- System Save
- Enable Control Scheduler
- OCR Name Conversion Table
- Serial Port Control

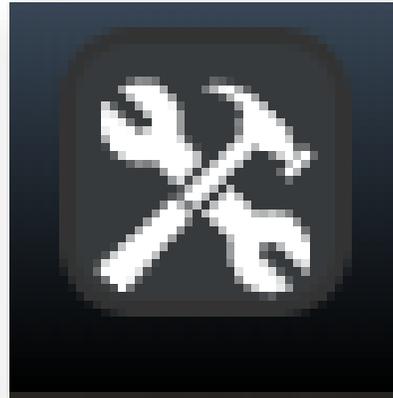


System Settings	
Name	Value
System Settings	
UI Language	English
Change Password	Submit
Auto Load Project	<input checked="" type="checkbox"/>
Reset Project	Submit
Left Mouse Button To Move Canvas	<input type="checkbox"/>
Auto Load Page Image	<input type="checkbox"/>
System Load	Submit
System Save	Submit
Enable Control Scheduler	<input type="checkbox"/>
OCR Name Conversion Table	Submit
Serial Port Control	COM2

Build Project – Login

- **Database Settings**

- Whether Save Image when recognition failed
- Target Quantity
- Target_color Quantity
- Target_pattern Quantity
- OCR Quantity
- Color Quantity
- Pattern Quantity
- Calc Quantity
- Export Path & Select Export Path
- Backup Path & Select Backup Path
- Backup Time (hour)



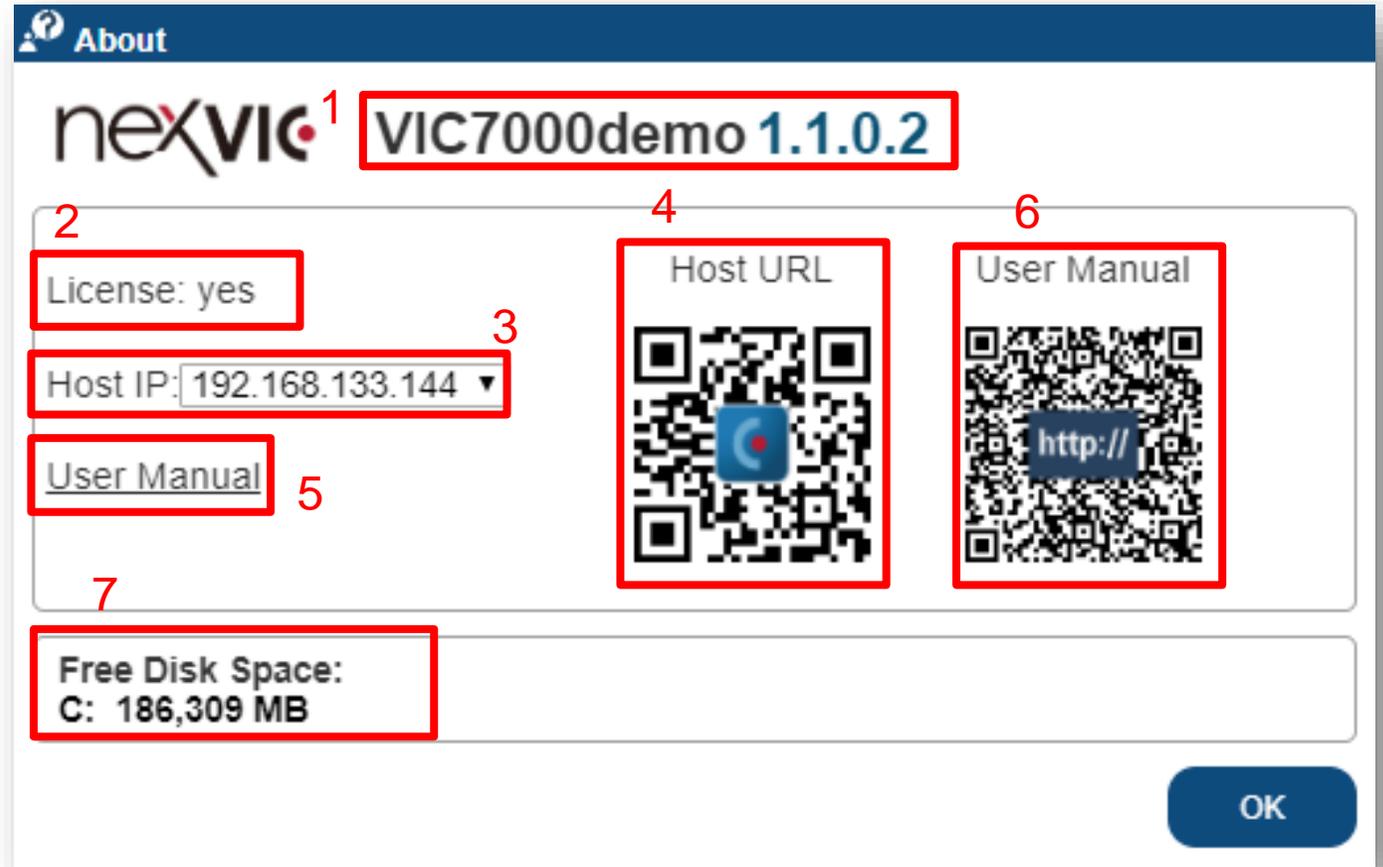
System Settings

Database Settings	
Save Image	<input checked="" type="checkbox"/>
Target Quantity	5
Target_color Quantity	5
Target_pattern Quantity	5
OCR Quantity	17
Color Quantity	20
Pattern Quantity	17
Calc Quantity	0
Export Path	D:/VIC7000/temp/
Select Export Path	<input type="button" value="Submit"/>
Backup Path	D:/VIC7000/backup/
Select Backup Path	<input type="button" value="Submit"/>
Backup time(hour)	12

Build Project – Login

- **About**

1. Version
2. Software license check
3. IP selection field of VIC7000
4. QR code of link VIC7000
5. Local user manual link
6. QR code of online user manual
7. VIC7000's PC Free Disk Space



Build Project – Login



Build Project – Login

- **Buttons**

1. New project
2. Load project
3. Save project
4. Save as
5. Recognition config page
6. Script
7. Monitor
8. Control
9. Link
10. Wizard

1



New

2



Load

3



Save

4



Save As

5



Page

6



Script

7



Monitor

8



Control

9



Link

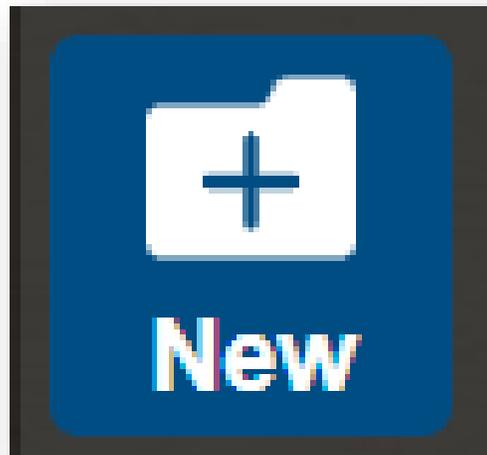
10



Wizard

Build Project – New Project

- **New project**
 1. Enter Project Name (Required and Unique)
 2. Click OK
 - Author
 - Version
 - Comment

A dialog box titled "New Project" with a blue header bar. It contains four input fields: "Project Name:" (with a red arrow pointing to it), "Author:", "Version:", and "Comment:". At the bottom right, there are two buttons: "OK" (with a red arrow pointing to it) and "Cancel".

New Project

Project Name:

Author:

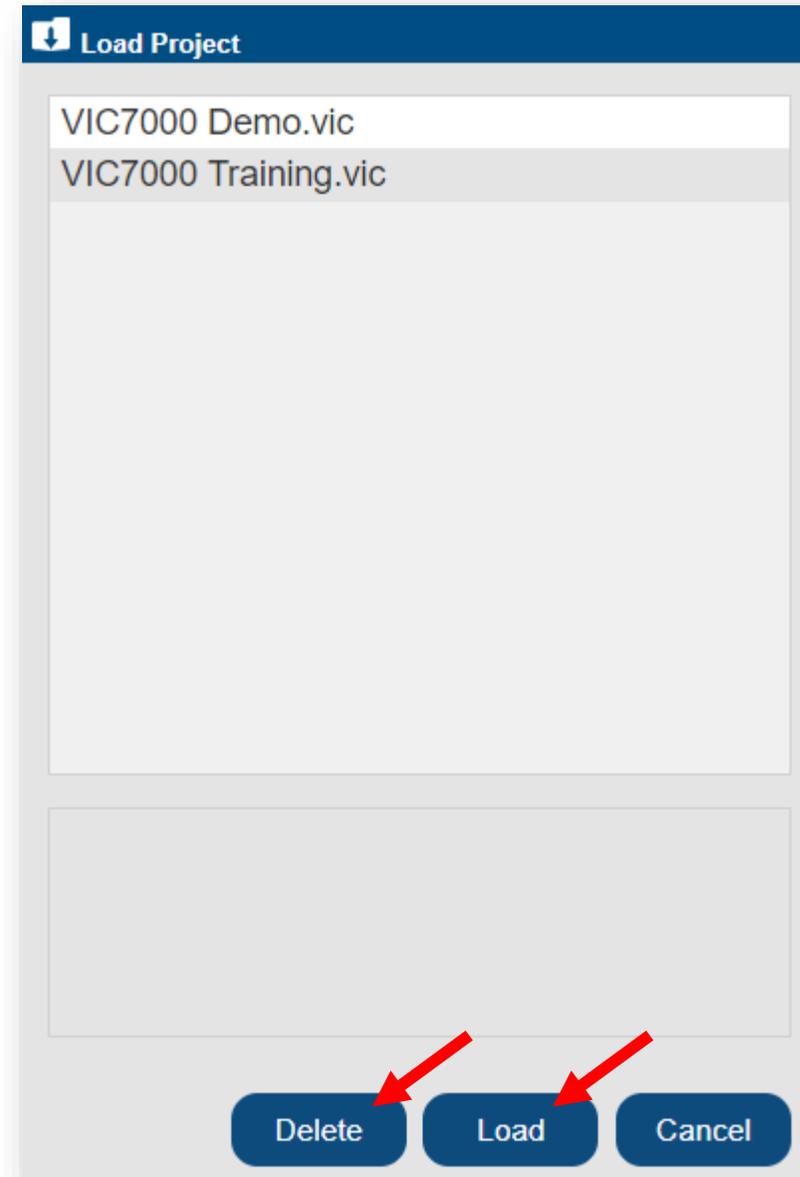
Version:

Comment:

OK Cancel

Build Project – New Project

- **Load Project**
 - Load project
 - Delete project



Build Project – New Project

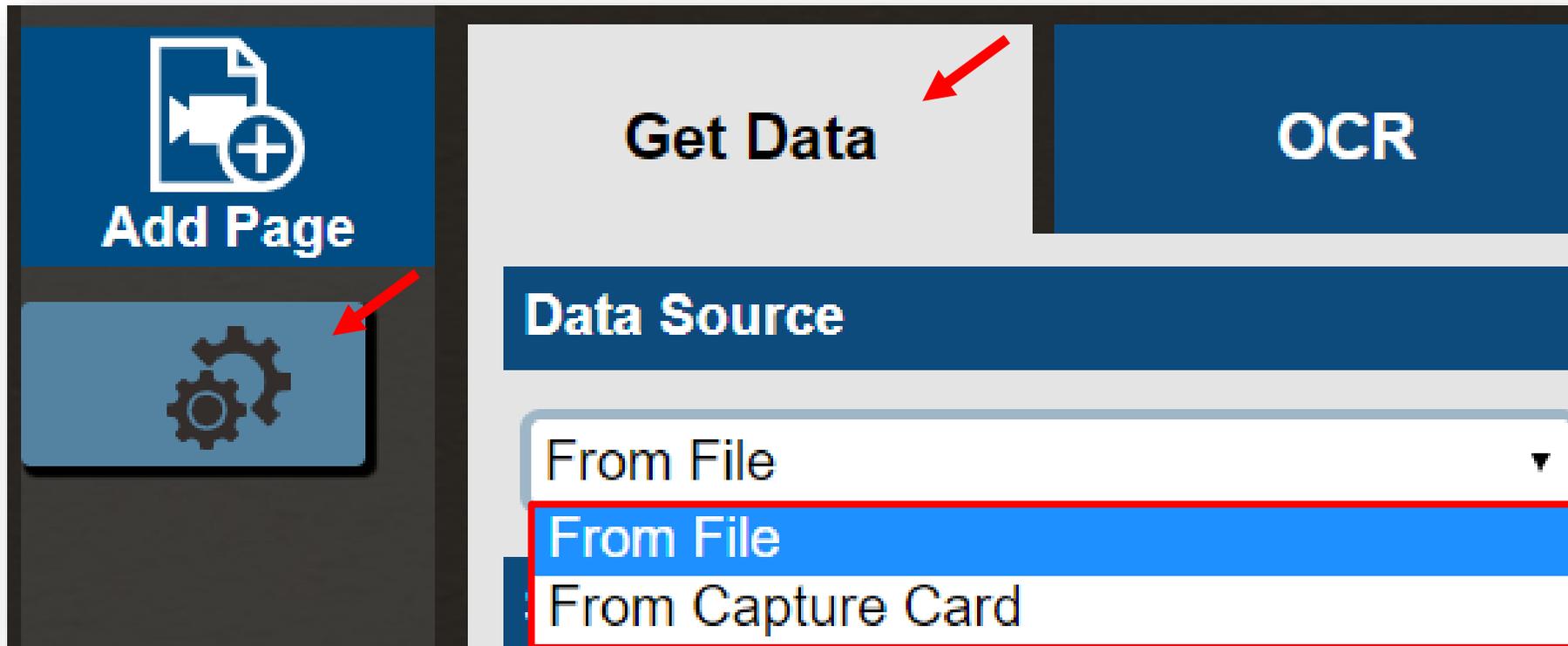
- Recognition Config Page



Build Project – Get Data

- **Image Source**

- **From File** : Read images from a folder (.bmp or .tif)
- **From Capture Card** : Read images captured by capture card



Build Project – Get Data

- **From File**
 1. Select the path of the folder where image is located
 2. Read interval

The folder path is an address inside VIC7000 computer hard drive

Get Data | **OCR**

Data Source
From File

Settings
Image:

Name	Value
Parameters	1
Select Image Folder	<input type="button" value="Submit"/>
Image Folder	C:/VIC7000
Interval (ms)	1000 2

Select Image Folder

C:/

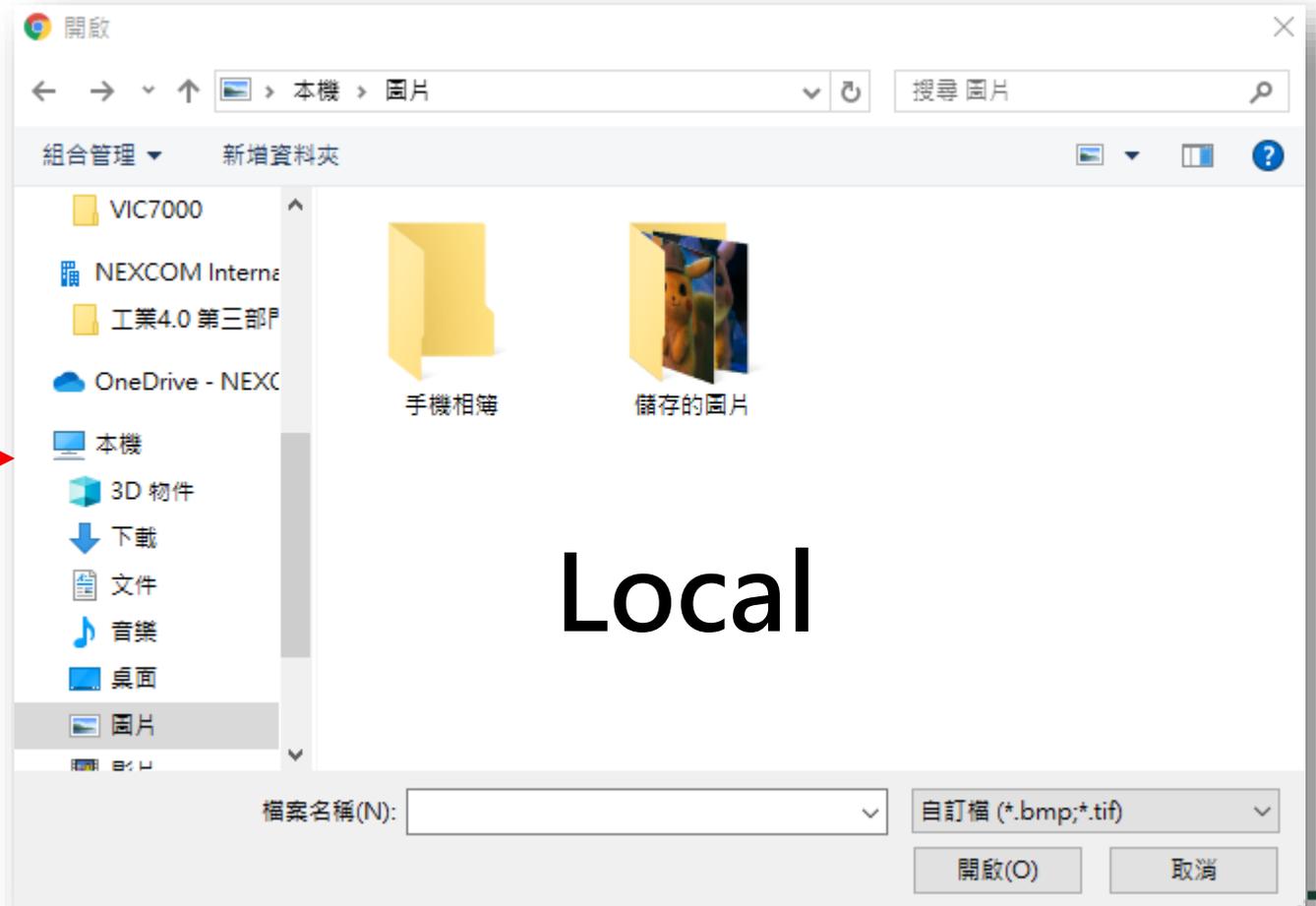
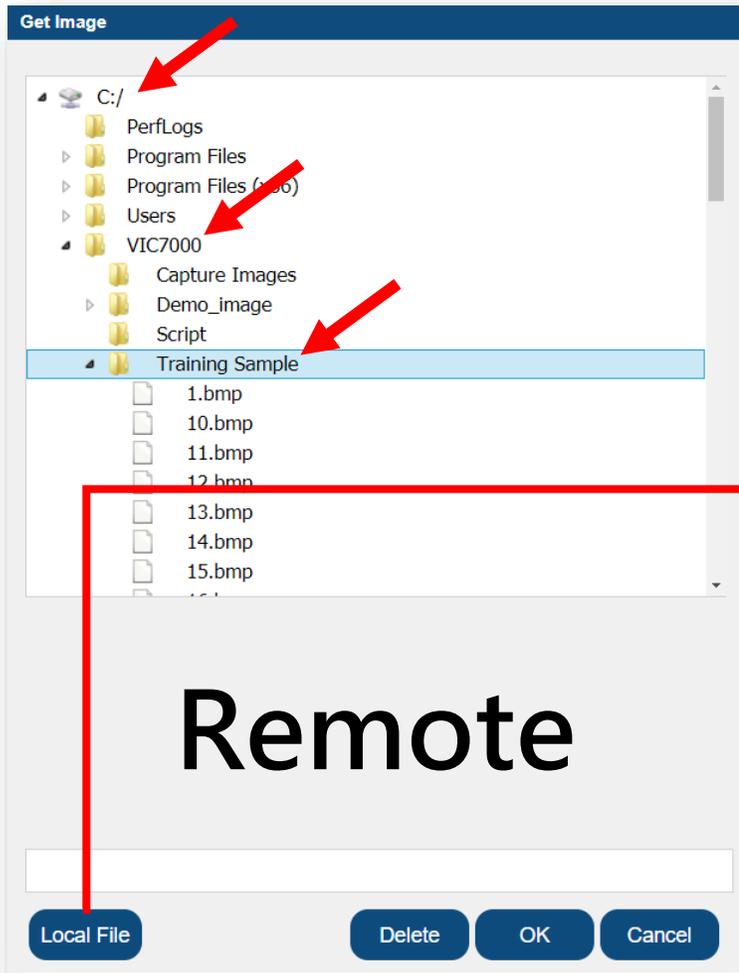
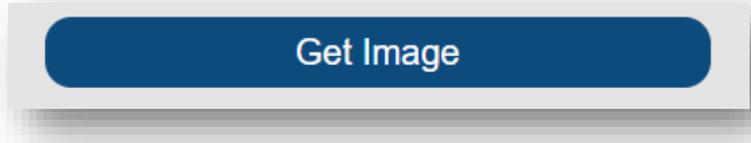
- PerfLogs
- Program Files
- Program Files (x86)
- Users
- VIC7000
 - assets
 - bin
 - Capture Images
 - control
 - Demo_image
 - images
 - ocr_fonts
 - project
 - Script
 - Training Sample**
 - Uninstaller
 - user_ocr_fonts
 - webroot
 - Windows

C:/VIC7000/Training Sample

Build Project – Get Data

- From File

- Get Image : Read images from a local folder or a remote folder



Build Project – Get Data

- From File

- 3. Start/Stop : Read and recognize images from a folder

- Get Image : Read images from a local folder or a remote folder

The screenshot displays the NexVIC software interface. On the left, the 'Get Data' sidebar is active, showing the 'OCR' tab. A red arrow points to the 'OCR' tab. Below it, the 'Recognition Method' is set to 'Matching target'. The 'Settings' section is empty. The 'Result' section shows 'Name: TARGET01' and 'Value: //|||=|||=-+|=--'. At the bottom of the sidebar, the 'Stop' and 'Start' buttons are highlighted with a red box and a red number '3'. A red arrow points from this box to the 'Start' button in the main interface. The main interface shows an 'Over View' for 'TARGET01'. It features a 'Pyramax' system monitor window with a data table and a process flow diagram.

Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T
Setpoint	85	75		90	85					20
Actual	112	125	125	155	165	190	238	260	285	295
Setpoint	110	125	125	125	165	225	225	260	285	285
Power	24	14	13	5	7	12	11	4	27	

Build Project – Get Data

- **From Capture Card**
 1. **Video Input** : Generally, it is DVI_A (RGB/VGA)
 2. **Set Capture Frame Rate (fps)**
- **Video Quality**
 - Brightness
 - Contrast
 - Hue
 - Saturation
 - Sharpness
 - Default : Restore quality parameters to default settings

Get Data **OCR**

Data Source
From Capture Card

Settings

Name	Value
Input Parameters	
Video Width	0
Video Height	0
Video Frame Rate	0
Video Signal	false
Video Input	DVI_A (RGB /
2 Capture Frame R2	

Stop Start

Get Image

Get Data **OCR**

Data Source
From Capture Card

Settings

Capture Frame R2	
Video Quality	
Brightness	128
Contrast	128
Hue	128
Saturation	128
Sharpness	136
Default	Submit
Save Images	

Stop Start

Get Image

Build Project – Get Data

- From Capture Card

- 2. **Start/Stop** : Continuously get images from capture card. **It's able to get and save images simultaneously**

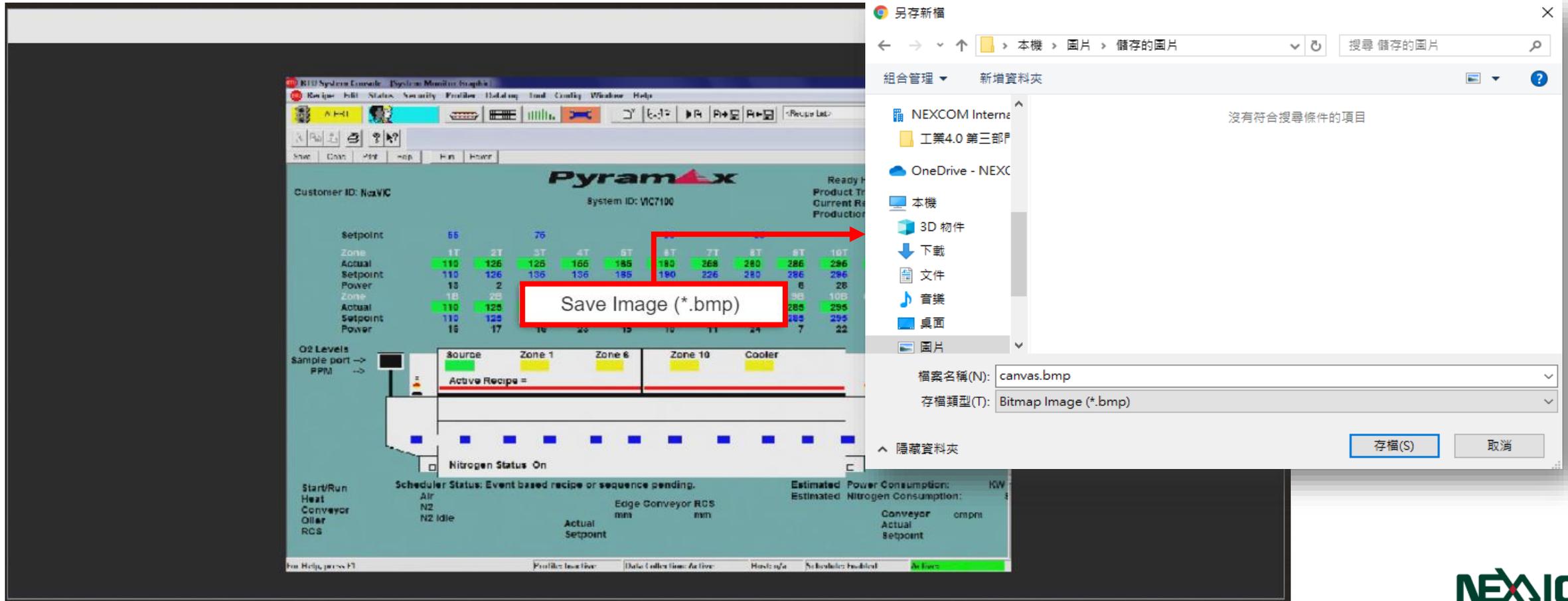
- Get Image** : Get an image from capture card

2
2

Build Project – Get Data

- From Capture Card

- Save Image : Right-click on the image, and follow instructions to save images to the local drive

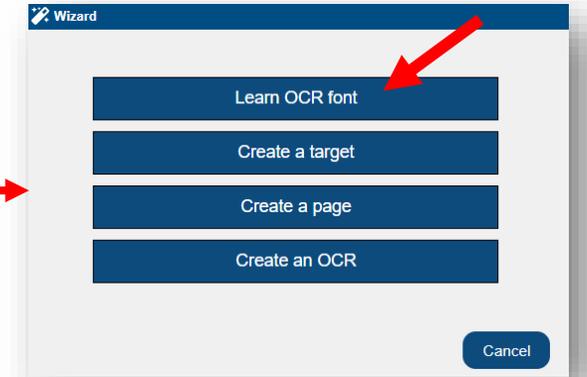


Build Project – Font Learning

- **Wizard : Learn OCR Font**

1. Data Source

From File or From Capture Card



Build Project – Font Learning

- **Wizard : Learn OCR Font**

- 2. Source Settings

From File : Image folder path, Read interval

From Capture Card : Video input signal type, Capture frame rate

Learn OCR Font

1. Data Source 2. Source Settings 3. Get Image 4. Segmentation Parameters 5. Create New Font

Image Folder
C:/VIC7000

Submit

Interval (ms)
1000

Learn OCR Font

1. Data Source 2. Source Settings 3. Get Image 4. Segmentation Parameters 5. Create New Font

Video Signal
 false

Video Input
DVI_A (RGB / VGA)

Capture Frame Rate
2

Previous Next Cancel

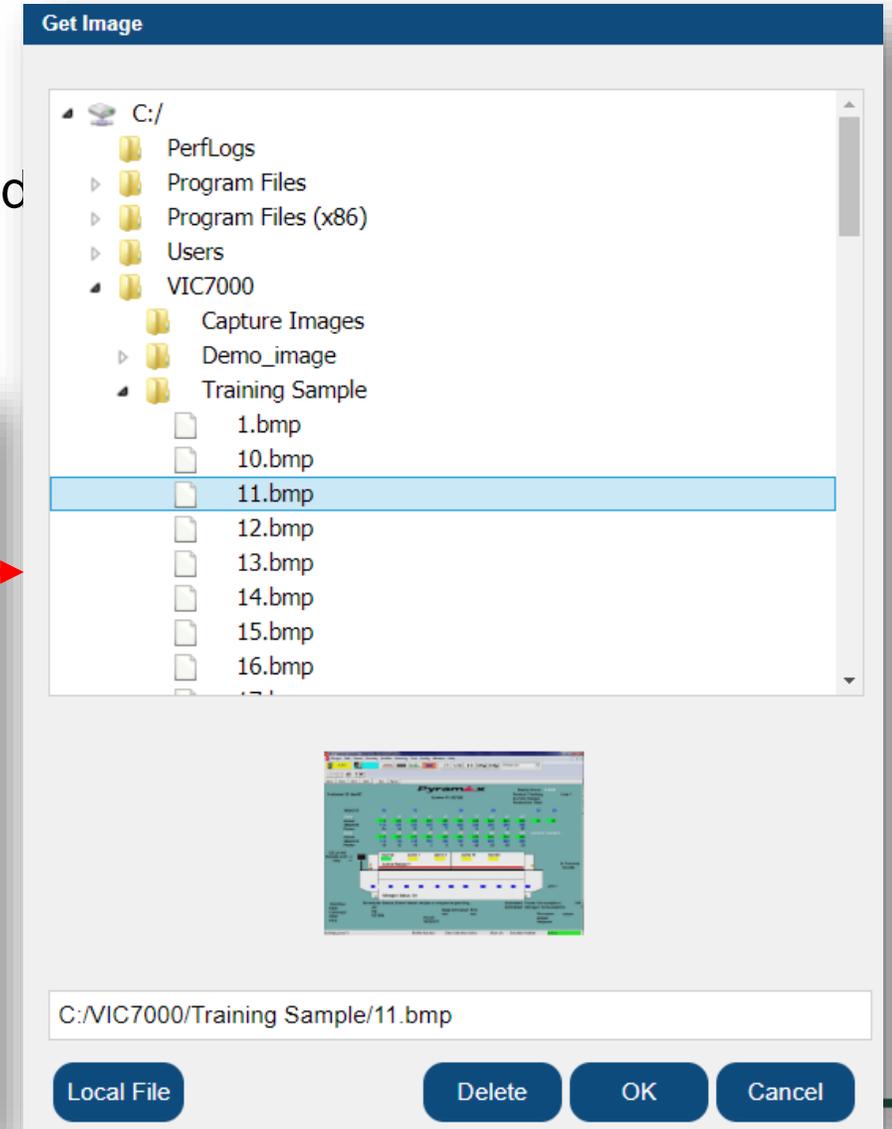
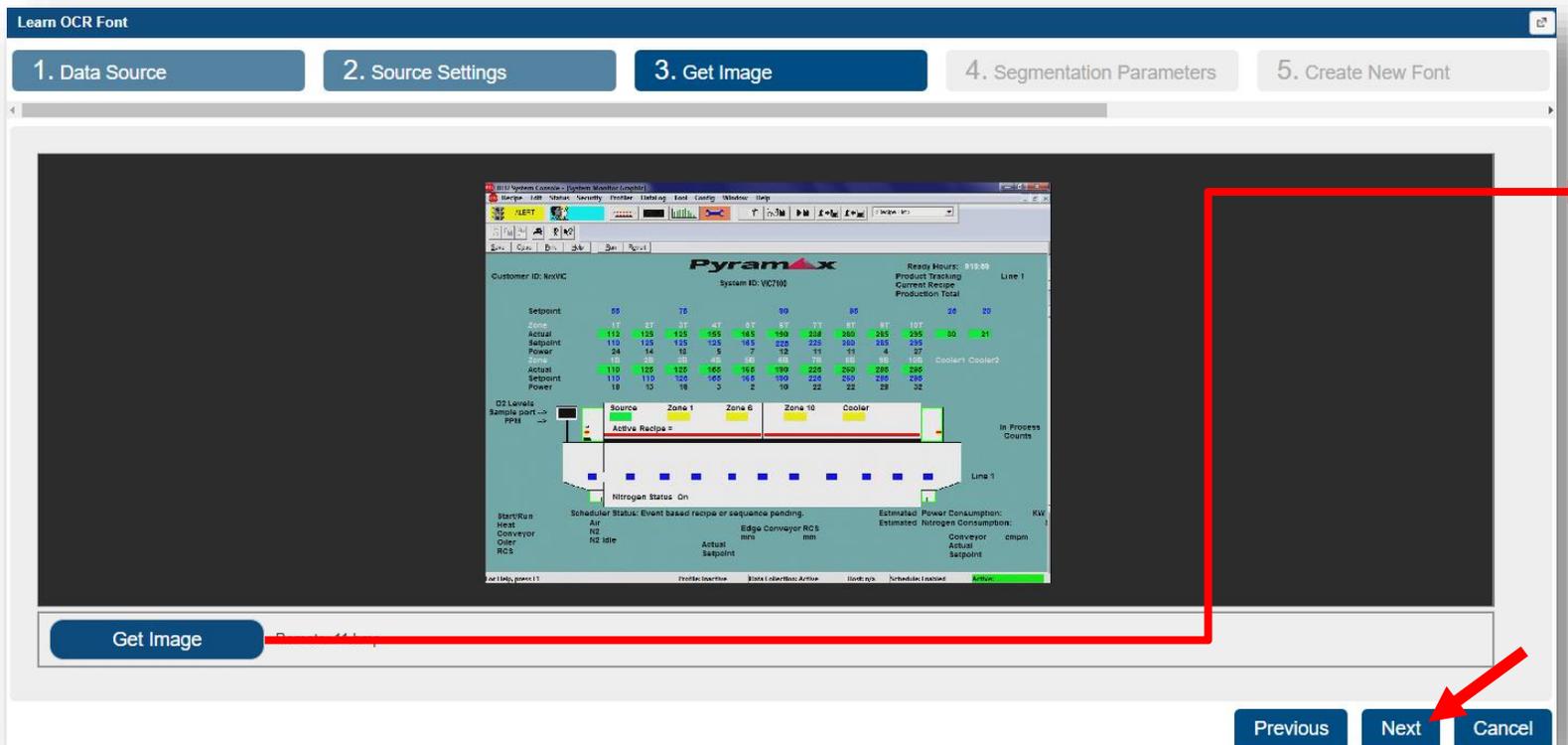
Build Project – Font Learning

- Wizard : Learn OCR Font

 - 3. Get Image

From File : Read images from a local folder or a remote folder

From Capture Card : Get an image from capture card



Build Project – Font Learning

- Wizard : Learn OCR Font

4. Segmentation Parameter : Adjust segmentation parameters to make characters recognizable

The screenshot displays the 'Learn OCR Font' wizard at the '4. Segmentation Parameters' step. The interface includes a progress bar at the top with five steps: 1. Data Source, 2. Source Settings, 3. Get Image, 4. Segmentation Parameters (active), and 5. Create New Font. The main area shows a document preview with a red bounding box around a character. Below the preview are several adjustable parameters:

- Min Width: [up/down arrows]
- Max Width: 48 [up/down arrows]
- Thresholding: 7 [up/down arrows]
- Show Segmentation:
- Cut Large Characters:
- Min Height: 16 [up/down arrows]
- Max Height: 72 [up/down arrows]
- Threshold Value: 103 [up/down arrows]
- Remove Narrow Or Flat:
- Relative Spacing (%): 0 [up/down arrows]
- Character Spacing: 8 [up/down arrows]
- Noise Area: 20 [up/down arrows]
- Chars Color: White on Black [dropdown menu]
- Remove Border:

At the bottom right, there are buttons for 'Advance' (highlighted with an orange arrow), 'Tip', 'Previous', 'Next', and 'Cancel'.

- **Segmentation Parameters**

- **Minimum Width/Height** : The width/height of the smallest character. If the width/height of a character is smaller than this value, it will be discarded
- **Maximum Width/Height** : The width/height of the maximum character, if the width/height of a character is larger than this value, it will be discarded
- **Character Spacing** : The smallest space between adjacent characters. If the space between two characters is less than this value, they will be considered as two characters separately
- **Noise Area** : Spotted area smaller than this value will be discarded. Adjusting this value will preserve the small character feature, like the dot above the letter i
- **Chars Color** : Black on White, White on Black, Dark on Light, Light on Dark
- **Threshold** : Adjust the image binarizing threshold

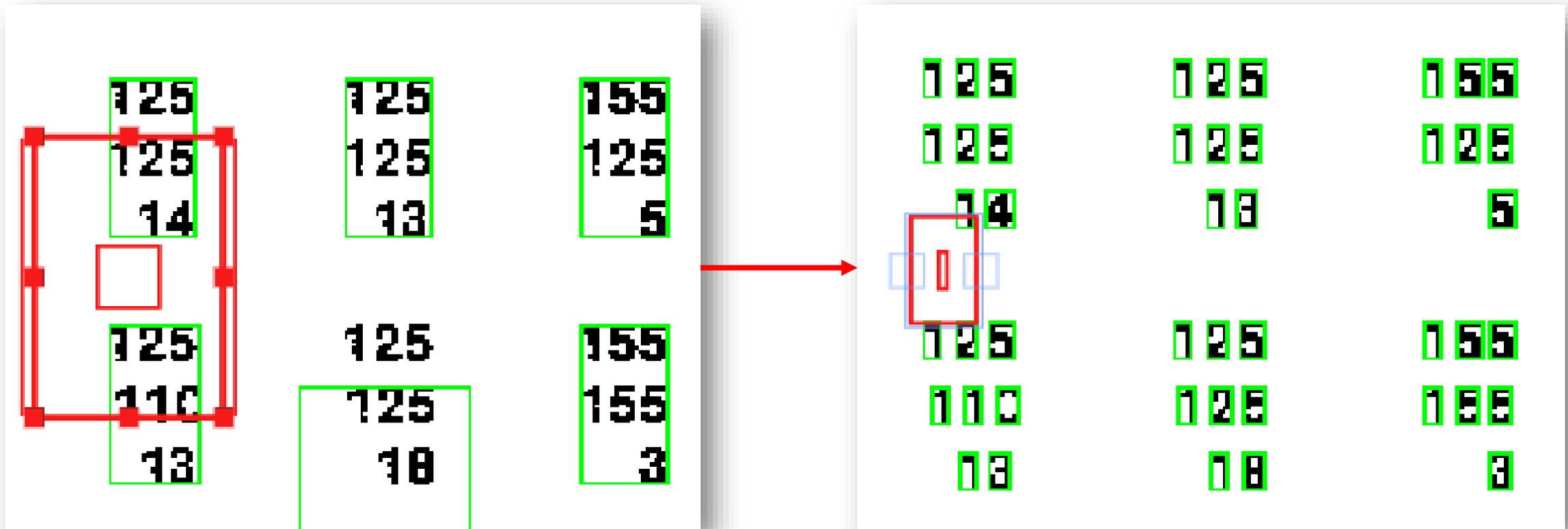
- **Segmentation Parameters**

- **Remove Narrow or Flat** : If a character has its size value less than the minimum width/height or greater than the maximum width/height, this character will be discarded. It's recommended to check this item again.
- **Remove Border** : Discard spots on edge of image/ROI
- **Cut Large Characters** : If enabled, characters are split as much part as possible. This item is designed for characters that cannot be separated by adjusting threshold
- **Relative Spacing(%)** : When Cut Large Characters is checked, the empty vector is inserted between those split parts

Build Project – Font Learning

- Wizard : Learn OCR font

4. Segmentation parameter : Adjust segmentation parameters to make characters recognizable



Build Project – Font Learning

- **Wizard : Learn OCR Font**

5. **Create New Font** : Patterns height/width must be less than or equal to the current minimum height/width

Learn OCR Font

1. Data Source 2. Source Settings 3. Get Image 4. Segmentation Parameters 5. Create New Font

The current minimum character size : Width = 2 , Height = 9

The current minimum character size : Width = 2 , Height = 9

Pattern Width 2 Pattern Height 9

Previous Next Cancel

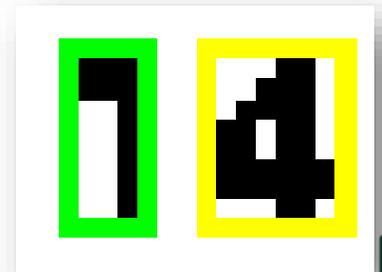
Build Project – Font Learning

- Wizard : Learn OCR Font

- 6. Learn OCR Font

- a. Learn **Single** Character : Click on the aimed character → Enter aimed **Character** into the field → Click **OK**

The screenshot displays the 'Learn OCR Font' wizard interface. The main window is titled 'Learn OCR Font' and has four tabs: '3. Get Image', '4. Segmentation Parameters', '5. Create New Font', and '6. Learn OCR Font'. The '6. Learn OCR Font' tab is active. The main area shows a grid of characters with bounding boxes. A red box highlights the character '4' in the grid, and a red arrow points from it to a dialog box titled 'Character'. The dialog box has a 'Character' input field containing '4' and a 'Class' dropdown menu set to 'EOCRClass_Digit'. The 'OK' button in the dialog box is highlighted with a red arrow. At the bottom of the main window, the 'Next' button is also highlighted with a red arrow. The 'Learn Single Character' section at the bottom of the main window has a 'Submit' button.

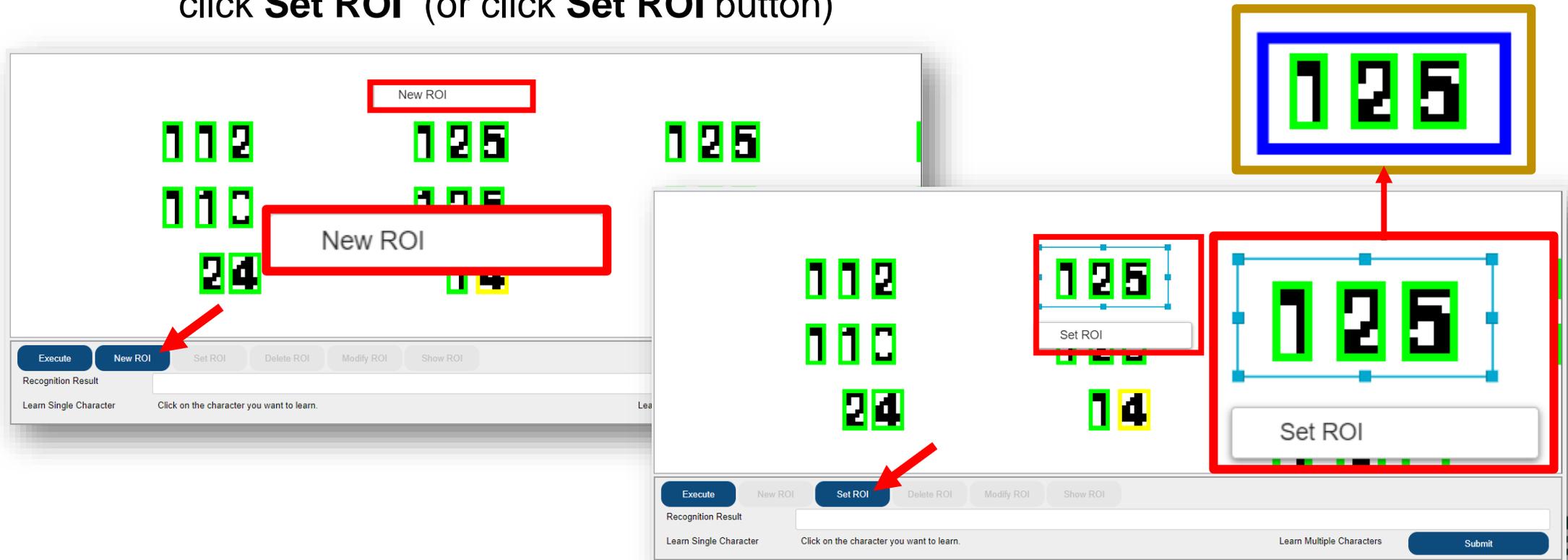


Build Project – Font Learning

- **Wizard : Learn OCR Font**

- 6. Learn OCR Font

- b. Learn **Multiple** Character : Right-click on the image then select **New ROI** (or Click on **New ROI** button) → adjust location and size of ROI → Right-click on the image and click **Set ROI** (or click **Set ROI** button)

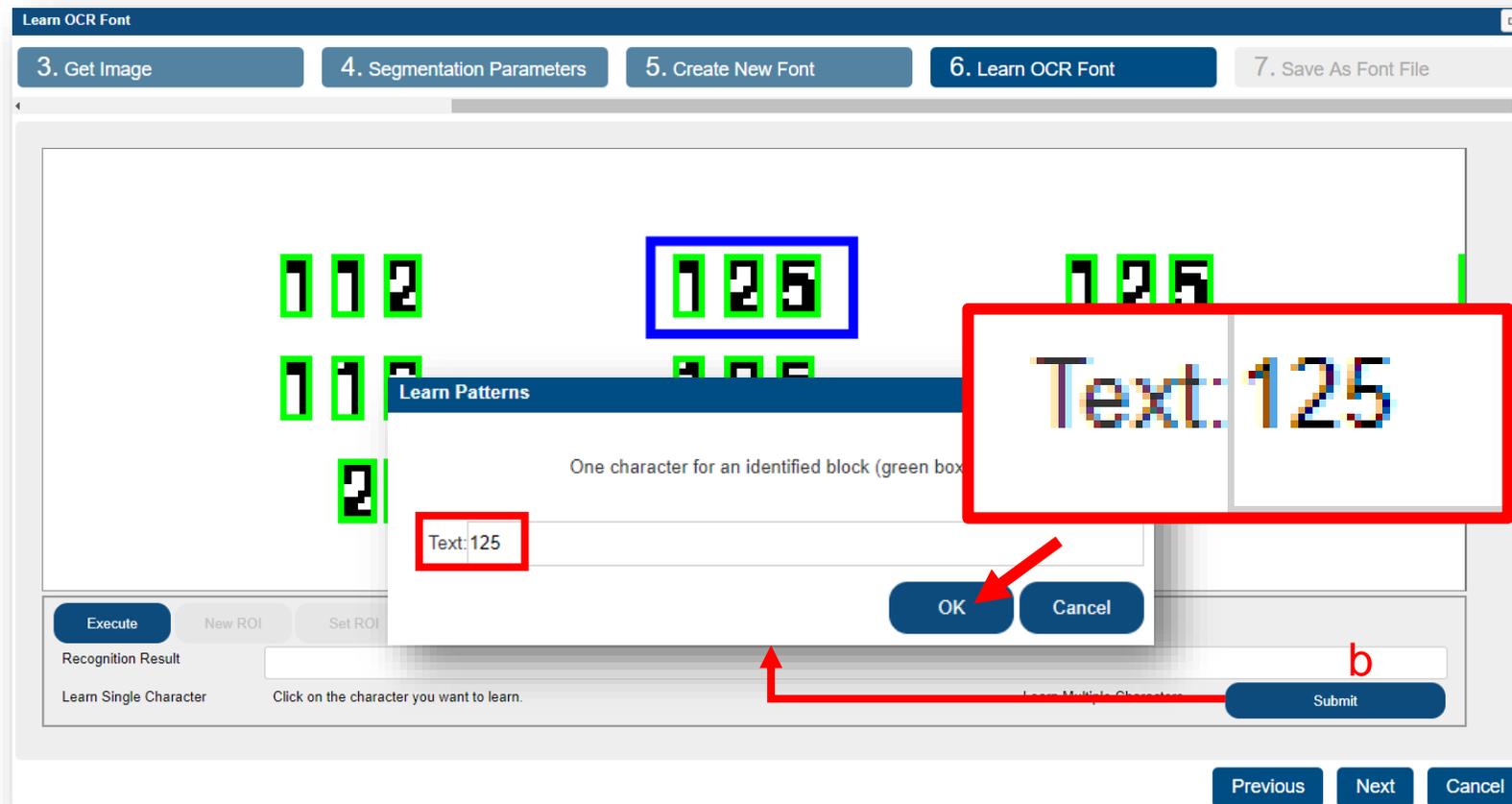


Build Project – Font Learning

- Wizard : Learn OCR Font

- 6. Learn OCR Font

- b. Learn **Multiple** Character : Click **Learn Multiple Characters** button → Enter **Text** → Click **OK**



Build Project – Font Learning

- Wizard : Learn OCR Font

- 6. Learn OCR Font

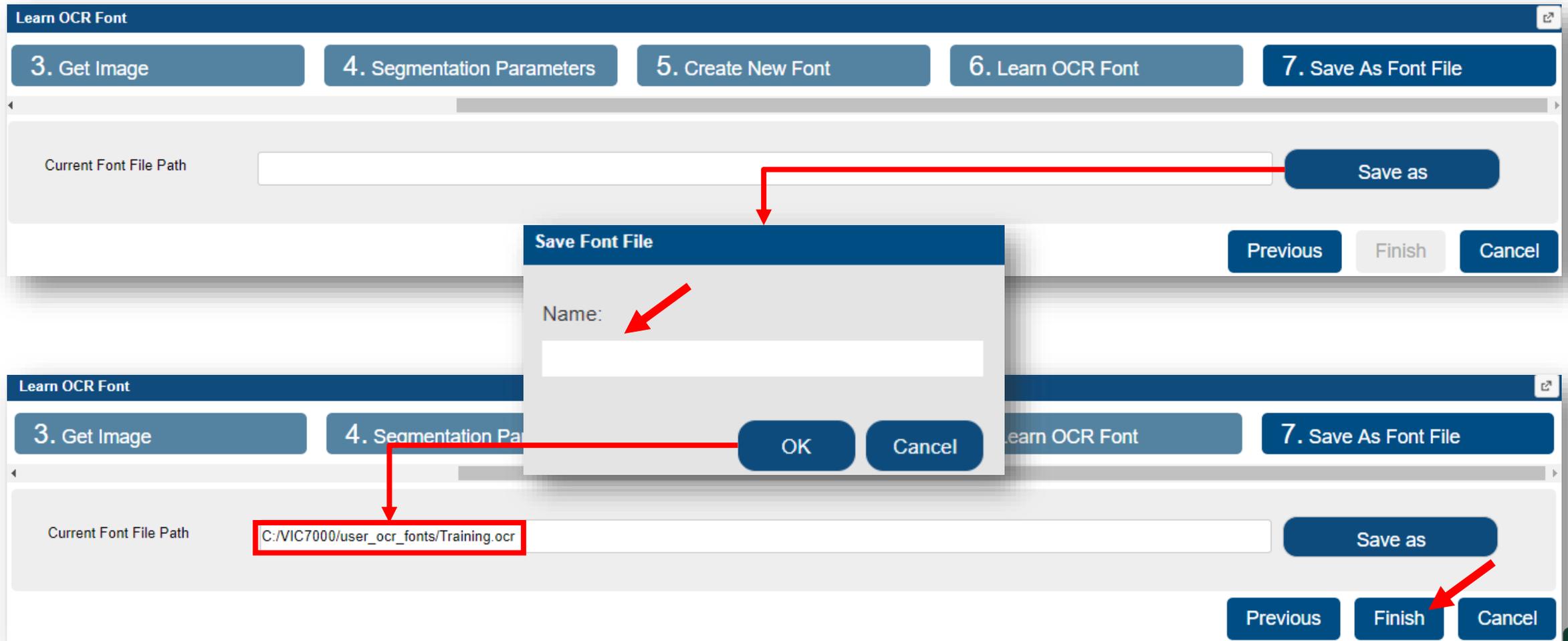
Simulation : Click **Execute**, and confirm the result in **Recognition Result** field

The screenshot shows the 'Learn OCR Font' wizard interface. The title bar reads 'Learn OCR Font'. The navigation bar includes steps: 3. Get Image, 4. Segmentation Parameters, 5. Create New Font, 6. Learn OCR Font (active), and 7. Save As Font File. The main area displays a grid of characters. A red bounding box highlights the character '125' in the second row, second column. Below the grid, the 'Recognition Result' field displays '125'. The 'Execute' button is highlighted with a red arrow. The 'Next' button is also highlighted with a red arrow. The interface includes buttons for 'Execute', 'New ROI', 'Set ROI', 'Delete ROI', 'Modify ROI', and 'Show ROI'. At the bottom, there are 'Previous', 'Next', and 'Cancel' buttons.

Build Project – Font Learning

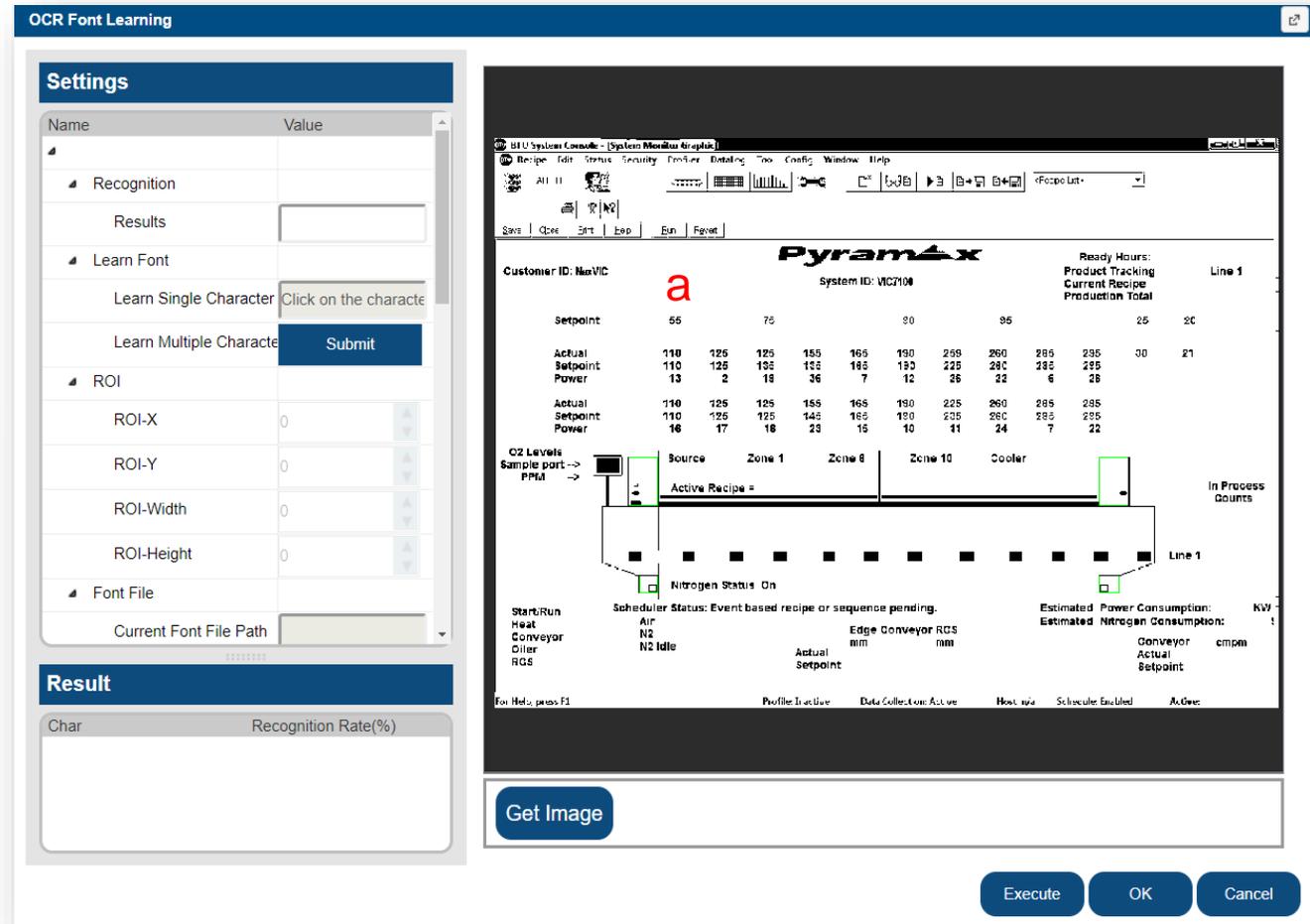
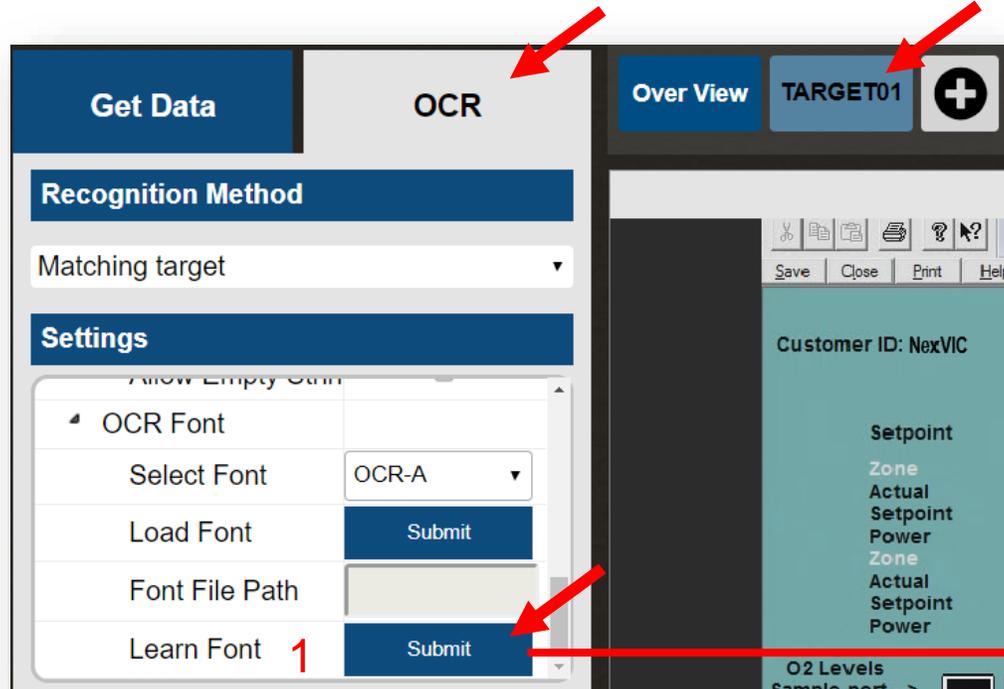
- **Wizard : Learn OCR Font**

7. **Save As Font File** : Enter a **Name** for the font file



Build Project – Font Learning

- **General : Learn OCR Font**
 1. Open OCR Font Learning Window
 2. Get Image
 - a. Direct Load : Directly load images from Get Data

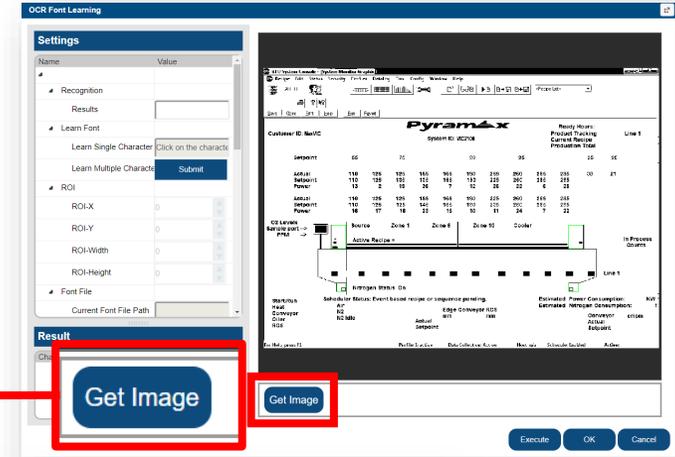
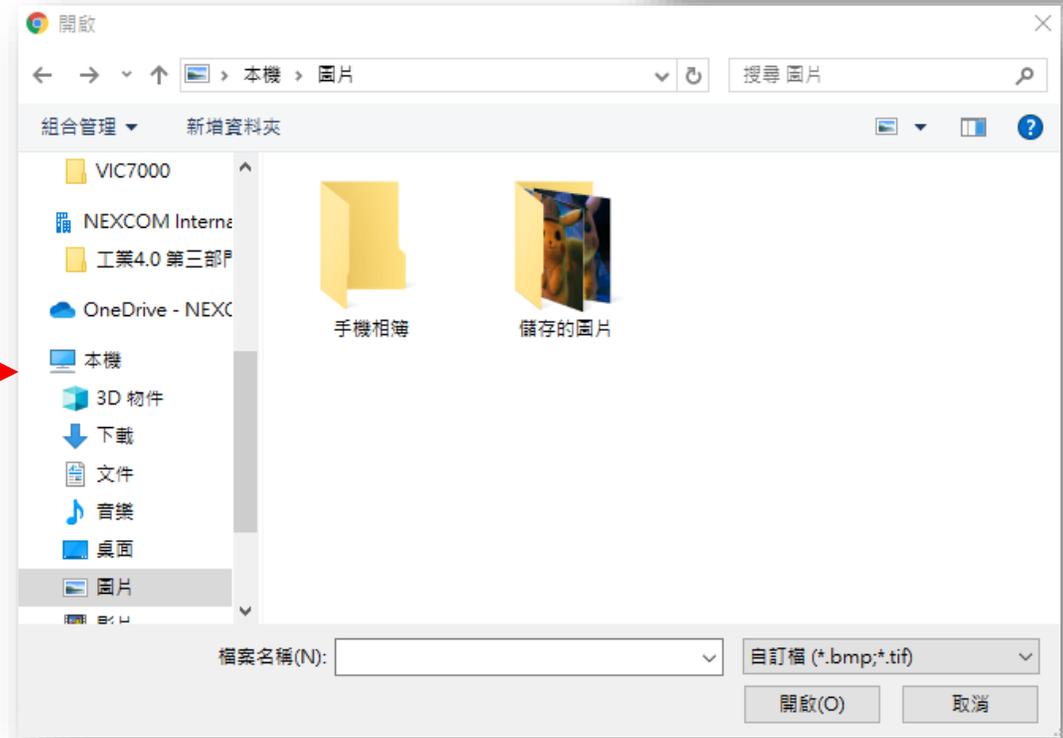
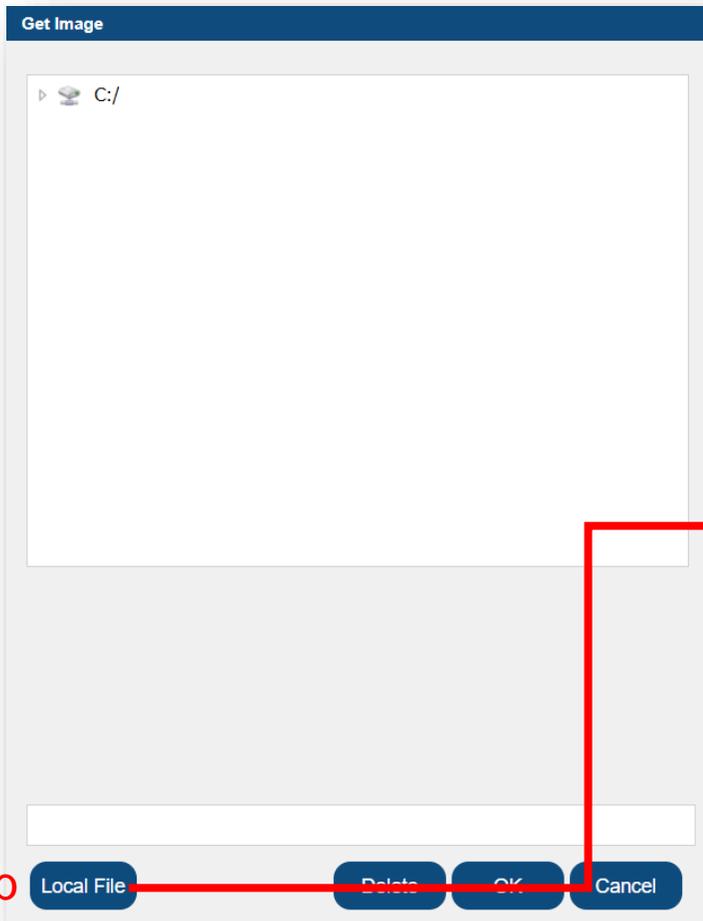


Build Project – Font Learning

- **General : Learn OCR Font**

- 2. Load Image

- b. Open local image : Load images from a local folder

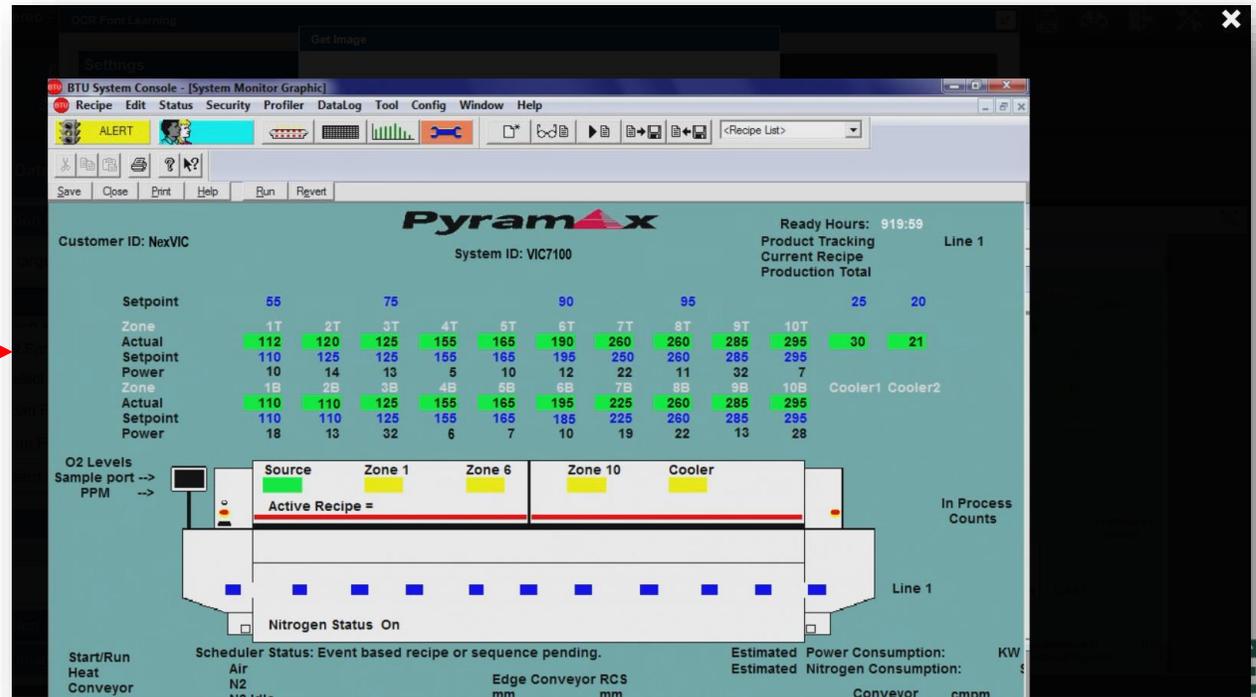
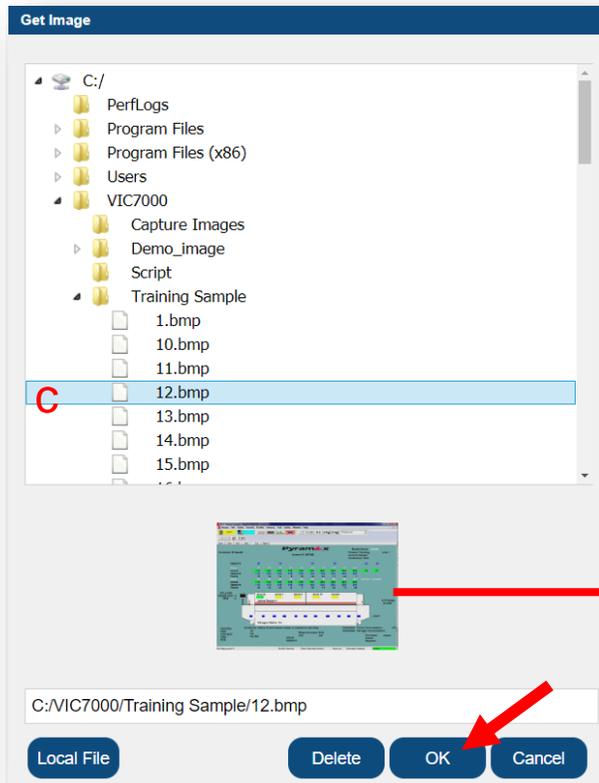
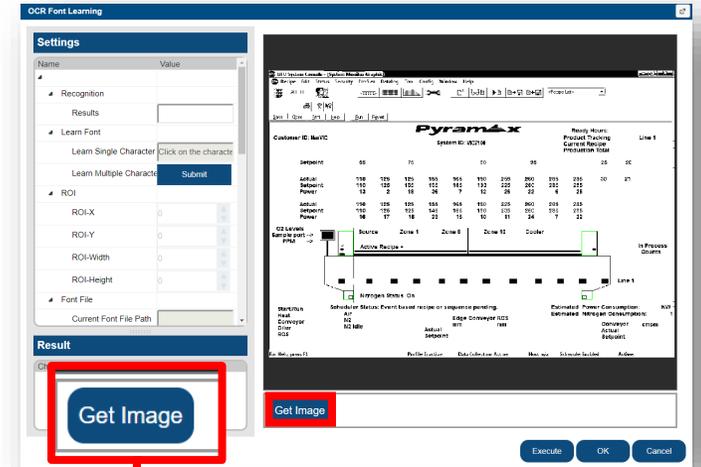


Build Project – Font Learning

- General : Learn OCR Font

- 2. Load Image

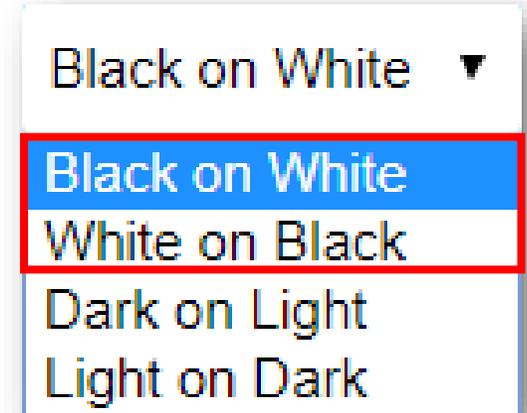
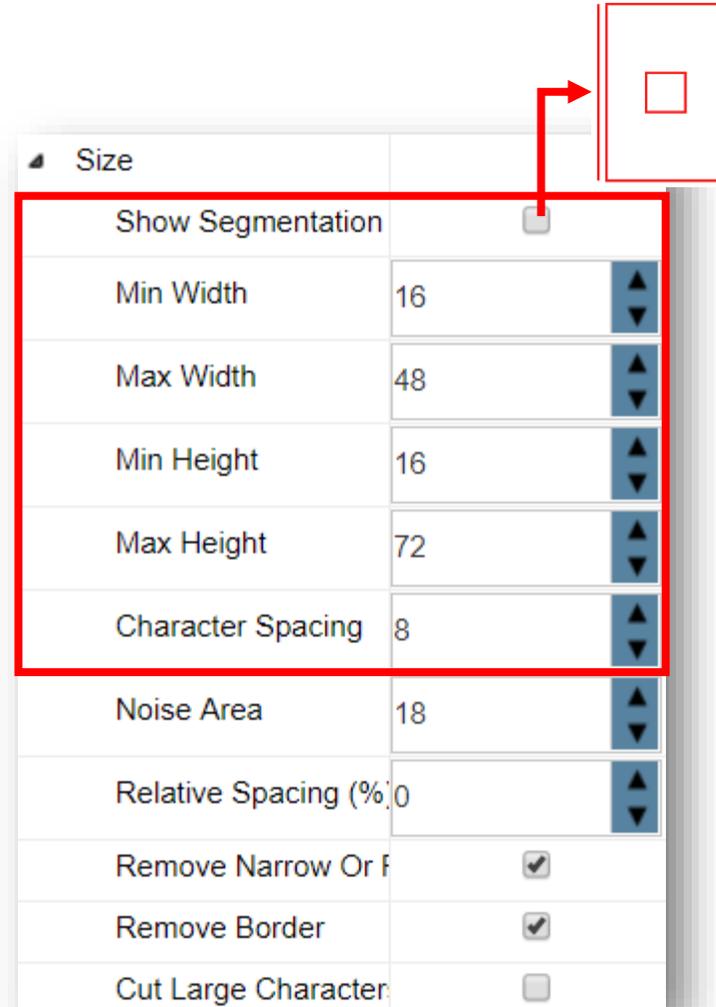
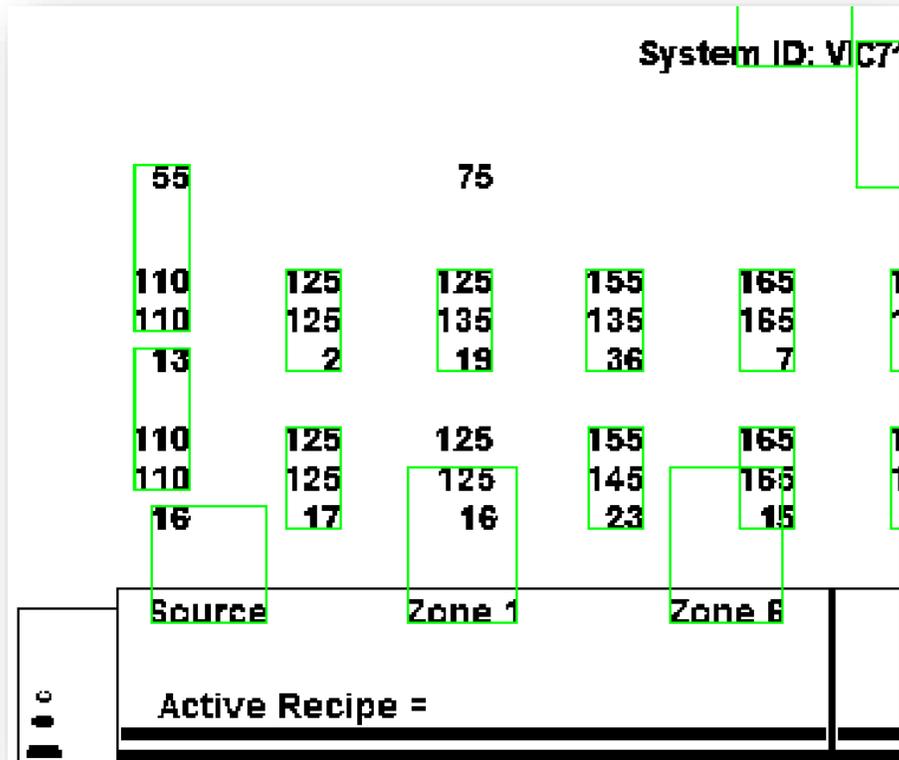
- c. Open remote image : Load the image on a remote VIC7000 computer. Click on the preview block to enlarge selected image



Build Project – Font Learning

- **General : Learn OCR Font**

3. **Segment Characters** : Adjust segmentation parameters to make characters recognizable.



- **Segmentation Parameters**

- **Minimum Width/Height** : The width/height of the smallest character. If the width/height of a character is smaller than this value, it will be discarded
- **Maximum Width/Height** : The width/height of the maximum character, if the width/height of a character is larger than this value, it will be discarded
- **Character Spacing** : The smallest space between adjacent characters. If the space between two characters is less than this value, they will be considered as two characters separately
- **Noise Area** : Spotted area smaller than this value will be discarded. Adjusting this value will preserve the small character feature, like the dot above the letter i
- **Chars Color** : Black on White, White on Black, Dark on Light, Light on Dark
- **Threshold** : Adjust the image binarizing threshold

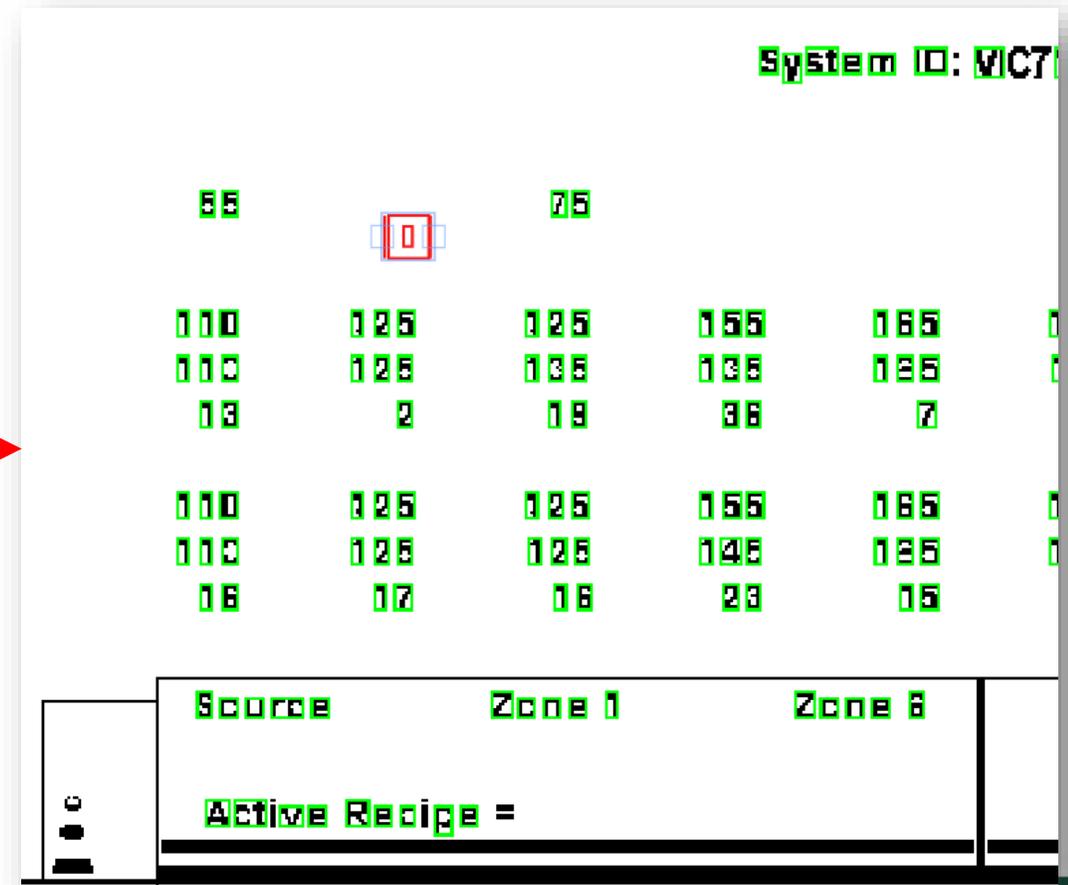
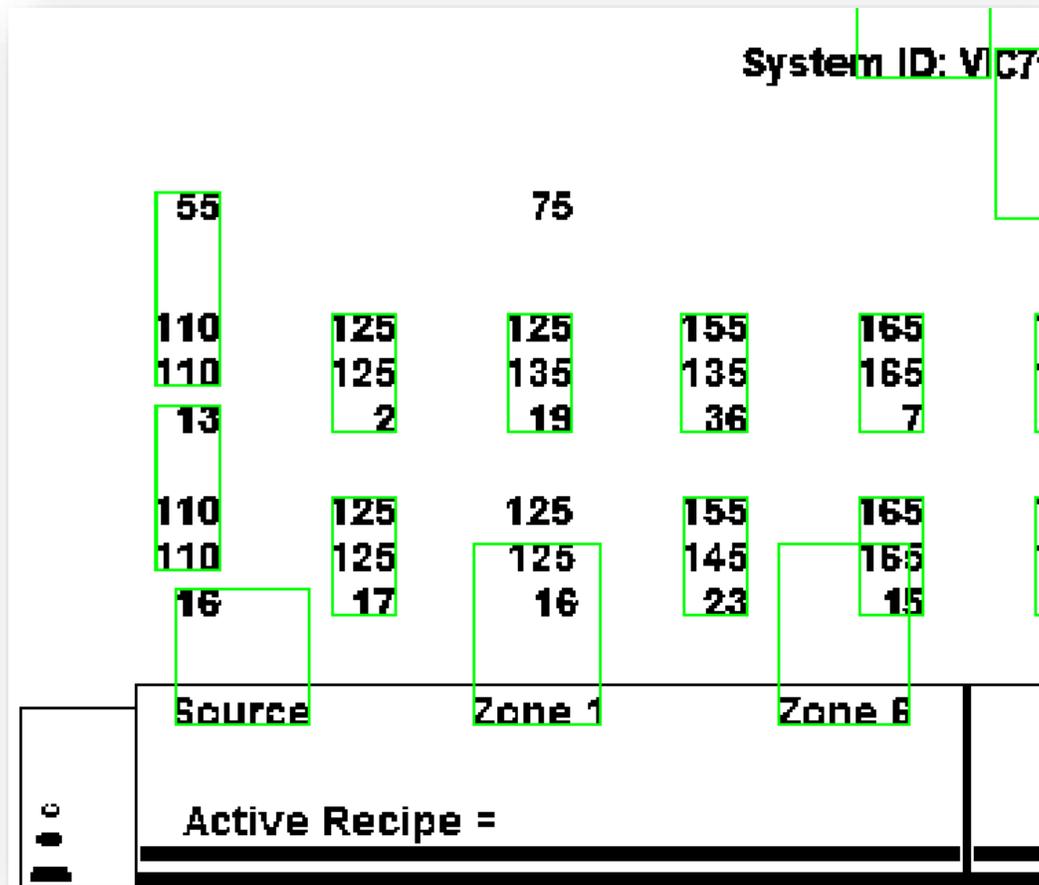
- **Segmentation Parameters**

- **Remove Narrow or Flat** : If a character has its size value less than the minimum width/height or greater than the maximum width/height, this character will be discarded. It's recommended to check this item again.
- **Remove Border** : Discard spots on edge of image/ROI
- **Cut Large Characters** : If enabled, characters are split as much part as possible. This item is designed for characters that cannot be separated by adjusting threshold
- **Relative Spacing(%)** : When Cut Large Characters is checked, the empty vector is inserted between those split parts

Build Project – Font Learning

- **General : Learn OCR Font**

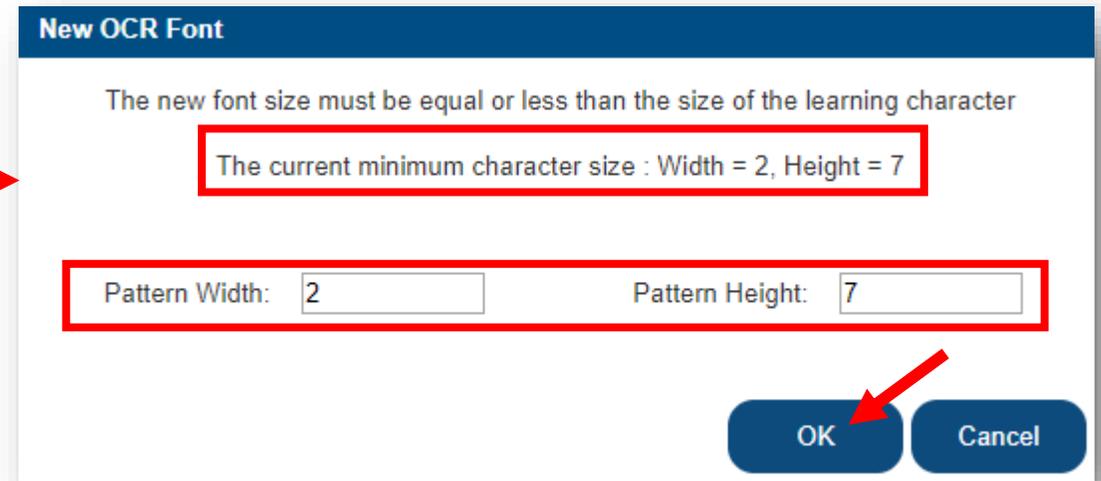
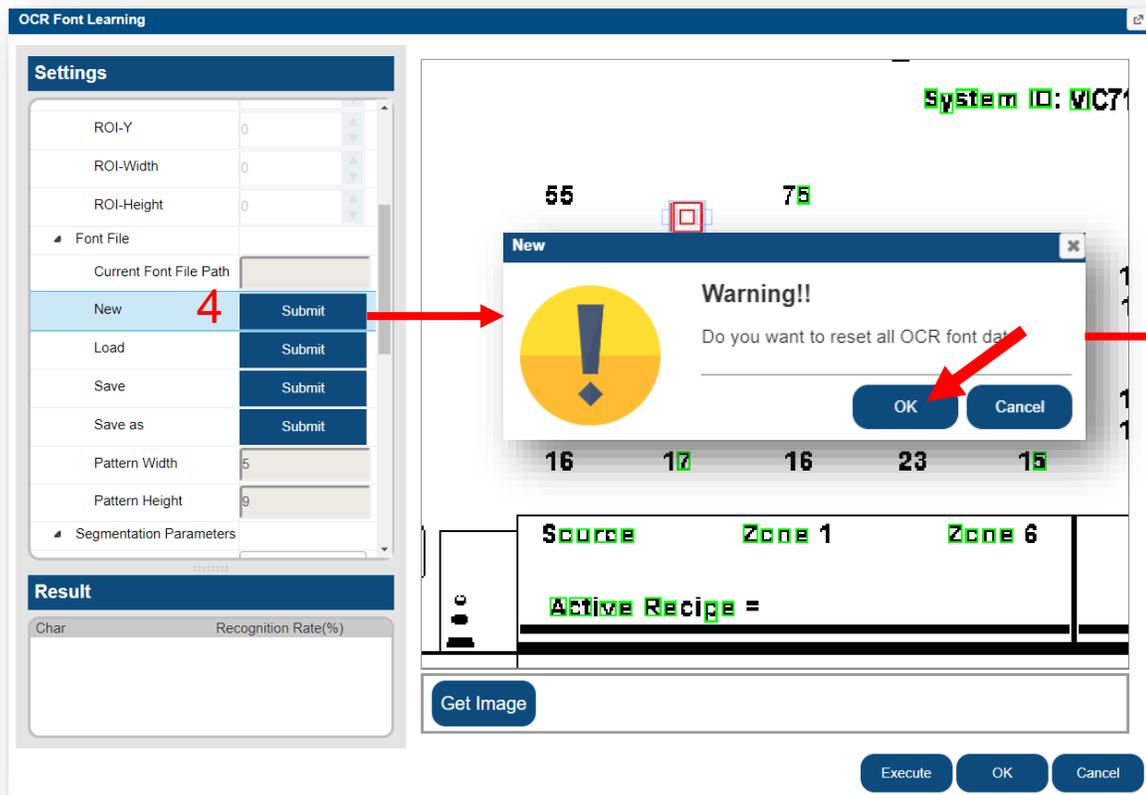
3. **Segment Characters** : Adjust segmentation parameters to make characters recognizable



Build Project – Font Learning

- **General : Learn OCR Font**

4. **Create New Font** : Patterns height/width must be less than or equal to characters minimum height/width

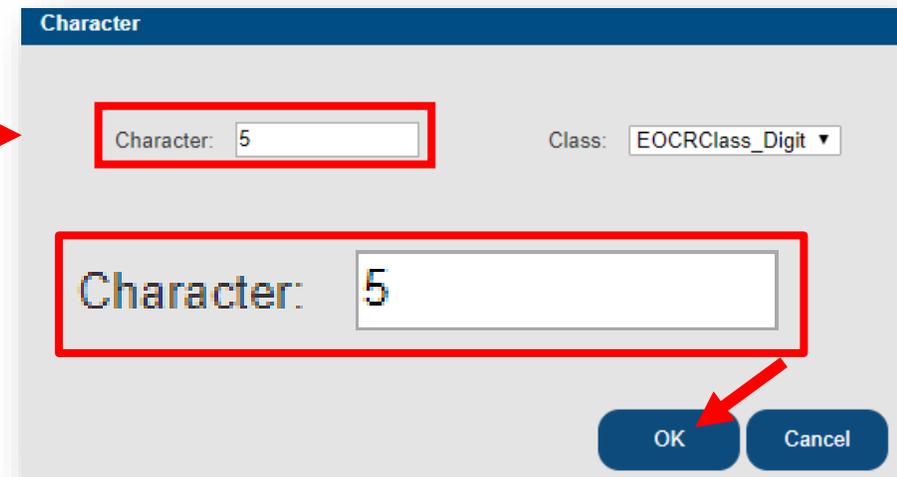
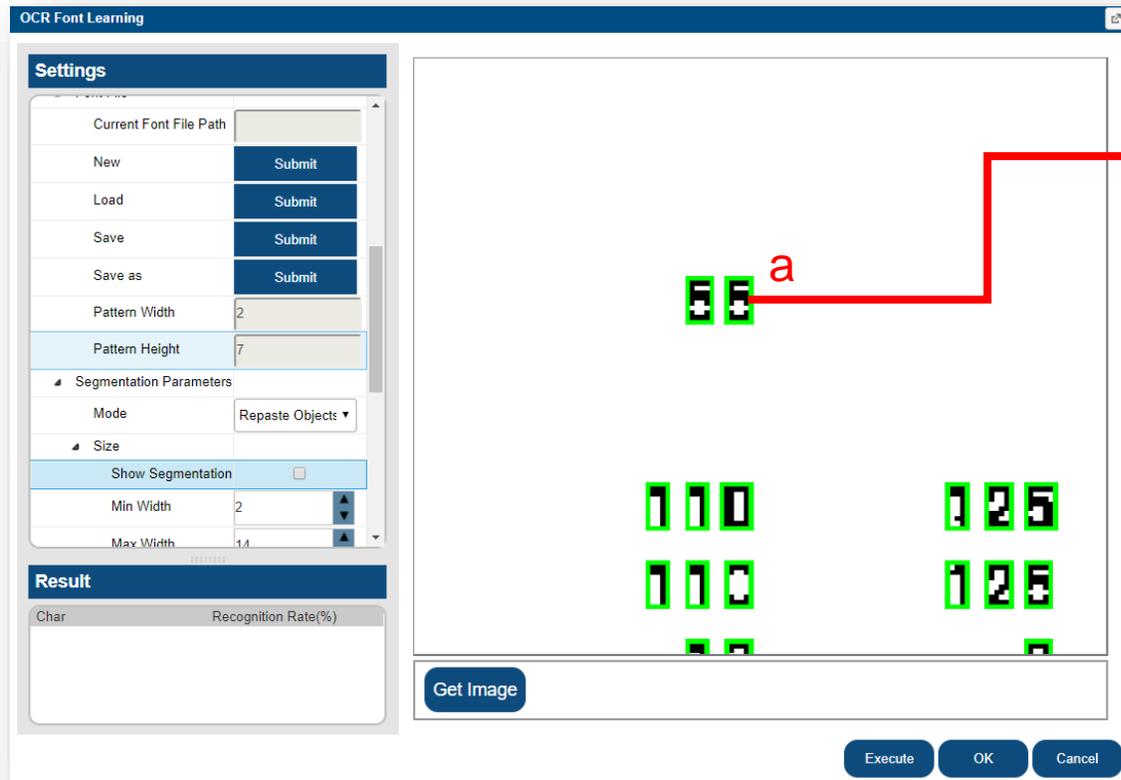


Build Project – Font Learning

- **General : Learn OCR Font**

- 5. Learn OCR Font

- a. Learn **Single** Character : Click on the targeted character → Enter **Character** → Click **OK**

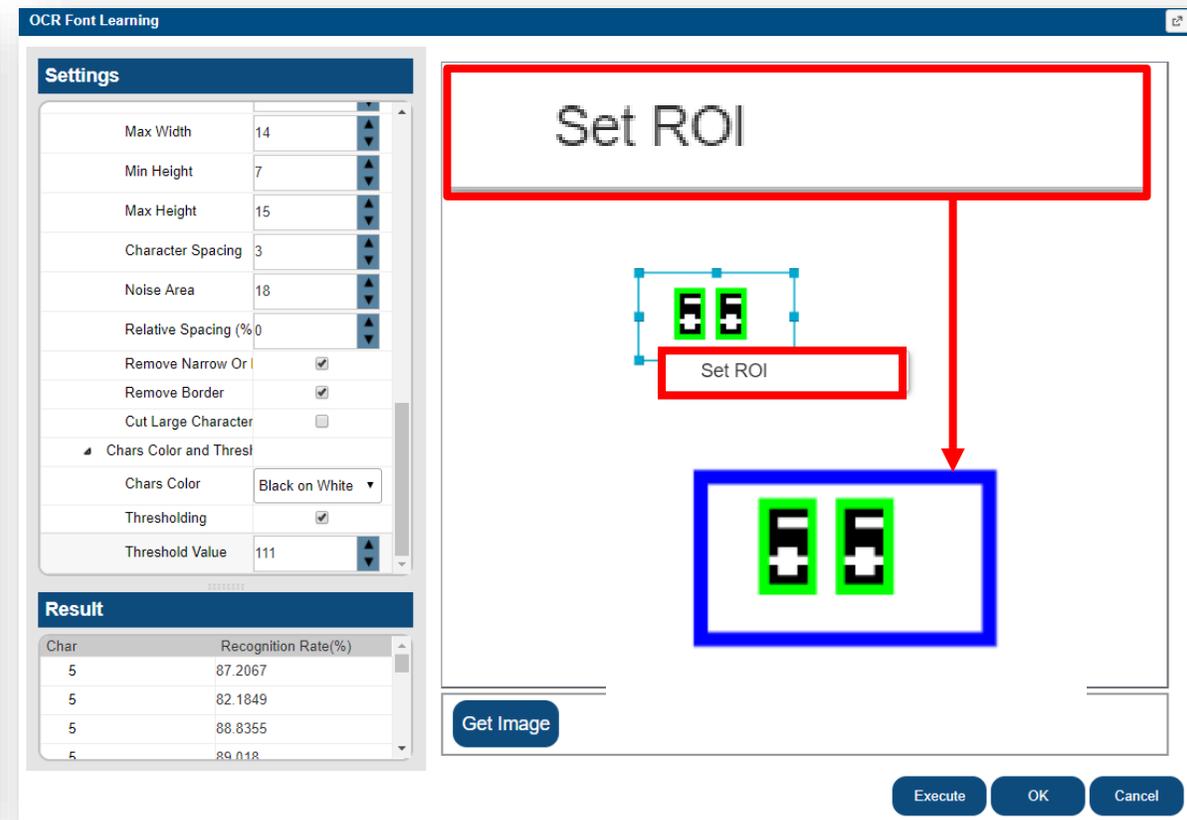
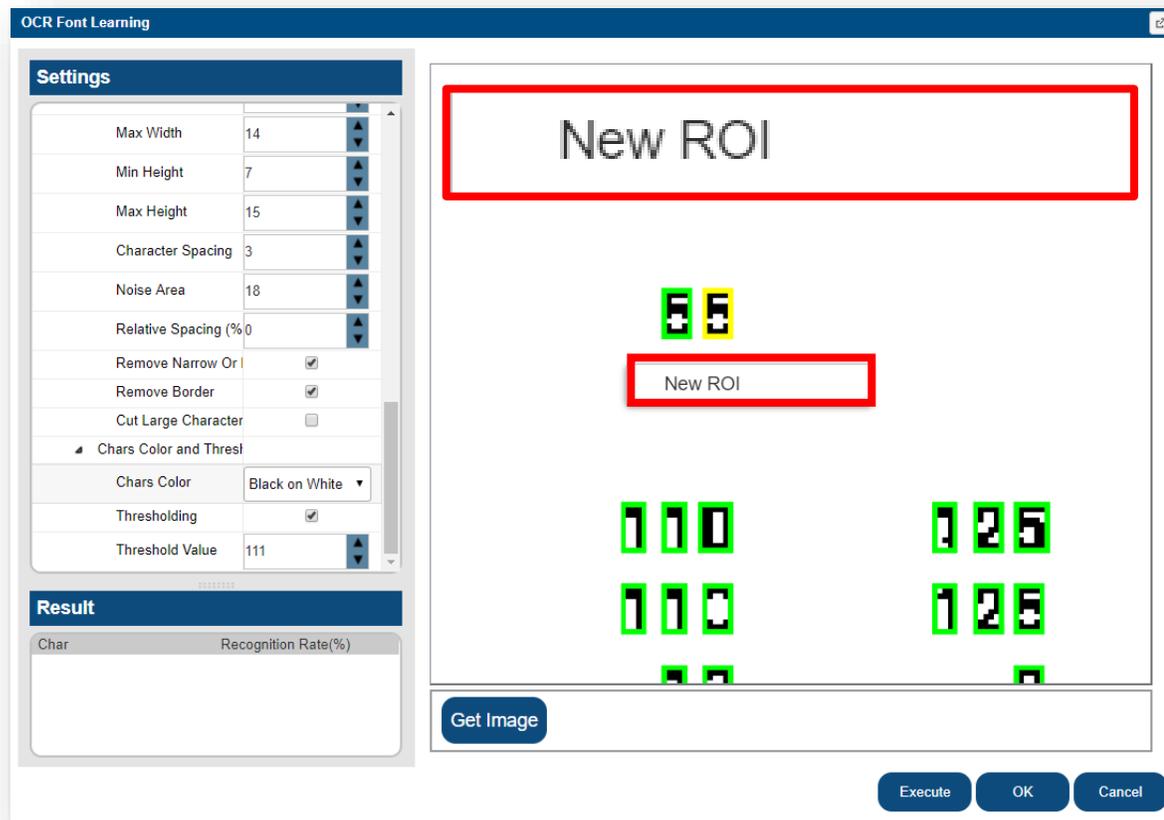


Build Project – Font Learning

- **General : Learn OCR Font**

- 5. Learn OCR Font

- b. Learn **Multiple** Character : Right-click on the image and select **New ROI** → adjust the location and size of ROI → Right-click on the image and select **Set ROI**

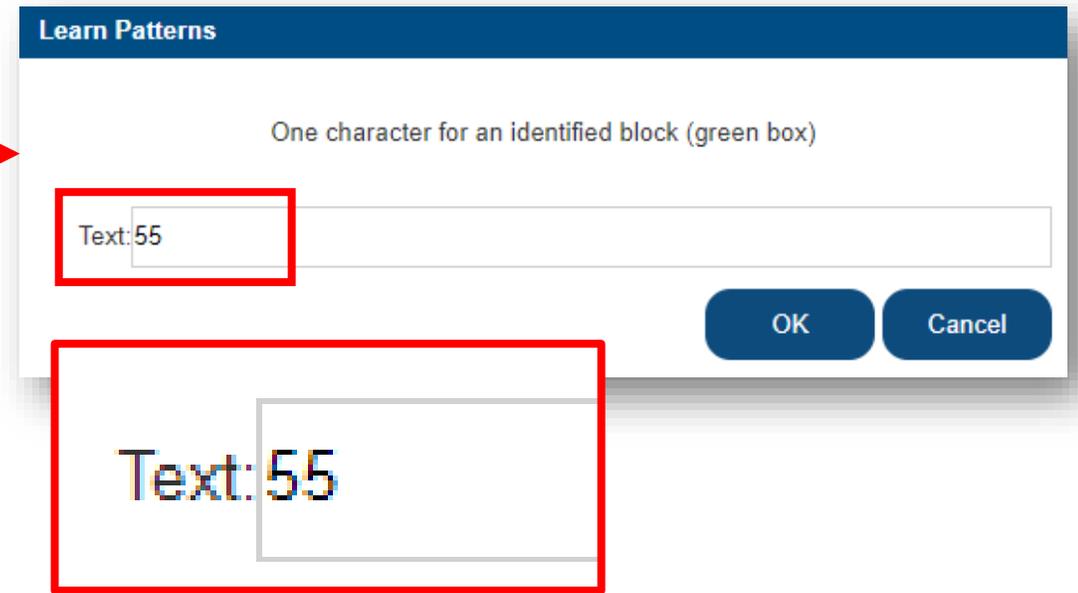
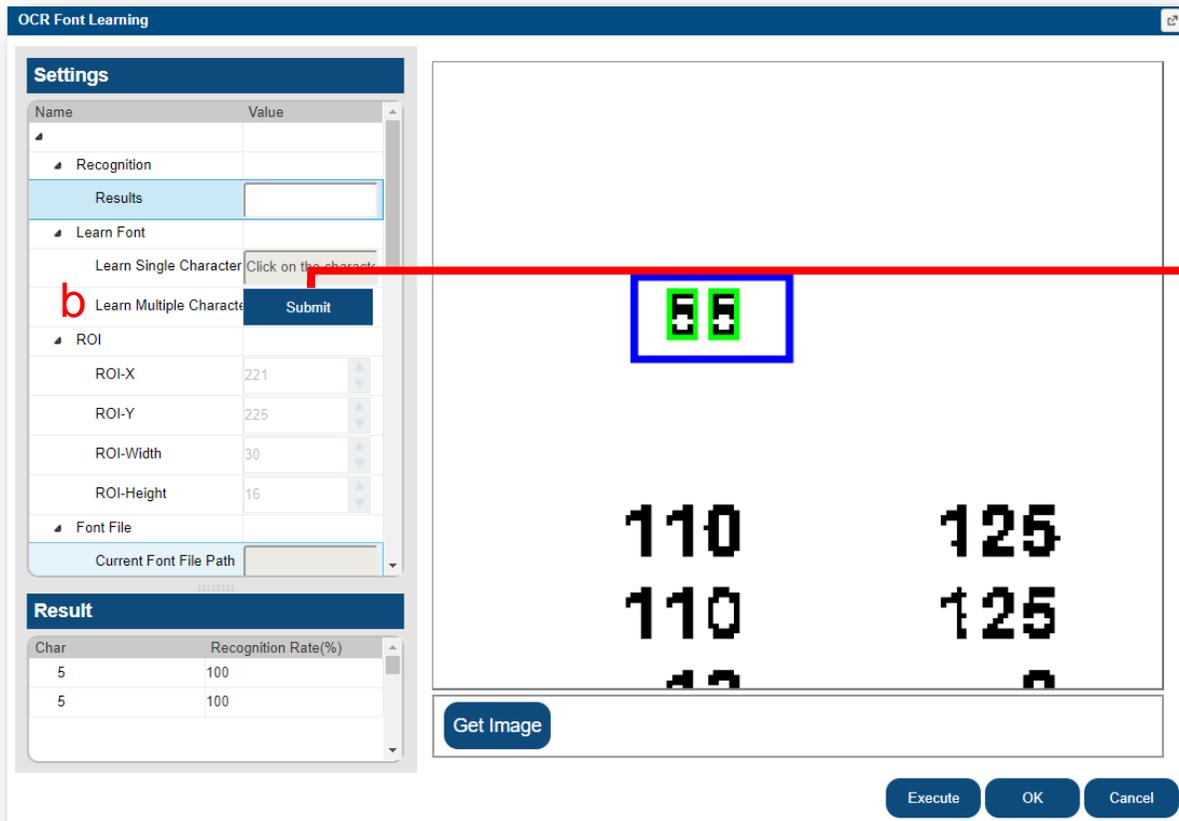


Build Project – Font Learning

- **General : Learn OCR Font**

- 5. Learn OCR Font

- b. Learn **Multiple** Character : Click **Learn Multiple Characters** → Enter **Text** → Click **OK**



Build Project – Font Learning

- **General : Learn OCR Font**

6. **Simulation** : Click **Execute**, and see the result in Recognition **Result** field

Results 55

Result	
Char	Recognition Rate(%)
5	100
5	100

Settings

Name	Value
Recognition	
Results	55
Learn Font	
Learn Single Character	Click on the character
Learn Multiple Characters	Submit
ROI	
ROI-X	221
ROI-Y	225
ROI-Width	30
ROI-Height	16
Font File	
Current Font File Path	

Result

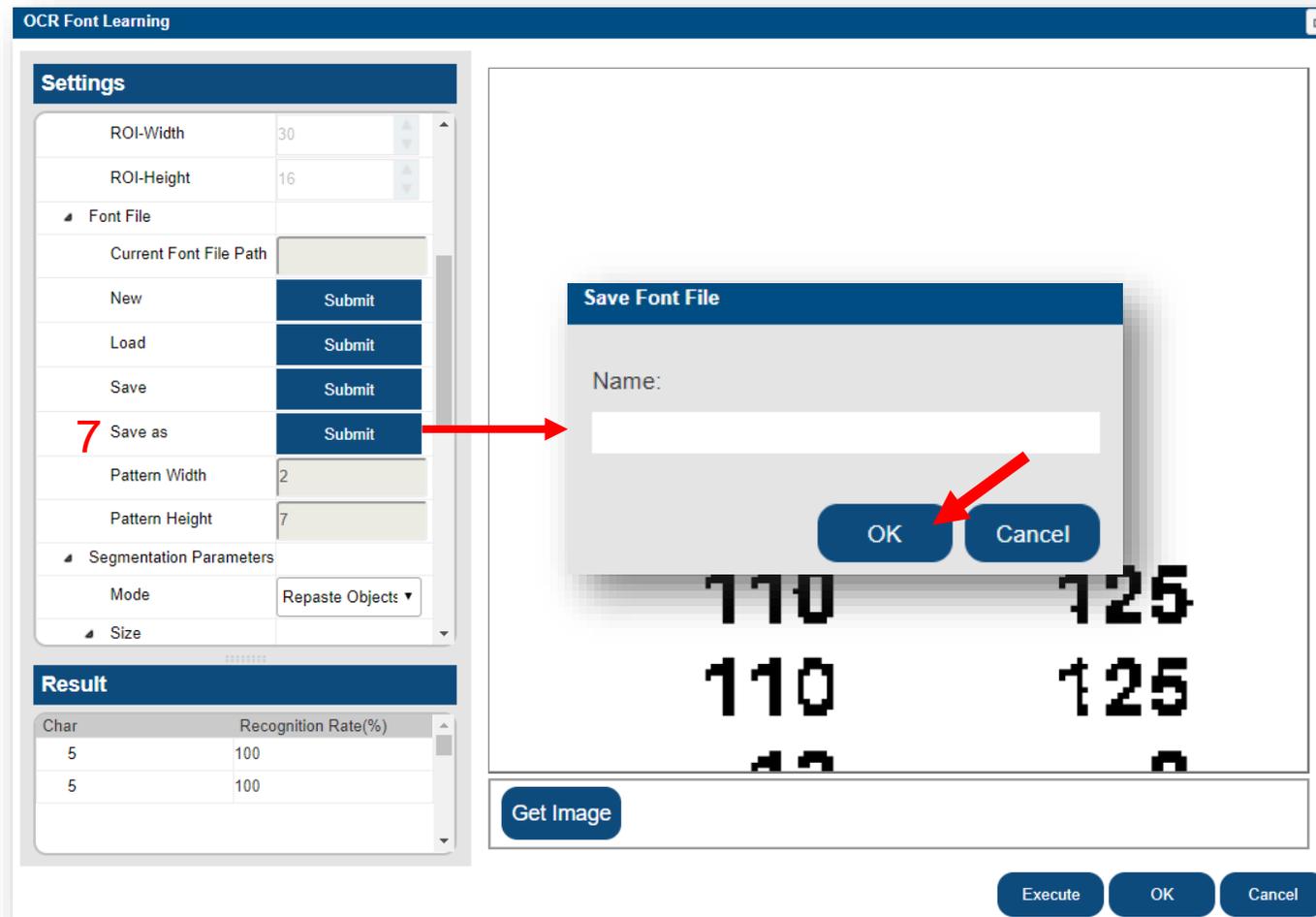
Char	Recognition Rate(%)
5	100
5	100

6 Execute OK Cancel

Build Project – Font Learning

- **General : Learn OCR Font**

7. **Save As Font File** : Click **Save As** → Enter a **Name** for the font file → Click **OK**



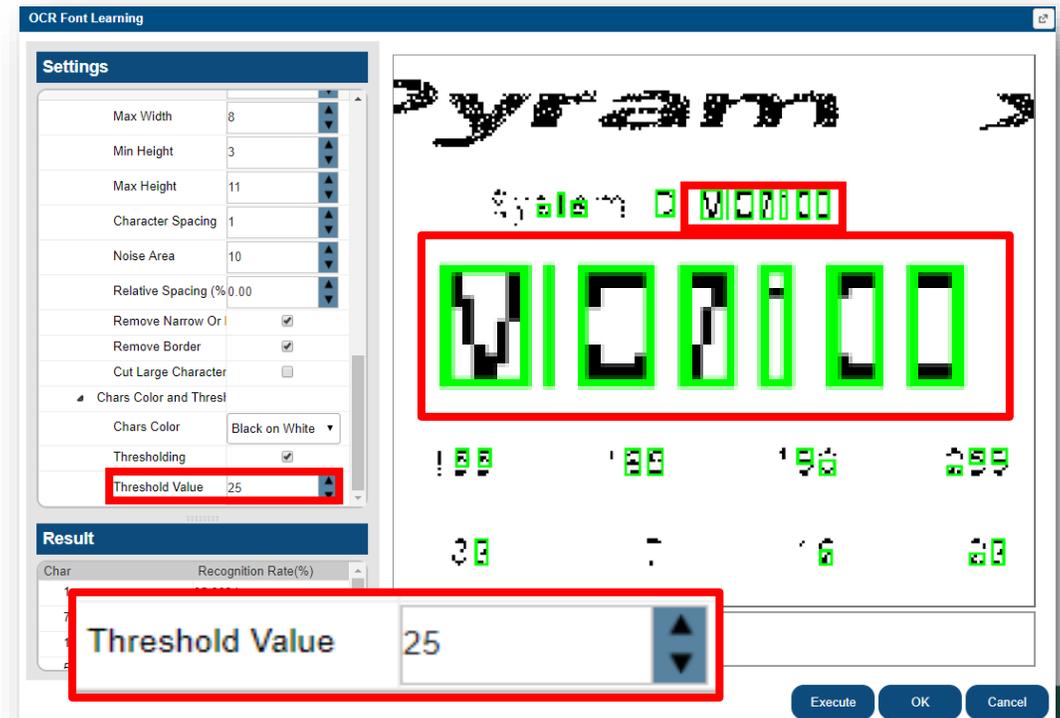
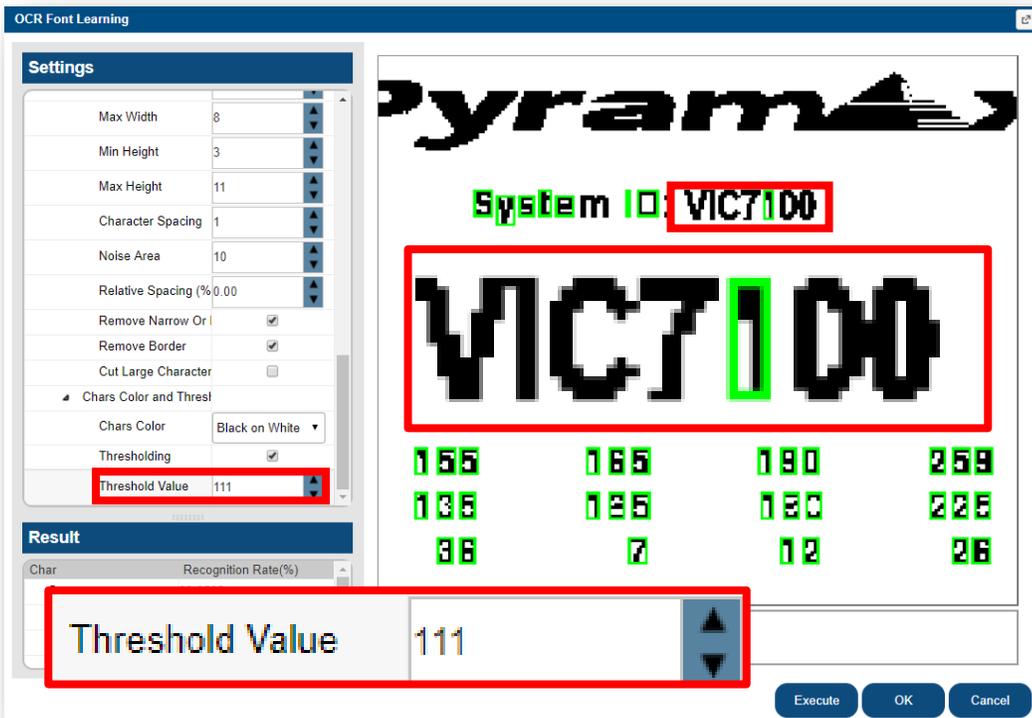
Build Project – Font Learning

- **General**

- **Segmentation Parameter** : Each font file contains its own segmentation parameters.

If those parameters are suffered any changes, recognition results will vary in consistent with them.

Some characters require special segmentation parameter adjustment. Keep in mind that **Create New Font File** will clear previously learnt data. Therefore, users need to save the original font file, before create a new font file or adjust it.

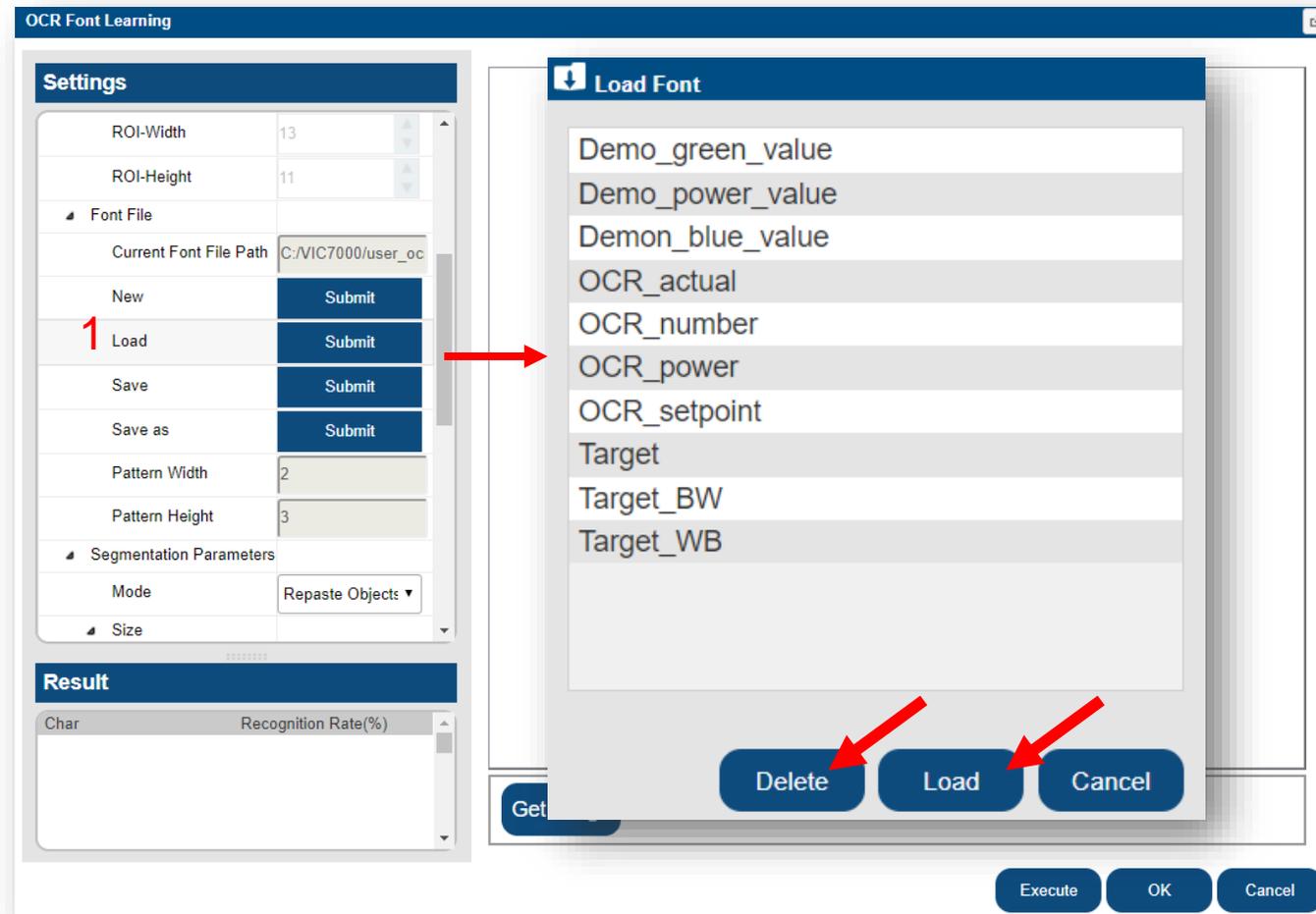


Build Project – Font Learning

- **General**

- **Keep training** : Load font file and train more characters

1. Load : Load font file with **Load** button in OCR Font Learning window



Build Project – Font Learning

- **General**

- **Keep training** : Load font file and train more characters

2. Direct Load : Directly load font file used in recognition config page

Get Data | OCR

Recognition Method

Matching target

Settings

OCR Font	
Select Font	Font File
Load Font	Submit
2 Font File	Target_BW.ocr
Learn Font	Submit

OCR Font Learning

Settings

ROI-Width	0
ROI-Height	0
Font File	
Current Font File	Target_BW.ocr
New	Submit
Load	Submit
Edit	Submit
Save	Submit
Save as	Submit

Build Project – Font Learning

- **General**

- **Keep Learning** : Once segmentation parameters are re-adjusted, the recognition processes will apply new segmentation parameters.

When learning process is finished → Click **Save** → Click **OK** to overwrite, repeating training process until all necessary characters are trained

The screenshot displays the 'OCR Font Learning' application interface. On the left, the 'Settings' panel includes fields for ROI-Width (13), ROI-Height (11), and Font File path (ocr_fonts/Target.ocr). Below these are buttons for 'New', 'Load', 'Save', and 'Save as', each with a 'Submit' button. The 'Segmentation Parameters' section shows 'Mode' set to 'Repaste Objects' and 'Size' set to '100000'. At the bottom left, a 'Result' table shows recognition rates for characters 5, V, 3, and v.

Char	Recognition Rate(%)
5	92.8385
V	95.7988
3	92.4977
v	94.1080

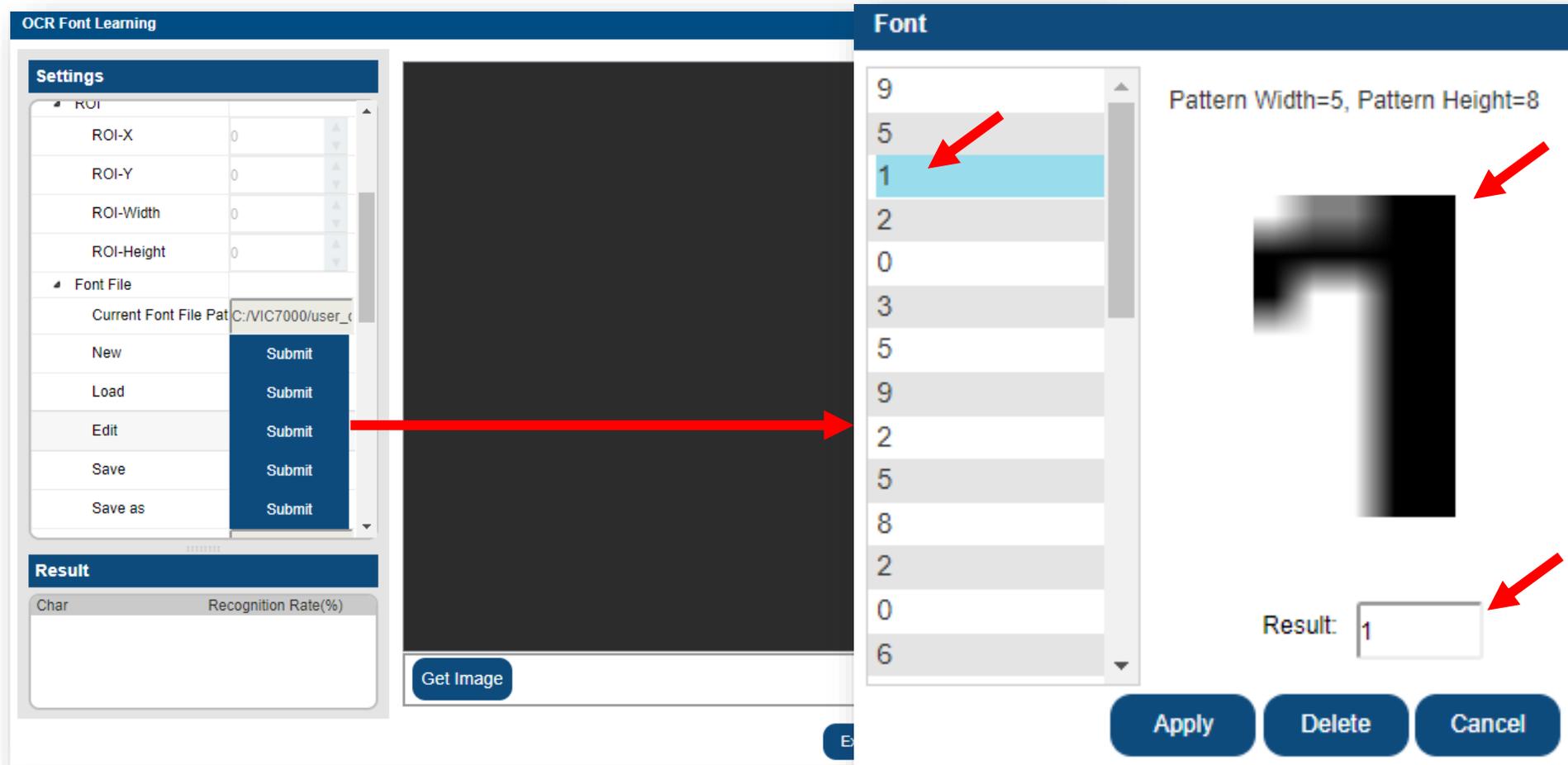
In the center, a 'Warning!!' dialog box asks 'Do you want to overwrite the font file?' with 'OK' and 'Cancel' buttons. A red arrow points from the 'Save' button in the settings to the 'Warning!!' dialog, and another red arrow points from the 'Warning!!' dialog to the 'OK' button. The background shows a blurred view of a document being processed.

At the bottom of the application window, there are buttons for 'Execute', 'OK', and 'Cancel'.

Build Project – Font Learning

- **General**

- **Edit Font File** : Click **Edit** in OCR Font Learning window. **Learnt samples and contents** can be reviewed or deleted in **Font window**.



Build Project – Font Learning

- **General**

- **Edit Font File** : User can Edit learnt data in Font window. Enter changes in Result field, and click **Apply**.



Build Project – Font Learning

- **General : Learn OCR Font**

8. **Finish Learning** : Click **OK** to close OCR Font Learning window

Settings

ROI-Width	13
ROI-Height	11
Font File	ocr_fonts/Target.ocr
New	Submit
Load	Submit
Save	Submit
Save as	Submit
Pattern Width	1
Pattern Height	4
Segmentation Parameters	Mode: Repaste Objects

Result

Char	Recognition Rate(%)
5	92.8385
V	95.7988
3	92.4977
V	94.1089

Pyramax

Setpoint	88	78	60	65	35	00
Manual	300	300	300	300	300	300
Setpoint	115	125	130	130	130	130
Power	10	0	10	30	0	00

CR Levels Range gpm → 0.00

Get Image

Execute OK Cancel

Build Project – Font Learning

- **General : Learn OCR Font**

- 8. **Finish Learning** : Back to OCR config page

The screenshot displays the NexVIC system console interface. On the left, the 'OCR' configuration page is visible, showing the 'Recognition Method' set to '04' and the 'Font File' set to 'Target.ocr'. The 'Settings' section includes options for 'Allow Recognition', 'Select Font', 'Load Font', 'Learn Font', 'Symbol OCR Font', and 'Allow Recognize'. The 'Result' section shows a table for 'Char' and 'Recognition Rate(%)'. At the bottom of the OCR page are buttons for 'Stop', 'Start', 'Get Image', and 'Simulate'.

The main window shows the 'System Monitor Graphic' for 'Pyramax' with 'System ID: VC7100'. It displays a detailed data table for various zones and coolers, along with a process flow diagram and system status indicators.

Setpoint	65	75	90	95	25	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T		
Actual	112	125	125	155	165	190	238	260	285	285	30	21
Setpoint	110	125	125	155	165	190	225	260	285	285		
Power	15	14	13	5	7	12	11	22	4	27		
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	Cooler1	Cooler2
Actual	110	125	125	155	165	190	225	260	285	285		
Setpoint	110	125	125	155	165	190	225	260	285	285		
Power	18	9	8	3	2	10	11	24	7	32		

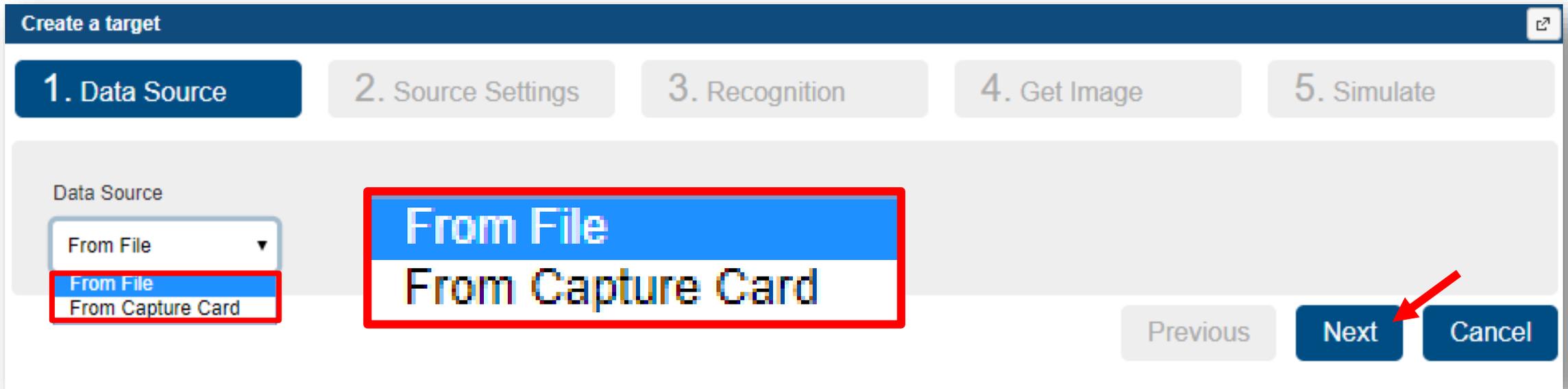
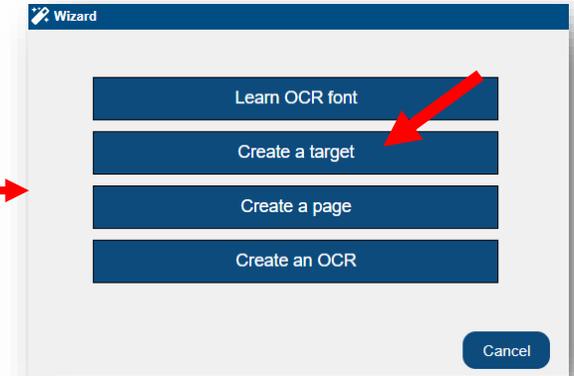
System Status: Scheduler Status: Event based recipe or sequence pending. Estimated Power Consumption: KW. Estimated Nitrogen Consumption: mm. Nitrogen Status: On. Active Recipe = [Recipe Name].

Build Project – Target

- **Wizard : Create a target**

1. Data Source

From File or From Capture Card



Build Project – Target

- **Wizard : Create a target**

- 2. Source Settings

From File : Image folder Path, Read interval

From Capture Card : Video input signal type, Capture frame rate

Create a target

1. Data Source 2. Source Settings 3. Recognition 4. Get Image 5. Simulate

Image Folder
C:/VIC7000

Submit

Interval (ms)
1000

Create a target

1. Data Source 2. Source Settings 3. Recognition 4. Get Image 5. Simulate

Video Signal
false

Video Input
DVI_A (RGB / VGA)

Capture Frame Rate
2

Previous Next Cancel

Build Project – Target

- **Wizard : Create a target**

3. Recognition

1. **Matching target** : Automatically select recognition page based on target matching result
2. **Specify page** : Directly specify the page to use

Create a target

1. Data Source 2. Source Settings 3. Recognition 4. Get Image 5. Simulate

Recognition Method

Matching target ▾

Matching target

01

02

03

Matching target 1	
01	2
02	
03	

Previous Next Cancel

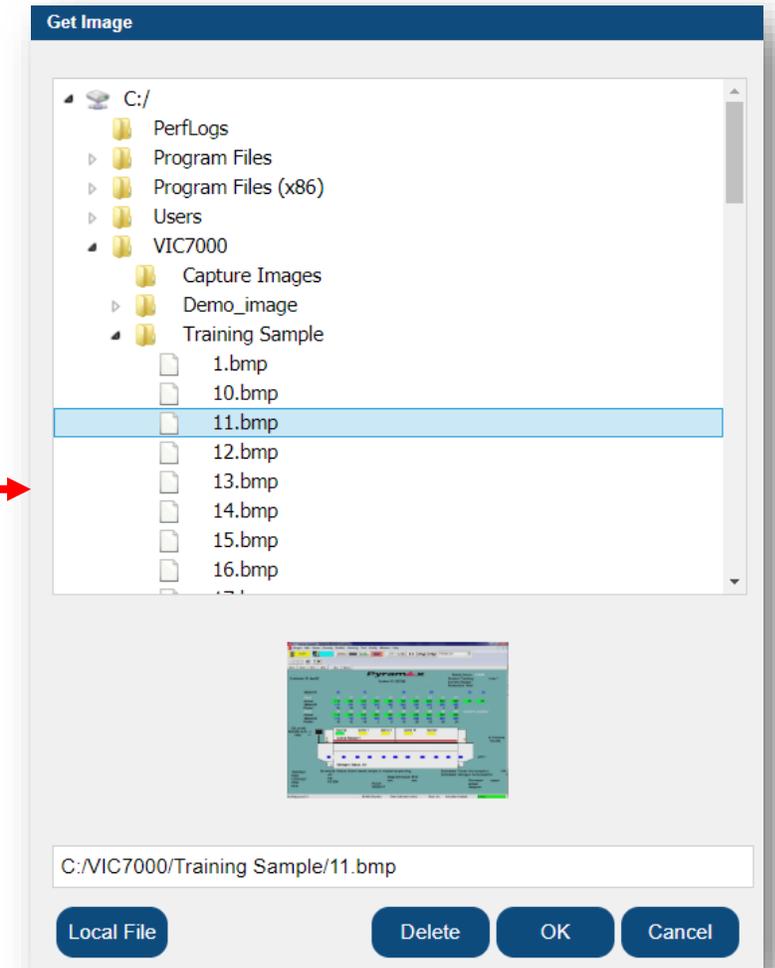
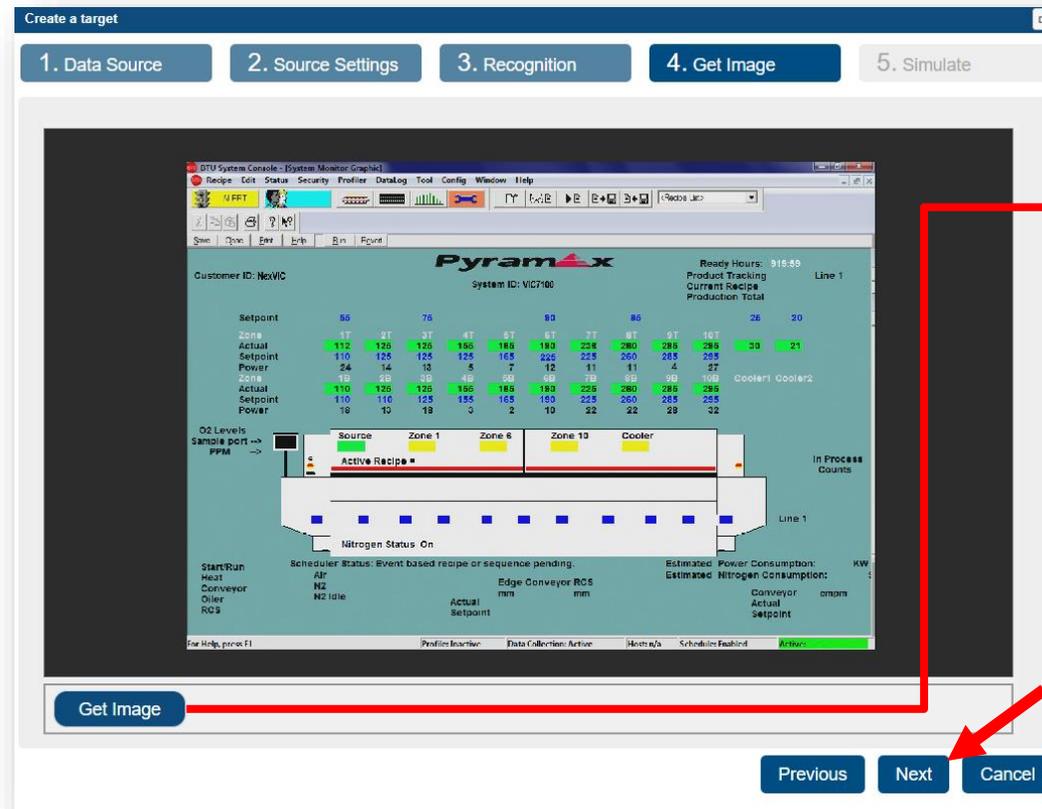
Build Project – Target

- Wizard : Create a target

- 4. Get Image

From File : Read images from local or remote folders

From Capture Card : Get an image from the capture card



Build Project – Target

- **Wizard : Create a target**

- 5. Simulate

Right-click on an image and click **New ROI** (or Click **New ROI**) → Resize location and size of ROI → Right-click on the image and click **Set ROI** (or Click **Set ROI**)



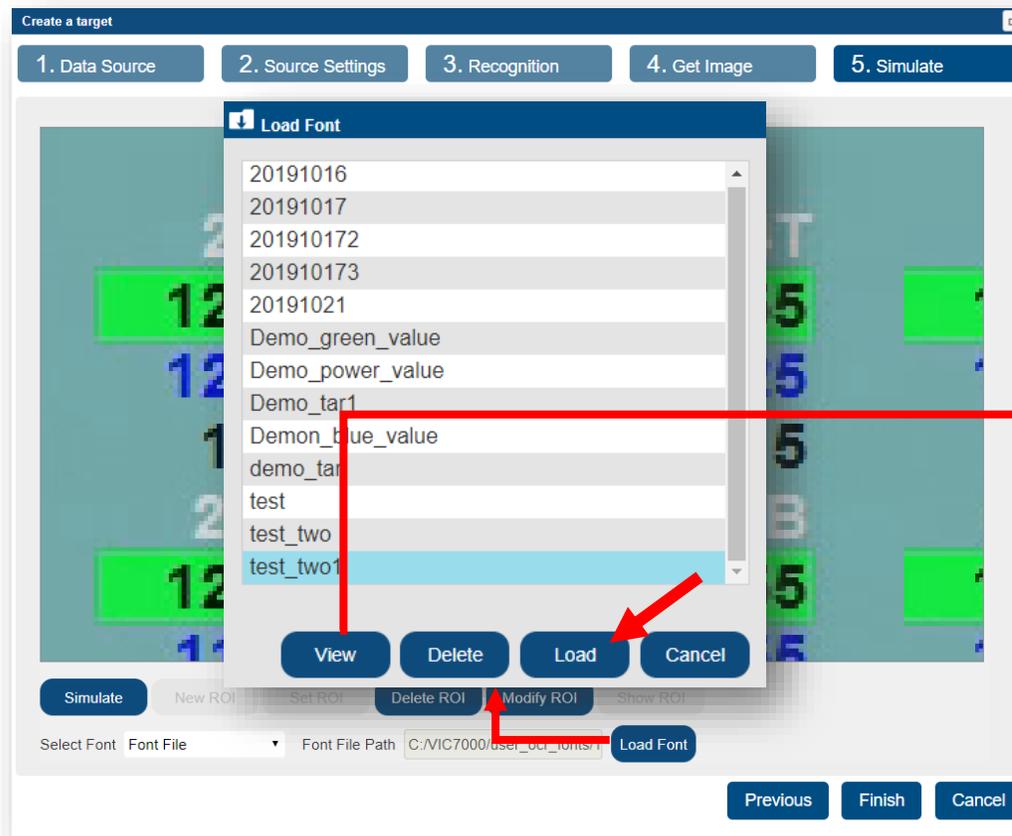
Build Project – Target

- **Wizard : Create a target**

- 5. Simulate

Click **Load Font** → Choose a font file used for recognition → Click **Load**

After selecting the font file, user can click preview to preview the learnt content of the font file

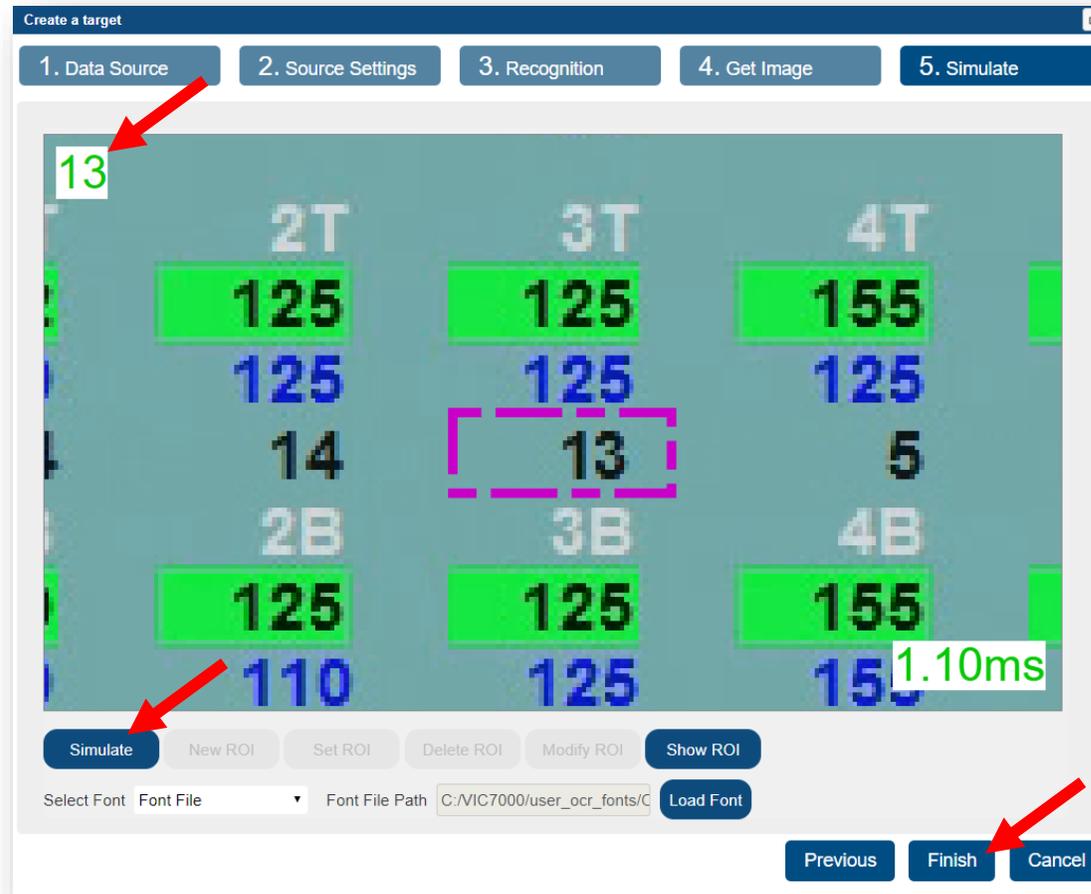


Build Project – Target

- Wizard : Create a target

- 5. Simulate

Click **Simulate** → Confirm the recognition result, which is used as **TARGETS**

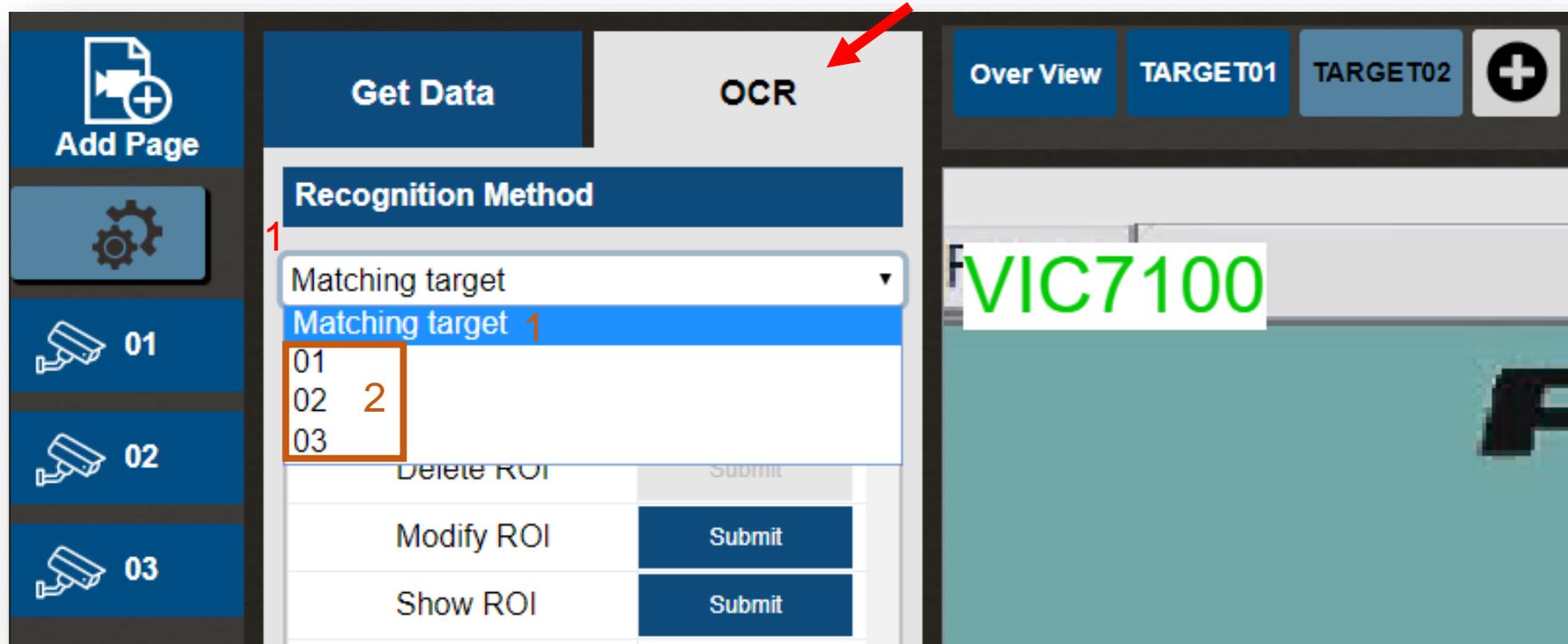


Build Project – Target

- **General : Create a Target**

1. Recognition Method

1. **Matching target** : Automatically select recognition page based on target matching result
2. **Specify page** : Directly specify the page to use

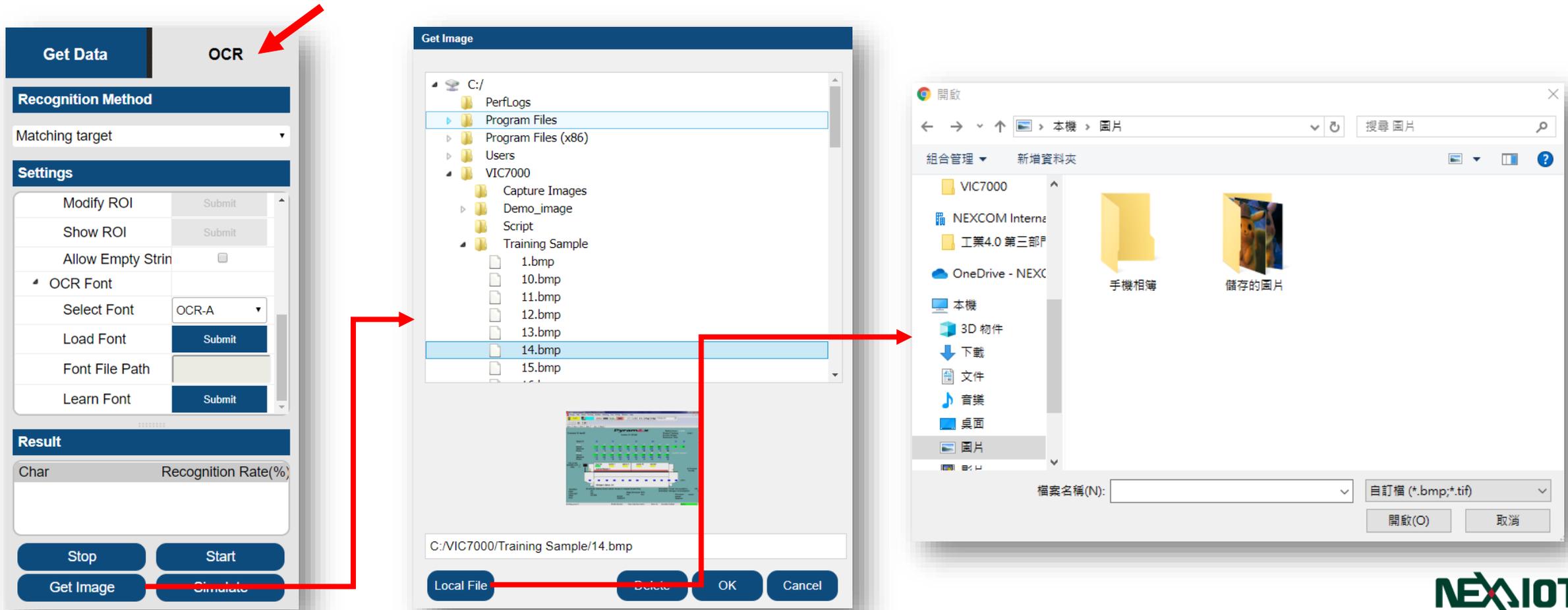


Build Project – Target

- **General : Create a Target**

- 2. **Get Image**

- a. **From File** : Read images from a local folder or a remote folder



2

Build Project – Target

- **General : Create a Target**

- 2. **Get Image**

- b. **From Capture Card** : Get an image from capture card

The screenshot displays the NexVIC software interface. On the left is the 'OCR' configuration panel, and on the right is the main system monitor window.

OCR Panel:

- Get Data** (tab)
- Recognition Method**: Matching target
- Settings**:
 - Allow Empty Scan:
 - OCR Font: Select Font (OCR-A), Load Font (Submit), Font File Path, Learn Font (Submit)
- Result**: Char, Recognition Rate(%)
- Buttons: Stop, Start, Get Image, Simulate

Main System Monitor:

- Customer ID: NexVIC, System ID: VIC700, Ready Hours: 819:69
- Product Tracking: Current Recipe, Production Total
- Line 1: 26, 20
- Table of Setpoint, Actual, and Power values for various zones and coolers.
- Diagram of the production line with components like Source, Zone 1, Zone 6, Zone 10, Cooler, and In Process Counts.
- Active Recipe = [Recipe Name]
- Nitrogen Status: On
- Scheduler Status: Event based recipe or sequence pending.
- Estimated Power Consumption: [Value] KW, Estimated Nitrogen Consumption: [Value] cmcm
- Start/Run: Heat, Air, Conveyor, Oilier, RCS
- Edge Conveyor RCS: [Value] mm
- Actual Setpoint: [Value]
- Conveyor Actual Setpoint: [Value]
- Footer: Profile: Inactive, Data Collection: Active, Host: n/a, Scheduler: Enabled, Active

2

Build Project – Target

- **General : Create a Target**

4. **Set ROI** : Resize location and size of ROI → Right-click on image and click **Set ROI** (or Click **Set ROI**)

The screenshot displays the NexVIC software interface. On the left, the 'Get Data' sidebar is visible, showing the 'OCR' section with various settings. The 'Set ROI' button is highlighted with a red box and a red arrow, with a red '4' next to it. The main window shows a 'System Monitor Graphic' with a 'Pyramax' data table. A red box highlights the 'Set ROI' button in the context menu over the 'NexVIC' text in the main window. An orange box highlights the 'NexVIC' text itself. A red arrow points to the 'Counts' label in the main window.

Setpoint	110	125	125	155	165	190	225	280	285	295
Power	13	15	10	6	7	12	10	22	6	28
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B
Actual	110	125	125	155	165	190	225	280	285	295

Build Project – Target

- **General : Create a Target**

5. **Load Font** : Click **Load Font** → Choose a font file used for recognition → Click **Load**

The screenshot displays the 'Load Font' dialog box in the nexvic software. The dialog lists several font files for selection:

- 20191016
- 20191017
- 201910172
- 201910173
- 20191021
- Demo_green_value
- Demo_power_value
- Demo_tar1
- Demon_blue_value
- demon_tar
- test
- test_two
- test_two1

At the bottom of the dialog, there are four buttons: View, Delete, Load, and Cancel. A red arrow points to the 'Load' button.

In the background, the software interface shows a 'Settings' panel on the left with the 'Load Font' button highlighted by a red arrow. The main area displays a production monitoring dashboard with various data points and charts.

Build Project – Target

- **General : Create a Target**

6. **Simulate** : Click **Simulate** → Confirm the recognition result, which is used as **TARGET**

The screenshot displays the NexVIC software interface. On the left, the 'Get Data' sidebar contains a 'Recognition Method' dropdown set to 'Matching target' and a 'Settings' section with various controls. The 'Result' section at the bottom left shows a table with recognition rates for characters 'N', 'e', and 'x' at 100%. A red arrow points to the 'Simulate' button in the bottom right of the sidebar. The main window, titled 'TARGET01', shows a 'NexVIC' logo with a red arrow pointing to it. An inset window titled 'BTU System Console - [System Monitor Graphic]' displays a 'Pyramax' system monitor with various data tables and a process flow diagram. A red arrow points to the 'Simulate' button in the inset window. A red number '6' is located at the bottom left of the main window. A green box with the text '1.44ms' is in the bottom right corner.

Char	Recognition Rate(%)
N	100
e	100
x	100

Setpoint	55	75	90	95	25	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T		
Actual	110	125	125	155	165	190	225	260	285	295	30	21
Setpoint	110	125	125	155	165	190	225	260	285	295		
Power	13	15	10	6	7	12	10	22	6	28		
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	Cooler1	Cooler2
Actual	110	125	125	155	165	190	225	260	285	295		
Setpoint	110	125	125	155	165	190	225	260	285	295		
Power	19	8	8	3	2	10	11	24	7	32		

Build Project – Target

- **General : Create a Target**
 - **Multiple Target** : Click **Add** icon → Repeat the aforementioned steps to create Targets

The screenshot displays the OCR interface with the following components and annotations:

- 1**: Add icon (+) in the top navigation bar.
- 2**: Stop button in the bottom left control panel.
- 3**: Run button in the top control panel.
- 4**: Submit buttons for various settings in the left sidebar.
- 5**: OCR Font dropdown menu in the left sidebar.
- 6**: Start button in the bottom left control panel.

The main display area shows the 'Pyramax' logo and a data table for 'System ID: VIC7100'. The table includes columns for 'Ready Hour', 'Product Tracking', 'Current Recipe', and 'Production Tot'. The data is organized into two rows of 10 columns each, with values ranging from 110 to 325.

Ready Hour	Product Tracking	Current Recipe	Production Tot
55	75	90	95
112	125	125	155
110	125	125	155
15	14	13	5
1B	2B	3B	4B
110	125	125	155
110	125	125	155
18	9	8	3
2T	3T	4T	5T
125	125	155	165
125	125	155	165
14	13	5	7
2B	3B	4B	5B
125	125	155	165
125	125	155	165
9	8	3	2
3T	4T	5T	6T
125	125	155	165
125	125	155	165
13	5	7	12
3B	4B	5B	6B
125	125	155	165
125	125	155	165
8	3	2	10
4T	5T	6T	7T
155	165	190	225
155	165	190	225
7	12	11	22
5B	6B	7B	8B
165	190	225	260
165	190	225	260
2	10	11	24
5T	6T	7T	8T
165	190	225	260
165	190	225	260
2	10	11	24
6T	7T	8T	9T
190	225	260	285
190	225	260	285
10	11	24	7
6T	7T	8T	9T
190	225	260	285
190	225	260	285
10	11	24	7
7T	8T	9T	10T
225	260	285	295
225	260	285	295
11	24	7	32
7T	8T	9T	10T
225	260	285	295
225	260	285	295
11	24	7	32
8T	9T	10T	3
260	285	295	3
260	285	295	3

Build Project – Target

- **General : Create a Target_Color**

3. Create a **TARGET_COLOR** : Move cursor to **Add** icon → Select **Color**

The screenshot shows the NexVIC software interface. On the left, there is a sidebar with 'Get Data' and 'OCR' tabs. The 'OCR' tab is active, showing 'Recognition Method' (Matching target) and 'Settings' (ROI X Offset: 0, ROI Y Offset: 0). Below this is a 'Result' section with 'Name' and 'Value' columns, and buttons for 'Stop', 'Start', 'Get Image', and 'Simulate'. The main area shows 'Over View' for 'TARGET01' with a '+ Add' icon. A dropdown menu is open, showing 'OCR', 'Color', and 'Pattern', with a red arrow pointing to 'Color'. The background window is the 'BTU System Console - System Monitor Graphic' for a 'Pyramax' system. It displays 'Customer ID: NexVIC', 'System ID: VIC7300', and 'Ready Hours: 919.99'. A table shows 'Setpoint' and 'Actual' values for various zones (1T to 10T) and coolers. Below the table is a diagram of the conveyor system with 'O2 Levels' and 'Sample port' indicators. At the bottom, there are status indicators for 'Scheduler Status', 'Estimated Power Consumption', and 'Estimated Nitrogen Consumption'.

Setpoint	55	75	80	95	26	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T	Cooler1	Cooler2
Actual	110	125	125	155	165	150	259	260	285	295	30	21
Setpoint	110	125	135	135	185	190	225	260	285	295		
Power	13	2	25	34	8	30	26	22	14	18		
zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B		
Actual	110	125	125	155	165	150	225	260	285	295		
Setpoint	110	125	125	145	165	150	205	260	285	295		
Power	18	27	18	23	15	20	11	24	15	13		

Build Project – Target

- **General : Create a Target_Color**

4. **New ROI** : Right-click on image and click **New ROI** (or Click **New ROI**)

The screenshot displays the nexVIC interface. On the left, the 'Settings' panel is visible, showing a table of input parameters. The 'New ROI' row is highlighted with a red box and a red arrow pointing to its 'Submit' button. The main area shows the 'Pyramax' system monitor with a 'New ROI' button highlighted in a red box. A red box also highlights the text '4 New ROI' in the top right corner of the main area.

Name	Value
Input Parameters	
Name	TARGET_COLOR1
ROI-X	0
ROI-Y	0
ROI-Width	1
ROI-Height	1
New ROI	Submit
Set ROI	Submit
Delete ROI	Submit
Modify ROI	Submit
Show ROI	Submit

Setpoint	Zone 1	Zone 6	Zone 10	Cooler
Actual	110	125	125	125
Setpoint	110	110	125	155
Power	13	39	28	3

Build Project – Target

- **General : Create a Target_Color**

5. **Set ROI** : Resize and relocate the ROI → Right-click on the image and select **Set ROI** (or Click **Set ROI**) The average RGB value of the ROI will be automatically obtained and be set as matching color

The screenshot displays the nexVIC software interface. On the left, the 'Get Data' sidebar is active, showing the 'OCR' section. Under 'Settings', the 'Input Parameters' table is visible:

Name	Value
ROI-X	168
ROI-Y	173
ROI-Width	99
ROI-Height	53

The 'Set ROI' button is highlighted with a red box and a callout box containing the text '5 Set ROI Save Image (*.bmp)'. The main window shows a 'Pyramax' system monitor with a red-bordered ROI on a product image. A callout box over the ROI also contains the text '5 Set ROI Save Image (*.bmp)'. On the right, the 'Matching Parameters' panel is shown with the following data:

Color Picker	Value
Red	105
Green	155
Blue	154

Build Project – Target

- **General : Create a Target_Color**

6. **Set Matching Tolerance and Result Output** : Set **Matching Tolerance** (RGB±) → Enter

Matching Result Output

The screenshot displays the nexVIC software interface. On the left, the 'Settings' panel is visible, showing the following configuration for the 'Matching Result Output':

Setting	Value
ROI-Height	53
New ROI	Submit
Set ROI	Submit
Delete ROI	Submit
Modify ROI	Submit
Show ROI	Submit
Matching Parameter	
Color Picker	
Red	105
Green	155
Blue	154
Matching Tolerance	53
Matching Output	true
No Matching Output	false

At the bottom of the settings panel, there are buttons for 'Stop', 'Start', 'Get Image', and 'Simulate'. The main window shows a 'System Monitor' window with a 'Matching Tolerance' dialog box overlaid, which is highlighted with a red box. The dialog box contains the following text:

6 Matching Tolerance 53
Matching Output true
No Matching Output false

Build Project – Target

- **General : Create a Target_Color**

7. **Simulate** : Click **Simulate** → Confirm matching result, which is used as **TARGET_COLOR**

The screenshot displays the Nexvic software interface. On the left, the 'Settings' panel is visible, with the 'Input Parameters' section containing a table:

Name	Value
Target_Color	TARGET_COLOR
ROI-X	168
ROI-Y	173
ROI-Width	99
ROI-Height	53

Below the settings, the 'Matching Parameter' section includes a 'Color Picker' and a 'Simulate' button. A red arrow points to the 'Simulate' button. The main interface shows a 'Pyramax' system monitor with a data table:

Setpoint	65	75	80	85	25	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T		
Actual	195	125	125	155	165	190	265	260	285	295	30	21
Setpoint	110	125	125	155	165	190	225	280	285	295		
Power	26	35	4	6	7	19	8	26	8	21		
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B		
Actual	110	125	125	165	166	190	225	260	285	295		
Setpoint	110	125	125	155	165	190	225	280	285	295		
Power	16	29	8	10	1	10	18	24	7	12		

A red arrow points to the text 'true (105,155,154)' displayed on the interface. At the bottom right, a green box contains the text '0.01ms'.

Build Project – Target

- **General : Create a Target_Color**

- **Assign color matching** : Click Color Picker → Enable eyedropper tool → Select the desired matching color in the image → The matching color will be set up automatically and confirm if it is correct.

The screenshot displays the NexVIC software interface. On the left, the 'Matching Parameters' panel is visible, with the 'Color Picker' option selected. The 'Color Picker' section shows a list of colors with their corresponding values: Red (105), Green (154), and Blue (155). The 'Matching Tolerans' is set to 10, and 'Matching Output' is set to true. The 'No Matching Outp' is set to false. The 'Get Image' and 'Simulate' buttons are at the bottom of this panel.

The main interface shows a 'Pyramax' system monitor graphic. A red target area is highlighted on the top right of the system image. A red arrow points to the 'Color Picker' option in the 'Matching Parameters' panel. Another red arrow points to the red target area on the system image. A third red arrow points to the 'Color Picker' section in the 'Matching Parameters' panel.

The 'Matching Parameters' panel is expanded to show the following table:

Matching Paramete	
Color Picker	
Red	180
Green	24
Blue	65

Build Project – Target

- **General : Create a Target_Color**
 - **Multiple Target_color** : Click **Add** icon → repeat the aforementioned steps to create Target_colors

3

OCR
Color
Pattern

4

5

6

7

true ■ (22,21,211)

Setpoint	65	78	80	85	25	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T		
Actual	125	125	125	155	165	190	230	260	285	295	30	21
Setpoint	110	125	125	155	165	190	225	280	285	295		
Power	21	14	10	5	7	12	12	22	8	28		
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	Cooler1	Cooler2
Actual	110	125	125	165	165	180	225	260	285	295		
Setpoint	110	125	125	155	165	190	225	280	285	295		
Power	18	9	8	3	2	10	11	24	7	32		

O2 Levels
Sample port →
PPM →

Source Zone 1 Zone 5 Zone 10 Cooler

Active Recipe =

Nitrogen Status: On

Scheduler Status: Event based recipe or sequence pending.

Estimated Power Consumption: kW
Estimated Nitrogen Consumption:

Start/Run Heat Conveyor Oilier RCS

Air N2 N2 Idle

Edge Conveyor RCS

Actual Setpoint

Conveyor Actual Setpoint

cmpm

0.00ms

Build Project – Target

- **General : Create a Target_Pattern**

3. Create a TARGET_PATTERN : Move cursor to **Add** icon → select **Pattern**

The screenshot displays the nexVIC software interface. On the left, there is a sidebar with sections: 'Get Data', 'OCR', 'Recognition Method' (with a dropdown menu set to 'Matching target'), 'Settings' (containing a table with 'Name' and 'Value' columns, listing 'ROI X Offset' and 'ROI Y Offset' both set to 0), and 'Result' (with an empty table). At the bottom of the sidebar are buttons for 'Stop', 'Start', 'Get Image', and 'Simulate'. The main area shows an 'Over View' tab for 'TARGET01' with a '+' icon. A context menu is open over the '+' icon, listing 'OCR', 'Color', and 'Pattern', with a red arrow pointing to 'Pattern'. The background image shows a person's face with a blue glow. A data table window is overlaid on the image, titled 'VIC7000 Demo Sample' and 'Current Mode : Text'. The table has columns for 'Product ID', 'Quantity', 'Temperature', 'Voltage', 'Time', and 'Result'. The 'Image' tab is selected in the table window.

Product ID	Quantity	Temperature	Voltage	Time	Result
1	549	-11.67 °C	8.6 V	1103 ms	Pass
2	337	-11.20 °C	18.5 V	681 ms	NG
3	878	-14.43 °C	3.9 V	1756 ms	Pass
4	733	14.24 °C	-3.4 V	1469 ms	Pass
5	316	26.68 °C	14.5 V	640 ms	NG
6	460	5.06 °C	0.1 V	926 ms	NG
7	583	-2.14 °C	-0.1 V	1171 ms	Pass
8	536	-11.82 °C	8.7 V	1077 ms	Pass
9	614	0.27 °C	6.7 V	1232 ms	Pass
10	510	26.98 °C	1.1 V	1025 ms	NG
11	582	3.85 °C	7.0 V	1169 ms	Pass
12	732	-10.66 °C	-3.5 V	1466 ms	Pass

Build Project – Target

- **General : Create a Target_Pattern**

4. **New ROI** : Right-click on the image and select **New ROI** (or Click **New ROI**)

The screenshot displays the nexVIC software interface. On the left, the 'Settings' panel is visible, with the 'New ROI' button highlighted by a red arrow and the number '4'. The main window shows an image with a context menu open, also highlighting the 'New ROI' option with a red box and the number '4'. A table of detection results is overlaid on the image.

Product ID	Quantity	Temperature	Voltage	Time	Result
1	549	-11.67 °C	8.6 V	1103 ms	Pass
2	337	-11.20 °C	18.5 V	681 ms	NG
3	878	-14.43 °C	3.9 V	1756 ms	Pass
4	733	14.24 °C	-3.4 V	1469 ms	Pass
5	316	26.68 °C	14.5 V	640 ms	NG
6	460	5.06 °C	0.1 V	926 ms	NG
7	583	-2.14 °C	-0.1 V	1171 ms	Pass
8	536	-11.82 °C	8.7 V	1077 ms	Pass
9	614	0.27 °C	6.7 V	1232 ms	Pass
10	510	26.98 °C	1.1 V	1025 ms	NG
11	582	3.85 °C	7.0 V	1169 ms	Pass
12	732	-10.66 °C	-3.5 V	1466 ms	Pass

Build Project – Target

- **General : Create a Target_Pattern**

5. **Set ROI** : adjust the location and size of the ROI → Right-click on image and select **Set ROI** (or Click **Set ROI**)

Settings

Name	Value
Input Parameters	
Name	TARGET_PATTER
ROI-X	0
ROI-Y	0
ROI-Width	840
ROI-Height	528
New ROI	Submit
Set ROI	Submit

Result

Name	Value
------	-------

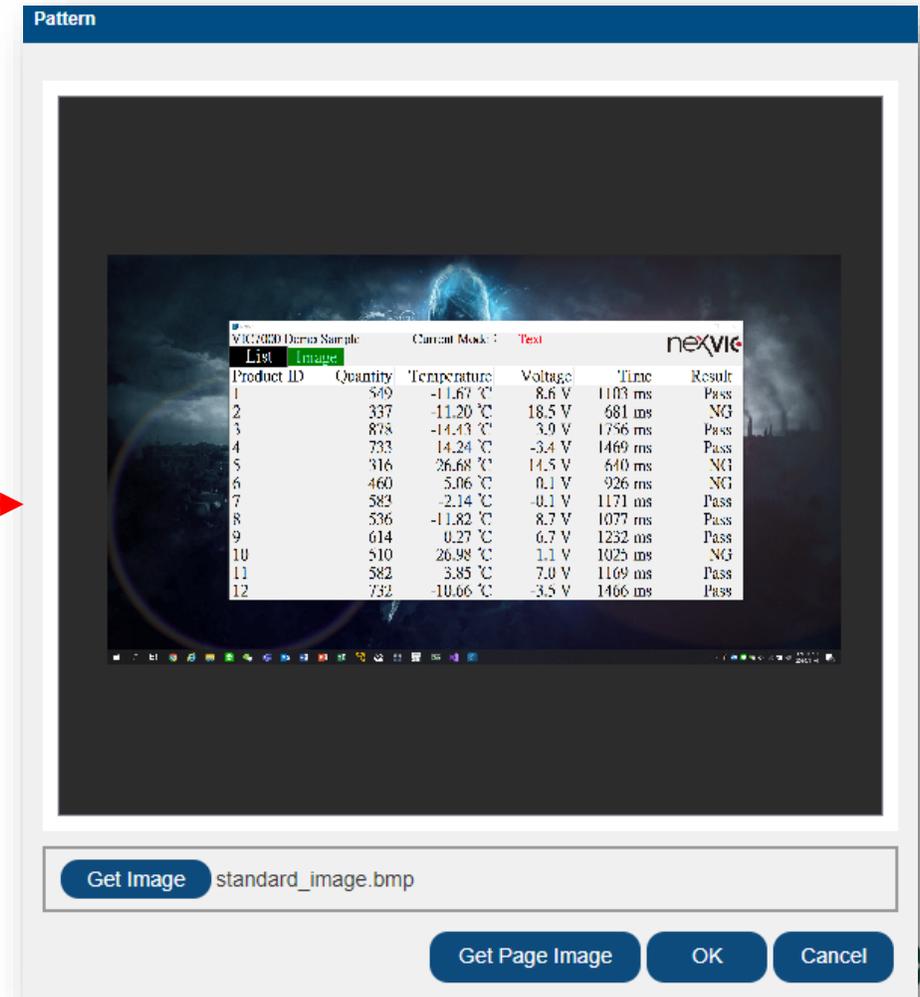
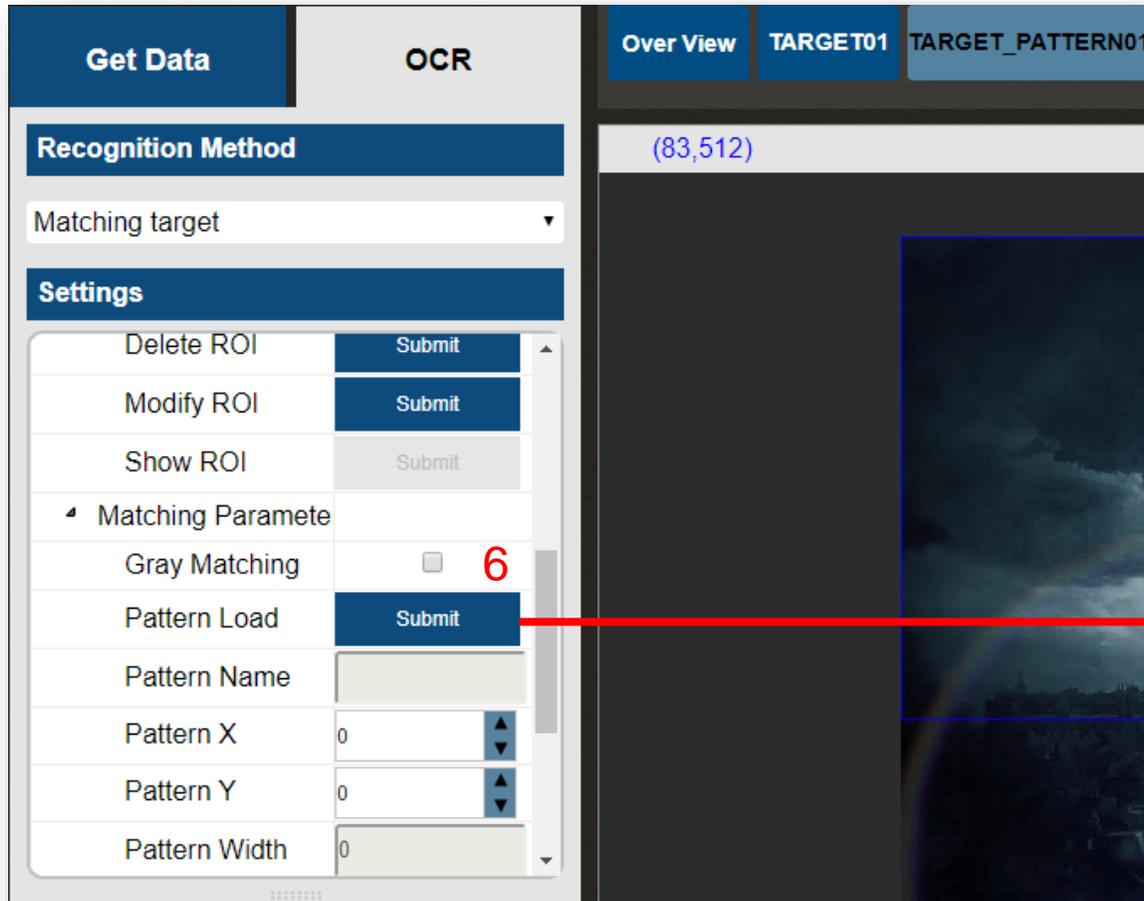
Table Data:

Product ID	Quantity	Temp
1	549	-11
2	337	-11
3	878	-14
4	733	14
5	316	26

Build Project – Target

- **General : Create a Target_Pattern**

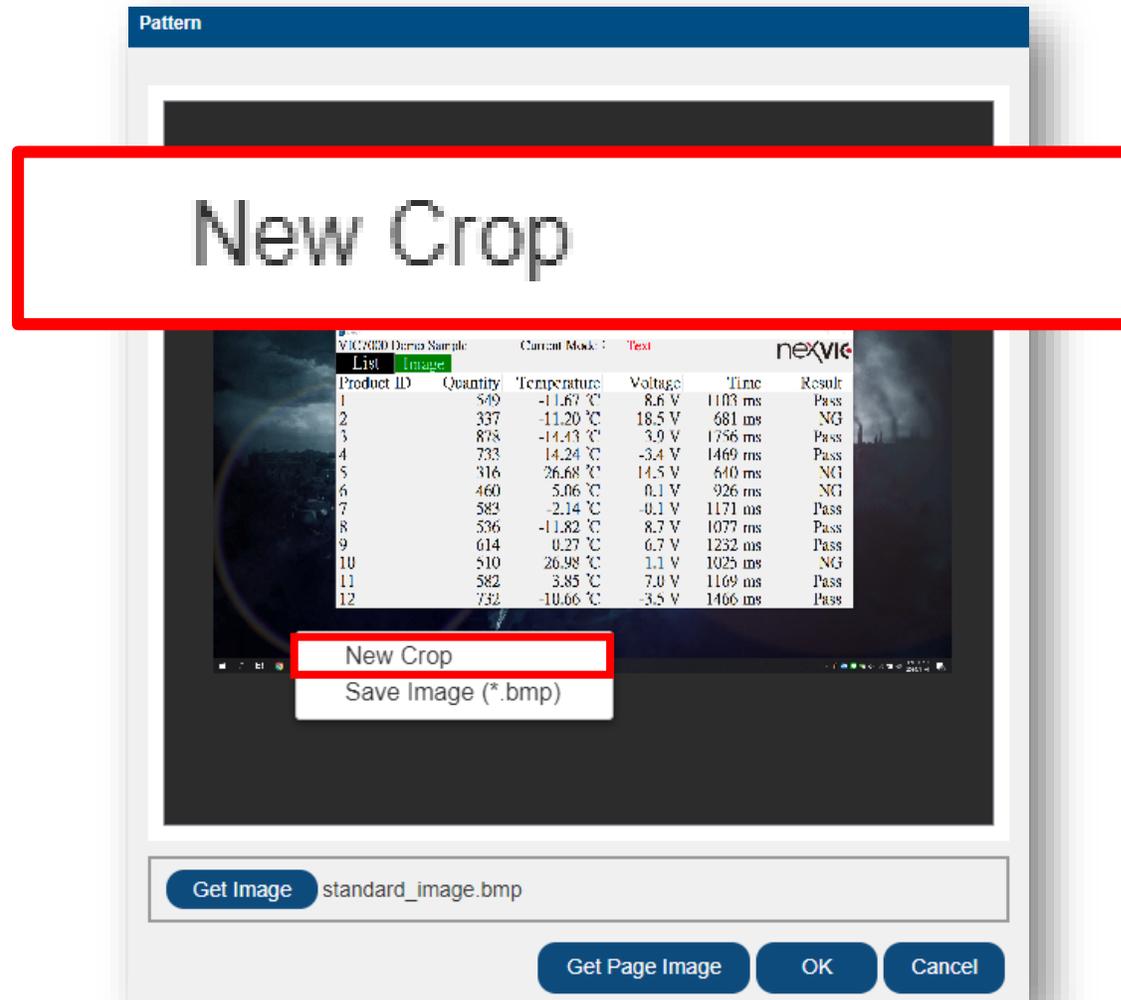
6. **Load Matching Pattern** : Click **Pattern Load** → User can enter **Pattern** window, and the image will be loaded automatically



Build Project – Target

- **General : Create a Target_Pattern**

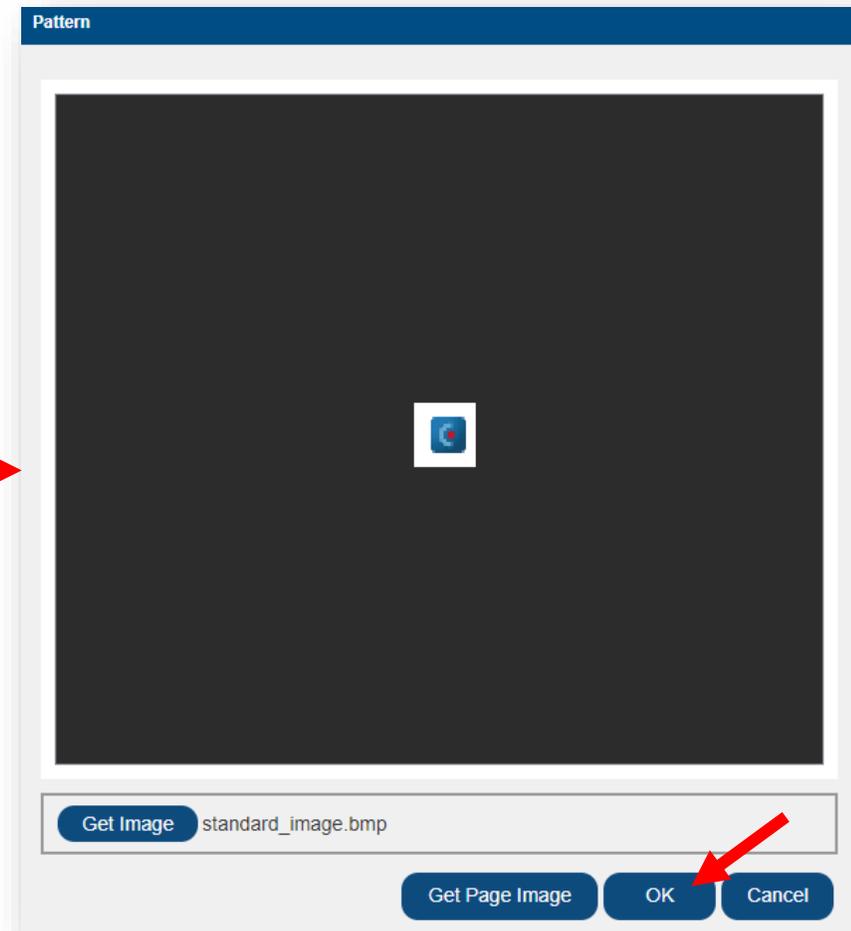
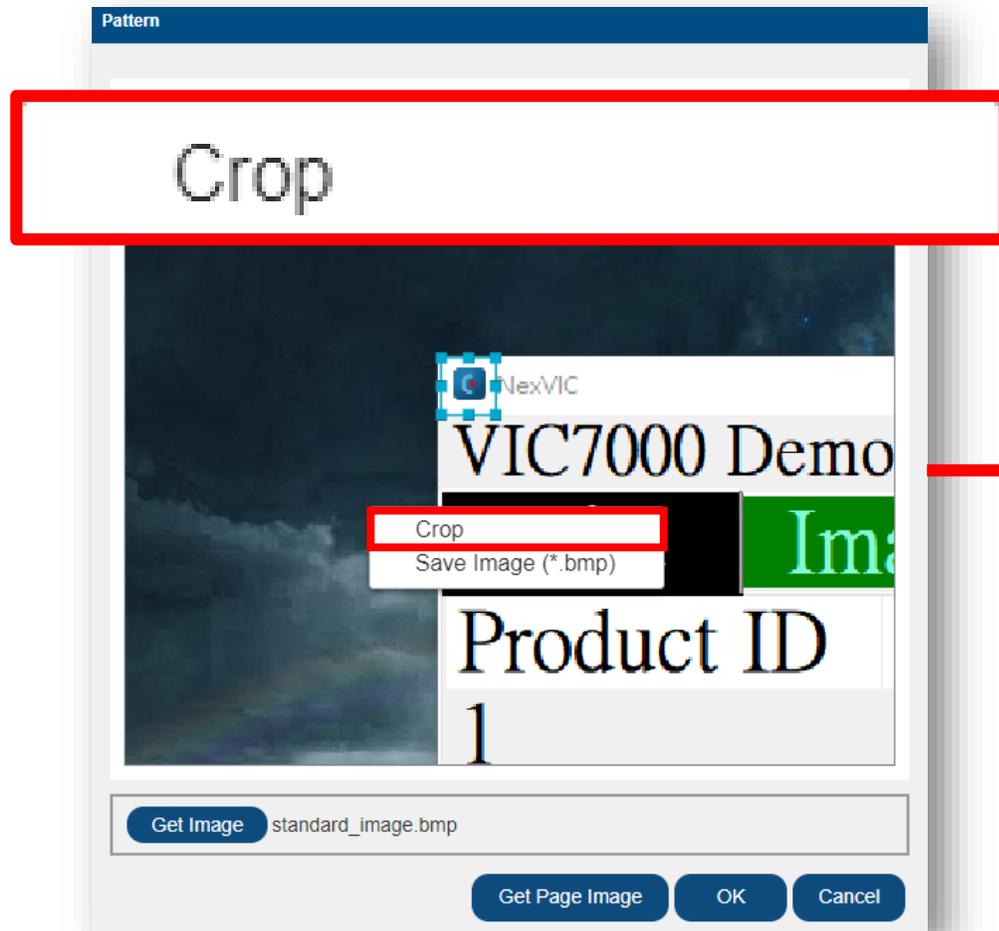
6. **Load Matching Pattern** : Right-click on the image → Select **New Crop**



Build Project – Target

- **General : Create a Target_Pattern**

6. **Load Matching Pattern** : Mark the matching pattern → Right-click on the image → Select **Crop** → **OK**



Build Project – Target

- **General : Create a Target_Pattern**

- 7. **Set Matching Result Output** : Enter **Matching Result Output**

The screenshot displays the configuration interface for a Target_Pattern in the nexVIC system. The interface is divided into several sections:

- Get Data**: A button to refresh or retrieve data.
- OCR**: The main processing area, currently showing a video feed of a city at night with a rainbow. A score of (-96,792) is visible at the top.
- Over View**: A tab for the current target, labeled TARGET01.
- TARGET_PATTERN01**: A tab for the specific target pattern, with a plus sign icon for adding more.
- Recognition Method**: A dropdown menu currently set to 'Matching target'.
- Settings**: A list of configuration parameters:
 - Pattern Name: standard_image.br
 - Pattern X: [input field]
 - Pattern Y: [input field]
 - Pattern Width: [input field]
 - Pattern Height: [input field]
 - Minimum Score: 0.95
 - Detect Page Disp: [checkbox]
 - Detect Displacem: [checkbox]
 - Matching Output: true
 - No Matching Output: false

A red box highlights the 'Matching Output' and 'No Matching Output' settings. A red number '7' is placed next to the 'No Matching Output' row, indicating the step number.

Build Project – Target

- **General : Create a Target_Pattern**

8. **Simulate** : It's recommended to use Gray Matching, it will speed up recognition speed.

Click **Simulate** → Confirm matching result, which is used as **TARGET_PATTERN**

The screenshot shows the NexVIC software interface. On the left, the 'Settings' panel is visible, with 'Gray Matching' checked. The 'Result' section shows a 'Match' with a score of 0.996686. The main display area shows a 'true' status indicator and a table of detected items. A red box highlights the '8 Gray Matching' checkbox, and another red box highlights the 'Simulate' button. A third red box highlights the 'true' status indicator.

Product ID	Quantity	Temp
1	549	-1
2	337	-1
3	878	-1
4	733	1
5	316	2
6	460	
7	583	-2.14 °C
8	526	11.82 °C

Build Project – Target

- **General**

- **Displacement Detection** : Based on the position of TARGET_PATTERN on the image where Target_Pattern is set

Detect Page Displacement : Make ROI of Targets and Target_Colors move in consistent with the position of TARGET_PATTERN

Detect Displacement : Make ROI of the page that match TARGET_PATTERN move with the position of TARGET_PATTERN

Detect Page Displacement	<input type="checkbox"/>
Detect Displacement	<input type="checkbox"/>

Get Data
OCR

Recognition Method

Matching target ▼

Settings

Pattern Name	stand. ▲
Pattern X	317 ▼▲
Pattern Y	175 ▼▲
Pattern Width	27
Pattern Height	28
Minimum Score	0.95 ▼▲
Detect Page Displacement	<input type="checkbox"/>
Detect Displacement	<input type="checkbox"/>
Matching Output	true
No Matching Output	false

Build Project – Target

- **General : Create a Target_Pattern**

- **Multiple Target_pattern** : Click **Add** icon → repeat the aforementioned steps to create Target_patterns

Settings

Name	Value
Name	TARGET_PATTE
ROI-X	0
ROI-Y	0
ROI-Width	840
ROI-Height	528
New ROI	Submit
Set ROI	Submit
Delete ROI	Submit
Modify ROI	Submit

Matching Parameters

Gray Matching	<input checked="" type="checkbox"/>
Pattern Load	Submit
Pattern Name	standard_image.br
Pattern X	317
Pattern Y	175
Pattern Width	27
Pattern Height	28
Minimum Score	0.95
Detect Page Disp	<input type="checkbox"/>
Detect Displacem	<input type="checkbox"/>
Matching Output	true
No Matching Out	false

Result

Name	Value
------	-------

OCR

Color

Pattern

VIC7000 Demo Sample Current Mode : Text

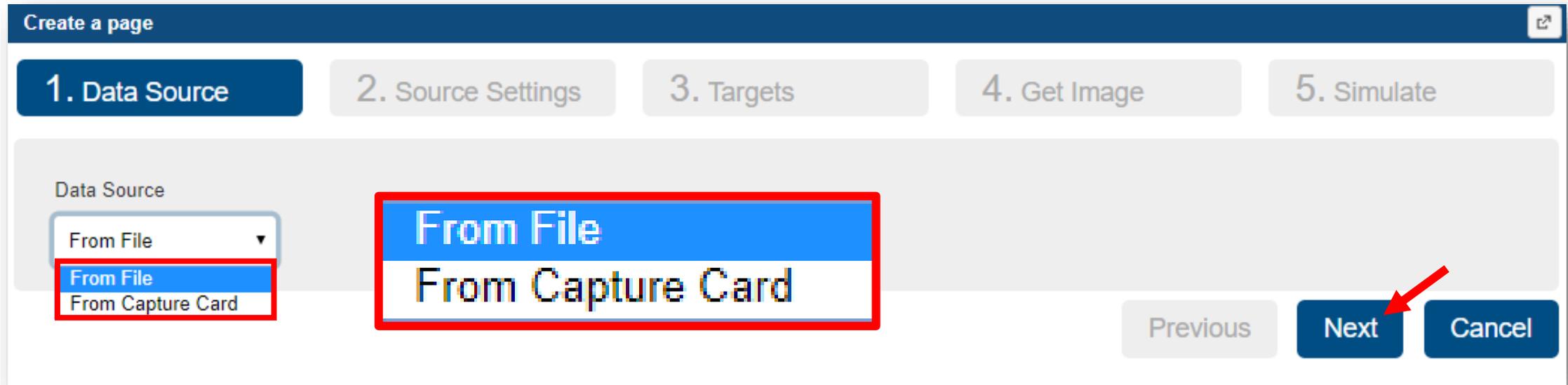
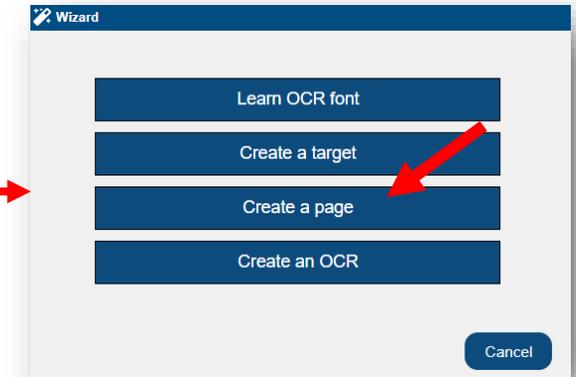
Product ID	Quantity	Temperature	Voltage	Time	Result
1	549	-11.67 °C	8.6 V	1103 ms	Pass
2	337	-11.20 °C	18.5 V	681 ms	NG
3	878	-14.43 °C	3.9 V	1756 ms	Pass
4	733	14.24 °C	-3.4 V	1469 ms	Pass
5	316	26.68 °C	14.5 V	640 ms	NG
6	460	5.06 °C	0.1 V	926 ms	NG
7	583	-2.14 °C	-0.1 V	1171 ms	Pass
8	536	-11.82 °C	8.7 V	1077 ms	Pass
9	614	0.27 °C	6.7 V	1232 ms	Pass
10	510	26.98 °C	1.1 V	1025 ms	NG
11	582	3.85 °C	7.0 V	1169 ms	Pass
12	732	-10.66 °C	-3.5 V	1466 ms	Pass

Build Project – Page & Recognition

- **Wizard : Create a page**

1. Data Source

From File or From Capture Card



Build Project – Page & Recognition

- **Wizard : Create a page**

- 2. Source Settings

From File : Image folder Path, Read interval

From Capture Card : Video input signal type, Capture frame rate

Create a page

1. Data Source 2. Source Settings 3. Targets 4. Get Image 5. Simulate

Image Folder
C:/VIC7000/Training Sample

Submit

Interval (ms)
1000

Create a page

1. Data Source 2. Source Settings 3. Targets 4. Get Image 5. Simulate

Video Signal
false

Video Input
DVI_A (RGB / VGA)

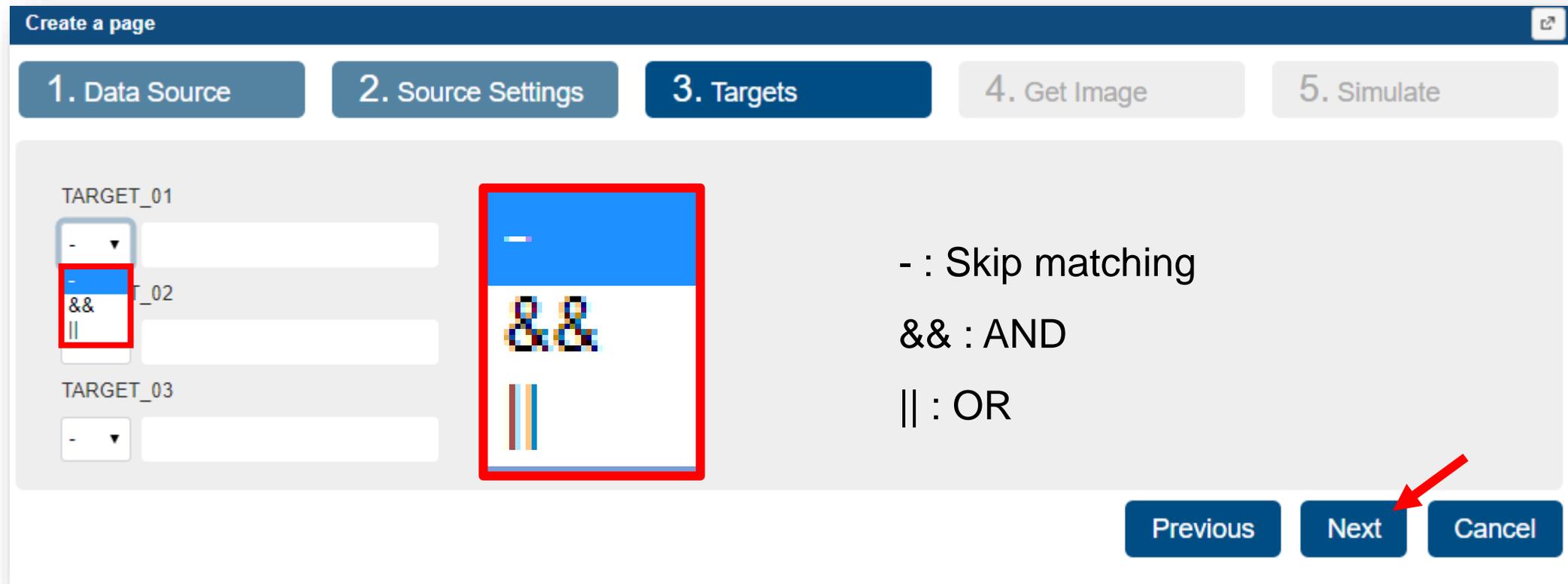
Capture Frame Rate
2

Previous Next Cancel

Build Project – Page & Recognition

- **Wizard : Create a page**

- 3. **Targets** : Set TARGET matching logical operators and conditions



- **Wizard : Create a page**

3. **Targets** : Set Target matching logical operators and conditions for the matching logical operators:

- : Skip matching this TARGET

- || : Execute || first. If one of the TARGETs set with || is satisfied, the page is considered as matched successfully.

- && : When || is not satisfied then the && will be considered, the page will only be considered as successfully if all of the TARGETs set with && are satisfied

If more than one page matched successfully at the same time, the page with smaller index will be selected to be recognized.

Build Project – Page & Recognition

- Wizard : Create a page

	TARGET01		TARGET02		TARGET03		Used Page
Actual Result	125		125		155		
PAGE01		120	&&	130	&&	155	
PAGE02		125	&&	125	&&	150	Use this page

	TARGET01		TARGET02		TARGET03		Used Page
Actual Result	125		125		155		
PAGE01	&&	120	&&	125	&&	155	
PAGE02		110	&&	125	&&	155	Use this page

Build Project – Page & Recognition

- Wizard : Create a page

	TARGET01		TARGET02		TARGET03		Used Page
Actual Result	125		125		155		
PAGE01		120	&&	125	&&	155	Use this page
PAGE02		125	&&	125	&&	150	

	TARGET01		TARGET02		TARGET03		Used Page
Actual Result	125		125		155		
PAGE01		120	&&	125	&&	155	Use this page
PAGE02		110	&&	125	&&	155	

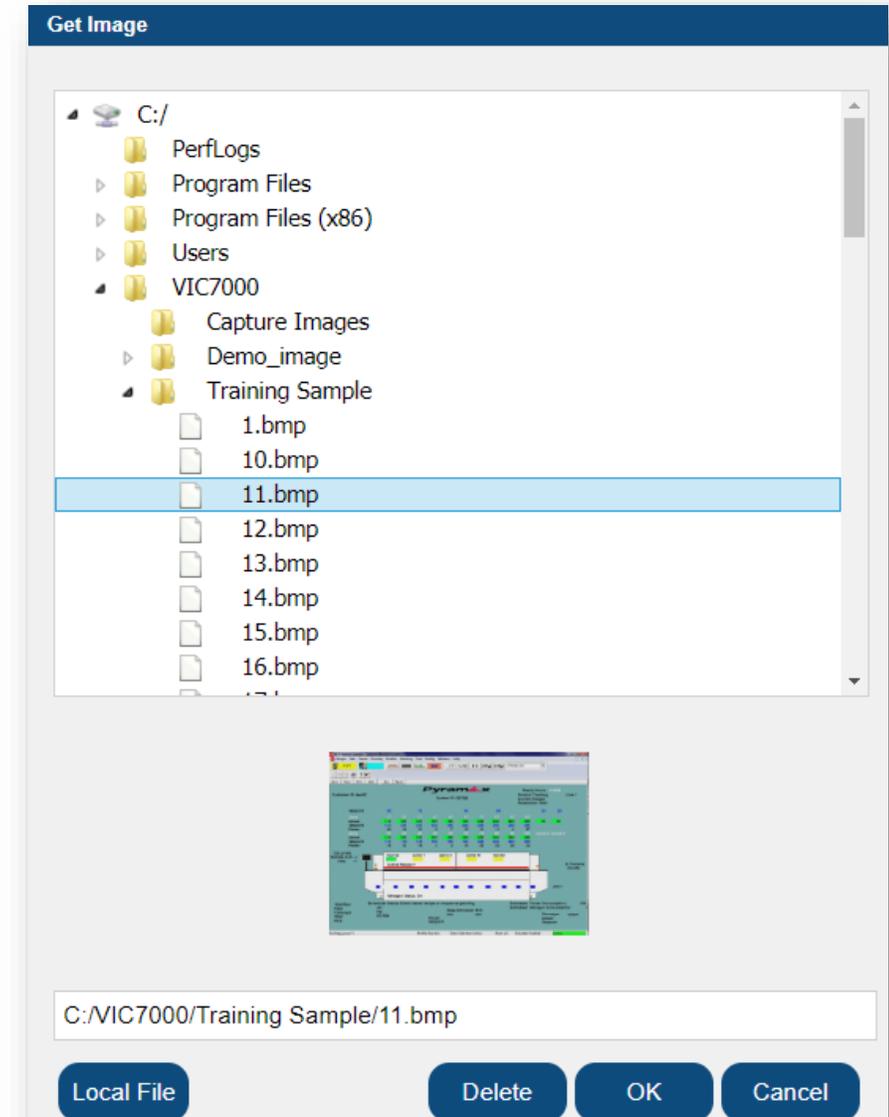
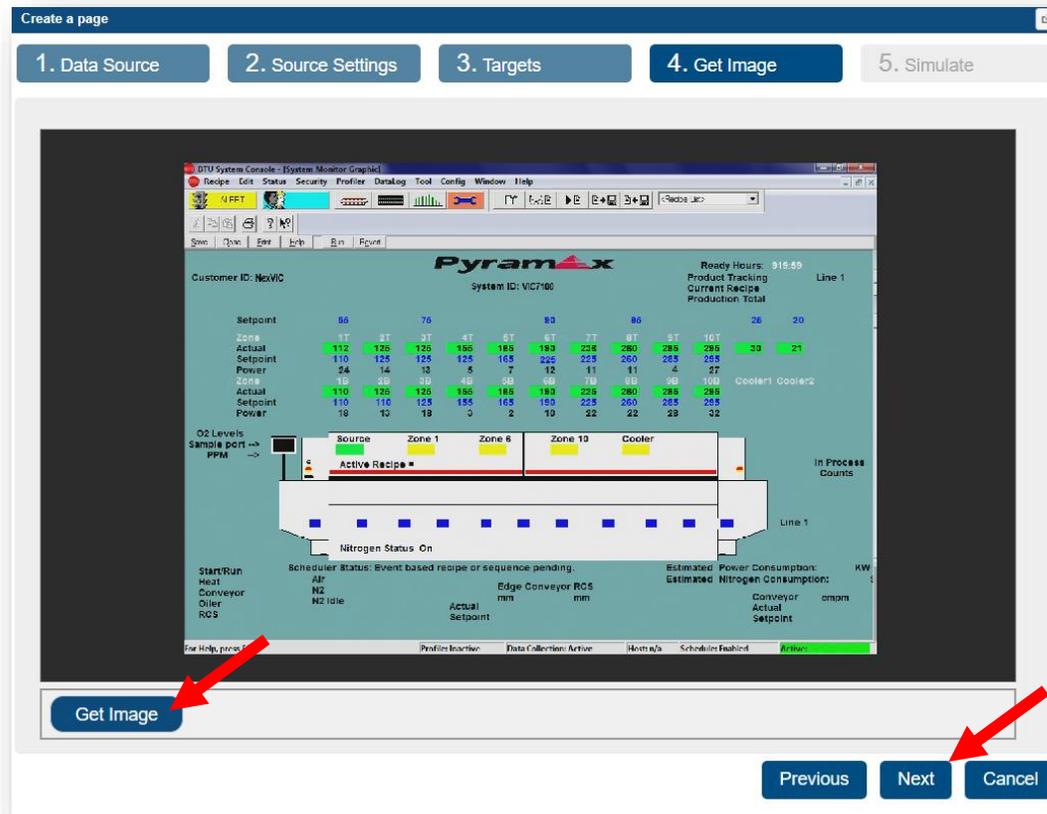
Build Project – Page & Recognition

- Wizard : Create a page

- 4. Get Image

From File : Read images from a local or remote folder

From Capture Card : Get an image from capture card

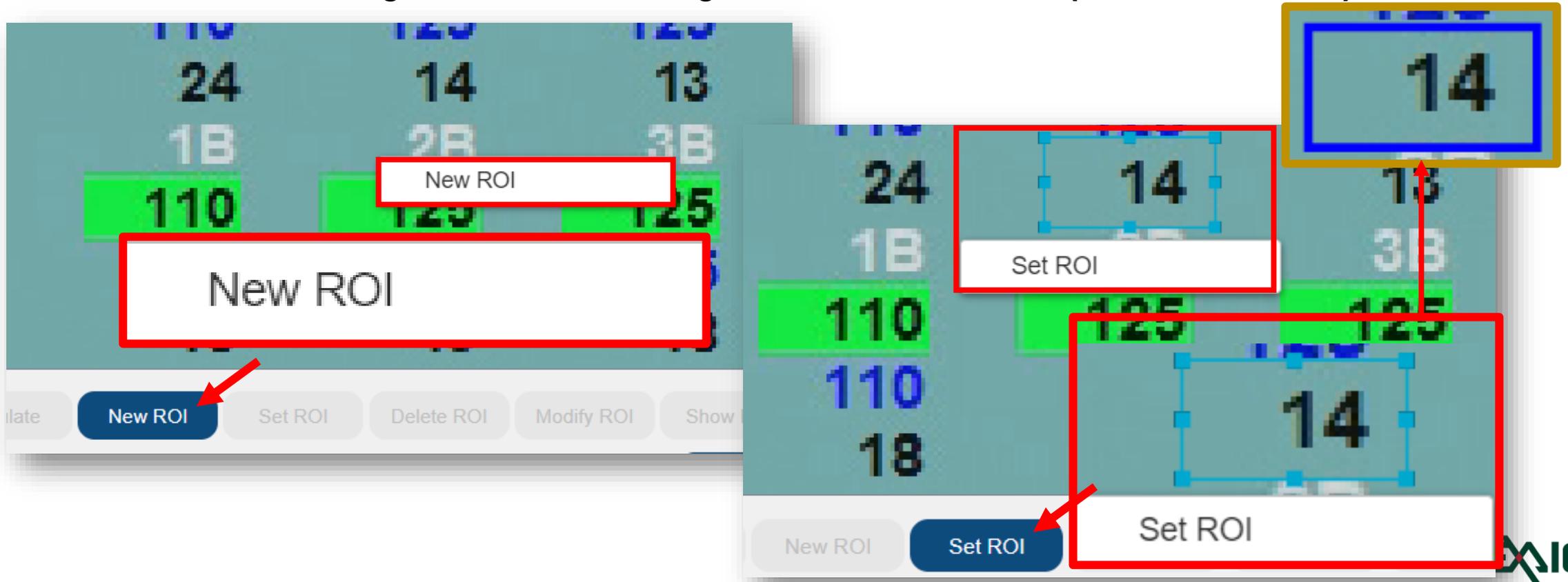


Build Project – Page & Recognition

- **Wizard : Create a page**

- 5. **Simulate**

Right-click on the image then select **New ROI** (or Click **New ROI**) → adjust the location and size of the ROI → Right-click on the image and select **Set ROI** (or Click **Set ROI**)

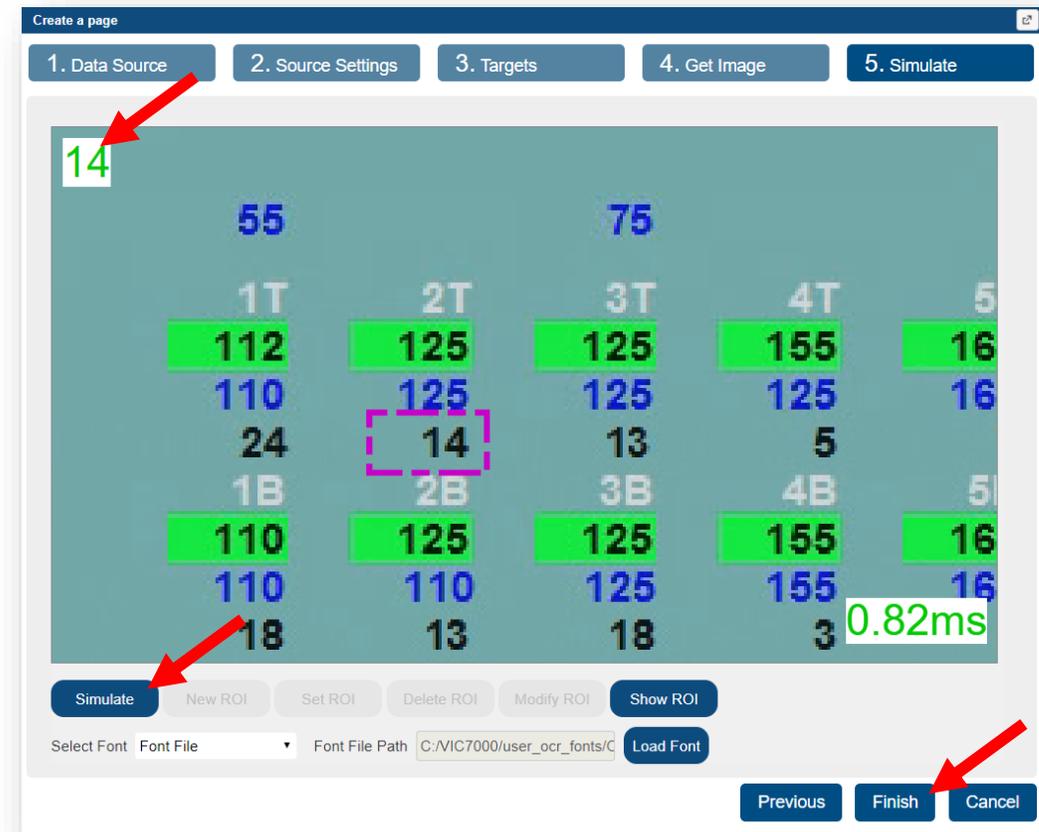


Build Project – Page & Recognition

- Wizard : Create a page

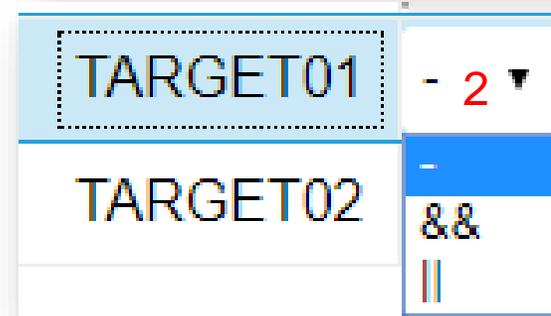
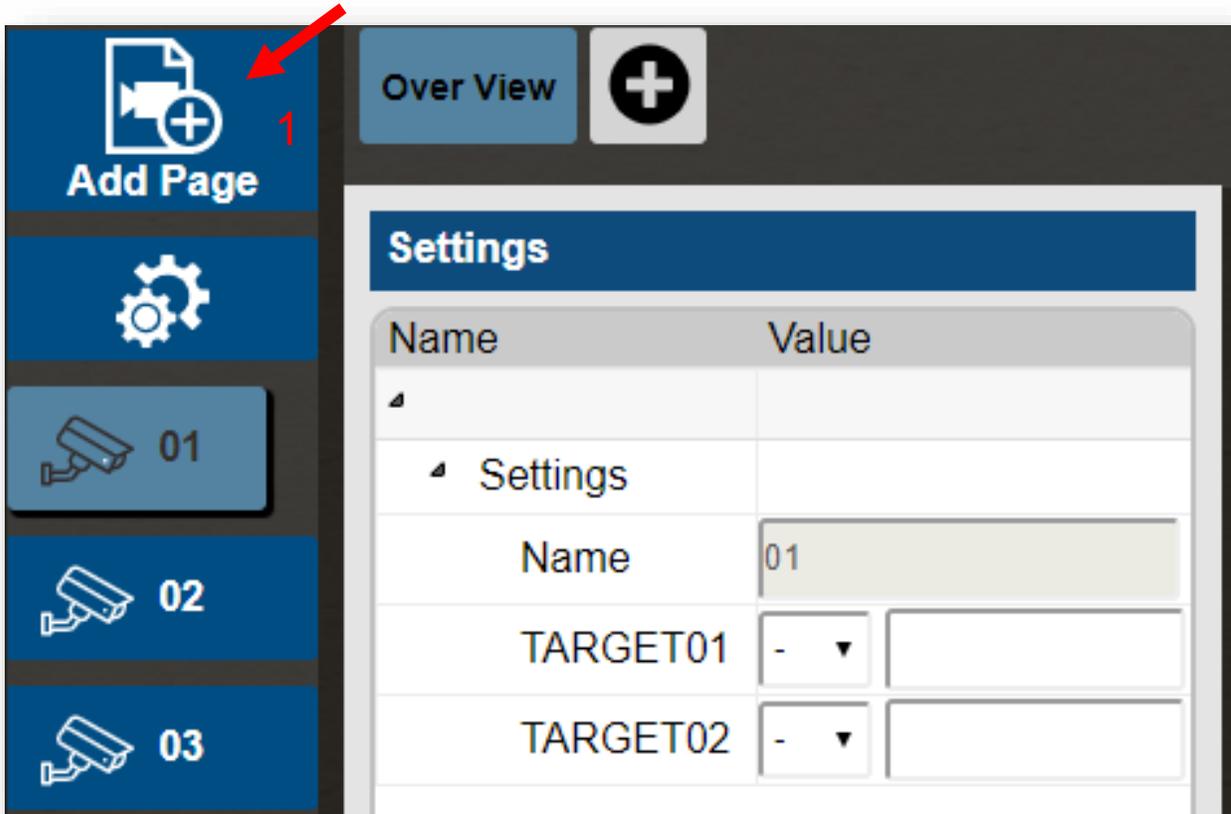
- 5. Simulate

Click **Load Font** → Choose a font file for recognition → Click **Load** → Click **Simulate** → Confirm the recognition results



Build Project – Page & Recognition

- **General : Create a page**
 1. **Create a Page** : Click **Add Page** icon
 2. **Targets** : Set TARGET matching logical operators and conditions



- : Skip matching

&& : AND

|| : OR

- **General : Create a page**

2. **Targets** : Set TARGET matching logical operators and conditions for the matching logical operators:

- : Skip matching this TARGET

- || : Execute || first. If one of the TARGETs set with || is satisfied, the page is considered as matched successfully.

- && : When || is not satisfied then the && will be considered, the page will only be considered as successfully if all of the TARGETs set with && are satisfied

If more than one page matched successfully at the same time, the page with smaller index will be selected to be recognized.

Build Project – Page & Recognition

- **General : Create a page**

- 3. **Create an OCR** : Click **Add** icon → Get Image → Set ROI → Load a font file → Click **Simulate** to confirm the recognition result

The screenshot displays the nexVIC software interface. On the left, a 'Settings' panel is visible with various configuration options. A red arrow labeled '1' points to the 'Add' icon (a plus sign) in the top navigation bar. Another red arrow labeled '4' points to the 'Load Font' button in the 'OCR Font' section. Below the settings, a 'Result' table shows recognition rates for characters '1' and '3'. At the bottom left, a control panel contains buttons for 'Get Image' (labeled '2') and 'Simulate' (labeled '5'). The main workspace shows a simulated OCR result on a document image. A red arrow labeled '3' points to a bounding box around the character '13'. Below the workspace, a 'Source' and 'Zone' section shows a green bar for 'Source' and a yellow bar for 'Zone 1', with a '19.39ms' timer. The nexVIC logo is in the bottom right corner.

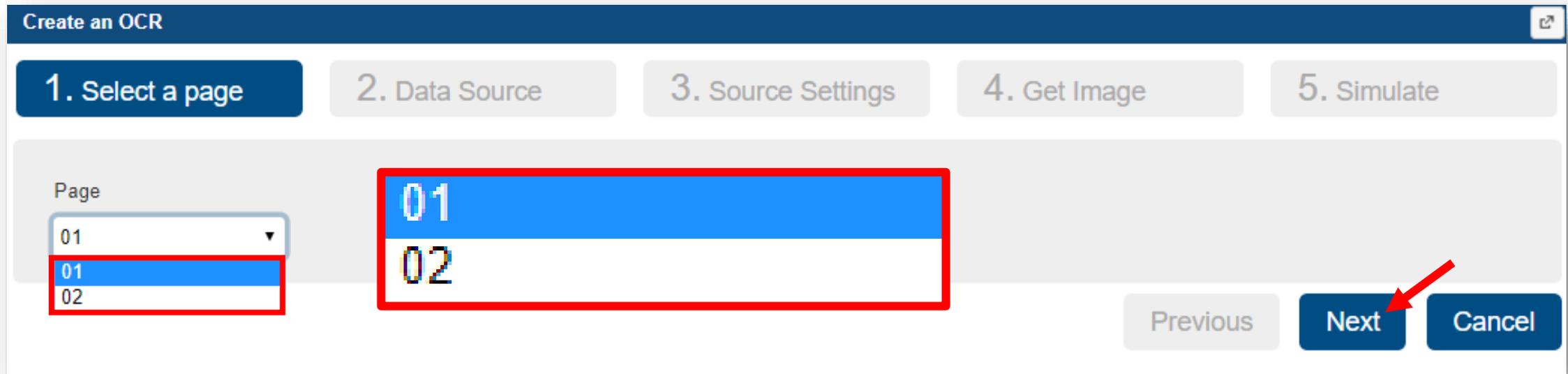
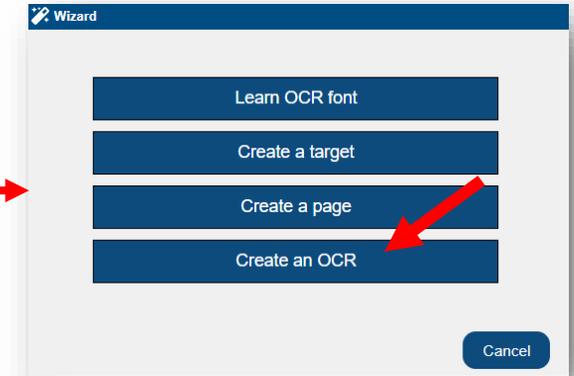
Char	Recognition Rate(%)
1	100
3	100

Source	Zone 1	Zone 2
19	9	8

Build Project – Page & Recognition

- **Wizard : Create an OCR**

1. **Select a page** : Choose the aimed page to create an OCR



Build Project – Page & Recognition

- **Wizard : Create an OCR**

- 2. Data Source

From File or From Capture Card

The screenshot shows a wizard titled "Create an OCR" with five steps: 1. Select a page, 2. Data Source, 3. Source Settings, 4. Get Image, and 5. Simulate. Step 2 is active. A dropdown menu for "Data Source" is open, showing "From File" and "From Capture Card" options. A red box highlights the "From File" option in the dropdown and the "From File" and "From Capture Card" options in the main content area. A red arrow points to the "Next" button.

Create an OCR

1. Select a page 2. Data Source 3. Source Settings 4. Get Image 5. Simulate

Data Source

From File

From File

From Capture Card

From File

From Capture Card

Previous Next Cancel

Build Project – Page & Recognition

- **Wizard : Create an OCR**

- 3. Source Settings

From File : Image folder path, Read interval

From Capture Card : Video input signal type, Capture frame rate

Create an OCR

1. Select a page 2. Data Source 3. Source Settings 4. Get Image 5. Simulate

Image Folder
C:/VIC7000/Training Sample

Submit

Interval (ms)
1000

Create an OCR

1. Select a page 2. Data Source 3. Source Settings 4. Get Image 5. Simulate

Video Signal
false

Video Input
DVI_A (RGB / VGA)

Capture Frame Rate
2

Previous Next Cancel

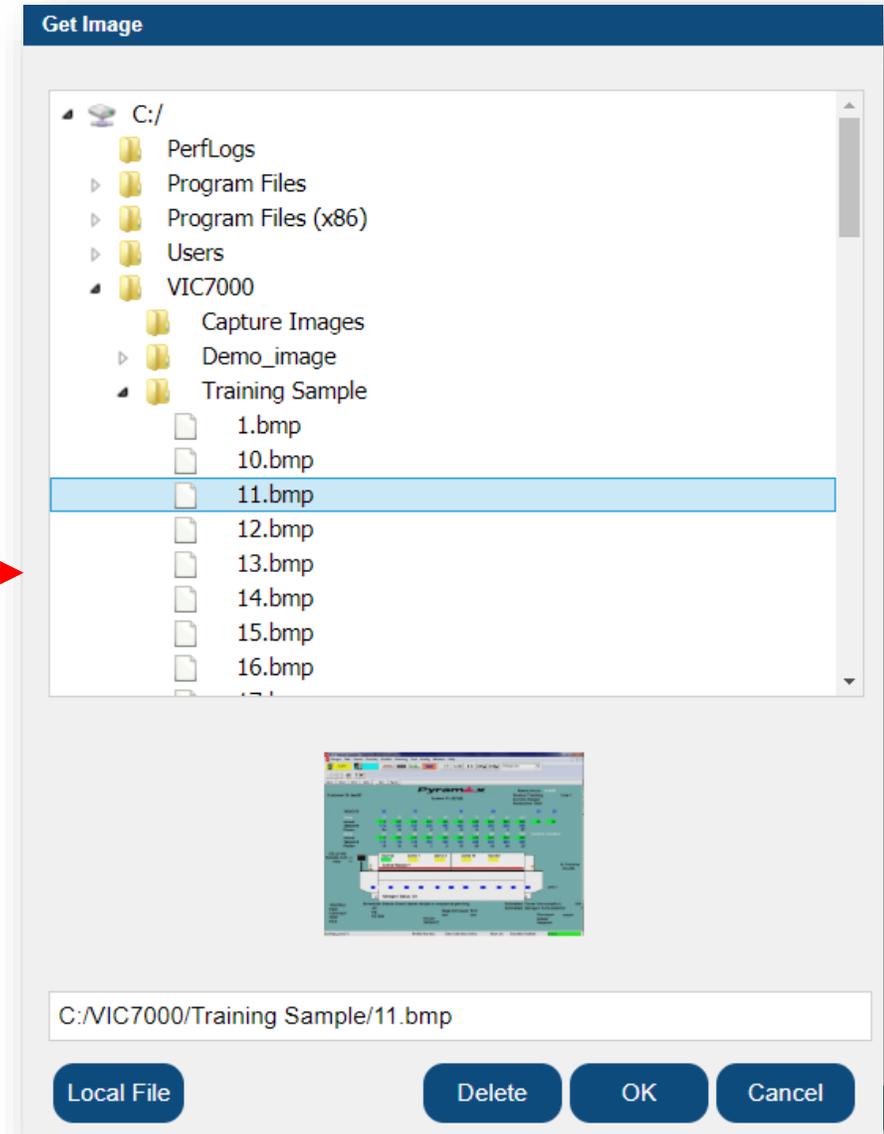
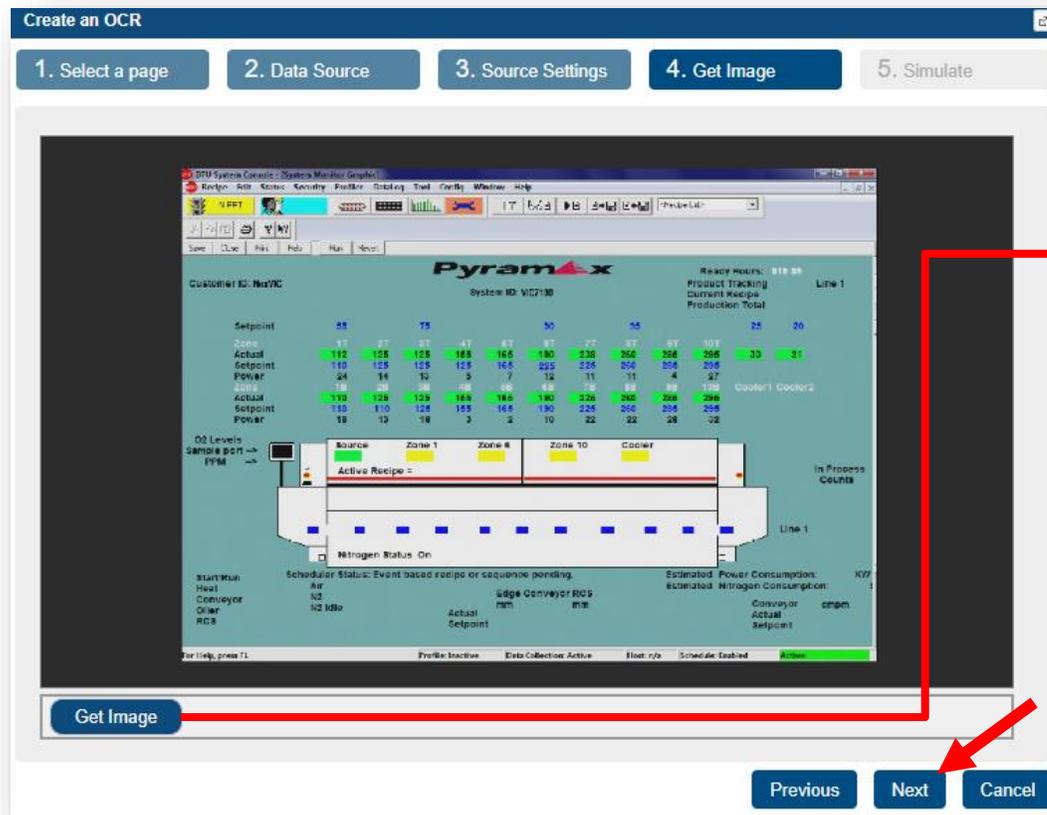
Build Project – Page & Recognition

- Wizard : Create an OCR

- 4. Get Image

From File : Read images from a local or remote folder

From Capture Card : Get an image from capture card



Build Project – Page & Recognition

- **Wizard : Create an OCR**

- 5. **Simulate**

Right-click on the image then select **New ROI** (or Click **New ROI**) → Adjust the location and size of ROI → Right-click on an image then select **Set ROI** (or Click **Set ROI**)

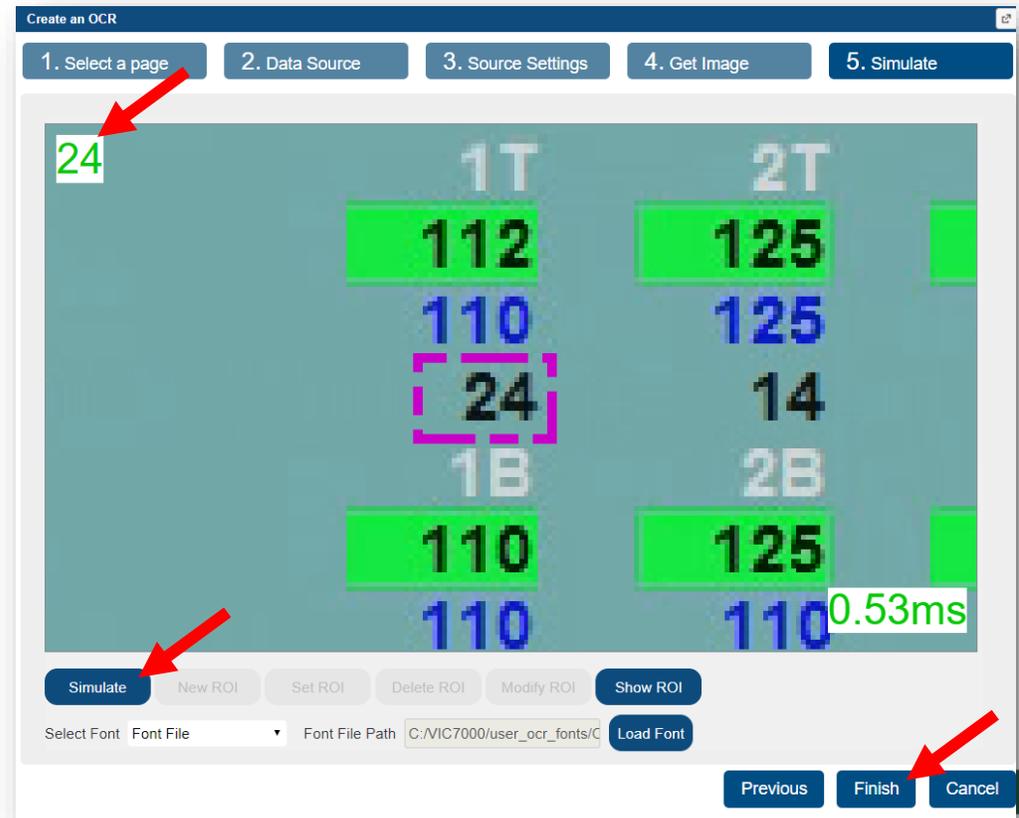
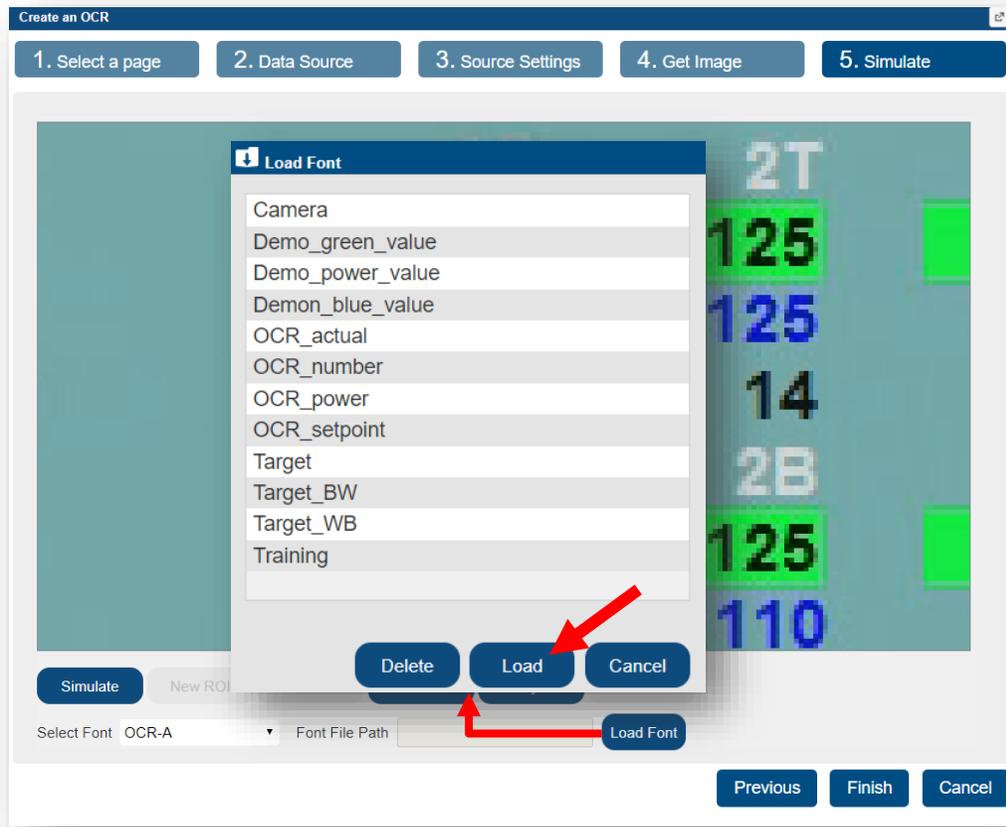


Build Project – Page & Recognition

- **Wizard : Create an OCR**

- 5. **Simulate**

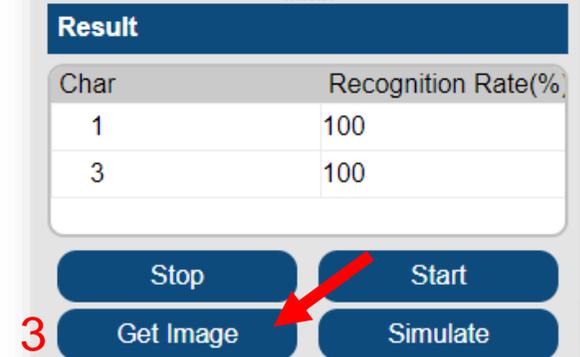
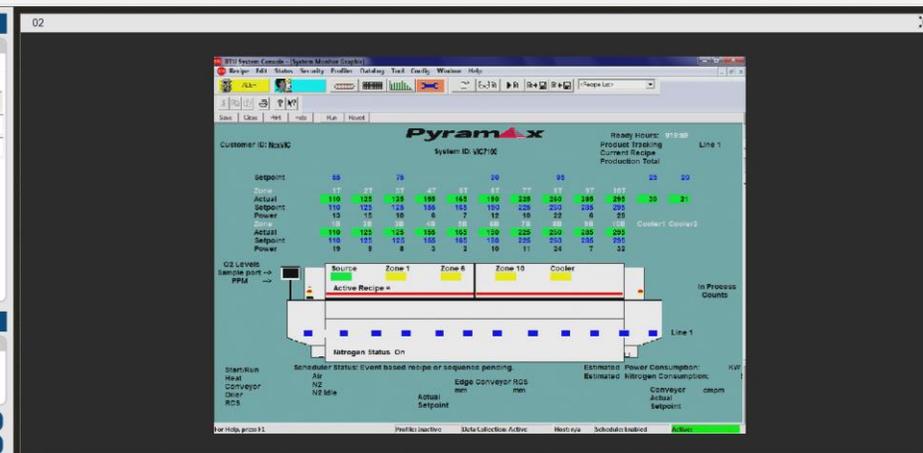
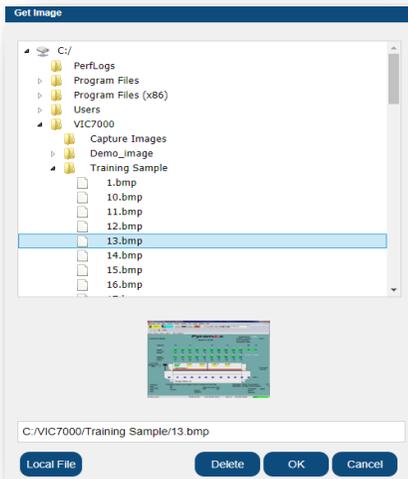
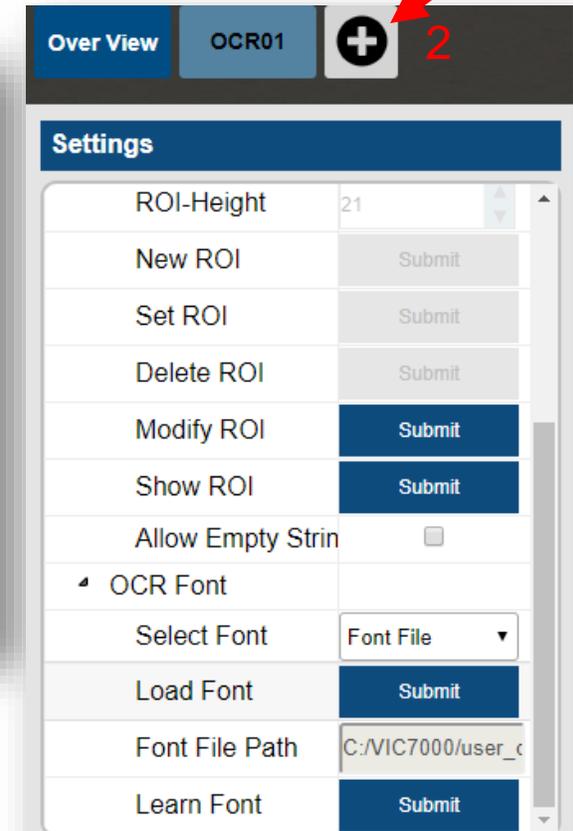
Click **Load Font** → Choose a font file used for recognition → Click **Load** → Click **Simulate** → Confirm the recognition result



Build Project – Page & Recognition

- **General : Create an OCR**

1. **Select a page** : Choose the aimed page to create an OCR
2. **Create an OCR** : Add icon
3. **Get Image**
 - a. **From File** : Read images from a local or remote folder
 - b. **From Capture Card** : Get an image from capture card



Build Project – Page & Recognition

- **General : Create an OCR**

4. **New ROI** : Right-click on an image then select **New ROI** (or Click **New ROI**)

The screenshot shows the Nexvic software interface. On the left, the 'Settings' panel is open, displaying a table of parameters for 'PAGE01.OCR01'. The 'New ROI' button is highlighted with a red box and a red arrow. Below the settings, there is a 'Result' section with a table for 'Char' and 'Recognition Rate(%)'. At the bottom, there are buttons for 'Stop', 'Start', 'Get Image', and 'Simulate'. On the right, a data table is displayed with columns for 'Setpoint', 'Zone', 'Actual', 'Setpoint', and 'Power'. The table is divided into sections for 'Zone 1' through 'Zone 10'. A red box highlights the 'New ROI' option in a context menu, and another red box highlights the 'New ROI' text in a larger box at the bottom of the screen.

Name	Value
ROI-X	208
ROI-Y	279
ROI-Width	187
ROI-Height	86
New ROI	Submit
Set ROI	Submit
Delete ROI	Submit
Modify ROI	Submit

Setpoint	55	75	90				
Zone	1T	2T	3T	4T	5T	6T	7T
Actual	110	125	125	155	165	190	225
Setpoint	110	125	125	155	165	190	225
Power	13	15	10	6	7	12	10
Zone	1B	2B	3B	4B	5B	6B	7B
Actual	110	125	125	155	165	190	225
Setpoint	110	125	125	155	165	190	225
Power	19	9	8	3	2	10	11

4 New ROI

Build Project – Page & Recognition

- **General : Create an OCR**

5. **Set ROI** : Adjust the location and size of ROI → Right-click on an image and select **Set ROI** (or Click **Set ROI**)

The screenshot displays the Nexvic software interface for page recognition. On the left, the 'Settings' panel is visible, showing a table of parameters for 'PAGE01.OCR01'. The 'Set ROI' button is highlighted in blue, and a red '5' is next to it. A red arrow points from this button to the 'Set ROI' option in a context menu that is open over a '13' in the main image. The main image shows a simulated page with a table of data. The table has columns for 'Setpoint', 'Zone', 'Actual', and 'Power'. The 'Setpoint' column has values 55, 75, and 90. The 'Zone' column has values 1T, 2T, 3T, 4T, 5T, 6T, and 7T. The 'Actual' column has values 110, 125, 125, 155, 165, 190, and 225. The 'Power' column has values 13, 15, 1, 2, 3, 0, and 10. A red box highlights a '13' in the 'Power' column under 'Zone 1T'. A blue box highlights another '13' in the 'Power' column under 'Zone 5T'. A context menu is open over the blue box, showing 'Set ROI' and 'Save Image (*.bmp)'. A red arrow points from the 'Set ROI' button in the settings to the 'Set ROI' option in the context menu. Below the table, there are buttons for 'Zone 1', 'Zone 6', and 'Zone 10', and a section for 'Active Recipe ='. The bottom right corner features the 'AIOT' logo.

Build Project – Page & Recognition

- **General : Create an OCR**

6. **Load Font** : Click **Load Font** → Choose a font file used for recognition → Click **Load**

The screenshot displays the Nexvic software interface. On the left, the 'Settings' panel is visible, with the 'Load Font' button highlighted by a red circle and a red arrow pointing to the 'Load Font' dialog box. The dialog box lists several font files, including '20191016', '20191017', '201910172', '201910173', '20191021', 'Demo_green_value', 'Demo_power_value', 'Demo_tar1', 'Demon_blue_value', 'demo_tar', 'test', 'test_two', and 'test_two1'. The 'Load' button at the bottom of the dialog is highlighted with a red arrow. The background shows a data table with columns for 'Zone' and 'Power' values.

Zone	4T	5T	6T	7T
Actual	155	165	190	225
Setpoint	155	165	190	225
Power	6	7	12	10
Zone	4B	5B	6B	7B
Actual	155	165	190	225
Setpoint	155	165	190	225
Power	3	2	10	1

Build Project – Page & Recognition

- **General : Create an OCR**
 7. **Simulate** : Click **Simulate** → Confirm the recognition result

The screenshot displays the Nexvic software interface. On the left is a 'Settings' panel with various configuration options. The main area shows a data table for '01' with columns for 'Setpoint', 'Zone', 'Actual', and 'Power'. A '13' is highlighted in a pink box in the 'Power' row for 'Zone 1B'. Below the table is a 'Result' section with a table of character recognition rates. At the bottom, a 'Levels' section shows a simulation of a machine with 'Active Recipe =' and a '1.20ms' timer. Red arrows point to the 'Simulate' button, the '13' value, and the '01' label.

Settings

ROI-Height	18
New ROI	Submit
Set ROI	Submit
Delete ROI	Submit
Modify ROI	Submit
Show ROI	Submit
Allow Empty Strin	<input type="checkbox"/>
OCR Font	
Select Font	Font File
Load Font	Submit
Font File Path	C:/VIC7000/user_c
Learn Font	Submit

Result

Char	Recognition Rate(%)
1	100
3	100

01

Setpoint	55	75	90				
Zone	1T	2T	3T	4T	5T	6T	7T
Actual	110	125	125	155	165	190	225
Setpoint	110	125	125	155	165	190	225
Power	13	15	10	6	7	12	10
Zone	1B	2B	3B	4B	5B	6B	7B
Actual	110	125	125	155	165	190	225
Setpoint	110	125	125	155	165	190	225
Power	19	9	8	3	2	10	11

Levels

le port -->

PM -->

Source Zone 1 Zone 6 Zone 10

Active Recipe =

1.20ms

Build Project – Page & Recognition

- **OCR Config**

- Input Parameters

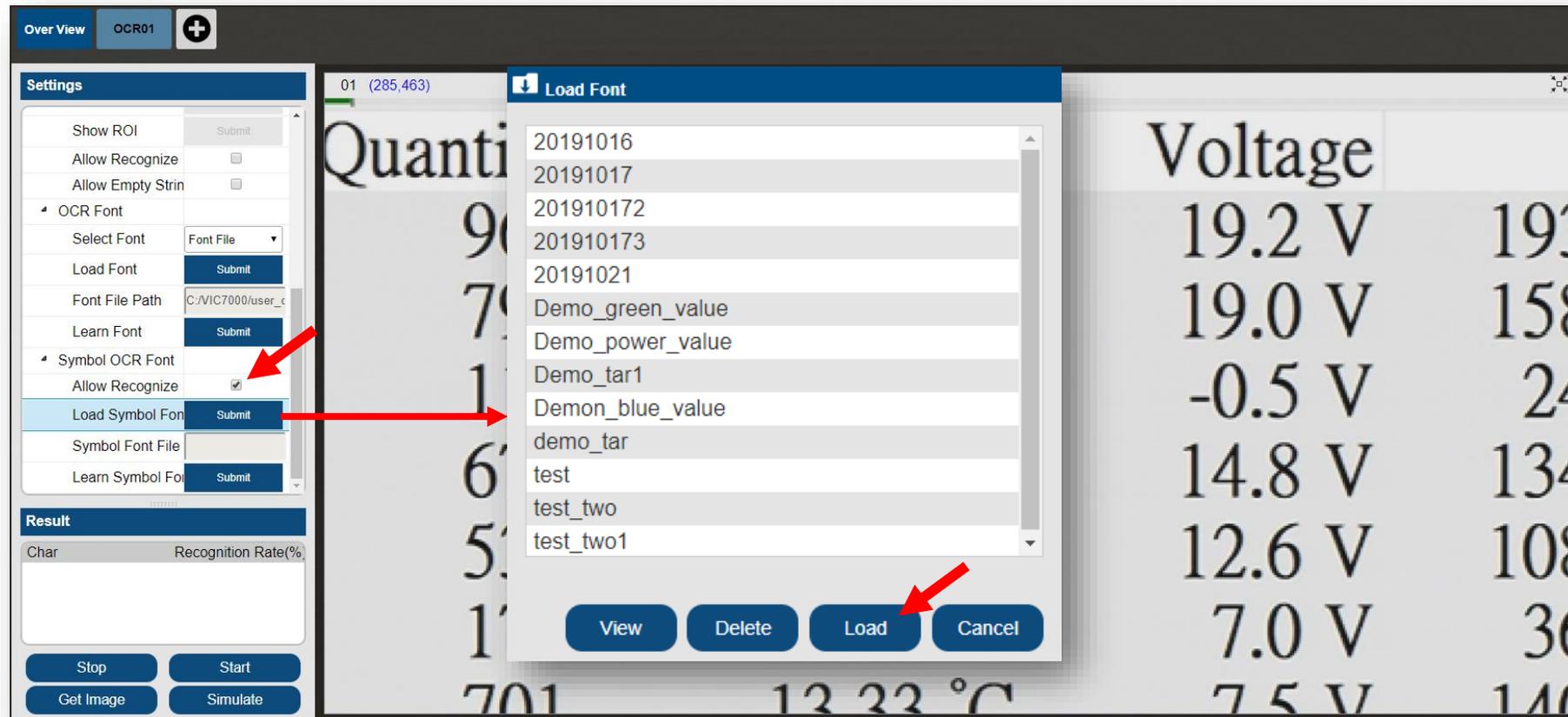
- ROI X : Set X coordinates of ROI
 - ROI Y : Set Y coordinates of ROI
 - ROI Width : Set width coordinates of ROI
 - ROI Height : Set Height coordinates of ROI
 - **Allow Empty Result** : If it is checked, NG won't show up when there is no character recognized in ROI
 - **Allow Recognition Rate** : If recognition rate is lower than this value, NG will show up

Build Project – Page & Recognition

- **General**

- **Symbol Recognition** : Check on **Allow Recognize Symbol** → Click **Load Symbol Font**
→ Choose a symbol font file used for recognition → Click **Load**

The Symbol font file that is used **only** for recognizing symbols.



Build Project – Page & Recognition

- **General**

- **Symbol Recognition** : Click **View** to confirm the content of OCR font and symbol font

In this sample, the OCR font is used to recognize numbers, and the symbol font is used to recognize minus sign and decimal point.

The image displays three screenshots of a font configuration interface:

- Left Screenshot:** A 'Load Font' dialog box showing a list of fonts. The 'View' button is highlighted with a red box, and a red arrow points from it to the middle screenshot.
- Middle Screenshot:** A 'Font' dialog box for an OCR font. The font list contains the following characters: 4, 1, 0, 2, 1, 4, 8, 2, 5, 5, 7, 8, 2, 3. The 'Pattern Width=5, Pattern Height=9' is displayed. A 'Result' input field and a 'Cancel' button are at the bottom.
- Right Screenshot:** A 'Font' dialog box for a symbol font. The font list contains the following characters: ., -, ., -. The 'Pattern Width=3, Pattern Height=2' is displayed. A 'Result' input field and a 'Cancel' button are at the bottom.

Build Project – Page & Recognition

- **General**

- **Symbol Recognition** : Click **Simulate** → Confirm the recognition result

The screenshot displays the nexVIC software interface. On the left, a 'Settings' panel is visible with various options for OCR and Symbol OCR. The 'Symbol OCR Font' section is highlighted with a red arrow pointing to the 'Load Symbol Font' button. Below the settings is a 'Result' table showing character recognition rates. The main area shows a table of recognized text with a red arrow pointing to the value '-14.68' in the 'Temperature' column. A 'Simulate' button is also highlighted with a red arrow.

Quantity	Temperature	Voltage	Time
756	2.14 °C	6.2 V	1515 ms
707	-14.68 °C	-7.5 V	1418 ms
270	29.32 °C	-3.6 V	548 ms
802	-11.81 °C	7.3 V	1605 ms
276	6.05 °C	0.5 V	560 ms
909	23.52 °C	-1.2 V	1818 ms
927	-0.71 °C	15.8 V	1824 ms

Char	Recognition Rate(%)
-	92.1433
1	98.7459
4	99.1673

Build Project – Page & Recognition

- **General : Create an OCR**

- **Multiple OCR** : Click **Add** icon → Repeat the aforementioned steps to create OCRs

The screenshot displays the Nexvic software interface. On the left, a 'Settings' panel is visible with various configuration options. A 'Result' panel at the bottom left contains 'Stop', 'Start', 'Get Image', and 'Simulate' buttons. The main area shows a data table for 'O2 Levels' with columns for 'Setpoint', 'Zone', 'Actual', 'Setpoint', and 'Power'. A 'Source' bar at the bottom right shows 'Active Recipe =' and color-coded bars for 'Zone 1' and 'Zone 6'. Red arrows and numbers 2 through 7 point to specific UI elements: 2 points to the '+' icon, 4 and 5 point to 'Submit' buttons in the ROI settings, 6 points to the 'Load Font' button, and 7 points to the 'Simulate' button.

Setpoint	55	75	90			
Zone	1T	2T	3T	4T	5T	6T
Actual	112	125	125	155	165	190
Setpoint	110	125	125	125	165	225
Power	24	14	13	5	7	12
Zone	1B	2B	3B	4B	5B	6B
Actual	110	125	125	155	165	190
Setpoint	110	110	125	155	165	190
Power	18	13	18	3	2	10

O2 Levels
Sample port --> []
PPM --> []

Source [] Zone 1 [] Zone 6 [] Zone []
Active Recipe =

Build Project – Page & Recognition

- **General : Create a Color**
 4. **Create a COLOR** : Click on **Add** icon → Click **Color**

The screenshot displays the RTI System Console interface. On the left, the 'Settings' panel is open, showing a dropdown menu with 'Color' selected, indicated by a red arrow and the number '4'. The main dashboard shows system parameters for 'System ID: VIC7100' and 'Line 1'. It includes a data table with columns for Setpoint, Zone, Actual, and Power, and a process flow diagram with zones labeled 'Zone 1', 'Zone 6', 'Zone 10', and 'Cooler'. The status bar at the bottom indicates 'Active'.

Setpoint	55	75	90	95	25	20						
Zone	1T	2T	3T	4T	6T	7T	8T	9T	10T			
Actual	112	125	125	155	165	190	238	260	285	295	30	21
Setpoint	110	125	125	125	165	225	225	260	285	295		
Power	24	14	10	5	7	12	11	11	4	27		
Zone	1B	2B	3B	4B	6B	7B	8B	9B	10B			
Actual	110	125	125	155	165	190	225	260	285	295		
Setpoint	110	110	125	165	165	190	225	260	285	286		
Power	18	13	13	3	2	10	22	22	28	32		

Build Project – Page & Recognition

- **General : Create a Color**

5. **New ROI** : Right-click on the image and select **New ROI** (or Click **New ROI** button)

The screenshot displays the RT11 System Console interface. On the left, the 'Settings' panel is visible, showing a table of input parameters. The 'New ROI' button is highlighted with a red arrow and the number '5'. The main monitoring screen shows a 'Pyramax' interface with a 'New ROI' button highlighted in a red box and the number '5' next to it.

Name	Value
Name	PAGE01.COLOR0
ROI-X	0
ROI-Y	0
ROI-Width	1
ROI-Height	1
New ROI	Submit
Set ROI	Submit
Delete ROI	Submit
Modify ROI	Submit
Show ROI	Submit

Setpoint	Zone 1	Zone 6	Zone 10	Cooler
Zone	6T	7T	8T	10T
Actual	165	190	238	260
Setpoint	165	225	225	260
Power	24	14	13	5
Zone	1B	2B	3B	4B
Actual	110	125	125	155
Setpoint	110	110	125	165
Power	18	13	18	3

Build Project – Page & Recognition

- **General : Create a Color**

7. **Set Matching Tolerance and Result Output** : Set **Matching Tolerance(RGB±)** → Enter

Matching Output Result

The screenshot displays the nexVIC software interface. On the left, the 'Settings' panel is visible, with a red box highlighting the 'Matching Parameters' section. This section includes a 'Color Picker' with 'Red' (105), 'Green' (155), and 'Blue' (154) values. Below it, 'Matching Tolerans' is set to a dropdown menu, 'Matching Output' is set to 'true', and 'No Matching Out' is set to 'false'. At the bottom of the settings panel are buttons for 'Stop', 'Start', 'Get Image', and 'Simulate'. The main window shows a 'Pyramax' system monitor with various status indicators and a 'Matching Output' dialog box overlaid in the center. The dialog box has a red border and contains three rows: 'Matching Tolerans' with a dropdown arrow, '7 Matching Output true', and 'No Matching Out false'. The background of the main window shows a conveyor belt layout with 'Line 1' and 'Nitrogen Status: On'.

Build Project – Page & Recognition

- **General : Create a Color**

8. **Simulate** : Click **Simulate** → Confirm matching result

The screenshot shows the NexVIC software interface. On the left is a 'Settings' panel with various parameters and a 'Color Picker' section. The 'Color Picker' section has the following values:

Red	105
Green	155
Blue	154
Matching Tolerance	
Matching Output	true
No Matching Output	false

At the bottom of the settings panel are buttons for 'Stop', 'Start', 'Get Image', and 'Simulate'. A red arrow points to the 'Simulate' button.

The main dashboard area shows a 'true (105,155,155)' status message with a red arrow pointing to it. Below this is a 'Pyramax' system monitor window. The monitor displays a table of data for various zones and coolers, and a process flow diagram. The 'Active Recipe' is shown as a red line across the process flow.

Setpoint	95	75	90	95	25	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T		
Actual	112	125	125	155	165	190	239	260	285	295	30	21
Setpoint	110	125	125	125	165	225	225	260	285	295		
Power	24	14	10	5	7	12	11	11	4	27		
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	Cooler1	Cooler2
Actual	110	125	125	155	165	190	225	260	285	295		
Setpoint	110	110	125	165	165	190	225	260	285	295		
Power	18	13	13	3	2	10	22	22	28	32		

At the bottom right of the dashboard, there is a '0.01ms' label and the 'AIOT' logo.

Build Project – Page & Recognition

- **General : Create a Color**

- **Assign color matching** : Click Color Picker → Enable eyedropper tool → Select the desired matching color in the image → The matching color will be set up automatically and confirm if it is correct.

The screenshot displays the nexVIC software interface. On the left, the 'Settings' panel is visible, with the 'Matching Parameter' section expanded. The 'Color Picker' option is highlighted with a red arrow. Below it, a list of colors and their corresponding values is shown: Red (105), Green (155), and Blue (154). In the center, a 'Pyramax' system monitor window is open, showing various data points and a process flow diagram. A red arrow points to a color selection tool in the top right corner of the main interface. Another red arrow points to a small image in the top right corner of the 'Pyramax' window. A third red arrow points to the 'Color Picker' option in the 'Matching Parameter' section of the settings. A fourth red arrow points to the 'Color Picker' option in the 'Matching Parameter' section of the settings.

Matching Parameter	
Color Picker	
Red	180
Green	24
Blue	65

Build Project – Page & Recognition

- **General : Create a Color**
 - **Multiple COLOR** : Click **Add** icon → Repeat the aforementioned steps to create Colors

The screenshot shows the 'Settings' panel on the left and a data table on the right. Red arrows and numbers 4-8 indicate the steps for creating a color:

- 4: Click the '+' icon to add a new color.
- 5: Select 'Color' from the dropdown menu.
- 6: Click the 'Submit' button for the new color.
- 7: A red box highlights the 'Matching Parameters' section, which includes:
 - Color Picker (set to Blue)
 - Red: 23
 - Green: 22
 - Blue: 212
 - Matching Tolerances (dropdown)
 - Matching Output: true
 - No Matching Output: false
- 8: Click the 'Simulate' button.

The data table on the right shows the following values:

Setpoint	55	75	90	95	25	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T		
Actual	112	125	125	155	165	190	238	260	285	295	30	21
Setpoint	110	125	125	125	165	225	225	260	285	295		
Power	24	14	13	5	7	12	11	11	4	27		
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	Cooler1	Cooler2
Actual	110	125	125	155	165	190	225	260	285	295		
Setpoint	110	110	125	165	165	190	225	260	285	295		
Power	18	13	18	3	2	10	22	22	28	32		

0.00ms

Build Project – Page & Recognition

- **General : Create a Pattern**

4. **Create a PATTERN** : Click **Add** icon on the page user wants to create a Pattern → Click **Pattern**

The screenshot displays the nexVIC software interface. On the left, the 'Settings' panel is visible, with a dropdown menu open showing options: OCR, Color, and Pattern. A red arrow points to the 'Pattern' option, which is marked with a red number '4'. Below the settings, there are buttons for 'Stop', 'Start', 'Get Image', and 'Simulate'. The main window shows a dark image with a glowing blue figure. Overlaid on this is a data table titled 'VIC7000 Demo Sample' with 'Current Mode : Text'. The table has columns for Product ID, Quantity, Temperature, Voltage, Time, and Result. The 'Image' tab is selected in the table's header.

Product ID	Quantity	Temperature	Voltage	Time	Result
1	549	-11.67 °C	8.6 V	1103 ms	Pass
2	337	-11.20 °C	18.5 V	681 ms	NG
3	878	-14.43 °C	3.9 V	1756 ms	Pass
4	733	14.24 °C	-3.4 V	1469 ms	Pass
5	316	26.68 °C	14.5 V	640 ms	NG
6	460	5.06 °C	0.1 V	926 ms	NG
7	583	-2.14 °C	-0.1 V	1171 ms	Pass
8	536	-11.82 °C	8.7 V	1077 ms	Pass
9	614	0.27 °C	6.7 V	1232 ms	Pass
10	510	26.98 °C	1.1 V	1025 ms	NG
11	582	3.85 °C	7.0 V	1169 ms	Pass
12	732	-10.66 °C	-3.5 V	1466 ms	Pass

Build Project – Page & Recognition

- **General : Create a Pattern**

5. **New ROI** : Right-click on the image and select **New ROI** (or Click **New ROI**)

The screenshot displays the nexVIC software interface. On the left, the 'Settings' panel is visible, featuring a table of input parameters and a 'New ROI' button highlighted with a red box and a red arrow. The main image area shows a thermal image of a person's head with a table of data overlaid. A red box highlights the '5 New ROI' menu item, and another red box highlights the 'New ROI' option in a context menu.

	Temperature	Time	Result		
1	549	-11.67 °C	8.6 V	1103 ms	Pass
2	337	-11.20 °C	18.5 V	681 ms	NG
3	878	-14.43 °C	3.9 V	1756 ms	Pass
4	733	14.24 °C	-3.4 V	1469 ms	Pass
5	316	26.68 °C	14.5 V	640 ms	NG
6	460	5.06 °C	0.1 V	926 ms	NG
7	583	-2.14 °C	-0.1 V	1171 ms	Pass
8	536	-11.82 °C	8.7 V	1077 ms	Pass
9	614	0.27 °C	6.7 V	1232 ms	Pass
10	510	26.98 °C	1.1 V	1025 ms	NG
11	582	3.85 °C	7.0 V	1169 ms	Pass
12	732	-10.66 °C	-3.5 V	1466 ms	Pass

Build Project – Page & Recognition

- **General : Create a Pattern**

6. **Set ROI** : Adjust the location and size of ROI → Right-click on the image then select **Set ROI (or Click Set ROI)**

The screenshot shows the nexVIC software interface. On the left, the 'Settings' panel is visible, with the 'Set ROI' button highlighted in blue. A red arrow points to this button, and a red box with the number '6' is next to it. The main image area shows a table of data with a yellow box highlighting a portion of it. A context menu is open over the image, with the 'Set ROI' option highlighted in red. A red box with the text '6 Set ROI' is also present at the bottom of the image area. The 'Result' panel at the bottom shows a table of data.

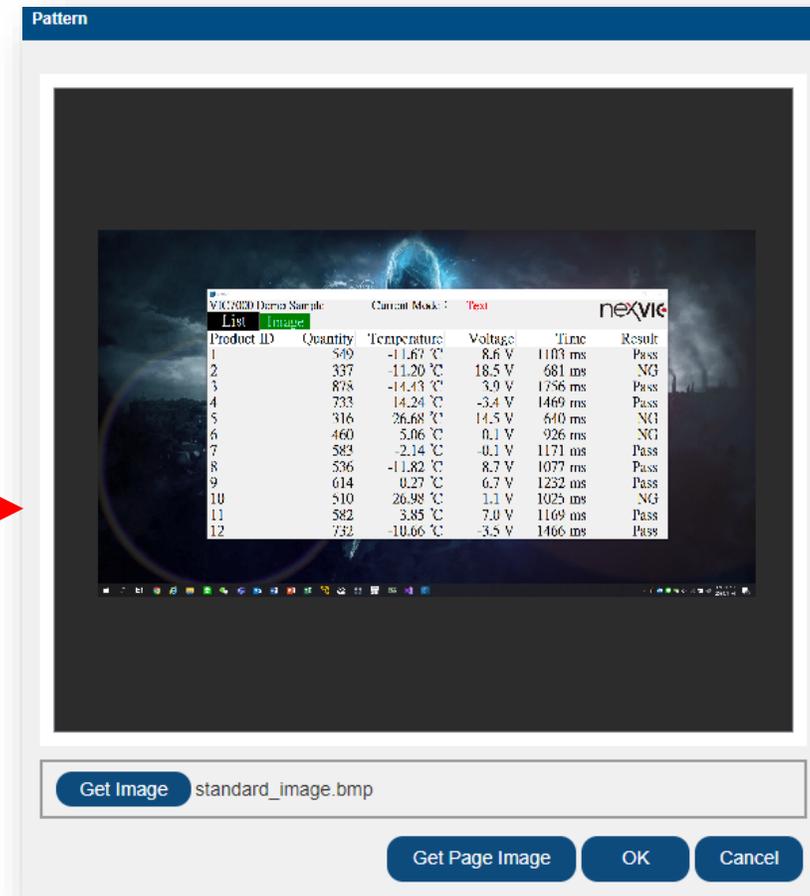
Temperature	Voltage	Time	Result
1.67 °C	8.6 V	1103 ms	Pass
1.20 °C	18.5 V	681 ms	NG
4.43 °C	3.9 V	1756 ms	Pass
4.24 °C	-3.4 V	1469 ms	Pass
5.68 °C	14.5 V	640 ms	NG
5.06 °C	0.1 V	926 ms	NG

Temperature	Voltage	Time	Result	
7.7 °C	8.6 V	1103 ms	Pass	
10 °C	18.5 V	681 ms	NG	
13 °C	3.9 V	1756 ms	Pass	
14.24 °C	-3.4 V	1469 ms	Pass	
14.5 V	640 ms	NG		
17.53 °C	14.24 °C	-3.4 V	1469 ms	Pass
316	26.68 °C	14.5 V	640 ms	NG
460	5.06 °C	0.1 V	926 ms	NG
583	-2.14 °C	-0.1 V	1171 ms	Pass
536	-11.82 °C	ms	Pass	
614	0.27 °C	ms	Pass	
1.1 V	1023 ms	NG		
8.5 °C	7.0 V	1169 ms	Pass	
16.6 °C	-3.5 V	1466 ms	Pass	

Build Project – Page & Recognition

- **General : Create a Pattern**

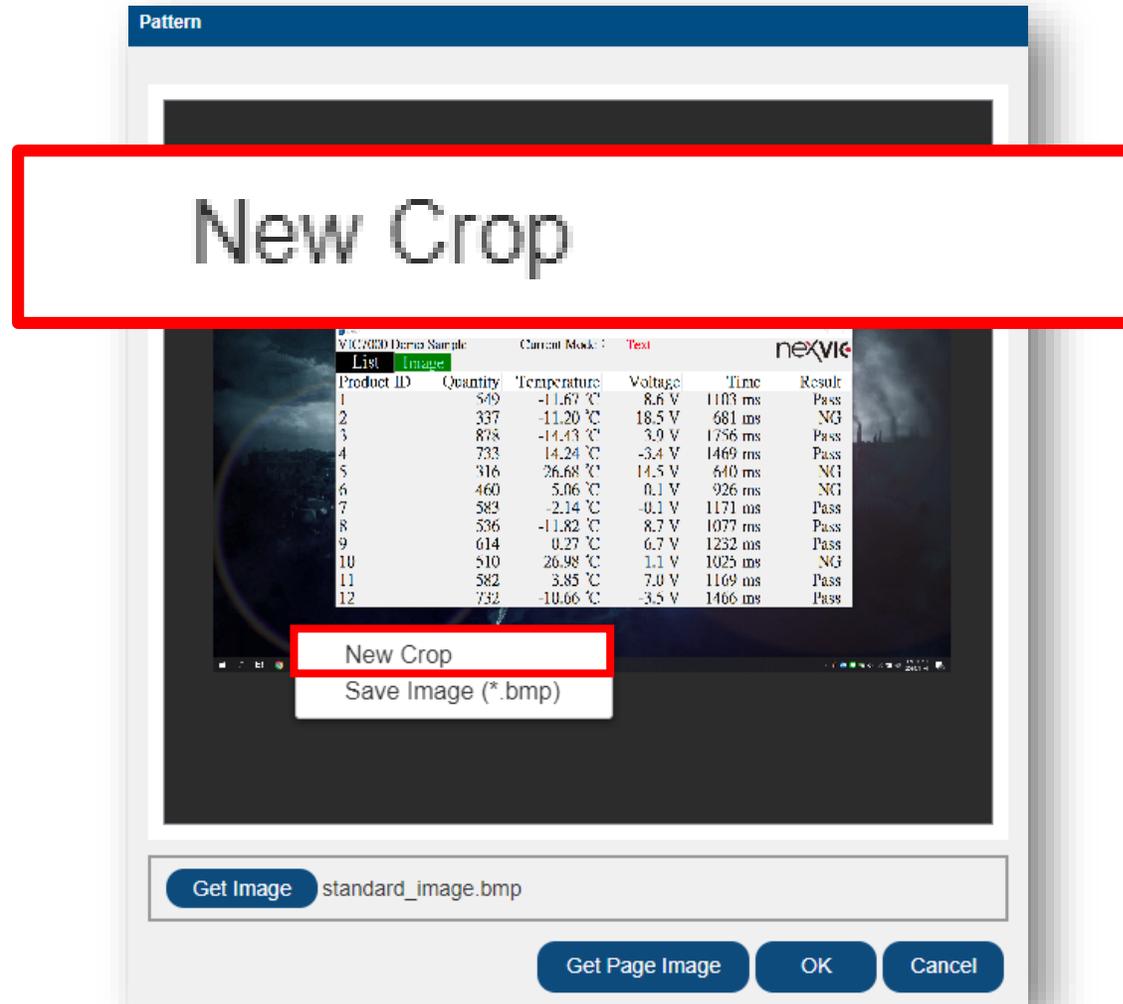
7. **Load Matching Pattern** : Click **Pattern Load** → **Pattern** window will appear, and an image will be loaded automatically



Build Project – Page & Recognition

- **General : Create a Pattern**

7. **Load Matching Pattern** : Right-click on the image → Select **New Crop**

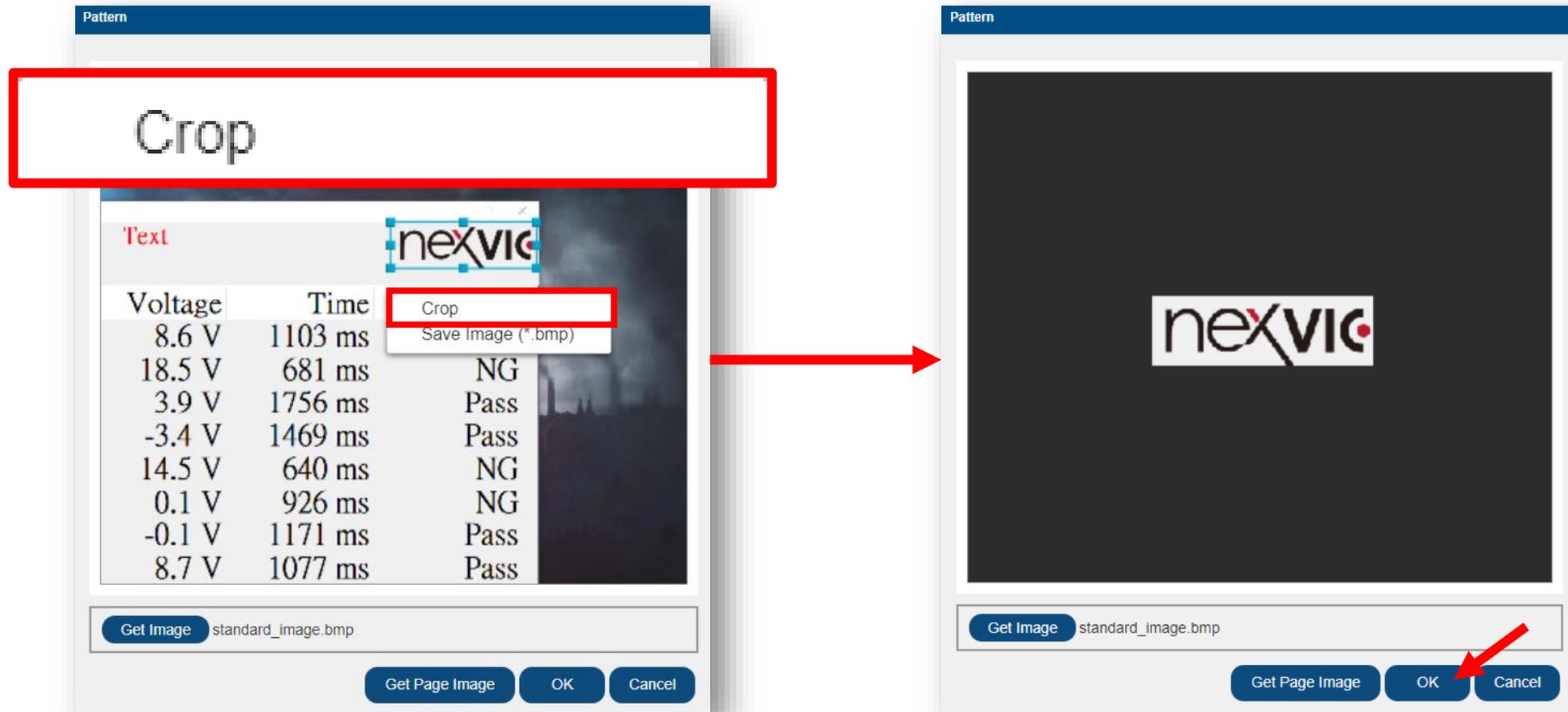


Build Project – Page & Recognition

- **General : Create a Pattern**

7. **Load Matching Pattern** : Mark the matching pattern → Right-click on the image

→ Select **Crop** → Click **OK**



Build Project – Page & Recognition

- **General : Create a Pattern**

8. **Set Matching Result Output** : Enter the **Output of the Matching Result**

The screenshot displays the 'Settings' panel for a pattern named 'PATTERN01'. The 'Matching Parameters' section includes a 'Gray Matching' checkbox. A red box highlights the 'Matching Output' and 'No Matching Output' settings, both set to 'true' and 'false' respectively. A red number '8' is placed next to the 'No Matching Output' setting. In the background, a matching result table is visible, showing temperature and voltage readings.

Temperature	Voltage
-11.67 °C	8.6 V
-11.20 °C	18.5 V
-14.43 °C	3.9 V

Build Project – Page & Recognition

- **General**
 - **Displacement Detection** : Based on the positions of PATTERNS on the image where Patterns are set

Detect Page Displacement : Making ROI of OCRs and Colors move with the positions of PATTERNS

Detect Page Displacement

The screenshot shows the 'Settings' panel for a pattern named 'PATTERN01'. The panel is divided into sections, with 'Matching Parameters' expanded. The 'Detect Page Displacement' option is highlighted with a red box. The 'Minimum Score' is set to 0.95. The 'Matching Output' is set to 'true' and 'No Matching Output' is set to 'false'.

Setting	Value
Matching Parameters	Expanded
Gray Matching	<input checked="" type="checkbox"/>
Pattern Load	Sub
Pattern Name	standi
Pattern X	145
Pattern Y	204
Pattern Width	206
Pattern Height	65
Minimum Score	0.95
Detect Page Displacement	<input type="checkbox"/>
Matching Output	true
No Matching Output	false

Build Project – Page & Recognition

- **General : Create a Pattern**

- **Multiple PATTERN** : Click **Add** icon → Repeat the aforementioned steps to create Patterns

The screenshot displays the Nexvic software interface for creating and managing patterns. The interface is divided into several sections:

- Over View:** Shows the current pattern name as "PATTERN01" and a plus icon for adding new patterns (indicated by red arrow 4).
- Settings:**
 - Input Parameters:** Fields for Name (PAGE01.PATTERN), ROI-X (961), ROI-Y (0), ROI-Width (958), ROI-Height (576), and buttons for New ROI, Set ROI, Delete ROI, Modify ROI, and Show ROI (indicated by red arrows 5 and 6).
 - Matching Parameter:** Fields for Gray Matching (checked), Pattern Load (Submit), Pattern Name (standard_image.br), Pattern X (1455), Pattern Y (204), Pattern Width (206), Pattern Height (65), Minimum Score (0.95), and Detect Page Disp (unchecked) (indicated by red arrow 7).
 - Matching Output:** A table with "Matching Output" set to true and "No Matching Output" set to false (indicated by red arrow 8).
- Result:** A table with columns for Name and Value (indicated by red arrow 9).
- Buttons:** Stop, Start, Get Image, and Simulate buttons (indicated by red arrow 9).

The main workspace shows a matching output table for a "VIC7000 Demo Sample" in "Text" mode. The table lists 12 items with their respective quantities, temperatures, voltages, times, and results.

Product ID	Quantity	Temperature	Voltage	Time	Result
1	549	-11.67 °C	8.6 V	1103 ms	Pass
2	337	-11.20 °C	18.5 V	681 ms	NG
3	878	-14.43 °C	3.9 V	1756 ms	Pass
4	733	14.24 °C	-3.4 V	1469 ms	Pass
5	316	26.68 °C	14.5 V	640 ms	NG
6	460	5.06 °C	0.1 V	926 ms	NG
7	583	-2.14 °C	-0.1 V	1171 ms	Pass
8	536	-11.82 °C	8.7 V	1077 ms	Pass
9	614	0.27 °C	6.7 V	1232 ms	Pass
10	510	26.98 °C	1.1 V	1025 ms	NG
11	582	3.85 °C	7.0 V	1169 ms	Pass
12	732	-10.66 °C	-3.5 V	1466 ms	Pass

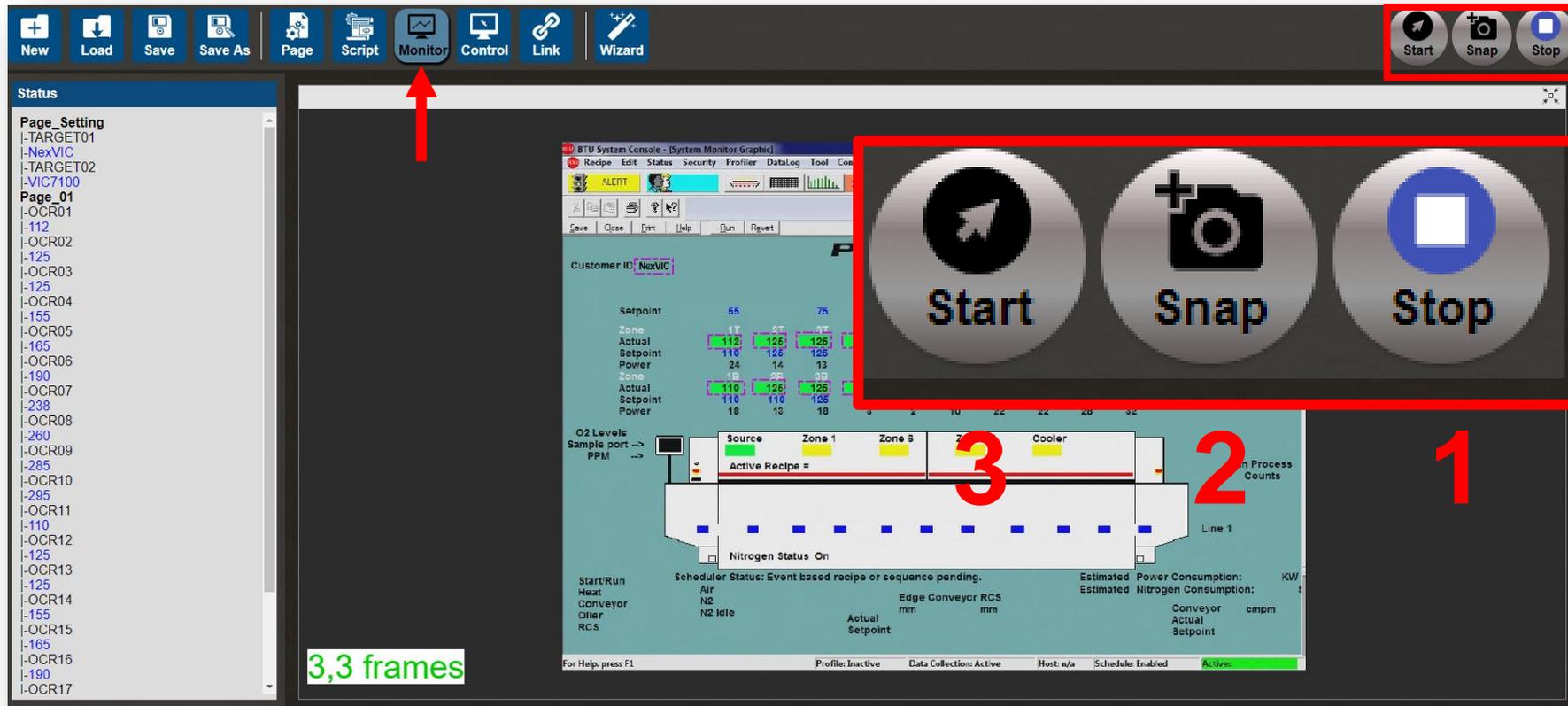
Build Project – Play Project

- **Monitor**

1. Start/Stop : Get images and push them into recognition continuously
2. Snap : Get an image and process recognition on it
3. Control Start/Stop : Play the control file

Recognition results **will not be stored in Database and transported through Protocols.**

While recognition process is running, **Scripts will be executed.**



Build Project – Play Project

- **Save Project**

1. Save Project : Click **Save**

2. Click **OK**

The screenshot displays the nexVIC software interface. The top toolbar contains several icons, with the 'Save' icon highlighted by a red arrow and labeled '1'. The main window shows a data table with columns for 'Setpoint', 'Actual', and 'Power' across various zones. A 'Warning!!' dialog box is open, asking 'Do you want to save project?', with the 'OK' button highlighted by a red arrow and labeled '2'. Below the warning dialog, a 'Sucess' dialog box displays a green checkmark and the message 'Save the project successfully.' with an 'OK' button. The status bar at the bottom indicates '411,411 frames' and 'Data Collection: Active'.

Setpoint	Actual	Power	Zone
110	110	110	1
125	125	125	2
155	155	155	3
165	165	165	4
190	190	190	5
225	225	225	6
260	260	260	7
285	285	285	8
295	295	295	9

Build Project – Play Project

- Play Project

1. Back to User Mode

The screenshot displays the nexVIC software interface for a Pyramax system. The top navigation bar includes buttons for New, Load, Save, Save As, Page, Script, Monitor, Control, Link, and Wizard. On the right side, there are Start, Snap, and Start buttons, with a red arrow pointing to the first Start button. The main display area shows a detailed system monitor with the following data:

Setpoint	55	75	90	95	25	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T		
Actual	166	126	126	155	166	190	295	260	286	295	30	21
Setpoint	110	126	126	155	166	186	225	260	286	295		
Power	23	16	16	6	7	18	36	29	13	27		
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	Cooler1	Cooler2
Actual	110	126	126	155	166	190	225	260	286	295		
Setpoint	110	116	126	155	166	190	265	260	286	295		
Power	9	29	8	25	3	10	11	24	10	30		

Additional information shown includes: Customer ID: NexVIC, System ID: VIC7500, Ready Hours: 919:59, Line 1, and In Process Counts. A green box at the bottom left of the main display indicates '411,411 frames'.

Build Project – Play Project

- Play Project
 2. Click Start Project

The screenshot shows the nexVIC interface with the 'Start' button highlighted by a red arrow. The main window displays the 'Pyramax' system monitor with various data tables and a process flow diagram.

3,3 frames

Setpoint	55	75	90	95	25	20						
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T		
Actual	112	125	125	155	165	190	238	260	285	295	30	21
Setpoint	110	125	125	125	165	225	225	260	285	295		
Power	24	14	13	5	7	12	11	11	4	27		
Zone	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	Cooler1	Cooler2
Actual	110	125	125	155	165	190	225	260	285	295		
Setpoint	110	110	125	155	165	190	225	260	285	295		
Power	18	13	18	3	2	10	22	22	28	32		

Process Flow Diagram:

- Source: Zone 1, Zone 6, Zone 10, Cooler
- Active Recipe =
- Nitrogen Status: On
- Scheduler Status: Event based recipe or sequence pending.
- Estimated Power Consumption: KW
- Estimated Nitrogen Consumption: cmpm
- Conveyor Actual Setpoint

System Information:

- Customer ID: NexVIC
- System ID: VIC7100
- Ready Hours: 919:59
- Product Tracking: Line 1
- Current Recipe: Production Recipe
- Production Total

Bottom Status Bar:

- Profile: Inactive
- Data Collection: Active
- Host: n/a
- Schedule: Enabled
- Active: (Green bar)

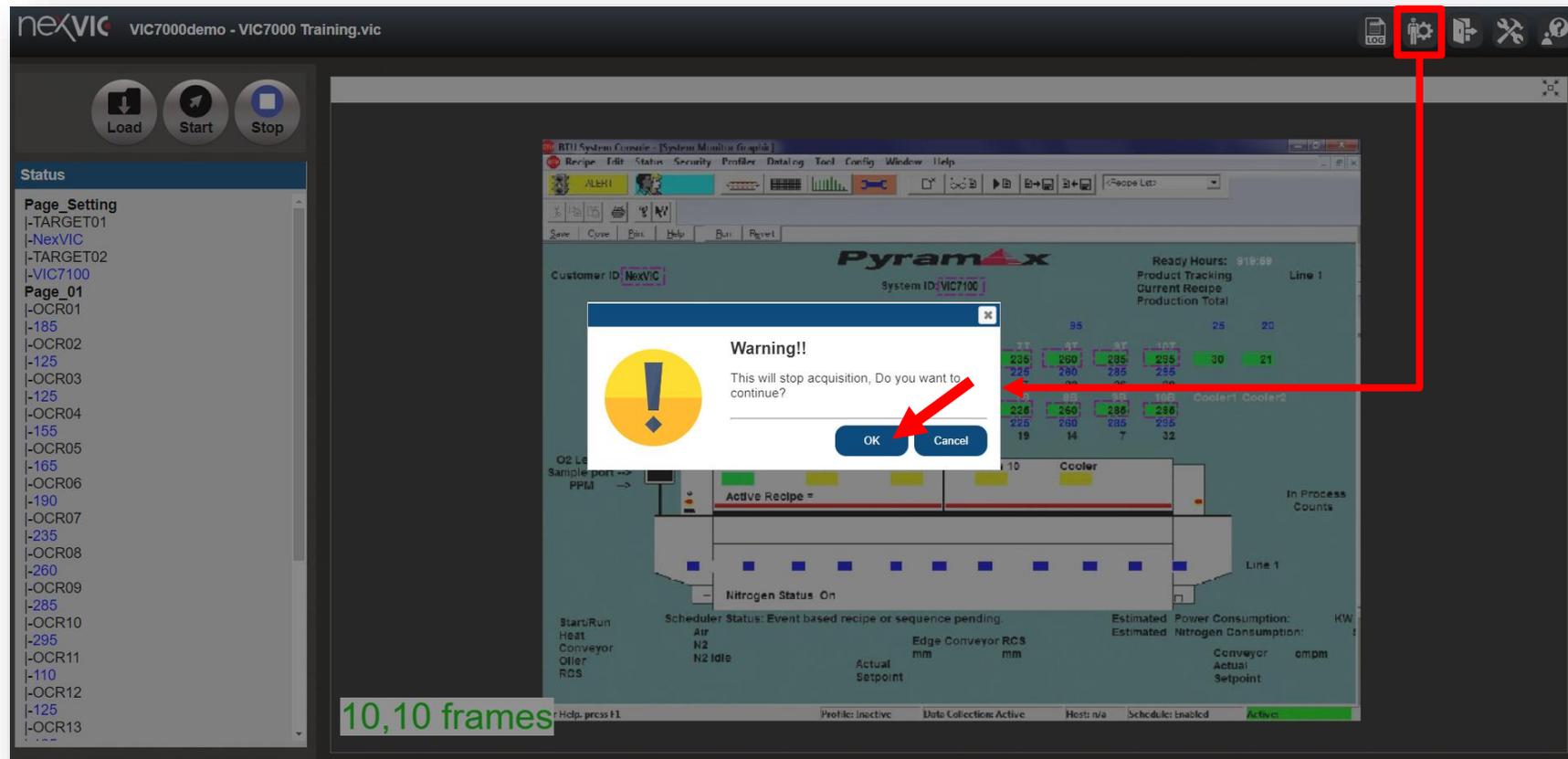
Build Project – Play Project

- **Stop Warning**

If user switch to administrator mode while the project is playing, the project will be interrupted.

Click on **Administrator Mode** → the Warning window will appear → Click **OK**

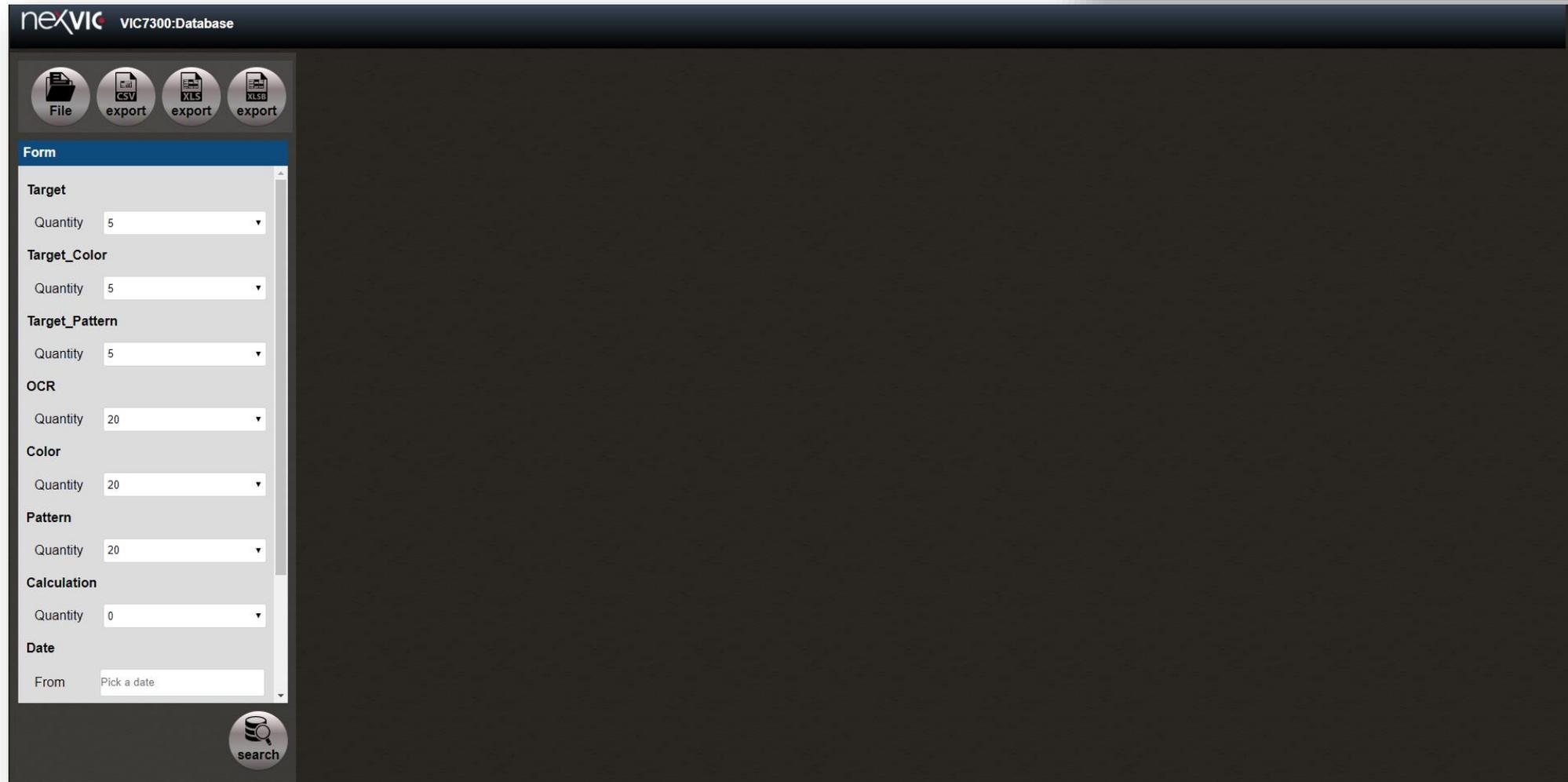
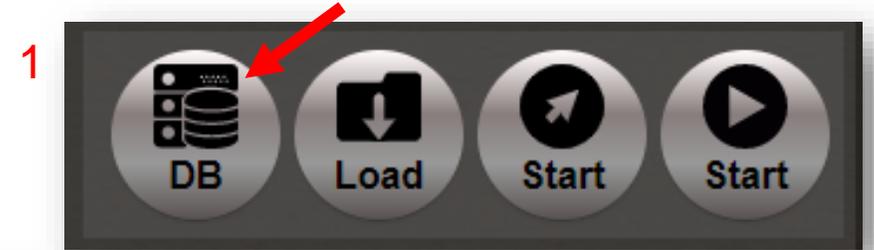
Then user can switch to administrator mode to go on



Build Project – Database

- Use Database

1. Enter Database Page : Click **DB** in User Mode



Build Project – Database

- **Use Database**

2. **Set Searching Parameters** : Set the amount of **Targets**, **Target_Colors**, **Target_Patterns**, **OCRs**, **Colors**, **Patterns**, **CALC. Date**, **Keyword of Page**, **Result**

3. **Search** : Click **Search**

Page :

Result :

- 01
- 02
- 03
- 04
- 05

Result :

- Pass
- NG
- No Matching

Calculation

Quantity

Date

From

To

Keyword

Page

Result

 search

2

Form

Target

Quantity

Target_Color

Quantity

Target_Pattern

Quantity

OCR

Quantity

Color

Quantity

Pattern

Quantity

Calculation

Quantity

3  search

Build Project – Database

- Use Database

4. **Searching Result** : Seeking data following given parameters. A small page contains 20 records, and a large page contains 10 small pages

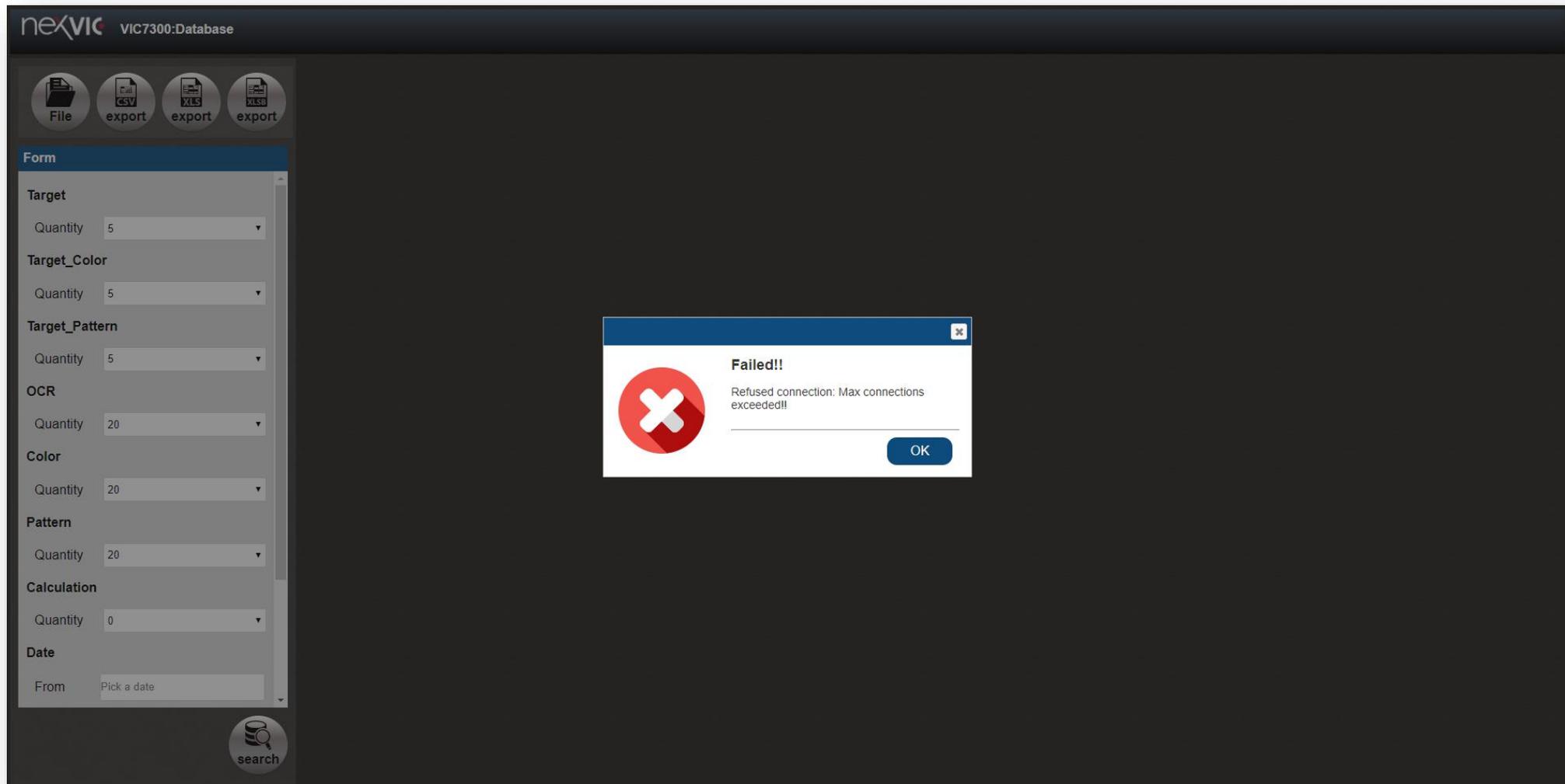
The screenshot displays the nexVIC VIC7300:Database interface. On the left, a sidebar contains a 'Form' section with various filters: Target (Quantity: 5), Target_Color (Quantity: 5), Target_Pattern (Quantity: 5), OCR (Quantity: 20), Color (Quantity: 20), Pattern (Quantity: 20), Calculation (Quantity: 0), and Date (From: 2019-10-26 09:05). Above the sidebar are icons for File, CSV export, XLS export, and XLSB export. The main area shows a table of search results with columns: id, page, result, timeStamp, image, TARGET_01, TARGET_02, TARGET_03, TARGET_04, TARGET_05, and TARGETCOLOR_01. The table contains 20 rows of data, all with 'Pass' results. At the bottom of the table, a pagination control is visible, showing a range of 1 to 10 pages, with 'page: first prev 1 2 3 4 5 next last' and the current page '1' highlighted. A red box highlights the pagination controls.

id	page	result	timeStamp	image	TARGET_01	TARGET_02	TARGET_03	TARGET_04	TARGET_05	TARGETCOLOR_01
521614	02	Pass	2019-10-26 09:05:00.050			7100	90	125	125	
521615	02	Pass	2019-10-26 09:05:00.150			7100	90	125	125	
521616	02	Pass	2019-10-26 09:05:00.267			7100	90	125	125	
521617	02	Pass	2019-10-26 09:05:00.384			7100	90	125	125	
521618	02	Pass	2019-10-26 09:05:00.484			7100	90	125	125	
521619	02	Pass	2019-10-26 09:05:00.584			7100	90	125	125	
521620	02	Pass	2019-10-26 09:05:00.701			7100	90	125	125	
521621	02	Pass	2019-10-26 09:05:00.800			7100	90	125	125	
521622	02	Pass	2019-10-26 09:05:00.917			7100	90	125	125	
521623	02	Pass	2019-10-26 09:05:01.034			7100	99	125	125	
521624	02	Pass	2019-10-26 09:05:01.134			7100	99	125	125	
521625	02	Pass	2019-10-26 09:05:01.251			7100	99	125	125	
521626	02	Pass	2019-10-26 09:05:01.368			7100	99	125	125	
521627	02	Pass	2019-10-26 09:05:01.468			7100	99	125	125	
521628	02	Pass	2019-10-26 09:05:01.585			7100	99	125	125	
521629	02	Pass	2019-10-26 09:05:01.685			7100	99	125	125	
521630	02	Pass	2019-10-26 09:05:01.801			7100	99	125	125	
521631	02	Pass	2019-10-26 09:05:01.902			7100	99	125	125	
521632	02	Pass	2019-10-26 09:05:02.018			7100	110	125	125	
521633	02	Pass	2019-10-26 09:05:02.118			7100	110	125	125	

Build Project – Database

- **Login Limit**

Only allow **one** person logs in and operates



Build Project – Database

- **Save Image**

Save Image

VIC7000 will save images into Database when recognition failed (NG or No Matching) (Enabled in System Setting window). Those saved images could be used for later training

The screenshot displays the nexVIC VIC7000:Database interface. On the left is a 'Form' panel with settings for Target, Target_Color, Target_Pattern, OCR, Color, Pattern, Calculation, and Date. The main area is a table with columns: id, page, result, timeStamp, image, TARGET_01, TARGET_02, TARGET_03, TARGET_04, TARGET_05, and TARGETCOLOR_01. A red arrow points to a row where the 'image' column contains a placeholder 'image' and the 'result' is 'NG'. An inset window shows a Pyramax system monitor with various data points and a process flow diagram.

id	page	result	timeStamp	image	TARGET_01	TARGET_02	TARGET_03	TARGET_04	TARGET_05	TARGETCOLOR_01
2129125	03	NG	2019-10-28 12:05:19.977		7500					
2129126	03	NG	2019-10-28 12:05:20.130		7500					
2129334	03	NG	2019-10-28 12:05:42.723	image	7500					
2129335	03	NG	2019-10-28 12:05:43.664	image	7500	110	125	125		
2129336	03	NG	2019-10-28 12:05:44.348	image	7500	110	125	125		
2129337	03	NG	2019-10-28 12:05:45.080	image	7500	110	125	125		
2129338	03	NG	2019-10-28 12:05:46.161	image	7500	110	125	125		
2129339	03	NG	2019-10-28 12:05:47.256							
2129340	03	NG	2019-10-28 12:05:48.013							
2129341	03	NG	2019-10-28 12:05:48.653							
2129342	03	NG	2019-10-28 12:05:49.355							
2129343	03	NG	2019-10-28 12:05:50.065							
2129344	03	NG	2019-10-28 12:05:50.737							
2129345	03	NG	2019-10-28 12:05:52.071							
2129346	03	NG	2019-10-28 12:05:53.265							
2129347	03	NG	2019-10-28 12:05:53.931							
2129348	03	NG	2019-10-28 12:05:54.615							
2129349	03	NG	2019-10-28 12:05:55.305							
2129350	03	NG	2019-10-28 12:05:55.970							
2129351	03	NG	2019-10-28 12:05:57.030							

Build Project – Database

- **Skip Repeated Data**

Skip Repeated Data

VIC7000 can skip repeated data while storing data in database(Enabled in System Setting window). It is recommended when capture frame rate is high and repeated data occurs.

id	page	result	timeStamp	image	OCR_01	OCR_02	OCR_03	OCR_04
6378551	02	Pass	2020-03-06 15:42:14.651		0	0.078	-0.610	0.838
6378552	02	Pass	2020-03-06 15:42:15.667		0	0.953	-0.627	-0.994
6378553	02	Pass	2020-03-06 15:42:16.700		0	0.998	-0.444	-0.346
6378554	02	Pass	2020-03-06 15:42:17.701		0	0.160	0.629	-0.534
6378555	02	Pass	2020-03-06 15:42:18.717		0	-0.786	-0.969	-0.875
6378556	02	Pass	2020-03-06 15:42:19.734		0	0.697	-0.633	0.416
6378557	02	Pass	2020-03-06 15:42:20.751		0	-0.988	0.957	0.647
6378558	02	Pass	2020-03-06 15:42:21.767		0	-0.143	-0.422	-0.758
6378559	02	Pass	2020-03-06 15:42:22.784		0	0.844	-0.062	0.438
6378560	02	Pass	2020-03-06 15:42:23.800		0	0.006	0.302	-0.515
6378561	02	Pass	2020-03-06 15:42:24.818		0	0.081	-0.611	-0.305
6378562	02	Pass	2020-03-06 15:42:25.833		0	-0.278	0.880	-0.560
6378563	02	Pass	2020-03-06 15:42:26.650		0	0.350	-0.573	-0.502
6378564	02	Pass	2020-03-06 15:42:27.650		0	-0.071	0.824	0.046
6378565	02	Pass	2020-03-06 15:42:28.684		0	0.059	0.081	-0.616
6378566	02	Pass	2020-03-06 15:42:29.700		0	-0.701	0.173	0.057
6378567	02	Pass	2020-03-06 15:42:30.717		0	-0.773	0.112	-0.834
6378568	02	Pass	2020-03-06 15:42:31.717		0	0.899	0.889	-0.259
6378569	02	Pass	2020-03-06 15:42:32.733		0	-0.633	0.963	-0.386
6378570	02	Pass	2020-03-06 15:42:33.750		0	-0.469	0.845	0.829

Build Project – Database

- **Export and Backup**

VIC7000 allows users to export the searching results to **.csv**, **.xls**, **.xlsb**. Export Path is on VIC7000 PC and can be adjusted in System Settings window

Data within a period of 7-day will be continuously stored and extracted as **.xlsb** everyday (FIFO).

Backup Path is set in VIC7000 PC and can be adjusted in System Setting window.

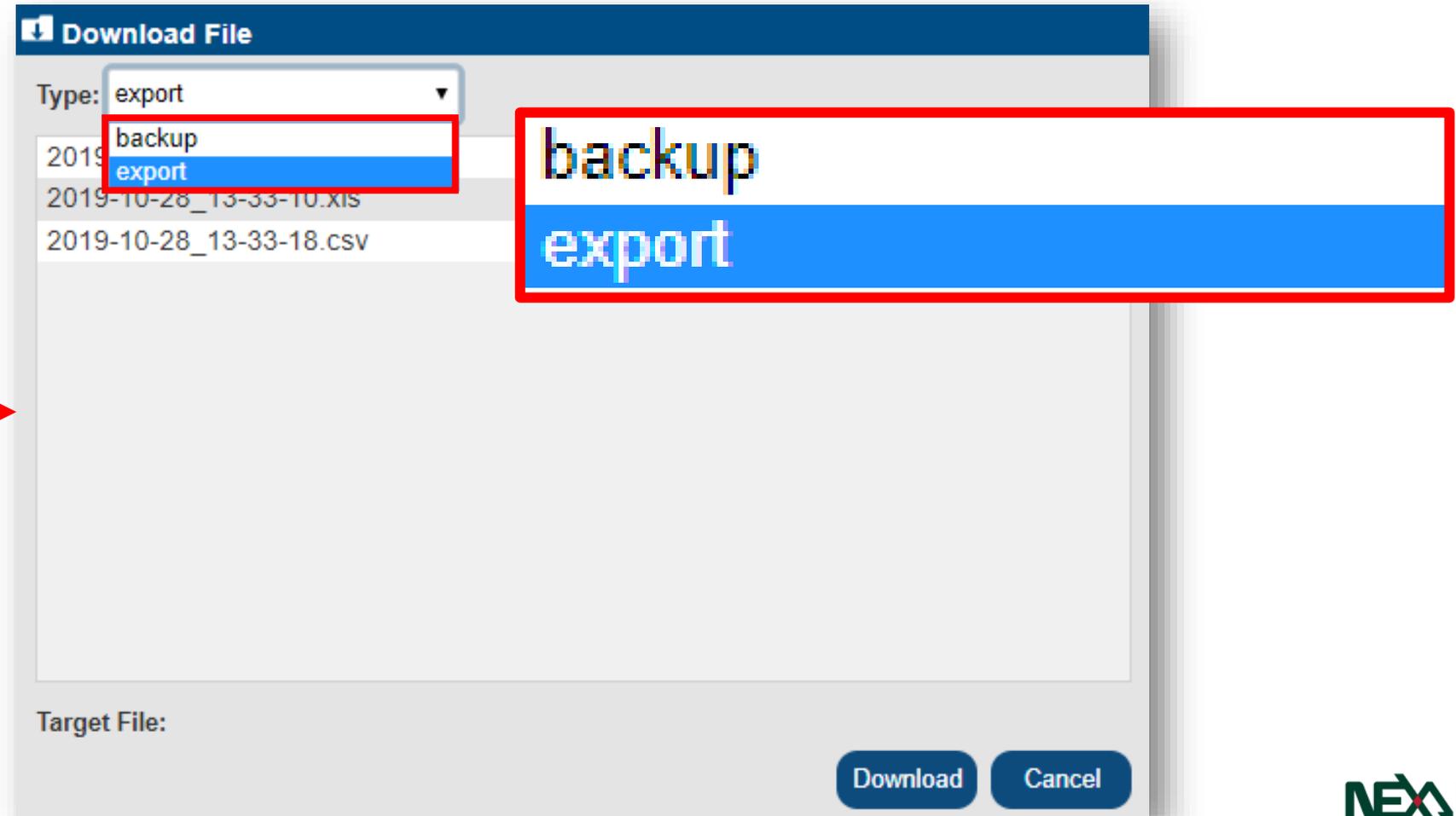


ID	Pass/Fail	Test Name	Type	Result	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8	Value 9	Value 10	Value 11	Value 12	Value 13	Value 14	Value 15	Value 16	Value 17	Value 18	Value 19	Value 20	Value 21	Value 22	Value 23	Value 24	Value 25	Value 26	Value 27	Value 28	Value 29	Value 30				
10390	2 Pass	29406.2	List	Image	97	1	70	5	5	204	NG	760	-	4	68	-	3	7	1																			
10391	2 Pass	29406.4	Text	Image	97	1	70	5	5	204	NG	760	-	4	68	-	3	7	1																			
10392	2 Pass	29406.6	Text	Image	97	1	70	5	5	204	NG	760	-	4	68	-	3	7	1																			
10393	2 Pass	29406.8	Text	Image	565	13	99	15	9	1134	Pass	951	-	16	84	-	11	2	1																			
10394	2 Pass	29407.2	Text	Image	565	13	99	15	9	1134	Pass	951	-	16	84	-	11	2	1																			
10395	2 Pass	29407.2	Text	Image	565	13	99	15	9	1134	Pass	951	-	16	84	-	11	2	1																			
10396	2 Pass	29407.4	Text	Image	565	13	99	15	9	1134	Pass	951	-	16	84	-	11	2	1																			
10397	1 Pass	29407.6	Image	Image	13	15	10	6	7	12	14	12	16	38	39	19	8	3	24	30																		
10398	1 Pass	29407.8	Image	Image	35	14	13	26	7	16	11	10	14	22	32	9	3	28	2	15																		
10399	1 Pass	29408.0	Image	Image	35	14	13	26	7	16	11	10	14	22	32	9	3	28	2	15																		
10400	1 Pass	29408.2	Image	Image	35	14	13	26	7	16	11	10	14	22	32	9	3	28	2	15																		
10401	1 Pass	29408.4	Image	Image	35	14	13	26	7	16	11	10	14	22	32	9	3	28	2	15																		
10402	1 Pass	29408.6	Image	Image	15	16	13	5	7	12	11	24	4	27	8	9	18	30	2	20																		
10403	1 Pass	29408.8	Image	Image	15	16	13	5	7	12	11	24	4	27	8	9	18	30	2	20																		
10404	1 Pass	29409.0	Image	Image	15	16	13	5	7	12	11	24	4	27	8	9	18	30	2	20																		
10405	1 Pass	29409.2	Image	Image	15	16	13	5	7	12	11	24	4	27	8	9	18	30	2	20																		
10406	1 Pass	29409.4	Image	Image	15	16	13	5	7	12	11	24	4	27	8	9	18	30	2	20																		
10407	1 Pass	29409.6	Image	Image	24	14	13	5	7	12	11	11	4	27	18	13	18	3	2	10																		
10408	1 Pass	29409.8	Image	Image	24	14	13	5	7	12	11	11	4	27	18	13	18	3	2	10																		
10409	1 Pass	29410.0	Image	Image	24	14	13	5	7	12	11	11	4	27	18	13	18	3	2	10																		
10410	1 Pass	29410.2	Image	Image	24	14	13	5	7	12	11	11	4	27	18	13	18	3	2	10																		
10411	1 Pass	29410.4	Image	Image	24	14	13	5	7	12	11	11	4	27	18	13	18	3	2	10																		
10412	2 NO	29410.7	Text	Image	216	13	10	23	6	0	NG	968	-	15	0	0	2	1																				
10413	2 Pass	29410.9	Text	Image	216	13	10	23	6	0	NG	968	-	15	0	0	2	1																				
10414	2 Pass	29411.1	Text	Image	216	13	10	23	6	0	NG	968	-	15	0	0	2	1																				
10415	2 Pass	29411.3	Text	Image	216	13	10	23	6	0	NG	968	-	15	0	0	2	1																				
10416	2 Pass	29411.5	Text	Image	216	13	10	23	6	0	NG	968	-	15	0	0	2	1																				
10417	2 Pass	29411.7	Text	Image	868	21	18	0	3	1737	Pass	966	-	3	92	23	3	1																				
10418	2 Pass	29411.9	Text	Image	868	21	18	0	3	1737	Pass	966	-	3	92	23	3	1																				
10419	2 Pass	29412.1	Text	Image	868	21	18	0	3	1737	Pass	966	-	3	92	23	3	1																				
10420	2 Pass	29412.3	Text	Image	868	21	18	0	3	1737	Pass	966	-	3	92	23	3	1																				
10421	2 Pass	29412.5	Text	Image	868	21	18	0	3	1737	Pass	966	-	3	92	23	3	1																				
10422	2 Pass	29412.7	Text	Image	773	27	37	16	2	1547	Pass	438	-	0	93	21	4																					

Build Project – Database

- **Remotely Download File**

Click **File** icon to remotely download Export and Backup file in **Download File** window

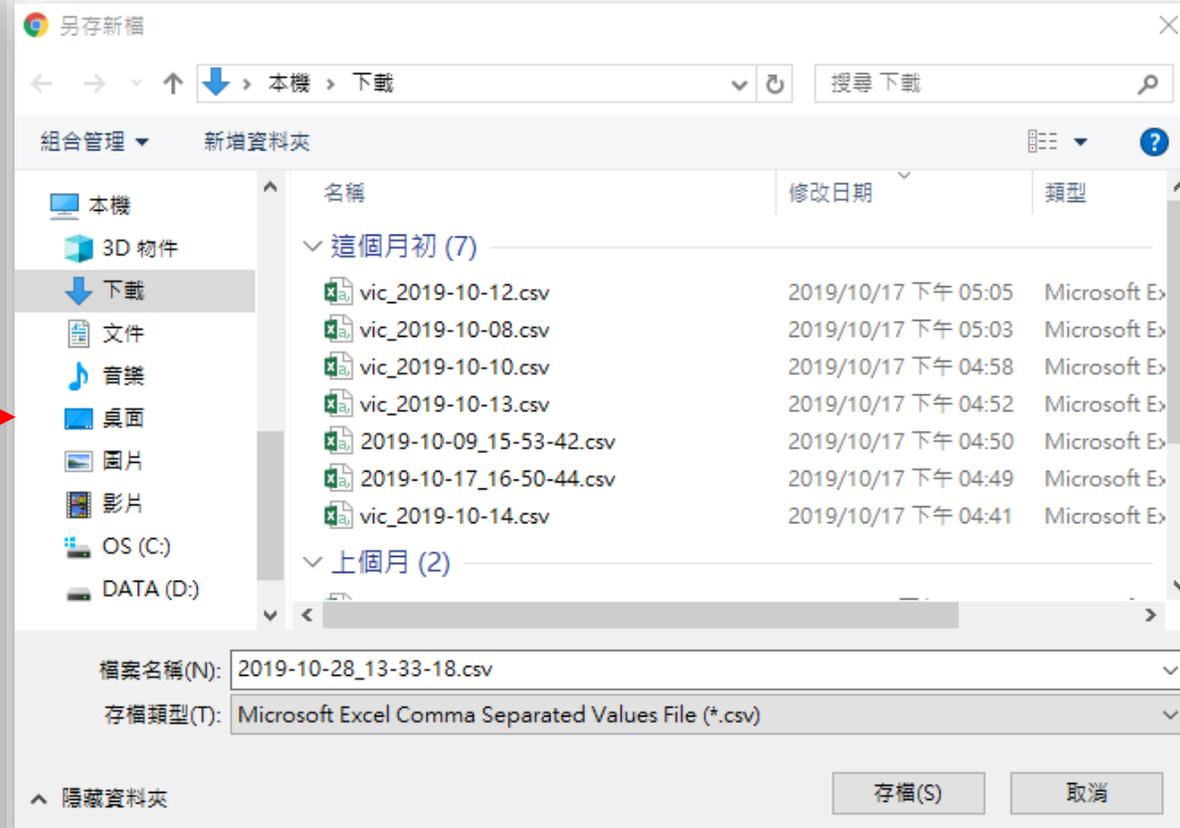
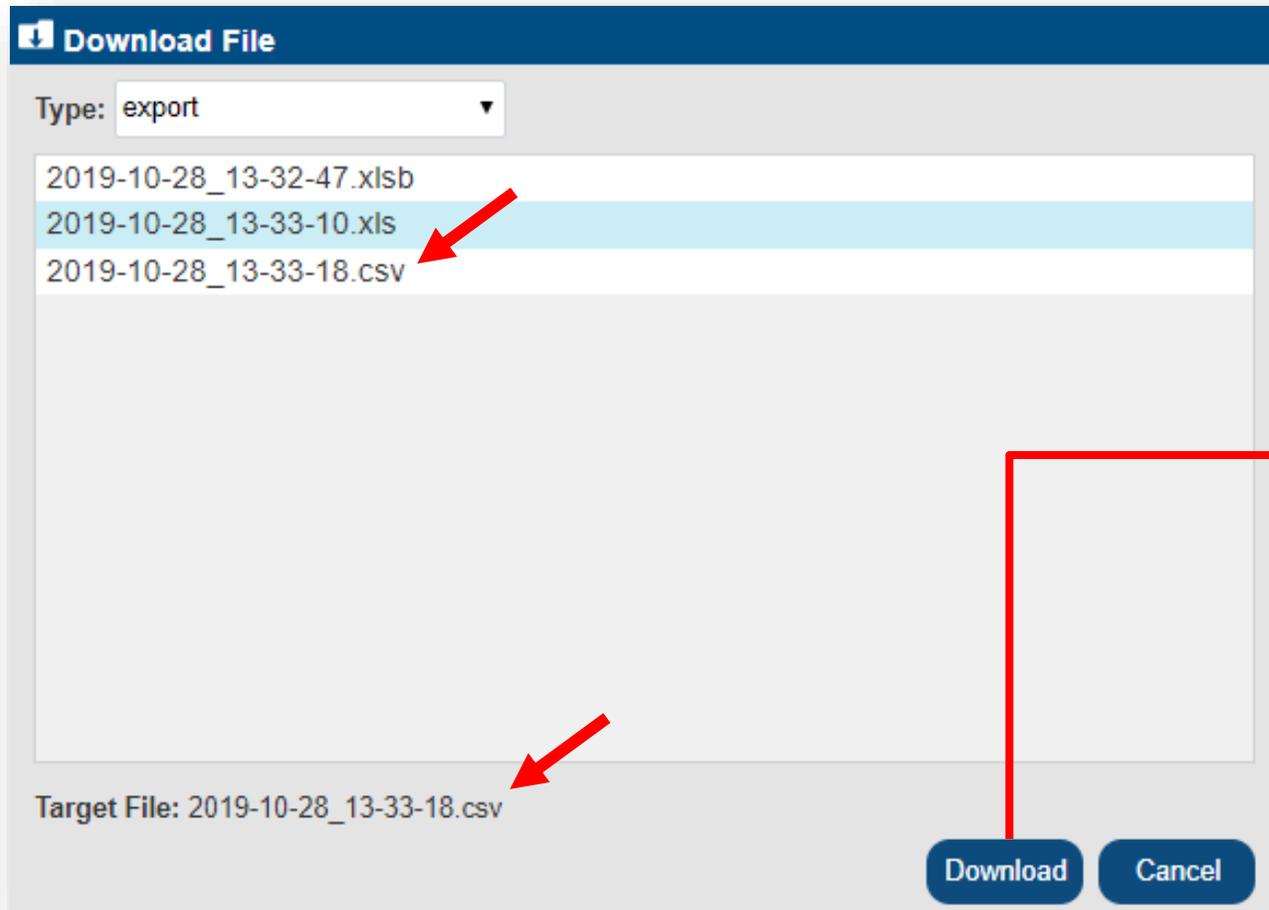


Build Project – Database

- **Remotely Download File**

Choose the file which user wants to download → Click **Download**

Download path is same as browser default



Build Project – Database

- **Database Notes**

1. VIC7000 has a **hardware remaining capacity detection** mechanism. If the available capacity is less than **100G**, the alert will show up and record in Log. Data will continue to be stored in Database at this state. If the available capacity is less than **50G**, the alert will show up and record in Log. New data will replace the older data at this state.
2. VIC7000 has an **automatic shutdown of saving image** mechanism, which is checked every minute to let users know that whether it is enabled or not. If it is enabled, it will be recorded in Log. When the number of saved images exceed a threshold in a minute, this mechanism will be enabled. At this moment, Data will continue to be stored and image will not be saved when recognition failed.

If the number of failure recognition occurring in a minute is less than the threshold, this mechanism will be turned off. Otherwise, this mechanism will still be enabled.

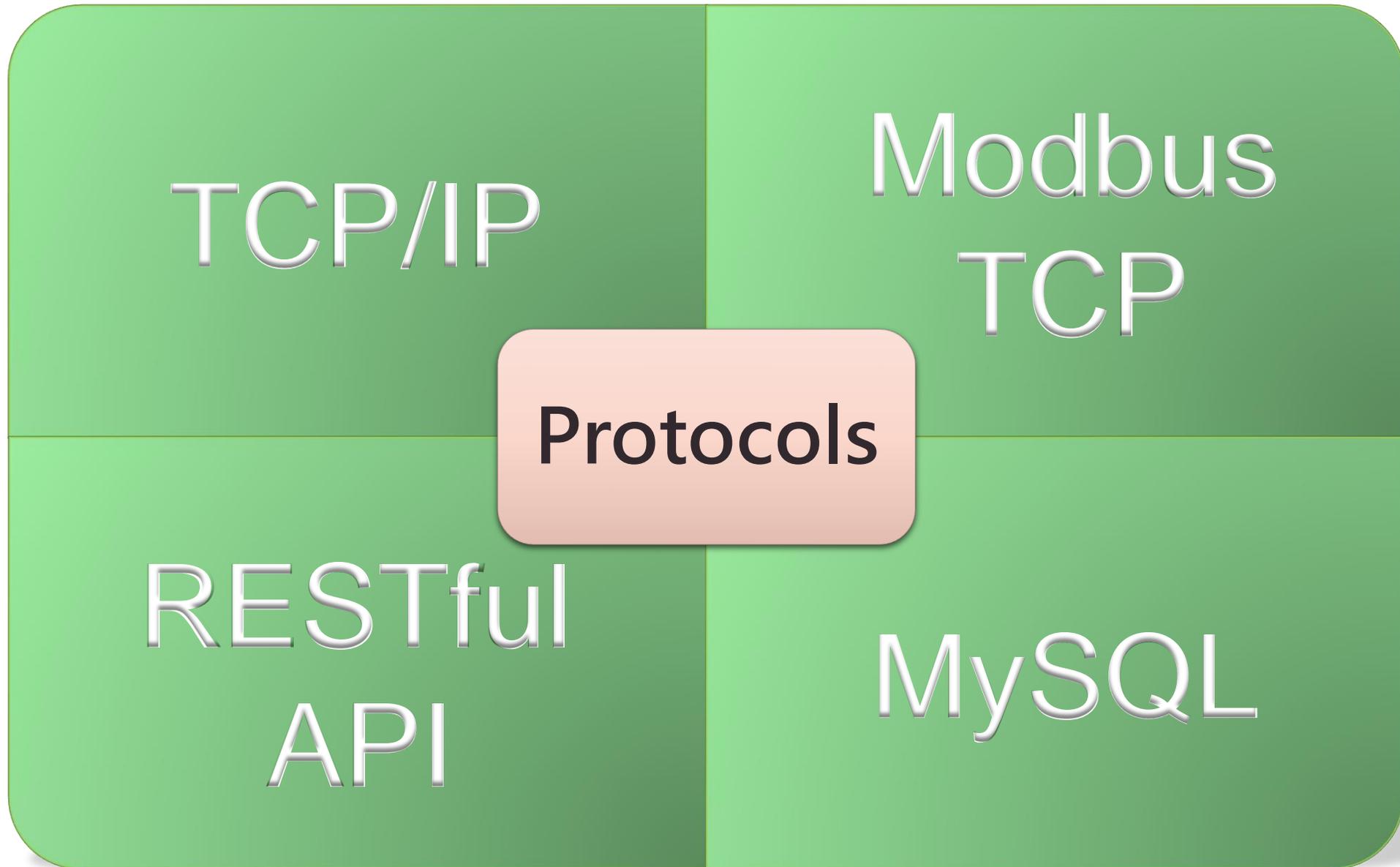
failure recognition means that recognition result is **NG** or **No Matching**.

Build Project – Database

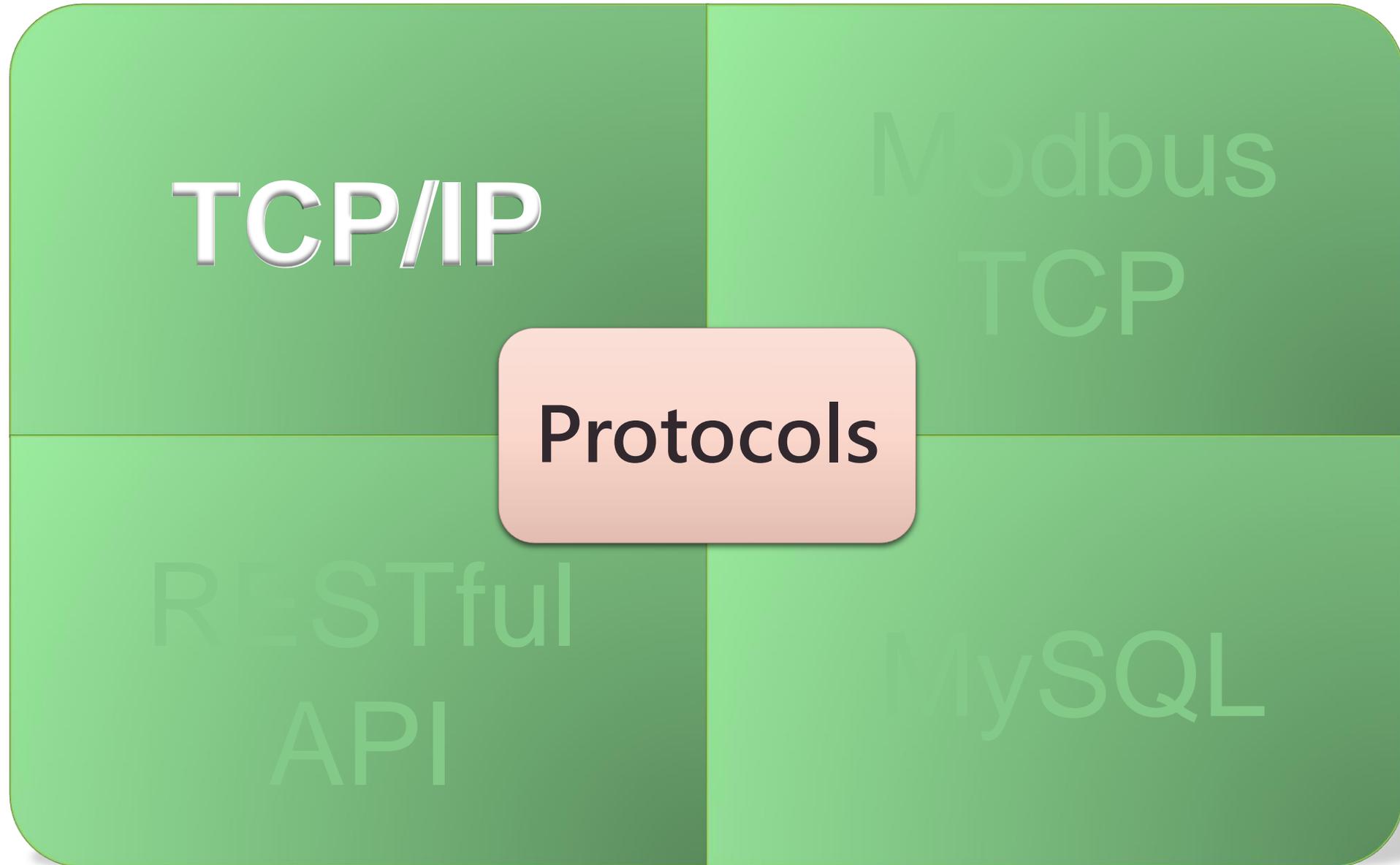
- **Database Notes**

3. The maximum number of data lines exported to a file is **one million**. If there more than one million lines of data exported at a moment, it will be divided to multiple files.
4. VIC7000 will backup data to a **.xlsb** file every day automatically. It takes more a half an hour, according the amount of data backed up. When backup process is running, it should avoid editing projects.

Build Project – Protocols



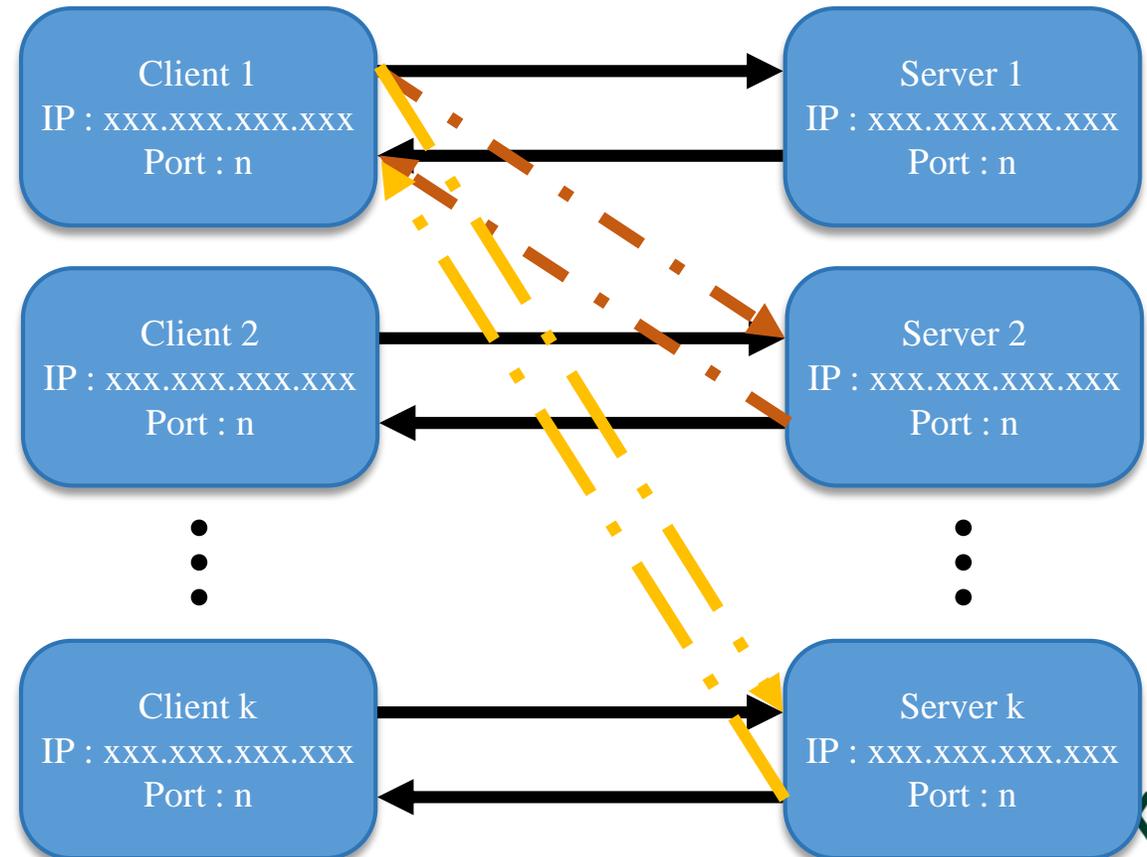
Build Project – Protocols



Build Project – Protocols

TCP/IP is referred to Internet protocol suite. Different computers or operating environments can communicate with each other through this protocol. It includes two core protocols : TCP (Transmission Control Protocol) and IP (Internet Protocol) .

TCP/IP provides **end-to-end data communication**. There are two roles : Server or Client. It allows multiple Servers and Clients, which are connected through IP address and TCP port. VIC7000 plays a role as **Server**.



Build Project – Protocols

- **Link Config**

1. Enter Link page : In administrator page
2. Choose TCP/IP
3. Enter Port
4. Click Add

The screenshot shows the nexvic interface with the following elements:

- Toolbar:** Contains buttons for New, Load, Save, Save As, Page, Script, Monitor, Control, **Link** (highlighted with a red arrow and '1'), and Wizard.
- Communication Mode:** A dropdown menu set to 'TCP/IP' (highlighted with a red arrow and '2').
- TCP/IP Setting Panel:**
 - Port:** An empty text input field (highlighted with a red arrow and '3').
 - Var Name:** A text input field containing 'TCPC00PORT'.
 - Add:** A blue button (highlighted with a red arrow and '4').
- TCP/IP Table:**

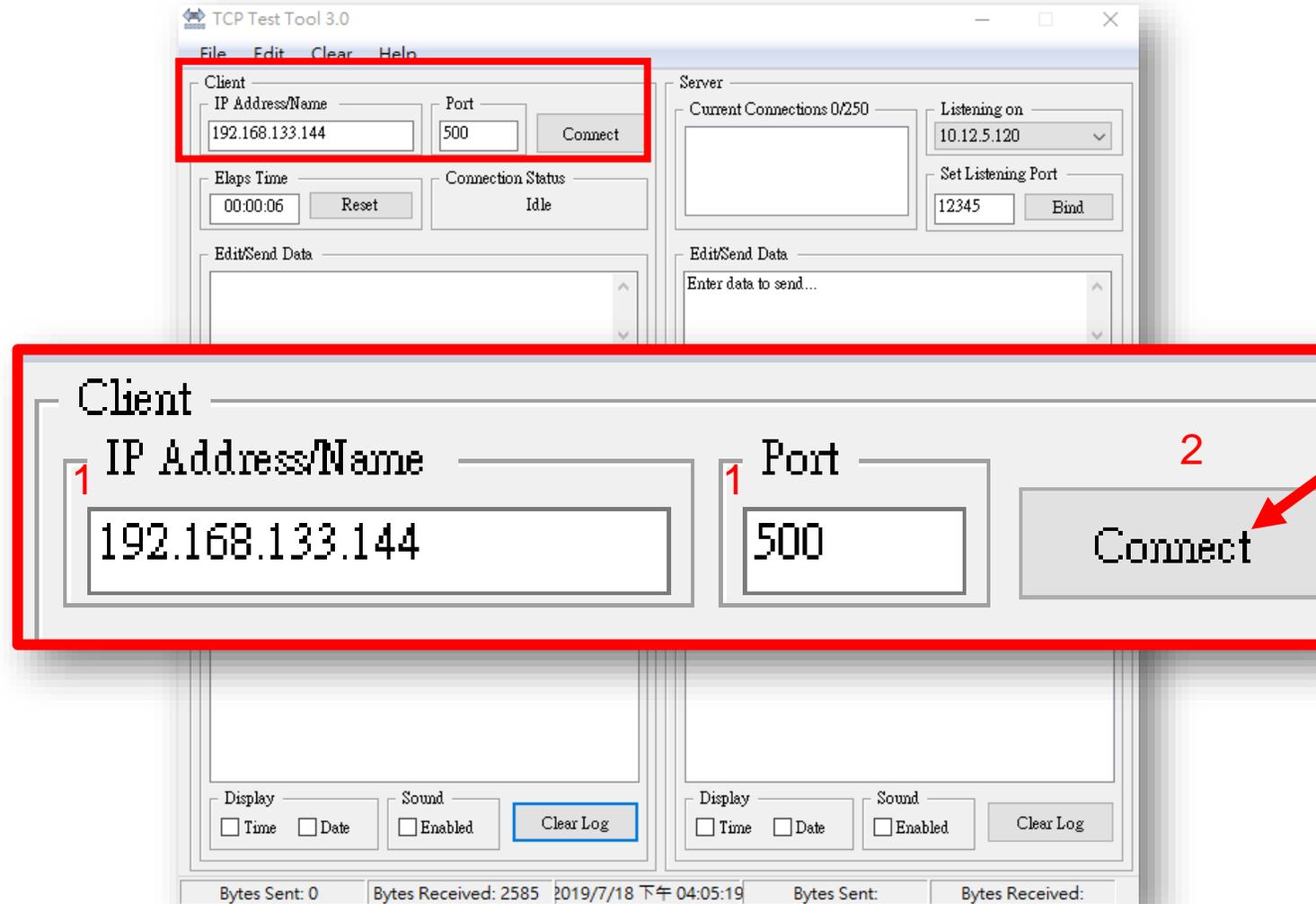
Connection:	Var Name:	Action
0	TCPS00PORT500	Remove (highlighted with a red arrow and 'Remove Link')

Build Project – Protocols

- **Link Testing** : Use the client function of TCP Test Tools

1. Enter IP and Port

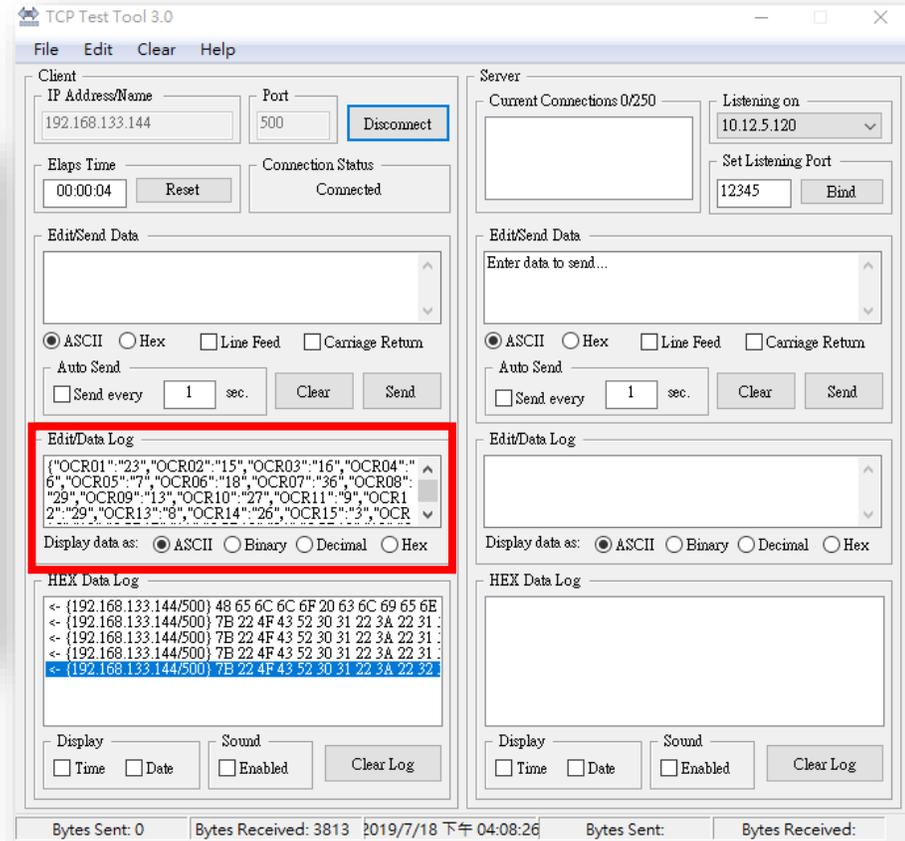
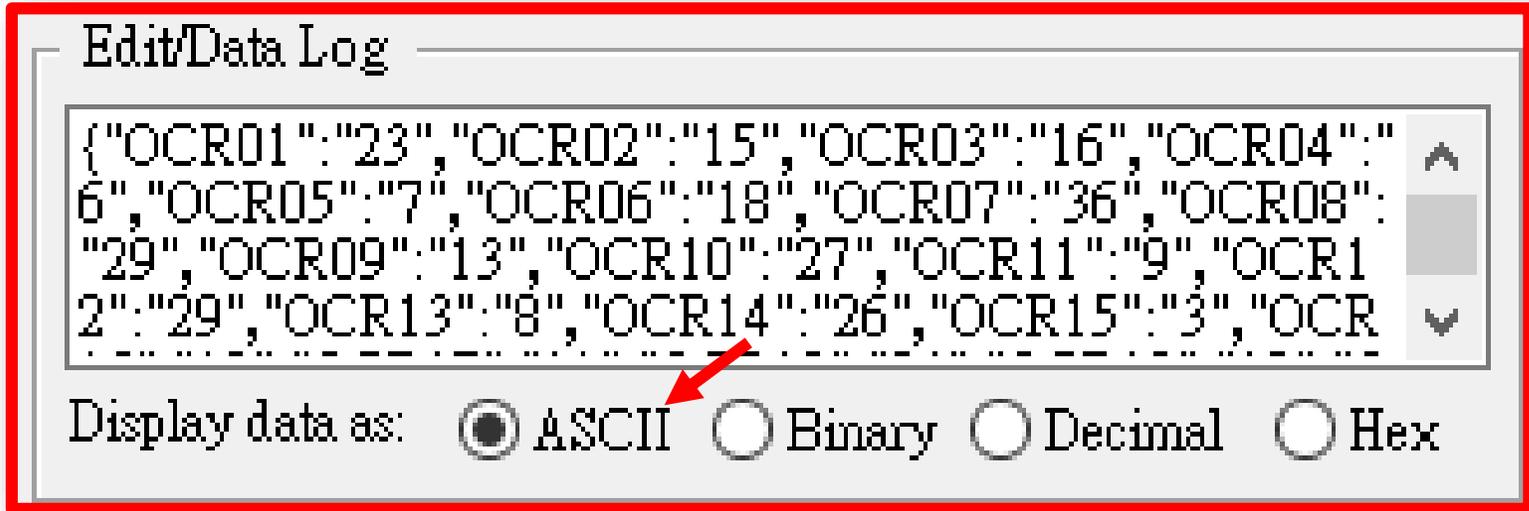
2. Click Connect



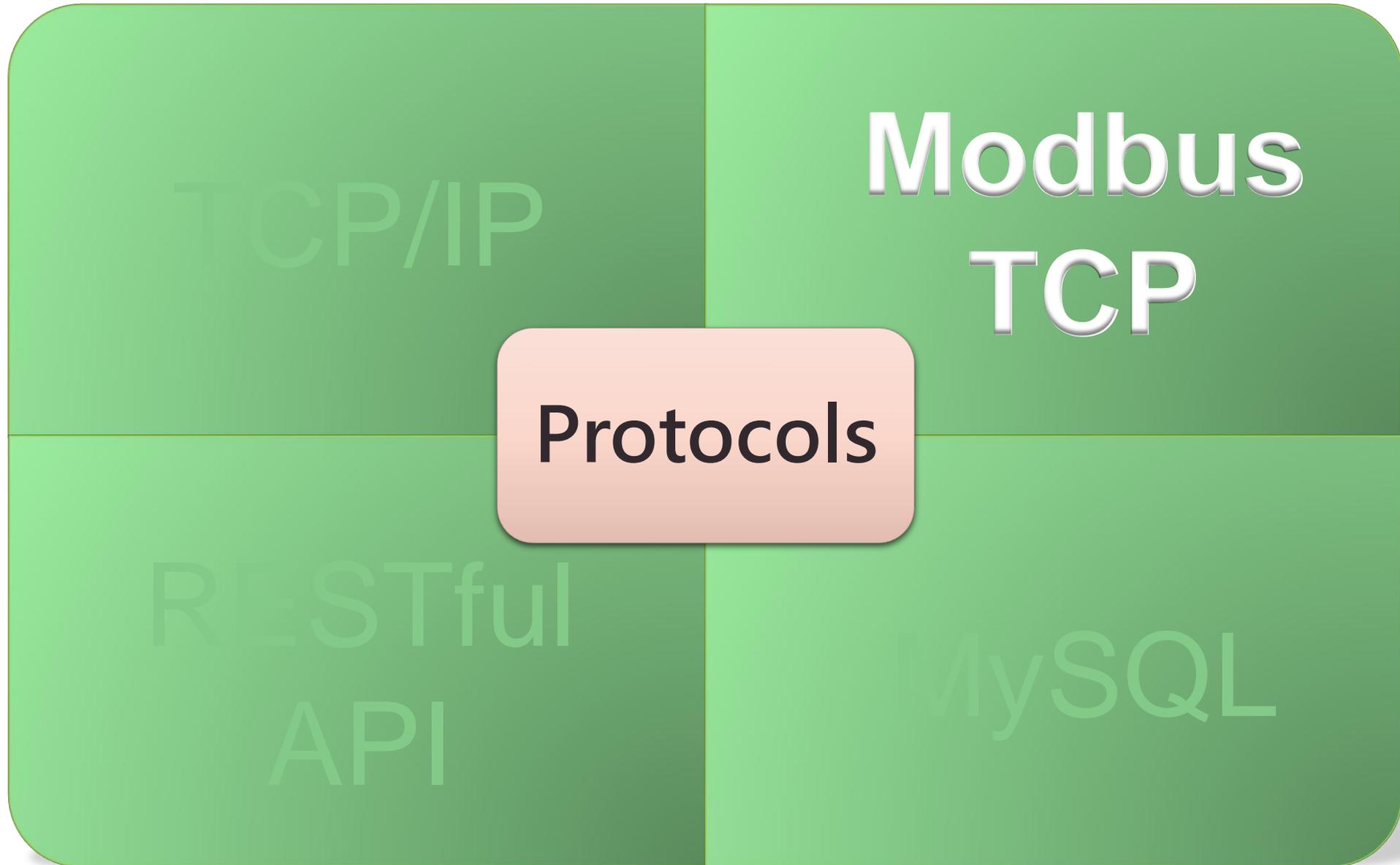
Build Project – Protocols

- Link Testing

- 3. Check Data Log : Output data type is ASCII



Build Project – Protocols



Build Project – Protocols

Modbus is a serial communications protocol originally published by Modicon in 1979 for use PLCs.

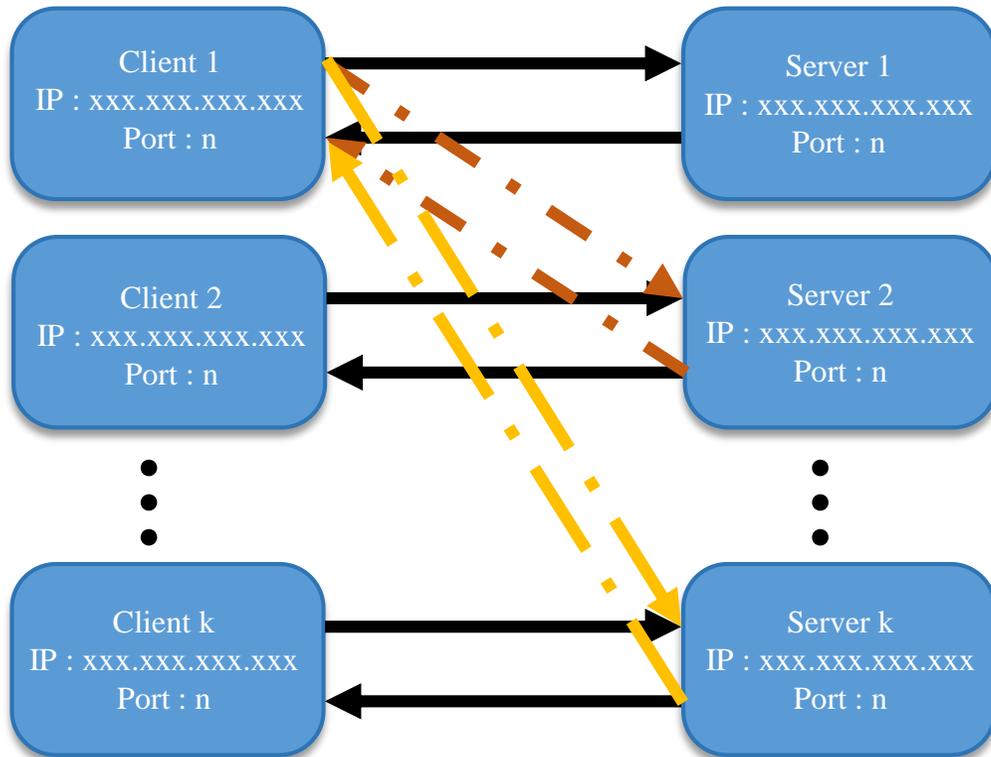
Modbus has become a standard communication protocol and is now a commonly available means of connecting industrial electronic devices. Modbus is commonly used to connect with PLC and SCADA software. Versions of the Modbus protocol exist for serial port and for Ethernet and other protocol that the Internet protocol suite.



Build Project – Protocols

- **Modbus**

- Use **Modbus TCP**, VIC7000 plays the role as **Server**
- Recognition data is stored in Input Status and Input Register
- Coil Status and Holding Register is for Script Editor output, external writing and controlling VIC



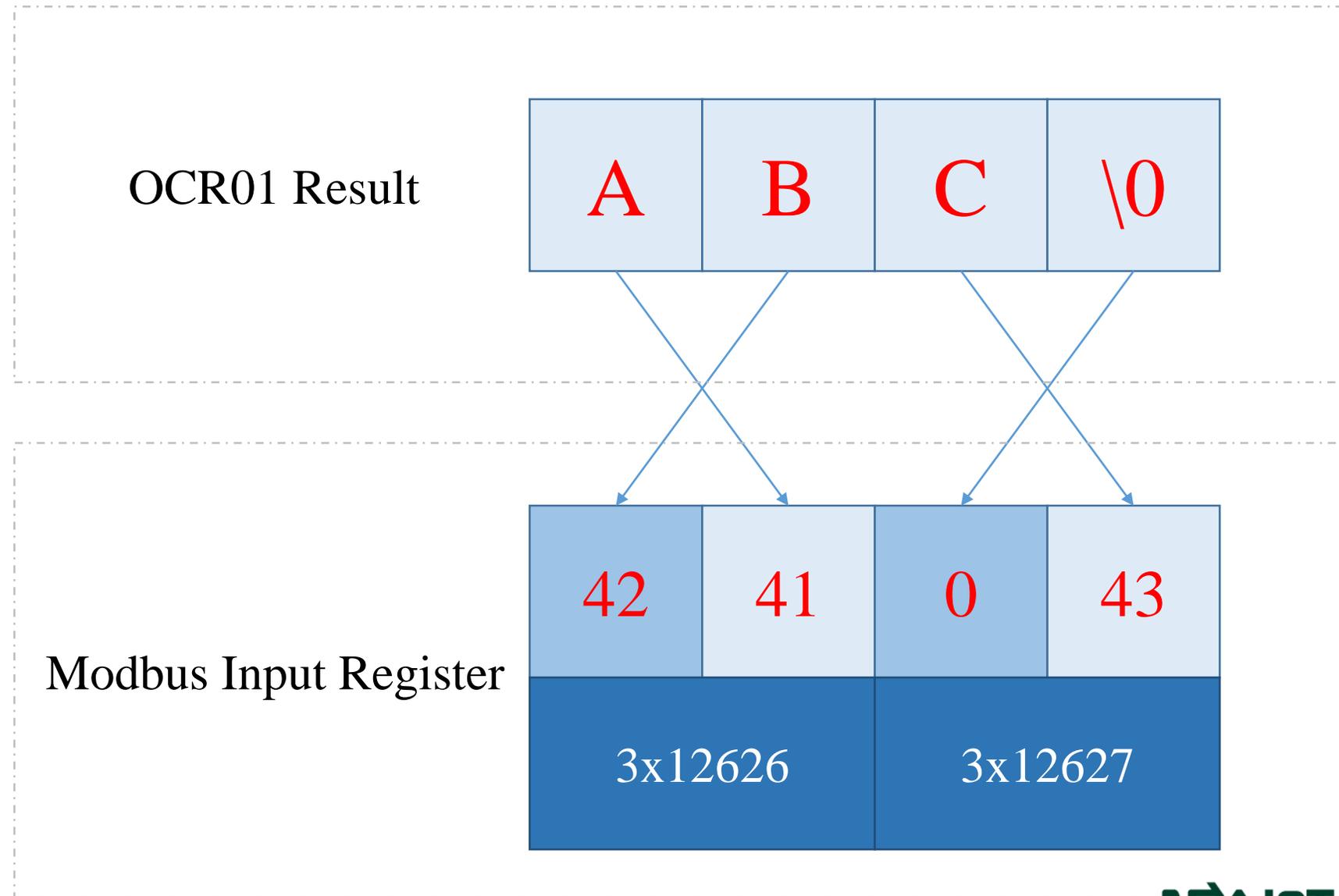
Address	Name	Data Type	Type
0X0001 ~ 0X9999	Coil Status	Bit	R/W
1X0001 ~ 1X9999	Input Status	Bit	R
3X0001 ~ 3X9999	Input Register	Word	R
4X0001 ~ 4X9999	Holding Register	Word	R/W

Build Project – Protocols

- **Modbus**

- Little – Endian

Fill in data from lower bits



Build Project – Protocols

- **Address Mapping – Input Status** : System Bit

Store system information. The Output data type is Boolean. Its length is 1 bit.

Input Status (1X)	
Address	Content
10001	Project playing Status 1 = Playing 0 = Stop
10002	Whether there is a user logging in . 1 = Yes 0 = No
10003	Whether the free storage is lower than 100G 1 = Yes 0 = No
10004	Whether the free storage is lower than 50G 1 = Yes 0 = No
10005	Whether storing images is stopped . 1 = Yes 0 = No
10006	Recognition result 0 = Pass 1 = NG 2 = No Matching
10007	

10008	Control playing status 1 = Playing 0 = Stop
10009	Whether serial port control is enabled . 1 = Yes 0 = No
10010	The status of serial port control 1 = Connecting 0 = Disconnecting

Bit 7	Bit 6	Sum	Result
0	0	0	Pass
0	1	1	NG
1	0	2	No Matching

Build Project – Protocols

- **Address Mapping** – Input Status : MODBUSBIT

Customizing Store Script output. The output data type is Boolean. Its length is 1 bit.

Input Status (1X)	
Address	Content
10101	MODBUSBIT00
10102	MODBUSBIT01
10103	MODBUSBIT02
10104	MODBUSBIT03
10105	MODBUSBIT04
10106	MODBUSBIT05

Input Status (1X)	
Address Range	Content
10101 ~ 10200	MODBUSBIT00 ~ MODBUSBIT99

Build Project – Protocols

- **Address Mapping** – Input Register (Int) : PAGE_NO, TARGET_COUNT, OCR_COUNT, TARGET_COLOR_COUNT, COLOR_COUNT, TARGET_PATTERN_COUNT, PATTERN_COUNT
Store the index of the current page and the number of target_color, target_pattern, OCR, color, pattern. The output data type is Int32. Its length is 2 words.

Input Register (3X)	
Address Range	Content
312501 ~ 312502	PAGE_NO
312503 ~ 312504	TARGET_COUNT
312505 ~ 312506	OCR_COUNT
312507 ~ 312508	TARGET_COLOR_COUNT
312509 ~ 312510	COLOR_COUNT
312511 ~ 312512	TARGET_PATTERN_COUNT
312513 ~ 312514	PATTERN_COUNT

Build Project – Protocols

- Address Mapping – Input Register (String) :** TARGET, OCR, CALC, MODBUSSTR
 Store recognition results of targets & OCRs, script calculated results and Modbus custom string outputs. The output data type is ASCII. Its length is 125 words.

Input Register (3X)	
Address Range	Content
30126 ~ 30250	Target01 (String)
30251 ~ 30375	Target02 (String)
30376 ~ 30500	Target03 (String)
30501 ~ 30625	Target04 (String)
30626 ~ 30750	Target05 (String)

Input Register (3X)	
Address Range	Content
312626 ~ 325000	OCR01 ~ 99 (String)
325001 ~ 337500	CALC00 ~ 99 (String)
337501 ~ 350000	MODBUSSTR00 ~ 99

Build Project – Protocols

- Address Mapping – Input Register (Int) :** TARGET, OCR, MODBUSINT, MODBUSUINT
 If recognition result contents of OCR and target is number, they will be converted to number. With the data type is Int32 and Its length is 2 words.

Input Register (3X)	
Address Range	Content
350003 ~ 350004	Target01 (Int)
350005 ~ 350006	Target02 (Int)
350007 ~ 350008	Target03 (Int)
350009 ~ 350010	Target04 (Int)

Input Register (3X)	
Address Range	Content
350203 ~ 350400	OCR01 ~ 99 (Int)
350401 ~ 350600	MODBUSINT00 ~ 99
350601 ~ 350800	MODBUSUINT00 ~ 99 (Uint32)

Build Project – Protocols

- **Address Mapping** – Holding Register (String) : MODBUSHSTR
Store Modbus custom output. The data type is ASCII. Its length is 51 words.

Holding Register (4X)	
Address Range	Content
40001 ~ 40051	MODBUSHSTR00
40052 ~ 40102	MODBUSHSTR01
40103 ~ 40153	MODBUSHSTR02
40154 ~ 40204	MODBUSHSTR03
40205 ~ 40255	MODBUSHSTR04

Holding Register (4X)	
Address Range	Content
40001 ~ 410200	MODBUSHSTR00 ~ 199

Build Project – Protocols

- **Address Mapping** – Holding Register (Int) : MODBUSHINT, MODBUSHUINT
Store Modbus custom output. The data type is Int32 and Uint32. Its length is 2 words.

Holding Register (4X)	
Address Range	Content
410201 ~ 410202	MODBUSHINT00
410203 ~ 410204	MODBUSHINT01
410205 ~ 410206	MODBUSHINT02
410207 ~ 410208	MODBUSHINT03
410209 ~ 410210	MODBUSHINT04

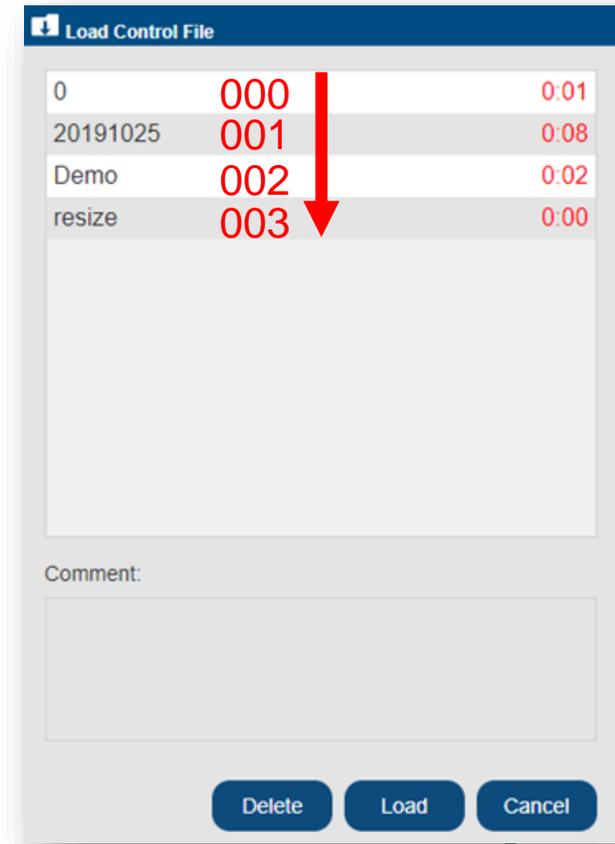
Holding Register (4X)	
Address Range	Content
410201 ~ 411200	MODBUSHINT00 ~ 499
411201 ~ 412200	MODBUSHUINT00 ~ 499

Build Project – Protocols

- **Address Mapping – Coil Status : System Control**

Control VIC7000. **Play project** can be used even there is **no admin logging in**. The index of control files is followed the order listed in the **Load Control File** window of **Control** page

Coil Status (0X)	
Address	Content
00001	Play project. 1 = Play 0 = Stop
00002	Play control. 1 = Play 0 = Stop
00101 ~ 00300	Play control file with index 000 ~ 199. 1 = Play 0 = Stop



Build Project – Protocols

- **Link Config**

1. Enter Link page : In administrator page
2. Choose Modbus

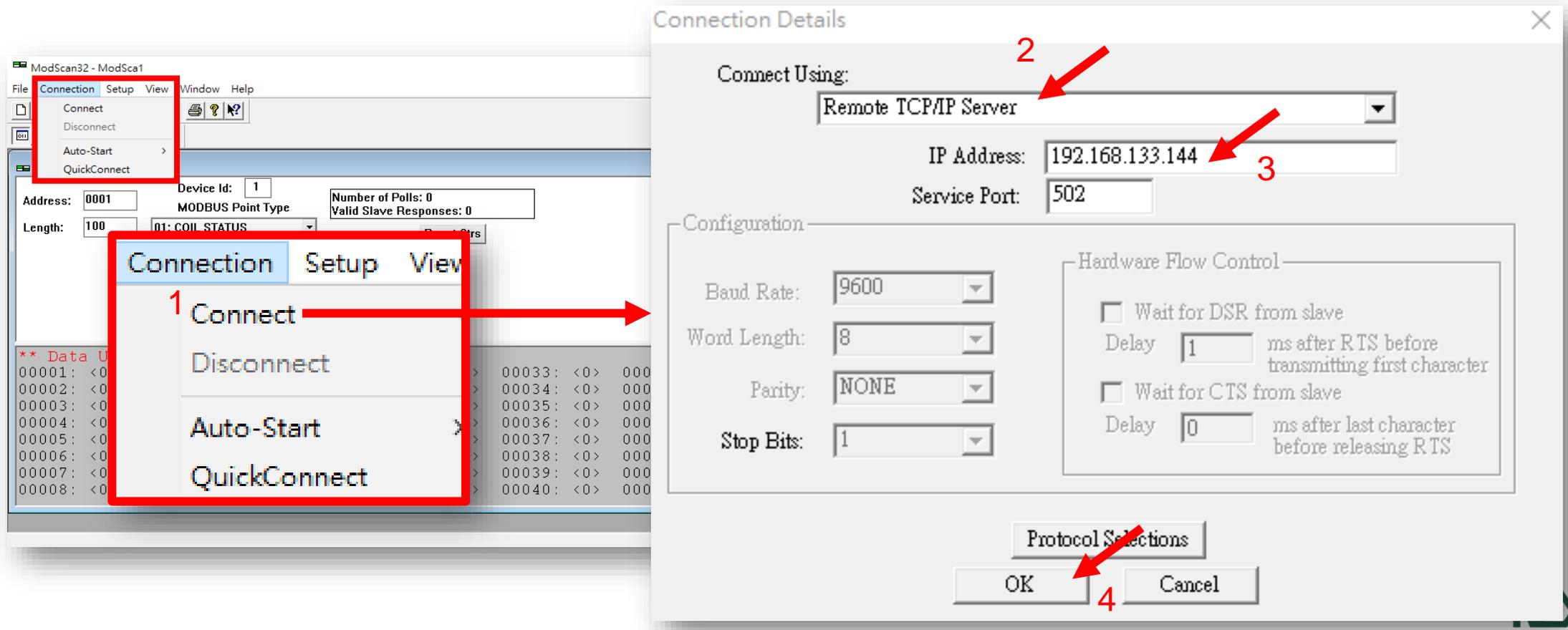
3. Enter Port : 502 (default)
4. Click Add

The screenshot displays the nexVIC software interface for configuring a link. The top navigation bar contains icons for New, Load, Save, Save As, Page, Script, Monitor, Control, Link, and Wizard. The 'Link' icon is highlighted with a red arrow and the number 1. Below the navigation bar, the 'Communication Mode' dropdown is set to 'Modbus', highlighted with a red arrow and the number 2. The 'Modbus Setting' panel shows 'TCP/IP' selected in a dropdown, 'Port: 502' in a text field, and 'Var Name: MB00TSlaveCSch' in a text field. A red arrow and the number 3 point to the 'Port' field. An 'Add' button is highlighted with a red arrow and the number 4. Below this, the 'Modbus' panel shows 'Connection: 0' and 'Var Name: MB00TSaveCSch'. A red arrow points to a 'Remove' button, with the text 'Remove Link' written in red above it.

Build Project – Protocols

- **Link Testing : Use Modscan**

1. **Connect Settings** : Connection → Connect
2. **Choose Remote TCP/IP Server**
3. **Enter IP Address and Service Port**
4. **Click OK**



Build Project – Protocols

- **Link Testing**

5. **Check got data** : The data type of string is ASCII, and the data type of numeric data is Int32.

ModSca1

Address: Device Id:

Length: MODBUS Point Type:

```

312626: <3031H> 312634: <0000H>
312627: <0000H> 312635: <0000H>
    
```

ModSca1

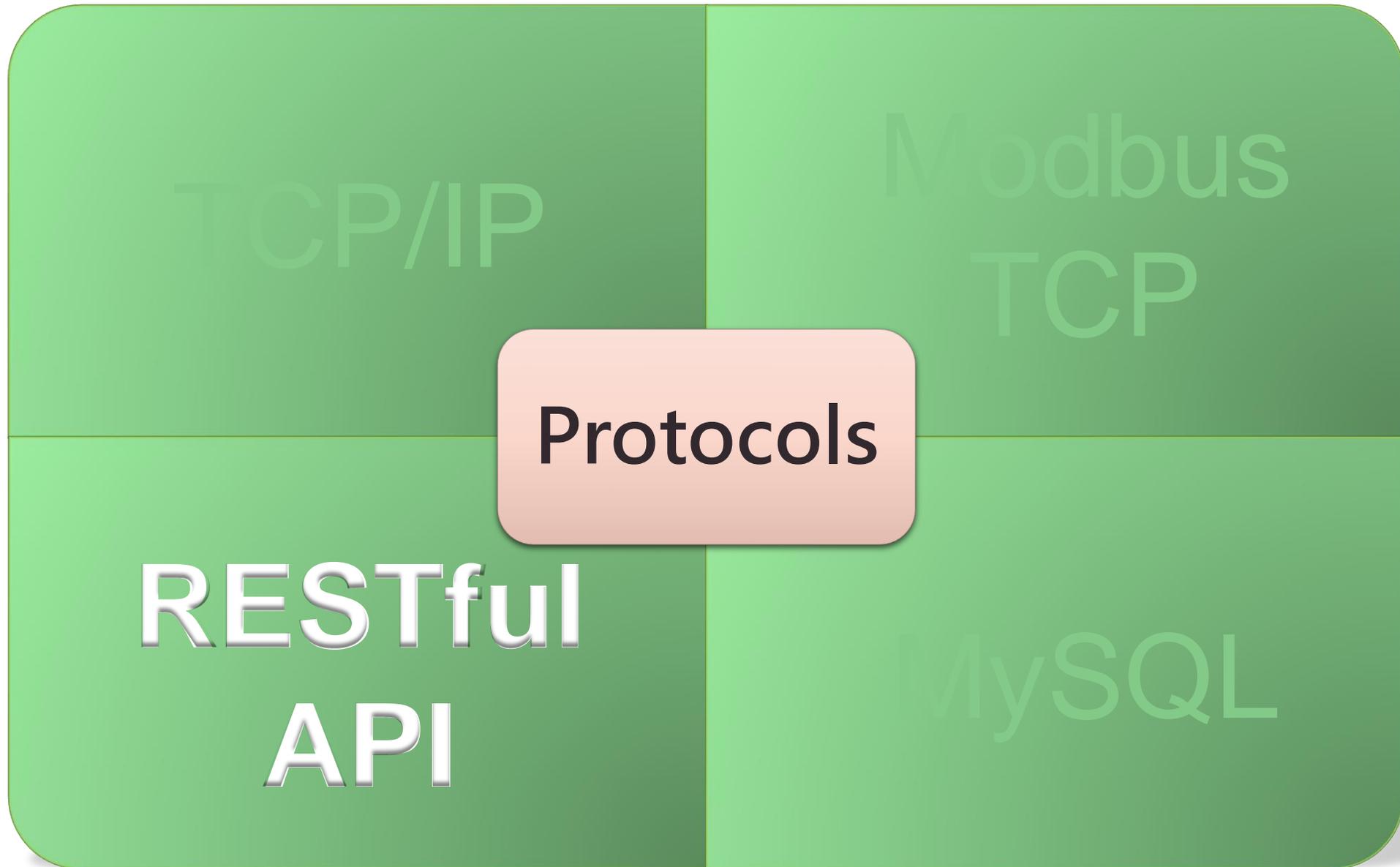
Address: Device Id: Number of Polls: 235

Length: MODBUS Point Type: Valid Slave Responses: 230

```

350203: <0000000001111101> 350211: <0000000010100101>
350204: <0000000000000000> 350212: <0000000000000000>
350205: <0000000001111101> 350213: <0000000010111110>
350206: <0000000000000000> 350214: <0000000000000000>
350207: <0000000001111101> 350215: <0000000011100110>
350208: <0000000000000000> 350216: <0000000000000000>
350209: <0000000010011011> 350217: <0000000100000100>
350210: <0000000000000000> 350218: <0000000000000000>
    
```

Build Project – Protocols



Build Project – Protocols

REST(Representation State Transfer) is a software architectural style, which is used to facilitate the transfer of information between different software/programs on the network.

REST allows users to send URLs to access and manipulate network resources. It is commonly used in the IT industry. Most of REST API returning resources is XML or JSON.

VIC7000 returning data is JSON.

RESTful API

GET PUT POST DELETE

Build Project – Protocols

- **Get Data**

1. **Call API** : Open browser → Enter **IP/restful** in URL field
2. **Check returning data**

1
192.168.133.144/restful

2

```
{ "TARGET01": "NexVIC", "TARGET02": "VIC7100", "TARGET03": "", "TARGET04": "", "TARGET05": "", "OCR01": "125", "OCR02": "125", "OCR03": "125", "OCR04": "155", "OCR05": "165", "OCR06": "190", "OCR07": "230", "OCR08": "260", "OCR09": "285", "OCR10": "295", "OCR11": "110", "OCR12": "125", "OCR13": "125", "OCR14": "155", "OCR15": "165", "OCR16": "190", "OCR17": "225", "OCR18": "260", "OCR19": "285", "OCR20": "295", "CALC00": "", "CALC01": "", "CALC02": "", "CALC03": "", "CALC04": "", "CALC05": "", "CALC06": "", "CALC07": "", "CALC08": "", "CALC09": "", "CALC10": "", "CALC11": "", "CALC12": "", "CALC13": "", "CALC14": "", "CALC15": "", "CALC16": "", "CALC17": "", "CALC18": "", "CALC19": "", "CALC20": "", "CALC21": "", "CALC22": "", "CALC23": "", "CALC24": "", "CALC25": "", "CALC26": "", "CALC27": "", "CALC28": "", "CALC29": "", "CALC30": "", "CALC31": "", "CALC32": "", "CALC33": "", "CALC34": "", "CALC35": "", "CALC36": "", "CALC37": "", "CALC38": "", "CALC39": "", "CALC40": "", "CALC41": "", "CALC42": "", "CALC43": "", "CALC44": "", "CALC45": "", "CALC46": "", "CALC47": "", "CALC48": "", "CALC49": "", "CALC50": "", "CALC51": "", "CALC52": "", "CALC53": "", "CALC54": "", "CALC55": "", "CALC56": "", "CALC57": "", "CALC58": "", "CALC59": "", "CALC60": "", "CALC61": "", "CALC62": "", "CALC63": "", "CALC64": "", "CALC65": "", "CALC66": "", "CALC67": "", "CALC68": "", "CALC69": "", "CALC70": "", "CALC71": "", "CALC72": "", "CALC73": "", "CALC74": "", "CALC75": "", "CALC76": "", "CALC77": "", "CALC78": "", "CALC79": "", "CALC80": "", "CALC81": "", "CALC82": "", "CALC83": "", "CALC84": "", "CALC85": "", "CALC86": "", "CALC87": "", "CALC88": "", "CALC89": "", "CALC90": "", "CALC91": "", "CALC92": "", "CALC93": "", "CALC94": "", "CALC95": "", "CALC96": "", "CALC97": "", "CALC98": "", "CALC99": "" }
```

Build Project – Protocols

- **Get Data**

3. **Call Separately** : Enter **IP/restful/ocr/index** in URL field, and returning data will be single data type. **Target, target_color, target_pattern, color, pattern, calc** can be called by this way.

```
192.168.133.144/restful/ocr/01
```

```
{"OCR01": "125"}
```

```
192.168.133.144/restful/target/01
```

```
{"TARGET01": "NexVIC"}
```

```
192.168.133.144/restful/calc/01
```

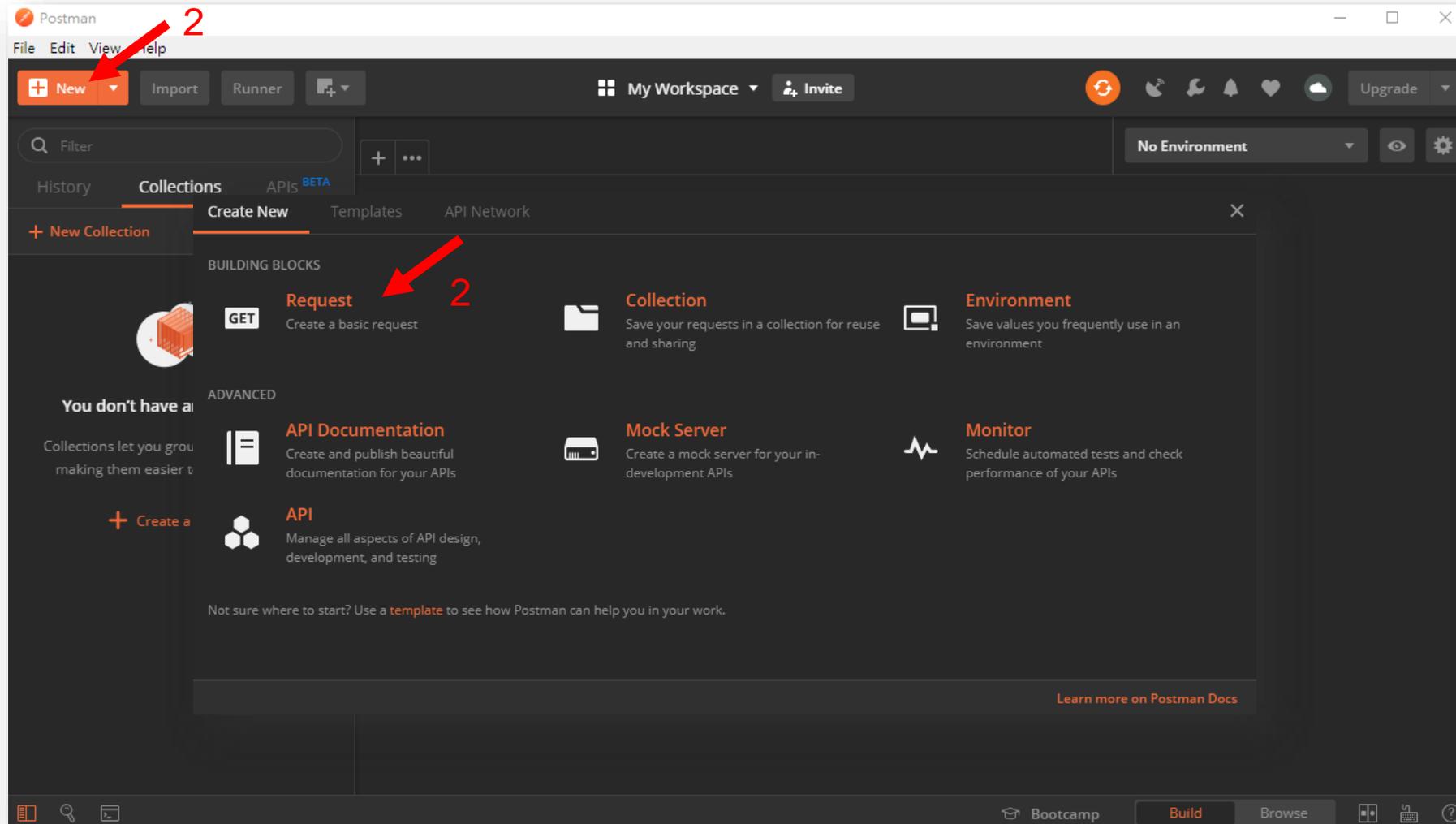
```
{"CALC01": ""}
```

Build Project – Protocols

- **Control VIC : Use Postman**

1. Execute Postman

2. Add new Request : Click **New** → Select **Request**

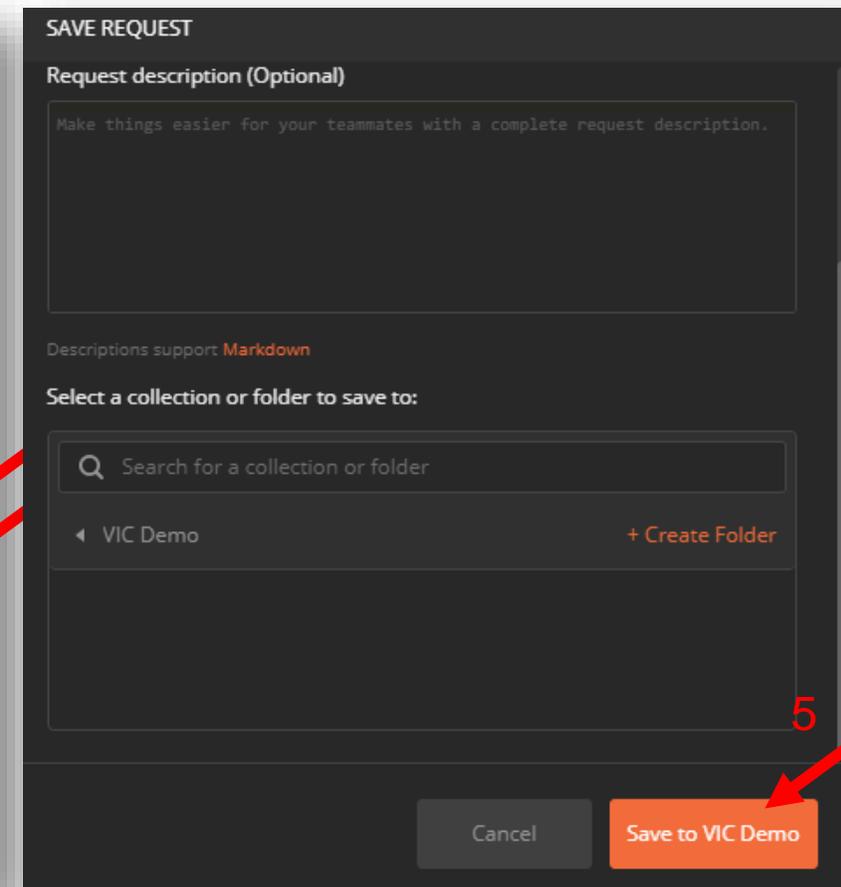
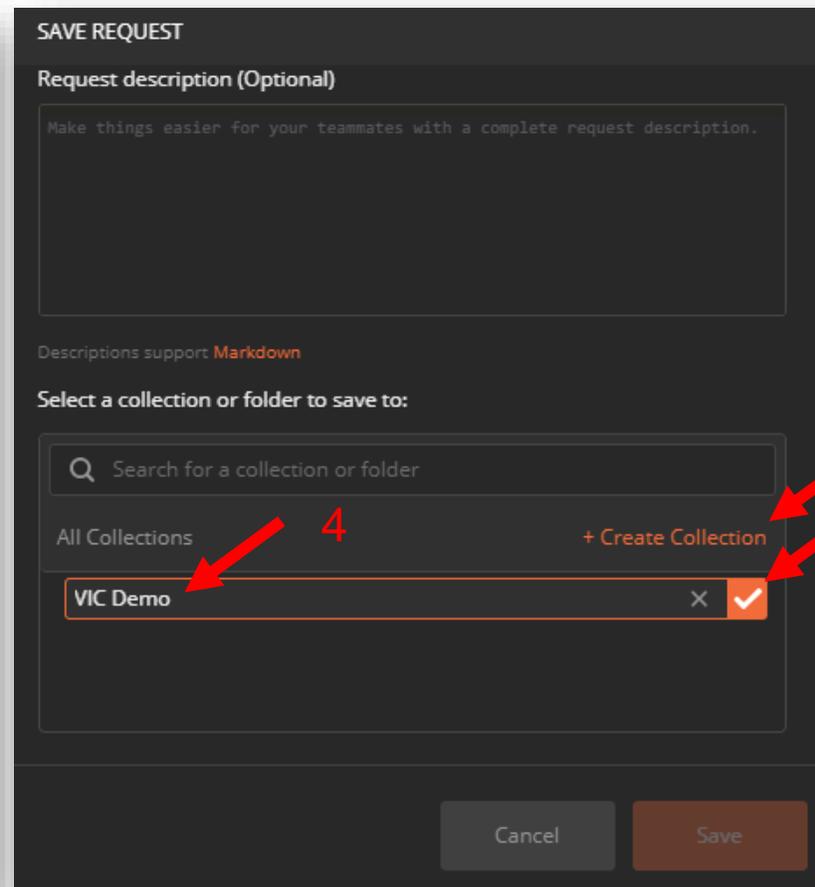
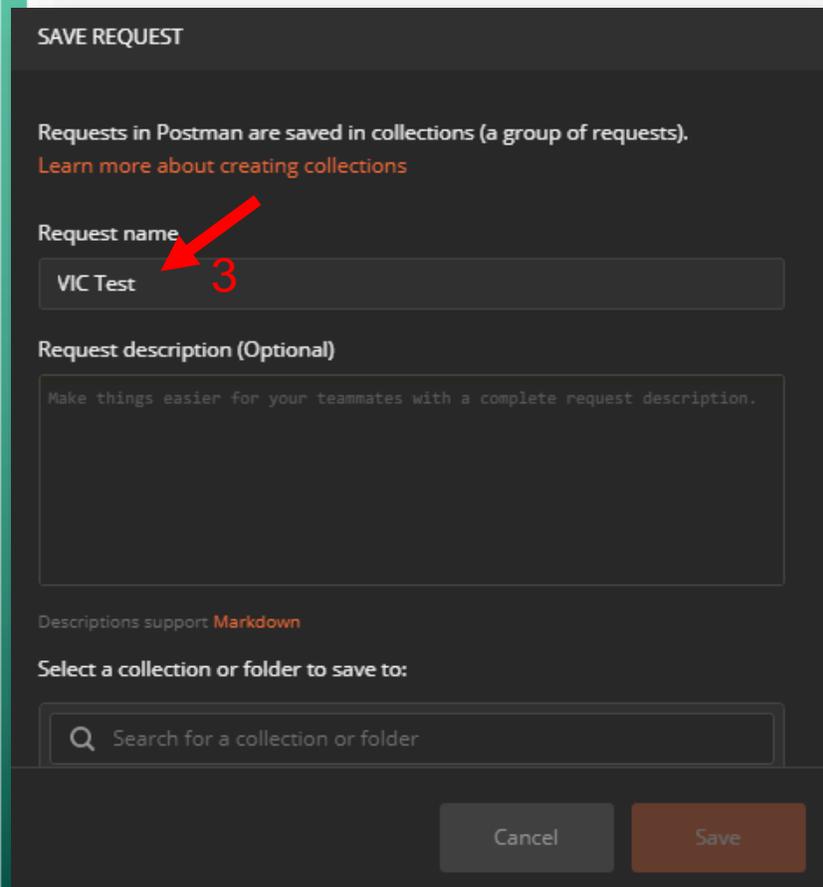


Build Project – Protocols

- **Control VIC : Use Postman**

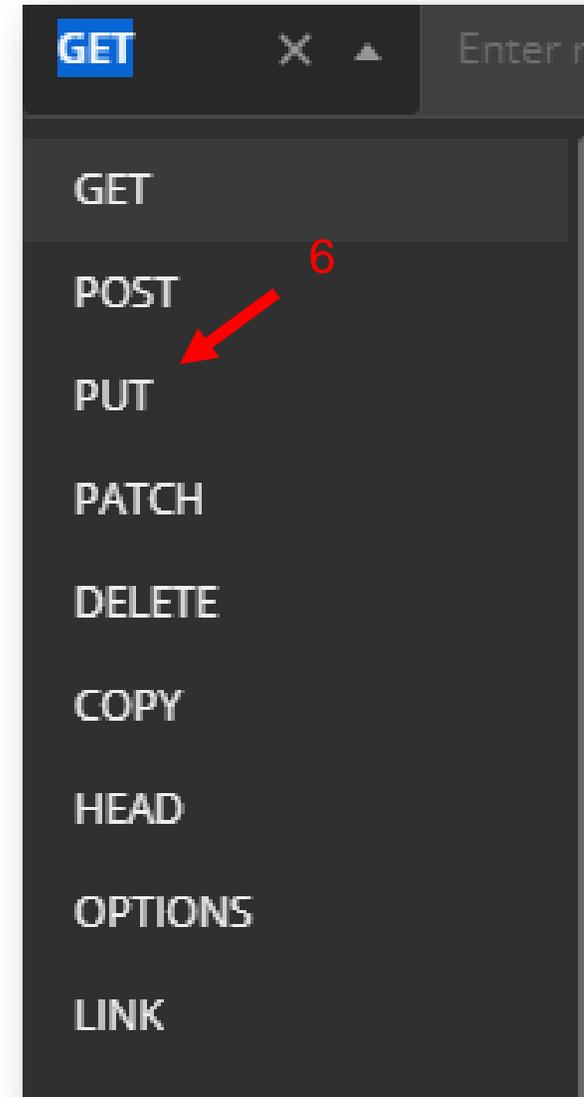
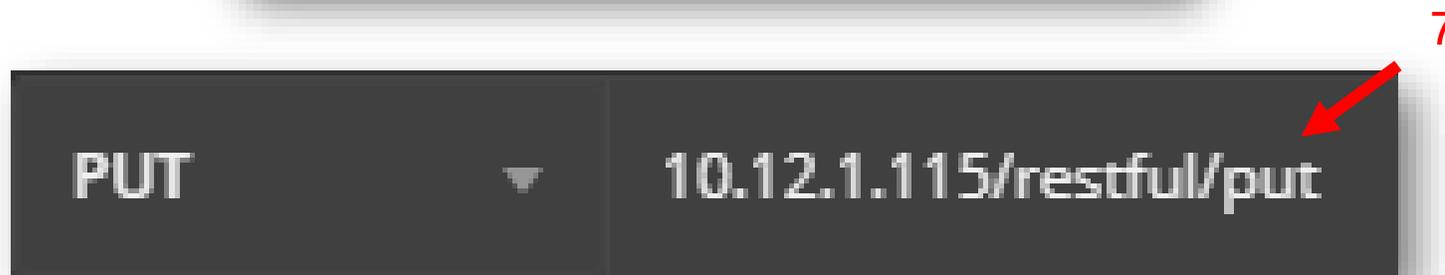
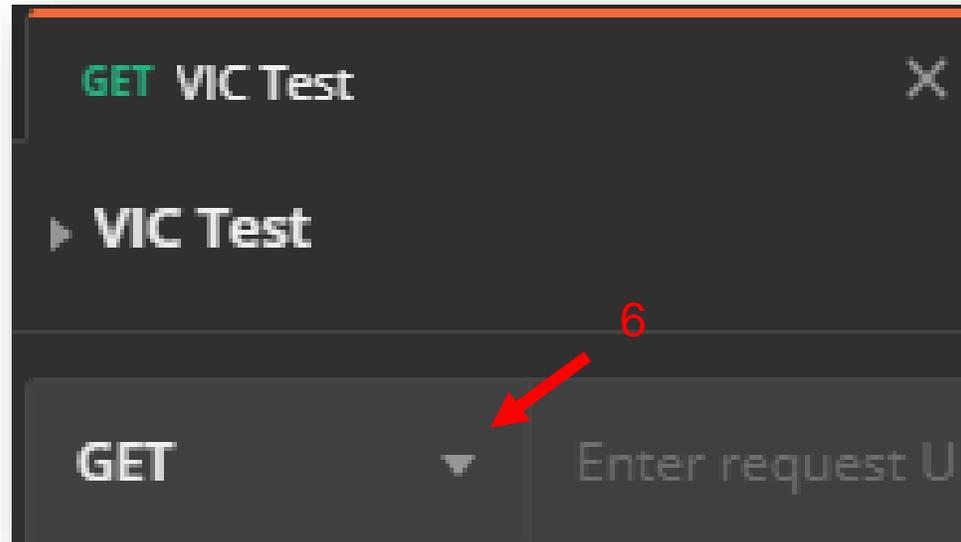
3. Enter Request name

4. Choose used Collection : If there is no Collection, select **+ Create Collection**
5. Save



Build Project – Protocols

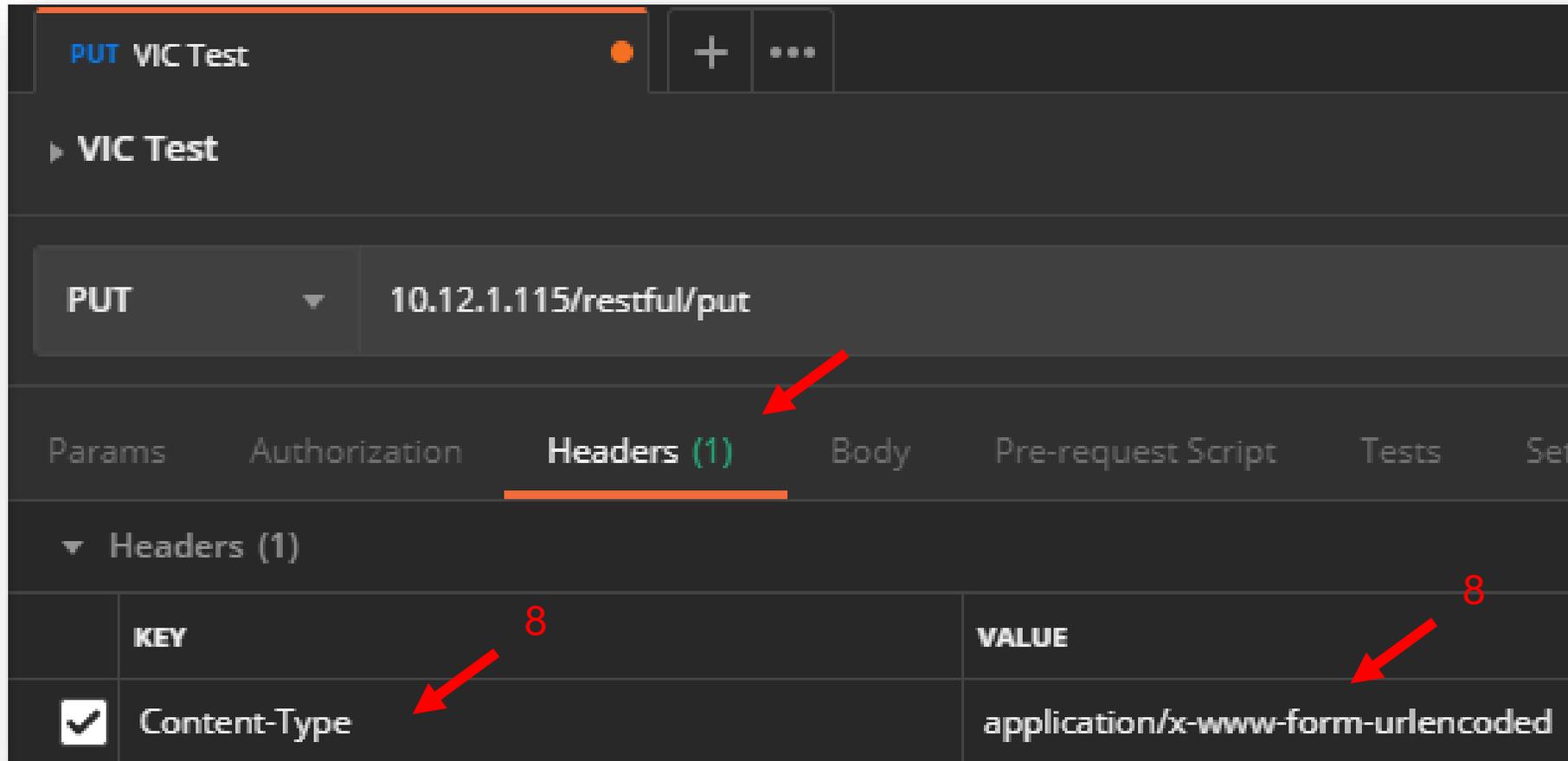
- **Control VIC : Use Postman**
 6. Choose PUT
 7. Enter URL : IP/restful/put



Build Project – Protocols

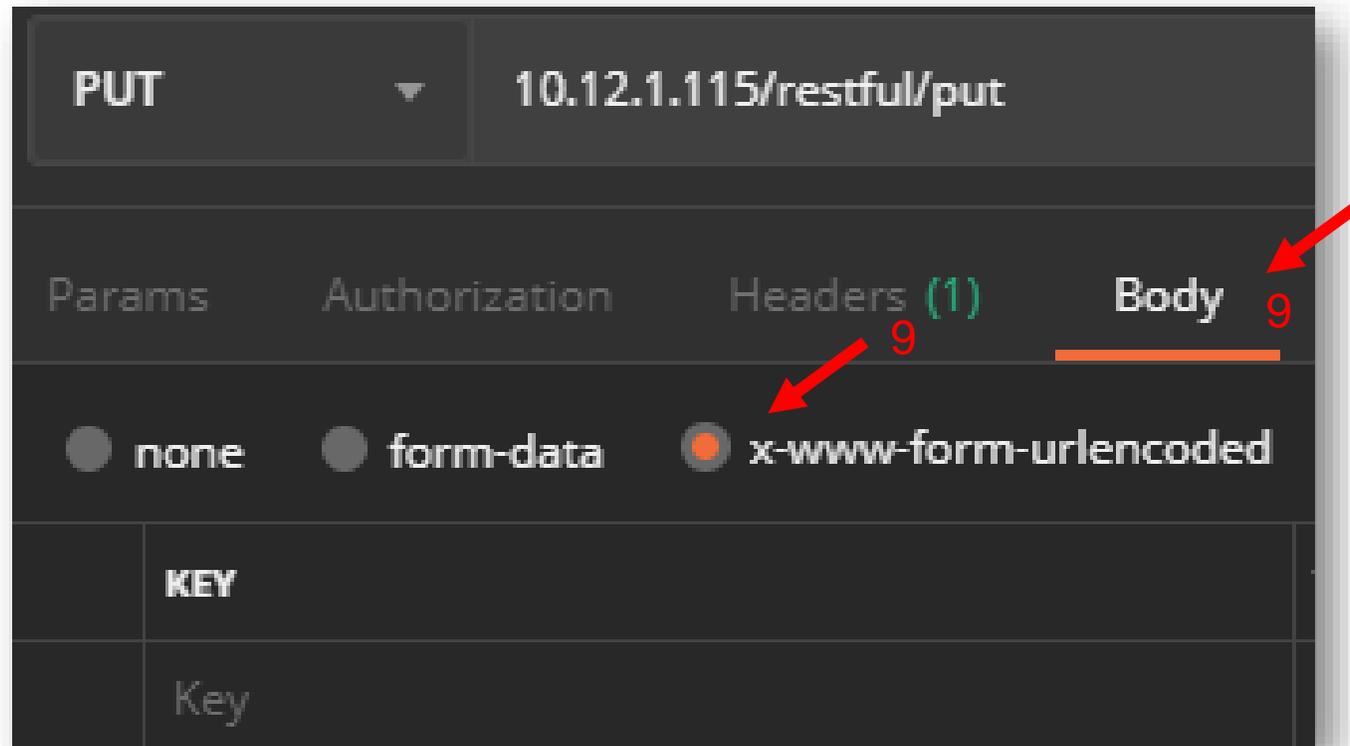
- **Control VIC : Use Postman**

8. **Headers** : Content-Type : application/x-www-form-urlencoded



Build Project – Protocols

- **Control VIC : Use Postman**
 9. **Body** : x-www-form-urlencoded



Build Project – Protocols

- **Control VIC : Use Postman**

9. **Body** : Even **play project** can be used only when there is **no admin logging in**.

	Play Project	Play Control	Play Control File with index i
username	admin or user	admin or user	admin or user
password	123456 (default)	123456 (default)	123456 (default)
channel_type	play	play_control	play_control_file
value	1 = Play 0 = Stop	1 = Play 0 = Stop	1 = Play 0 = Stop
index_value	-	-	0 ~ 199

Build Project – Protocols

- **Control VIC : Use Postman**

9. **Body** : Sample : Play Project

10. **Send**

PUT VIC Test

VIC Test

PUT 10.12.1.115/restful/put

Send

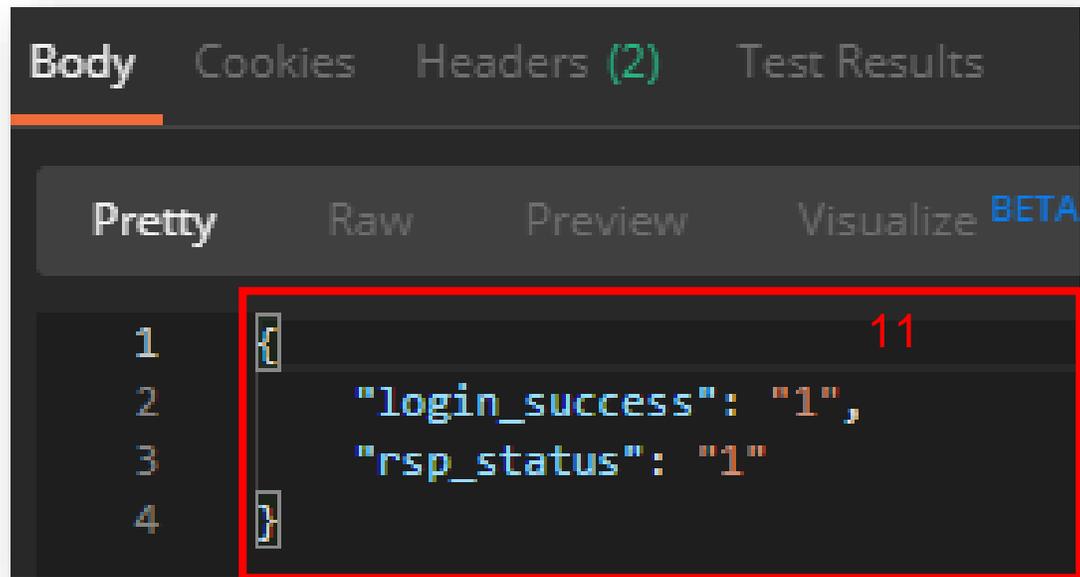
Params Authorization Headers (1) **Body** Pre-request Script Tests Settings

none form-data **x-www-form-urlencoded** raw binary GraphQL BETA

	KEY	VALUE	DESCRIPTION
<input checked="" type="checkbox"/>	username	admin	
<input checked="" type="checkbox"/>	password	123456	
<input checked="" type="checkbox"/>	channel_type	play	
<input checked="" type="checkbox"/>	value	1	
	Key	Value	Description

Build Project – Protocols

- **Control VIC : Use Postman**
 - 11. Check Response

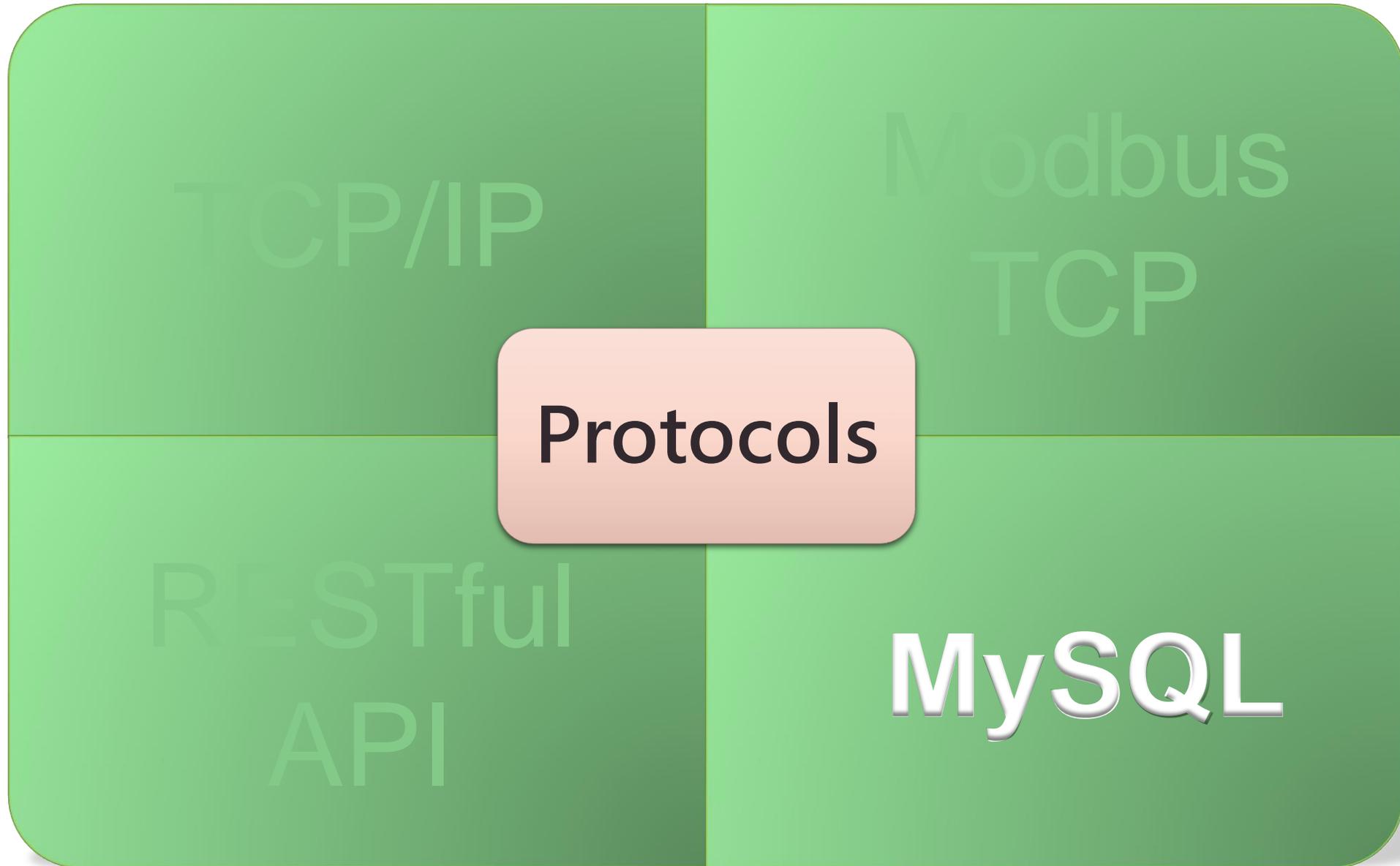


The screenshot shows the Postman interface with the 'Body' tab selected. The response is displayed in 'Pretty' format, showing a JSON object with two fields: 'login_success' and 'rsp_status', both with a value of '1'. The JSON is highlighted with a red border. The status code '11' is visible in the top right corner of the response area.

```
{  
  "login_success": "1",  
  "rsp_status": "1"  
}
```

login_success	Whether logging in is successful. 1 = Successful 0 = Failed
rsp_status	Whether the command is executed successfully. 1 = Successful 0 = Failed

Build Project – Protocols



Build Project – Protocols

SQL, Structure Query Language, is used to manage database system.
The scope of SQL includes data query, data manipulation, data definition, and data access control.

Query

```
SELECT "column"  
FROM "table"  
WHERE "condition"  
GROUP BY "condition"  
ORDER BY "[ASC, DESC]"  
LIMIT "limitation"
```



Build Project – Protocols

MySQL is an open-source relational database management system. Because of its high efficacy, low cost, and high reliability, MySQL has become a popular open-source database.

VIC7000 utilizes MySQL to store data. Users can use another computer to connect to the database within VIC7000.



Build Project – Protocols

The database name within VIC7000 is named “**vic**”. There is a default account, username and password are **vic_7000**. This account can be used with VIC7000 computer.

If users want to get data remotely, they must add a new account with account **root** and its default password is 123456 (user can change it).

```
set password for 'root'@'localhost' = password('root');
```

```
C:\Users\eagle>mysql -u root -p
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 7
Server version: 5.5.45 MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> set password for 'root'@'localhost' = password('root');
Query OK, 0 rows affected (0.00 sec)

mysql> _
```

Build Project – Protocols

After add a new user with account **root**, next step is to give this new user the authority to use “vic” database. Then this new account can access in “**vic**” database to query or get data.

```
CREATE USER 'test_user'@'%' IDENTIFIED BY 'test_user';
```

```
GRANT ALL PRIVILEGES ON vic.* TO 'test_user'@'%' ;
```

```
命令提示字元 - mysql -uroot -p
Microsoft Windows [版本 10.0.17763.557]
(c) 2018 Microsoft Corporation. 著作權所有，並保留一切權利。
C:\Users\jasontsai>mysql -uroot -p
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 181
Server version: 5.7.23-log MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE USER 'test user'@'%' IDENTIFIED BY 'test user';
Query OK, 0 rows affected (0.00 sec)

mysql> GRANT ALL PRIVILEGES ON vic.* TO 'test user'@'%' ;
Query OK, 0 rows affected (0.00 sec)

mysql>
```

```
命令提示字元 - mysql -utest_user -p
Microsoft Windows [版本 10.0.17763.557]
(c) 2018 Microsoft Corporation. 著作權所有，並保留一切權利。
C:\Users\jasontsai>mysql -utest_user -p
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 185
Server version: 5.7.23-log MySQL Community Server (GPL)

Copyright (c) 2000, 2018, Oracle and/or its affiliates. All rights reserved.

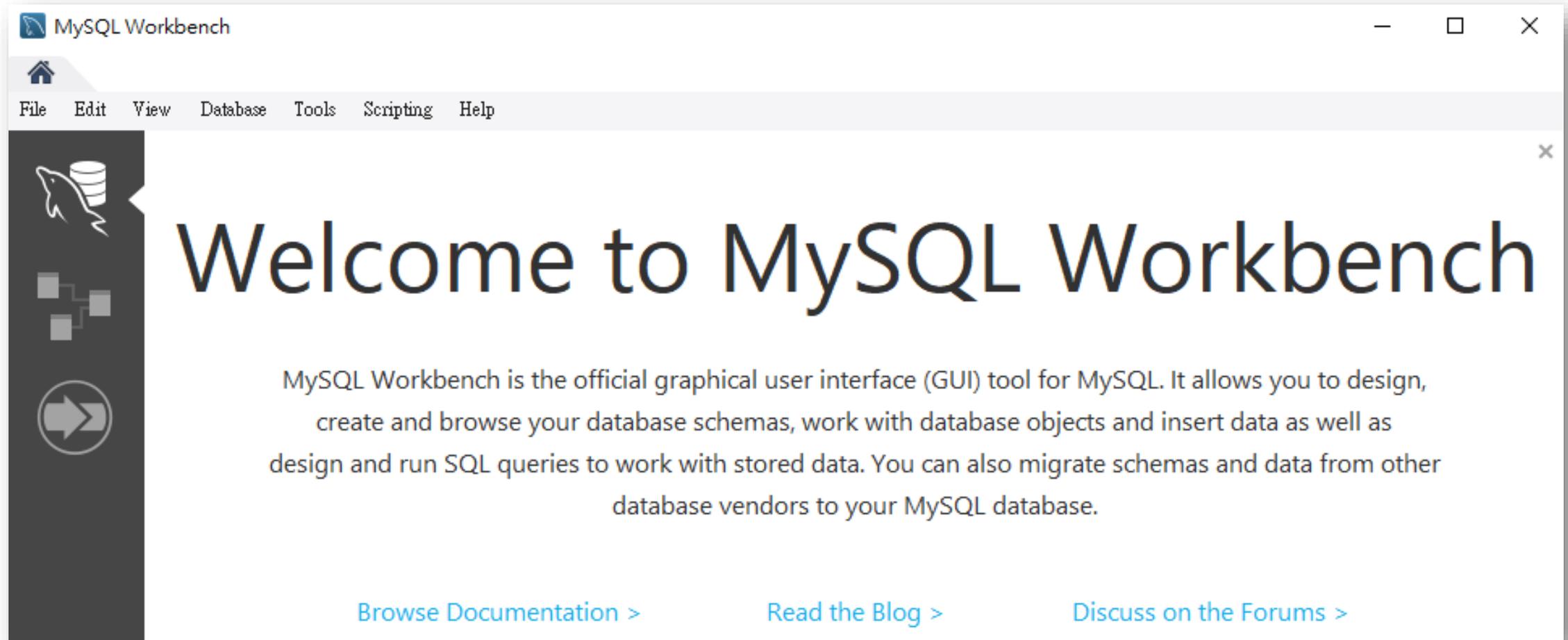
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Build Project – Protocols

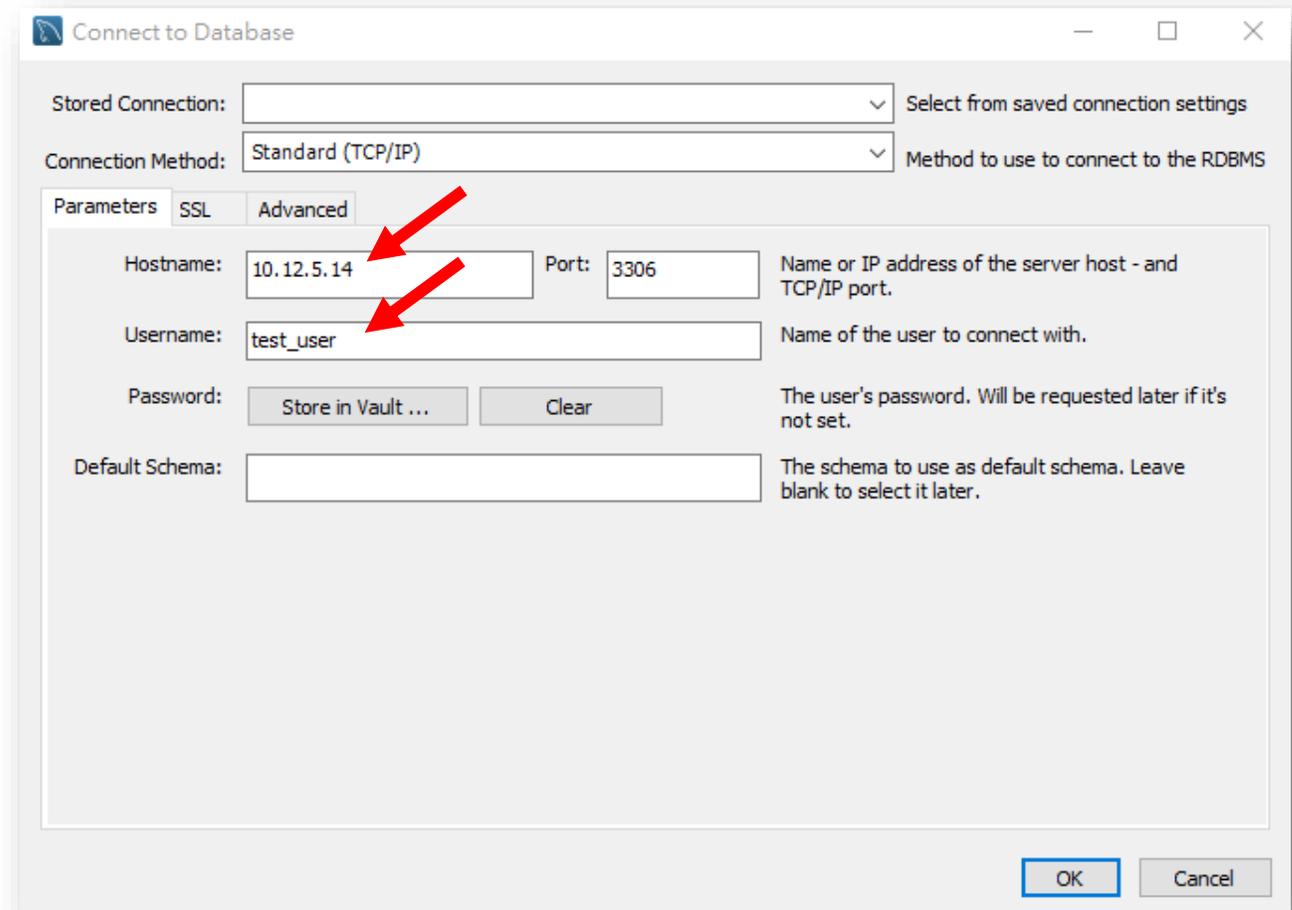
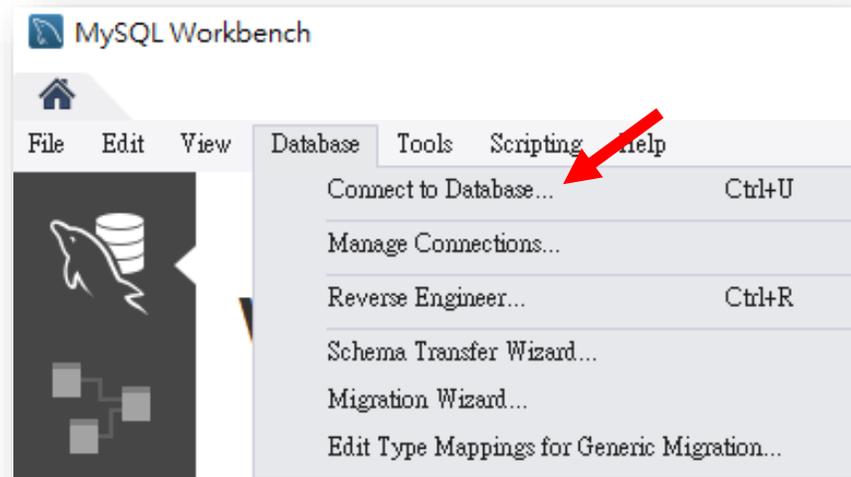
- **Link Testing : MySQL Workbench**



Build Project – Protocols

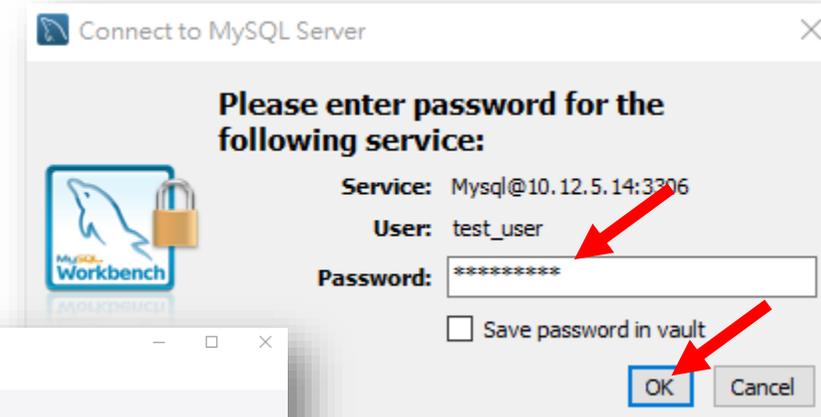
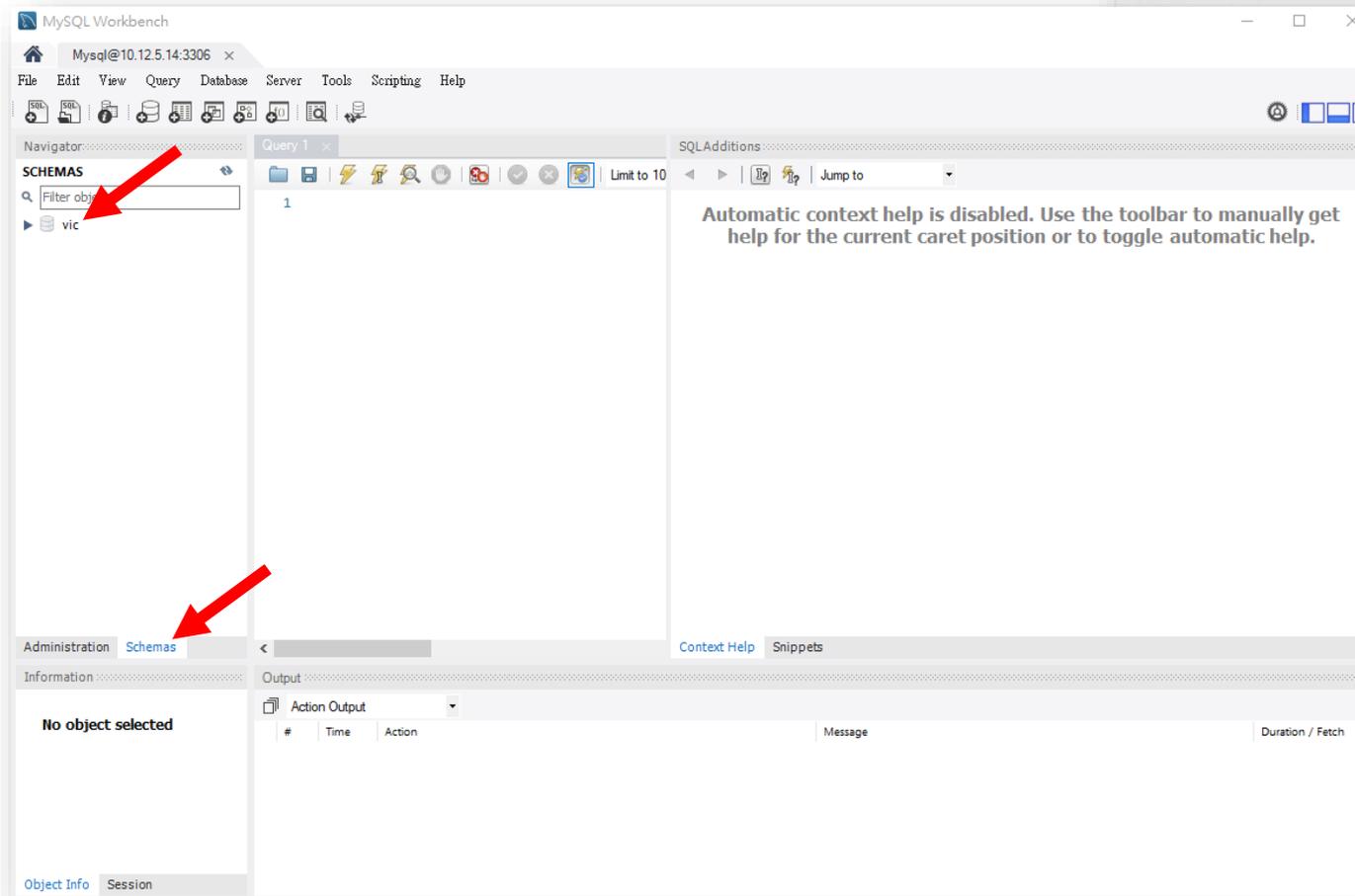
- **Link Testing : MySQL Workbench**

1. **Connection Settings** : Database → Connect to Database... → Hostname : IP → Username : test_user



Build Project – Protocols

- **Link Testing : MySQL Workbench**
 3. Enter password and click OK
 4. Check database “vic”



Build Project – Protocols

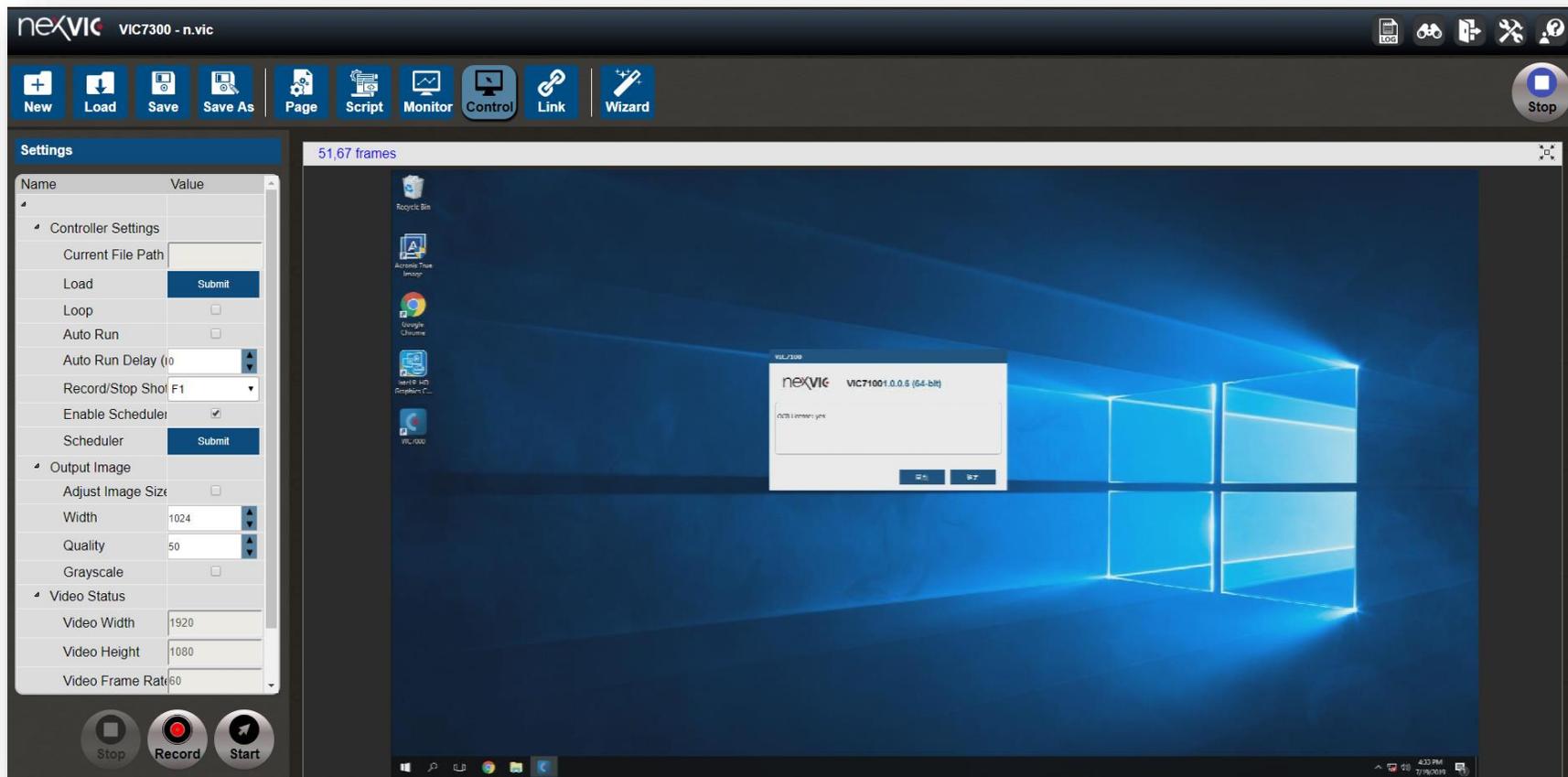
- **Link Testing : MySQL Workbench**

6. **Enter and execute commands** : Create a new SQL tab for executing queries → Enter SQL command (This sample counting data in “vic”) → Form Editor

The screenshot displays the MySQL Workbench interface. At the top, a toolbar contains various icons, with a red arrow pointing to the 'New SQL Query' icon. Below the toolbar, the 'Navigator' pane on the left shows a tree view under 'SCHEMAS' with a search box and a list of objects for the 'vic' database. The main workspace is titled 'Query 1' and contains a toolbar with icons for file operations, execution, and settings. A red arrow points to the 'Limit to 1000 rows' dropdown menu. The SQL editor shows the query: `1 select count(*) from vic.ocr_table;`. Below the editor, the 'Form Editor' pane displays the result: `Count(*): 728708`, with a red arrow pointing to the value. On the right side, a vertical toolbar contains icons for 'Result Grid' and 'Form Editor', with a red arrow pointing to the 'Form Editor' icon.

Build Project – Control

- **Control** : Record the action of mouse and keyboard
 1. **Entry to Control Page** : It must be used along with capture card input. When it's recording, the capture card should get data continuously.



Build Project – Control

- **Control**

- **Controller Settings**

Current File Path

Load : Load control file

Loop : Whether to play control file cyclically

Auto Run : Whether to play control file while project is playing

Auto Run Delay (ms)

Record/Stop Shortcut Key

Enable Scheduler

Scheduler Setting

Settings

Name	Value
<div style="display: flex; align-items: center;"> ▾ Controller Settings </div>	
Current File Path	<input type="text"/>
Load	Submit
Loop	<input type="checkbox"/>
Auto Run	<input type="checkbox"/>
Auto Run Delay (ms)	<input type="text"/>
Record/Stop Shortcut Key	F1 ▾
Enable Scheduler	<input checked="" type="checkbox"/>
Scheduler	Submit

- F1 ▾
- F1
- F2
- F3
- F4
- F5
- F6
- F7
- F8
- F9
- F10
- F11
- F12

Build Project – Control

- **Control**

- **Video Parameter**

Adjust Image Size : Modifying the width and quality of the image and using grayscale to improve smoothness **while recording control files**

Adjusting video width

Adjusting video Quality

Grayscale

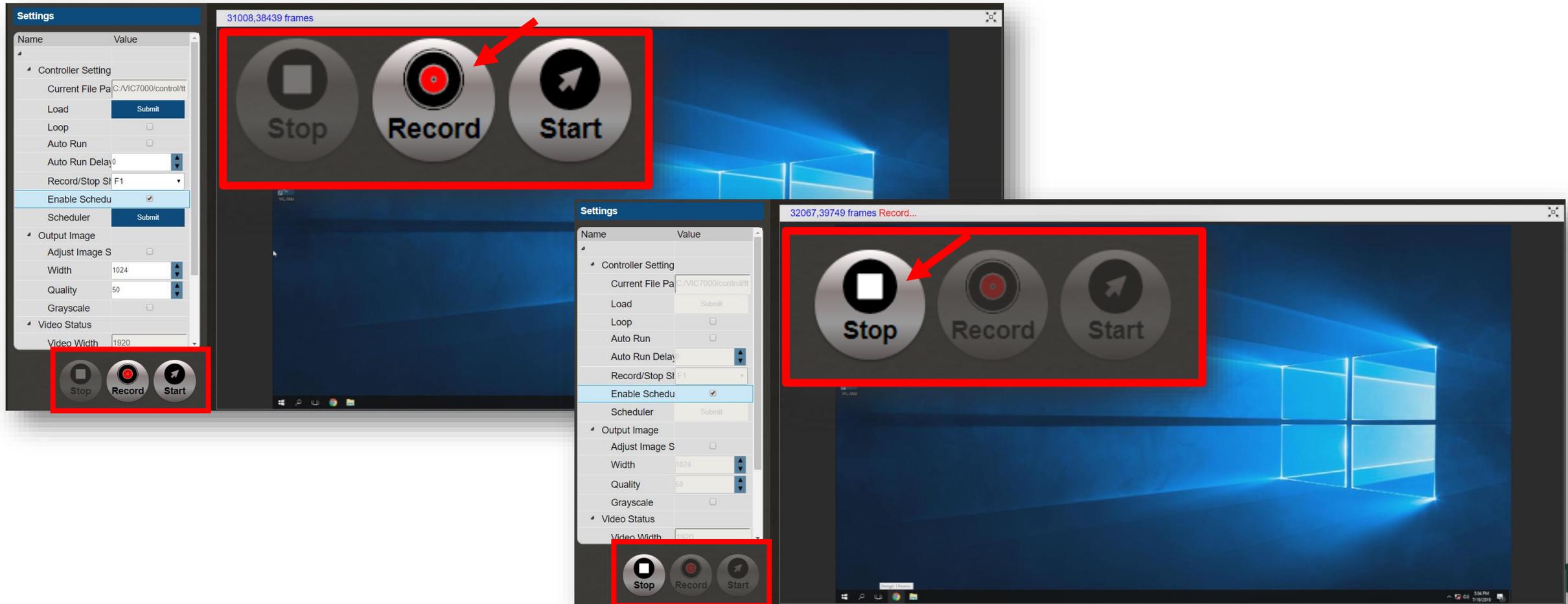
Video Signal

▾ Output Image	
Adjust Image Size	<input type="checkbox"/>
Width	1024 
Quality	50 
Grayscale	<input type="checkbox"/>
▾ Video Status	
Video Width	1920
Video Height	1080
Video Frame Rate	60
Video Signal	true
Video Input	DVI_A (RGB / \ ▾)

Build Project – Control

- **Control**

2. **Record Action** : Click **Record** (press **Record Shortcut Key**) → The action of mouse and keyboard will be recorded → Click **Stop** (press **Stop Shortcut Key**)



Build Project – Control

- **Control**

2. **Record Action** : Enter **Name** of control file → Click **OK**

The control file will be loaded automatically. Click **Start** to simulate playing the control file.

Save Record

Name:

Comment:

OK Cancel

Name	Value
Controller Settings	
Current File Path	C:/VIC7000/control/ttt
Load	Submit
Loop	<input type="checkbox"/>
Auto Run	<input type="checkbox"/>
Auto Run Delay	0
Record/Stop Sh	F1
Enable Scheduling	<input checked="" type="checkbox"/>
Scheduler	Submit

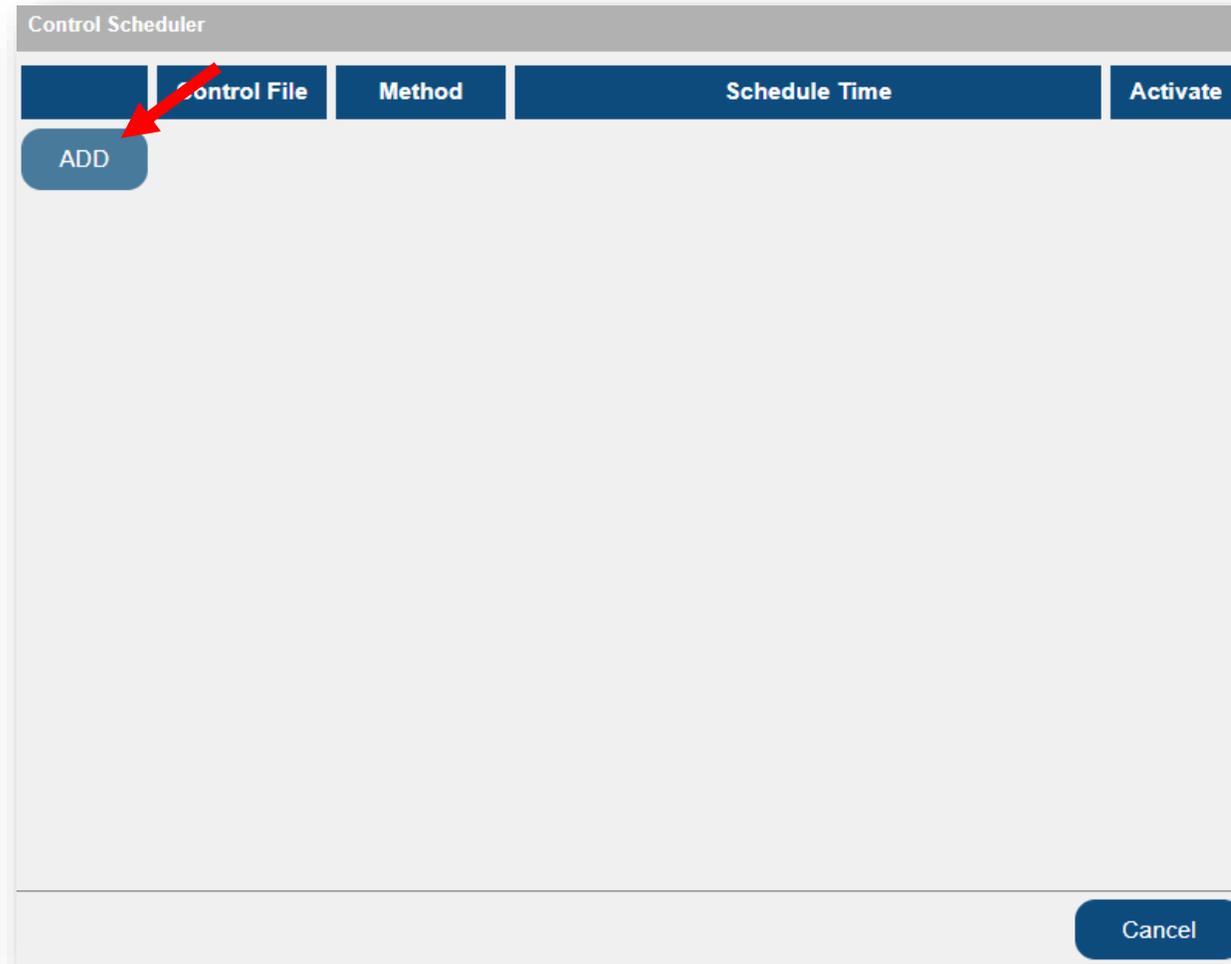
Stop Record Start

Build Project – Control

- **Control**

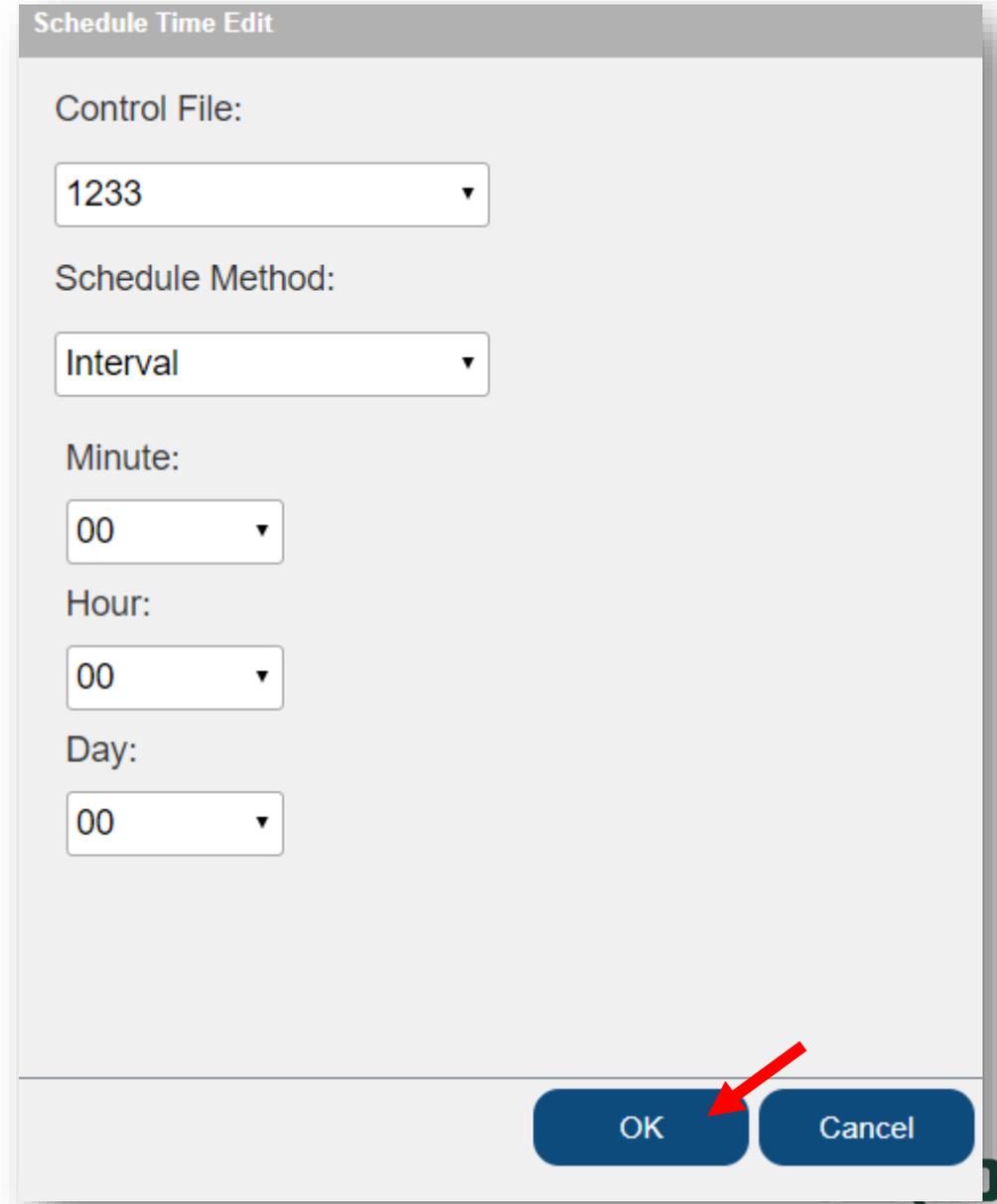
- **Scheduler Settings** : Click **Scheduler** and **Control Scheduler** window will show up →

Click **Add**



Build Project – Control

- **Control**
 - **Scheduler Settings – interval** : How often the control file should be played
- Control File
- Schedule method : Choose **interval**
- Minute
- Hour
- Day
- Clicking **OK** to finish



Schedule Time Edit

Control File:
1233

Schedule Method:
Interval

Minute:
00

Hour:
00

Day:
00

OK Cancel

Build Project – Control

- **Control**
 - **Scheduler Settings – At an exact time** : Play control file once at a specific time

Control File

Schedule Method : At an exact time

Minute	If there is a set Day and Day of Week, the control file will be played only when two conditions are matched .
Hour	
Day	Ex : if Day is set to 5, Day of Week is set to 1, then the control file will be played on 5 th and Monday every month.
Day of Week	

* : Represent each time point in the field

Ex : If settings are minute-*, Hour-12, Day-25, Day of Week-*, then this control file will be repeated every minute at twelve o'clock on 25th every month.

Schedule Time Edit

Control File:
1233

Schedule Method:
At an exact time

Minute:
*

Hour:
*

Day:
*

Day Of Week:
*

Asterisk (*) means every instance of that time slot:
Every minute, every hour, every day or every day of the week

Clicking OK after setting up

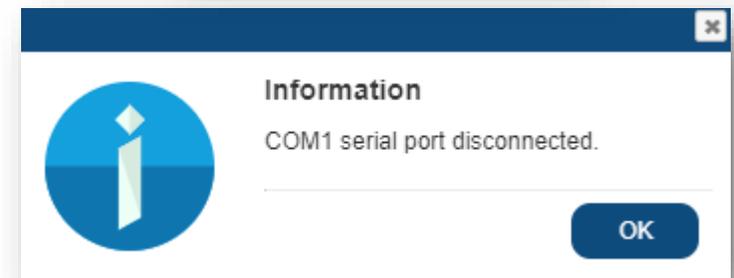
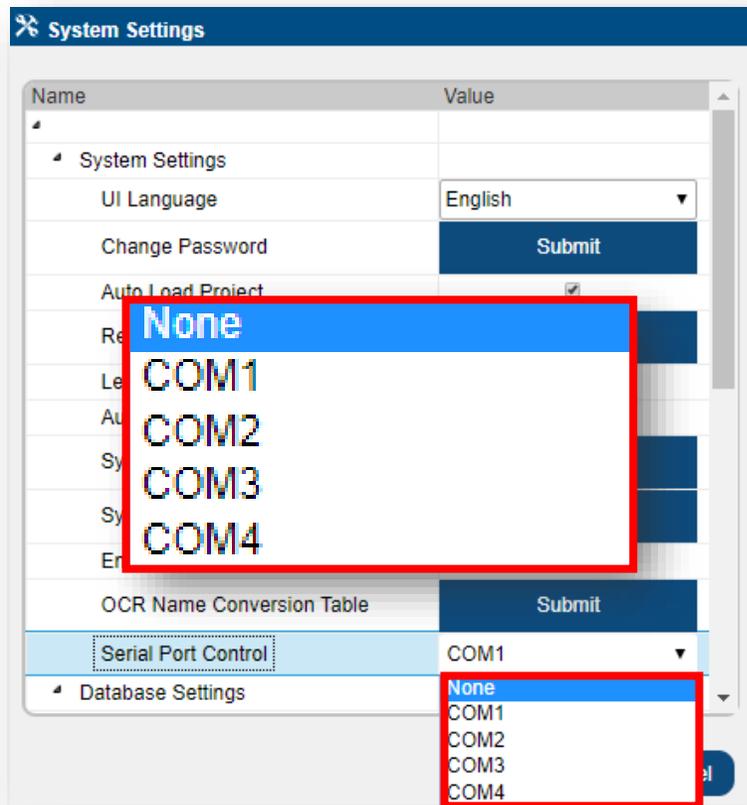
OK Cancel

Build Project – Control

- **Serial Port Control**

Set the serial port in System Settings. The status of serial port is based on connection of supplied COM cable, and it is displayed on the toolbar in the upper-right corner.

If it is connected, project and control playing will be played, otherwise it will be paused.



Build Project – Script

- **Script** : Entry to **Script** page

The screenshot displays the nexvic software interface for a project named 'VIC7000demo - t.vic'. The top navigation bar includes icons for LOG, a camera, a folder, a wrench, and a help icon. Below this is a toolbar with buttons for New, Load, Save, Save As, Page, Script (highlighted), Monitor, Control, Link, and Wizard. The main workspace is a large text editor with a cursor at line 1. On the right, a 'Targets' panel shows a grid of buttons for '01', '02', and '03', along with various Modbus-related functions like 'Calc', 'Functions', 'Modbus Bit', 'Modbus String', 'Modbus Int', 'Modbus Uint', 'Read Modbus System Bit', and 'Link'. Below these are 'Control List' buttons for 'TARGET01' and 'TARGET02'. An 'Apply' button is located at the bottom left of the interface.

Build Project – Script

- **Script**

- **Use Parameter** : Right-click on the target field

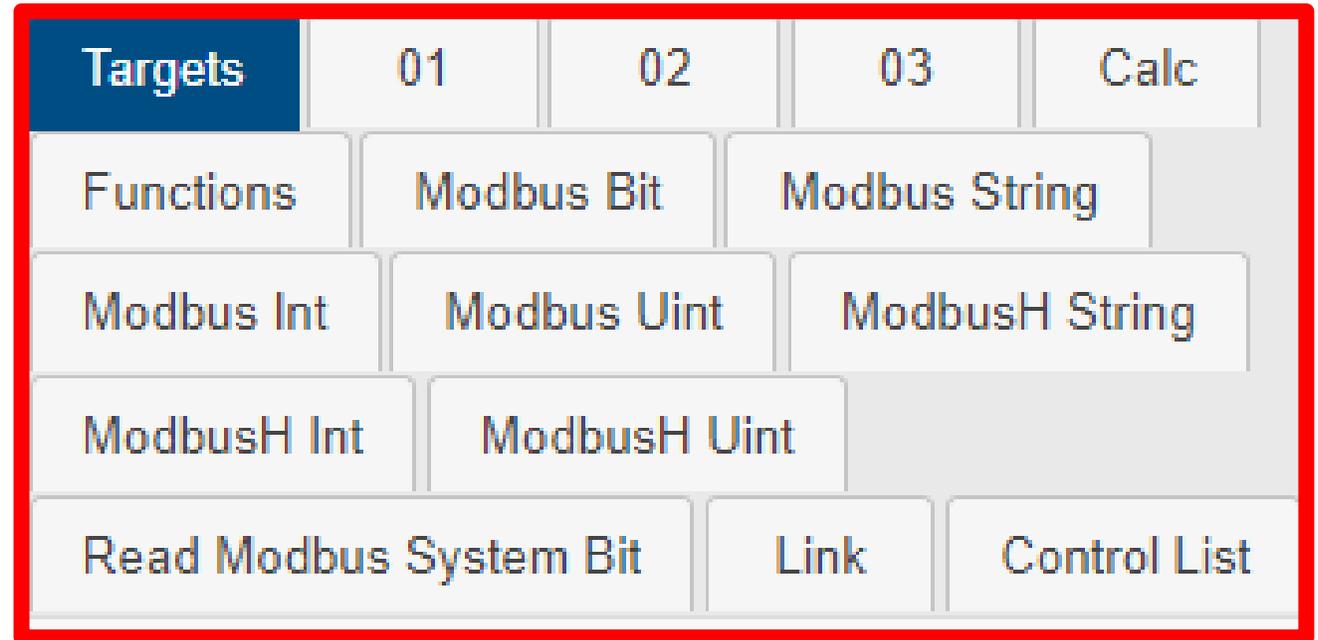
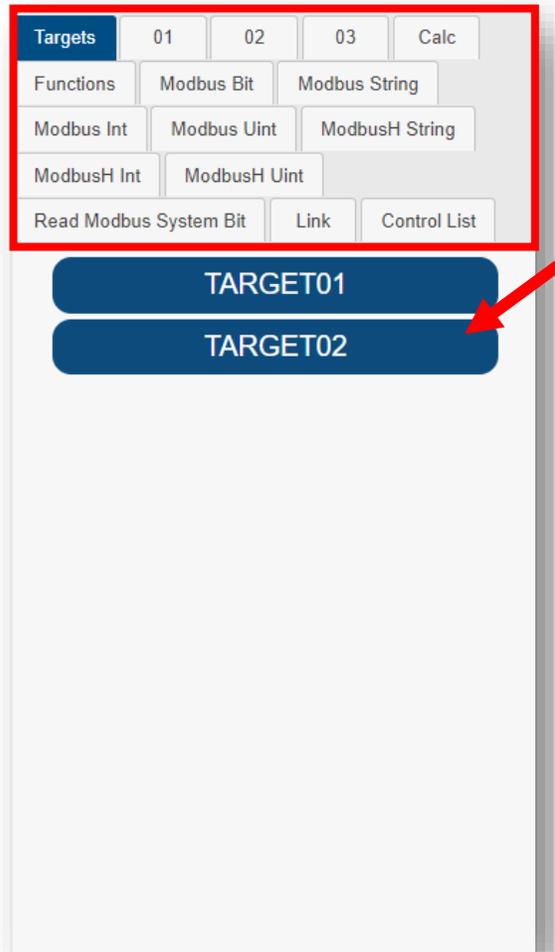
The screenshot shows a software interface with a right-click context menu open over a target field. The menu is divided into two sections. The left section, highlighted with a red box, lists the following options: Targets, 01, 02, 03, Calc, Functions, Modbus Bit, Modbus String, Modbus Int, Modbus Uint, ModbusH String, ModbusH Int, ModbusH Uint, Read Modbus System Bit, and Link. The right section lists target identifiers from PAGE01.OCR01 to PAGE01.OCR20. A red arrow points to the 'PAGE01.OCR01' target field. A larger red box on the right side of the image contains a list of the same options as the context menu, but without the 'Targets' header, serving as a legend for the highlighted menu items.

Context Menu Item	Legend Item
Targets	Targets
01	01
02	02
03	03
Calc	Calc
Functions	Functions
Modbus Bit	Modbus Bit
Modbus String	Modbus String
Modbus Int	Modbus Int
Modbus Uint	Modbus Uint
ModbusH String	ModbusH String
ModbusH Int	ModbusH Int
ModbusH Uint	ModbusH Uint
Read Modbus System Bit	Read Modbus System Bit
Link	Link

Build Project – Script

- **Script**

- **Use Parameter** : Select a Targets button in the right-hand side field



Build Project – Script

- **Script**

Operator	Num & Num	Num & String	String & String
Addition (+)	+	convert number to string, then string add ups	+
Subtraction (-)	-	No action	No action
Multiplication (*)	*	No action	No action
Division (/)	/	No action	No action
Less than (<)	Comparison	convert character to ASCII code, then compare it in order	convert character to ASCII code, then compare it in order
Equal (==)			
Greater than (>)			
Less than or Equal (<=)			
Greater than or Equal (>=)			
Not equal (!=)			

Build Project – Script

- **Script**

- **Functions** : Click **Functions** button

SEND.EMAIL : Send email automatically, see Advanced

SEND.LINE : Send LINE notify automatically, see Advanced

SEND.WECHAT : Send WeChat message automatically, see
Advanced

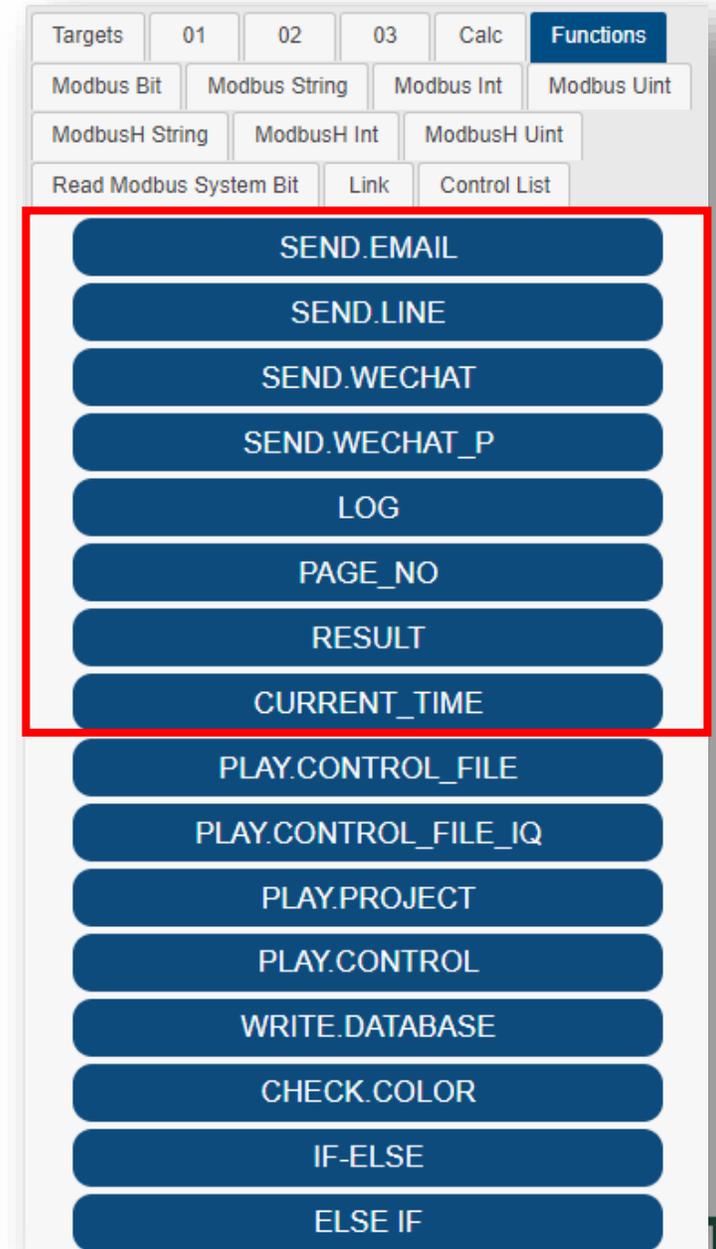
SEND.WECHAT_P : Send WeChat message automatically, see
Advanced

LOG : Record message in Log

PAGE_NO : A variable, the used page index currently

RESULT : Current recognition, 0 = Pass, 1 = NG, 2 = No Matching

CURRENT_TIME : A variable, current time to execute script



Build Project – Script

- **Script**

- **Functions** : Click **Functions** button

PLAY.CONTROL_FILE : Play specific control file

PLAY.CONTROL_FILE_IQ : Play specific control file with input and queue property, see Advanced

PLAY.PROJECT : Play/Stop project

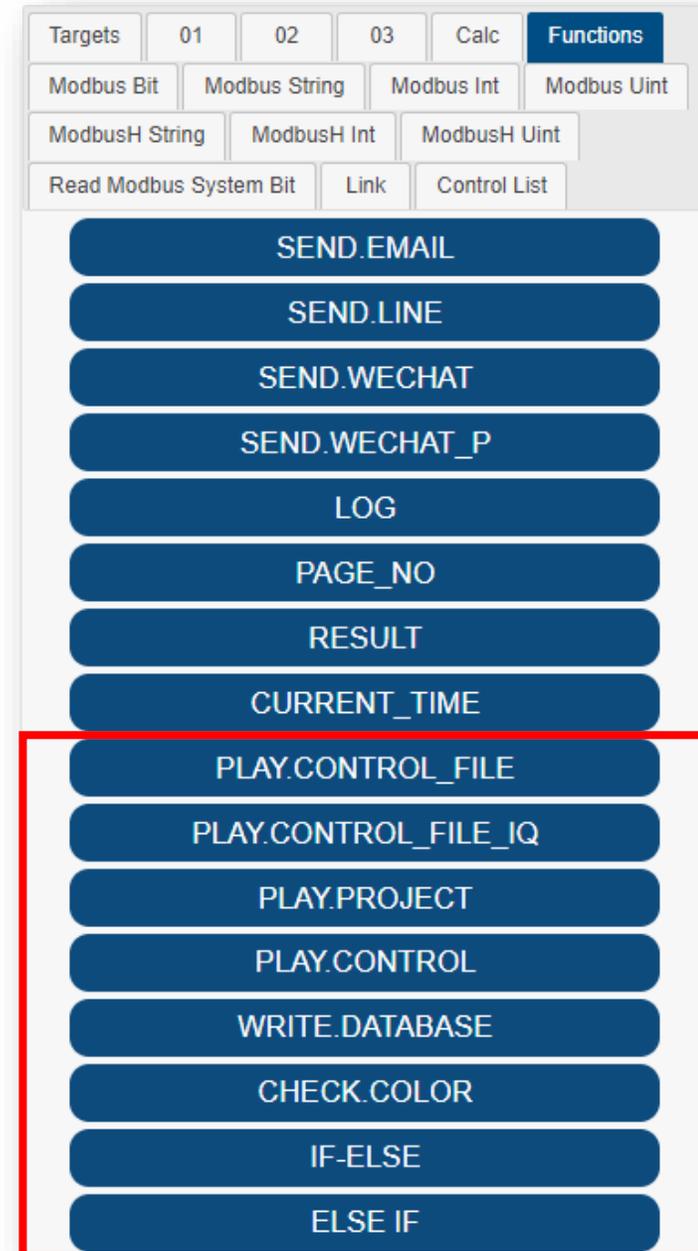
PLAY.CONTROL : Play/Stop control

WRITE.DATABASE : Whether recognition data is written into database

CHECK.COLOR : Check whether a color is twinkling

IF-ELSE : Conditional

ELSE IF : Conditional



Build Project – Script

- **Script**

- **LOG** : Record message in Log
 1. type : The color of the message recorded in Log, 0 : black, 1 : red, 2 : blue
 2. message : The message that is needed to be recorded (string)
 3. sec : Restrict execution again in a period of time (s)



```
LOG( , , );
```

Build Project – Script

- **Script**

- **PLAY.CONTROL_FILE** : Play specific control file

1. `control_file_name` : Name of the control file that is about to play.

The file can be picked from control file list

2. `sec` : Restrict execution again in a period of time (s)

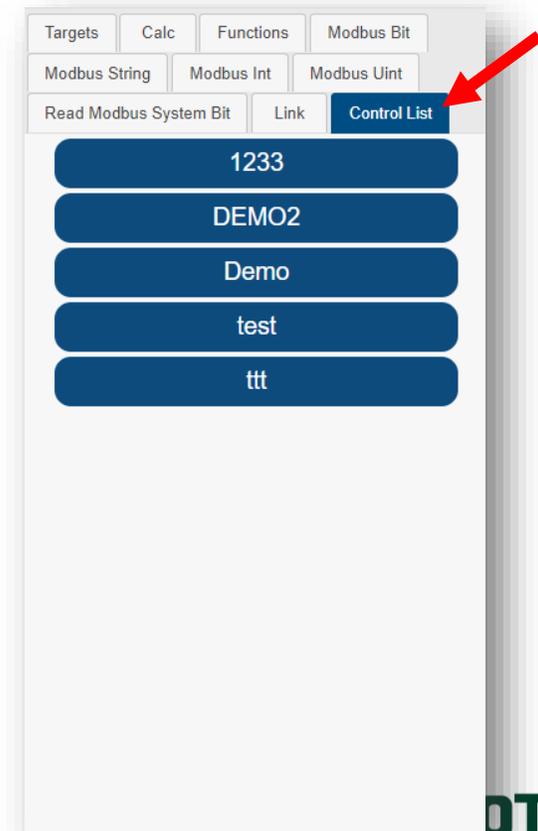
*While the current control file is being played, another control file is played, the current file will be stopped and the next file will start immediately.

PLAY.CONTROL_FILE

`PLAY.CONTROL_FILE(control_file_name, sec)`

PLAY.CONTROL_FILE(,);

Control file list



Build Project – Script

- **Script**

- **PLAY.PROJECT** : Play/Stop project

1. status : It could only be set to 0, means that it will only stop project

PLAY.PROJECT

PLAY.PROJECT(status)

```
PLAY.PROJECT( );
```

Build Project – Script

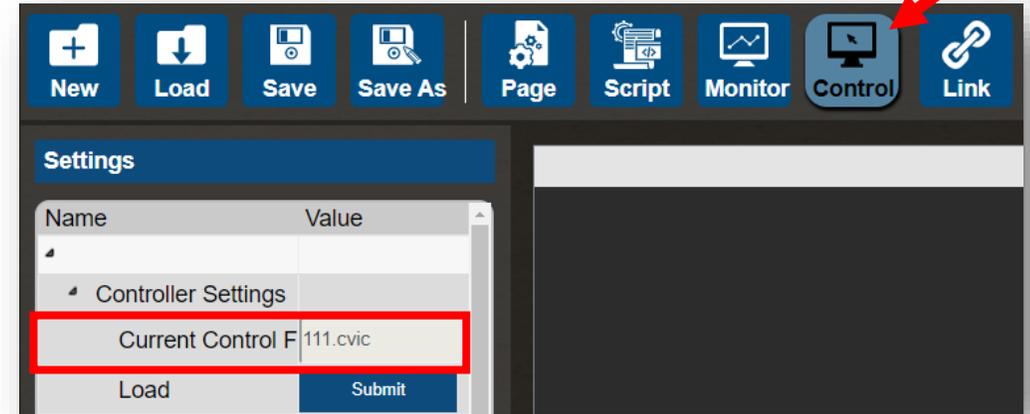
- **Script**

- **PLAY.CONTROL** : Play/Stop control

1. status : Set the status of control

0 = Stop current all current controls

1 = Play the control file set in Control page



PLAY.CONTROL

PLAY.CONTROL(status)

```
PLAY.CONTROL( );
```

Build Project – Script

- **Script**

- **WRITE.DATABASE** : Whether recognition data is written into database
 1. status : Set the status of writing data into database
 - 0 = Disable writing data into database
 - 1 = Enable writing data into database

WRITE.DATABASE

WRITE.DATABASE(status)

```
WRITE.DATABASE( );
```

Build Project – Script

- **Script**

- **CHECK.COLOR** : Detect whether a COLOR is twinkling
 1. page_color : The color needed to be detected
 2. calc : Store detection results
 3. sec : detection time interval (int)



```
CHECK.COLOR( , , );
```

```
1 CHECK.COLOR(PAGE01.COLOR01,CALC00,10);|
```

Detect COLOR01 on PAGE01 that is twinkling in 10 seconds, and the result will be stored in CALC00.

Build Project – Script

- **Script**

- **Apply** : After edition is finished, click Apply(ctrl + s) and the script will take effect.

The screenshot shows a code editor with a script and its execution results. The script contains several conditional statements:

```
3  if(PAGE01.OCR02>=0)
4    CALC00=1;
5  else
6    CALC00=0;
7
8  if(PAGE01.OCR03>=0)
9    CALC01=1;
10 else
11    CALC01=0;
12
13 if(PAGE01.OCR07>=0)
14
15 else
16
17
18 if(PAGE01.OCR08>=0)
19    CALC03=1;
20 else
21    CALC03=0;
22
23 if(PAGE01.OCR012>=0)
```

Below the code, three execution results are shown, each with a red border:

- 1. A blue button labeled "Apply" followed by the text "Apply successfully."
- 2. A blue button labeled "Apply" followed by the text "Syntax error at line 15: syntax error, unexpected ELSE" in red.
- 3. A blue button labeled "Apply" followed by the text "Apply successfully."

Build Project – Script

- **Script**

- **Sample** : Use Script to determine the CALC value. If the recognition result on PAGE01 is greater than 0, set CALC as 1, otherwise set CALC as 0.

```
3  if(PAGE01.OCR02>=0)
4    CALC00=1;
5  else
6    CALC00=0;
7
8  if(PAGE01.OCR03>=0)
9    CALC01=1;
10 else
11    CALC01=0;
12
13 if(PAGE01.OCR07>=0)
14    CALC02=1;
15 else
16    CALC02=0;
17
18 if(PAGE01.OCR08>=0)
19    CALC03=1;
20 else
21    CALC03=0;
22
23 if(PAGE01.OCR012>=0)
24
```

Apply Apply successfully.

Build Project – Script

- **Script**

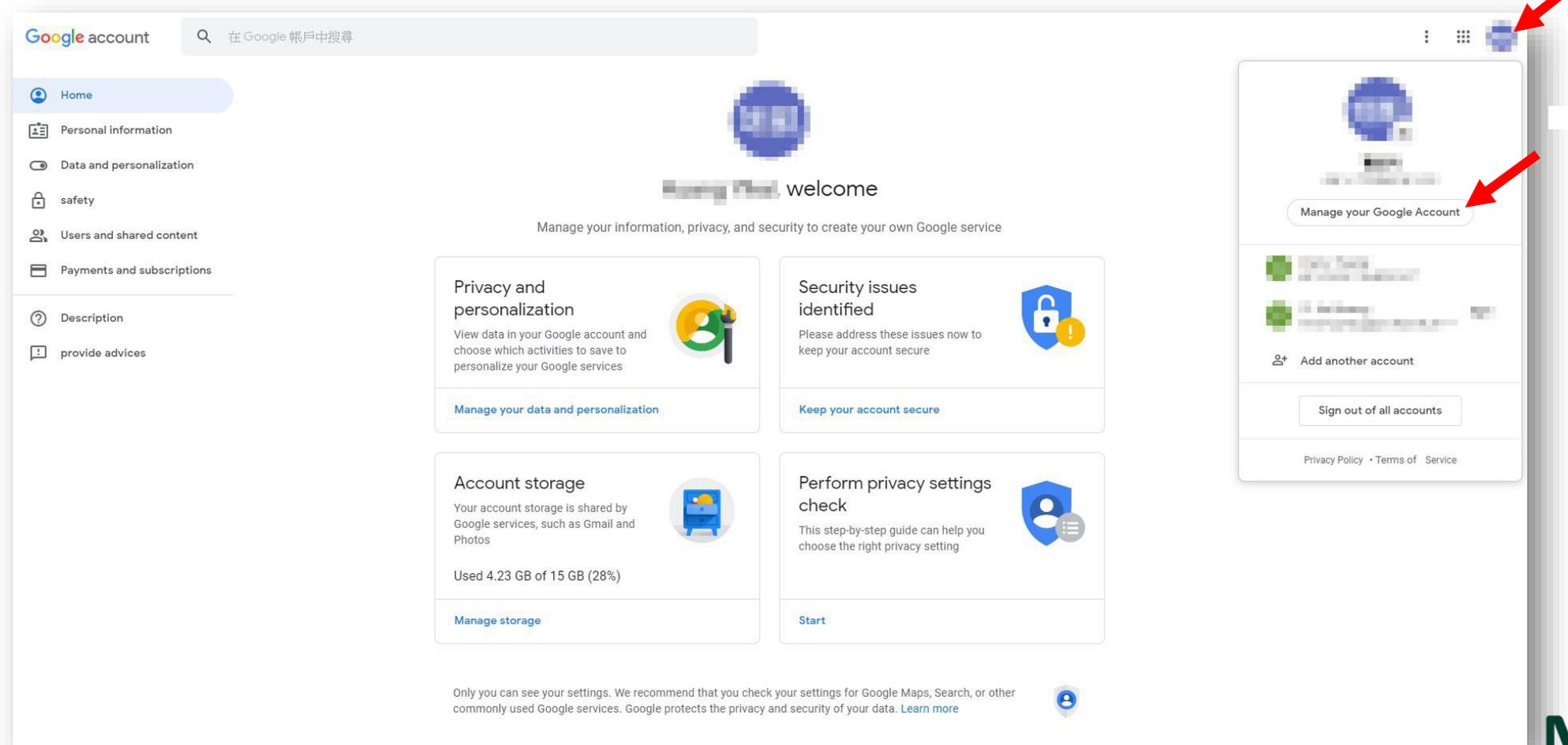
- **Simulate** : Enter **Monitor** page → Click **Snap** → Check Script execution result

The screenshot displays a software interface with a sidebar on the left and a main data table. The sidebar has two sections: 'Page_Setting' and 'Calculation'. The 'Calculation' section is highlighted with a red box and lists items from '-CALC00' to '-CALC11'. The main table has four columns: 'Quantity', 'Temperature', 'Voltage', and 'Time'. Each row in the table is enclosed in a dashed purple box and includes a red label (CALC00 to CALC11) next to the temperature value. The temperature values are in degrees Celsius, and the voltage values are in Volts (V). The time values are in milliseconds (ms). At the bottom of the table, there is a green box containing the text '1,1 frames' and '16ms'.

Quantity	Temperature	Voltage	Time
566	-14.04 °C	17.9 V	1137 ms
974	20.79 °C	23.3 V	1948 ms
669	3.74 °C	22.1 V	1342 ms
157	-5.38 °C	15.9 V	324 ms
261	27.35 °C	6.8 V	529 ms
46	26.09 °C	14.0 V	101 ms
764	13.75 °C	20.1 V	1530 ms
563	7.74 °C	17.7 V	1130 ms

- SMTP

- **Get Authority** : If using Gmail, user needs to **get access authority of email**. First, enter Google account page



Advanced

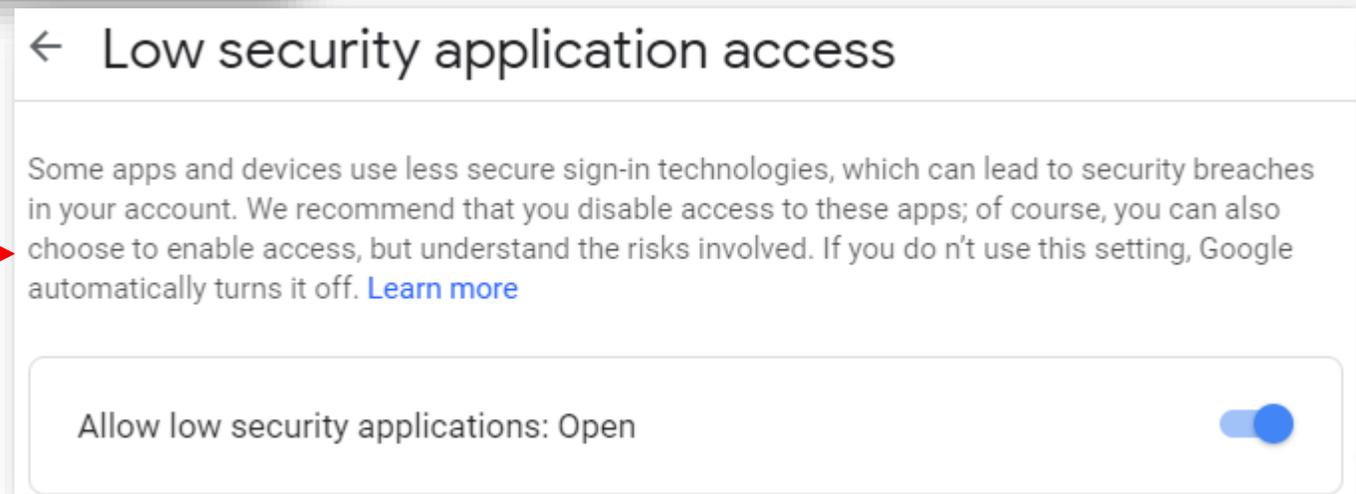
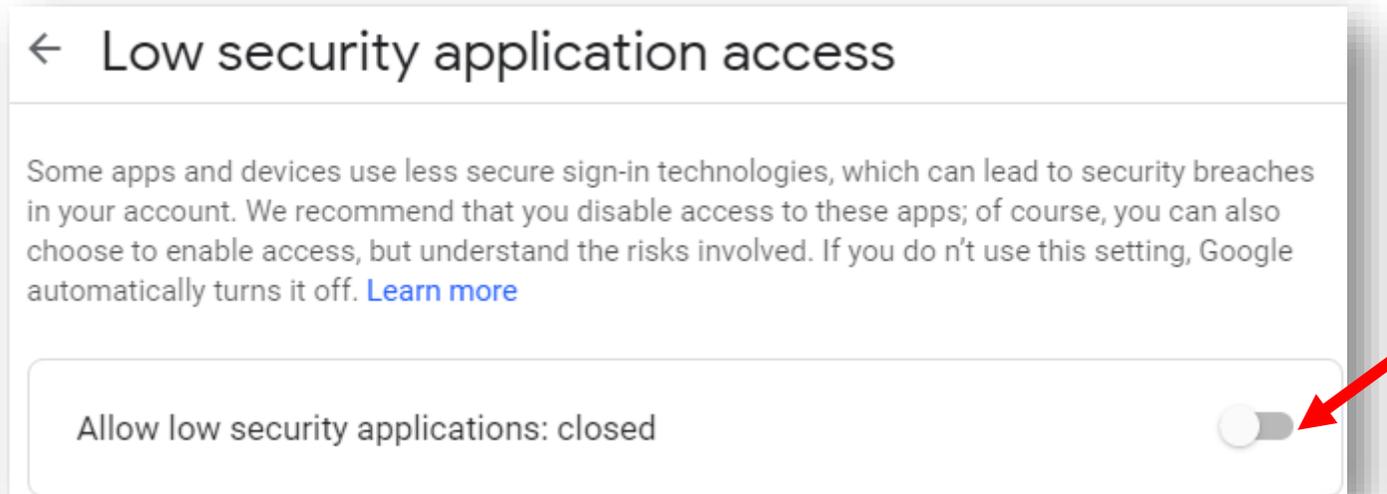
- SMTP

- **Get Authority** : Enter **safety** page → Find **Low security application access** → Click **Turn on access**

The screenshot shows the Google Account interface. On the left, the 'safety' menu item is highlighted with a red arrow. The main content area shows the 'Low security application access' section, which is currently turned off. A red arrow points to the 'Turn on access (not recommended)' link at the bottom of this section. Other visible elements include the search bar at the top, navigation links like 'Home', 'Personal information', and 'Data and personalization', and a 'Management device' link.

Advanced

- SMTP
 - **Get Authority** : **Allow low security applications**



Advanced

- SMTP

- **Get Authority** : If using Yahoo mail, user needs to **get access authority of email**. Enter account page for Yahoo homepage.

The image shows a screenshot of the Yahoo! account management page. At the top, there's a navigation bar with the Yahoo! logo, a search bar, and user information for 'garry'. Below this is a menu with categories like '焦點', '運動', '娛樂', '新奇', '生活', and '影音'. The main content area is titled '個人資料' (Personal Information) and features a large profile picture placeholder. On the left side, there's a sidebar with options: '個人資料', '帳號安全性', '最近活動', '偏好設定', and '服務說明'. The profile information shows the name '翊凱' (Yi Kai) and the surname '黃' (Huang).

- SMTP

- **Get Authority** : Enter **Security** page → **Find Allow the use of applications with less secure login methods** → Click to Allow access



允許使用登入方式較不安全的應用程式

部分非 Yahoo 應用程式和裝置使用的登入技術較不安全，因此會讓您的帳號更容易遭受攻擊。您可關閉存取權限 (建議作法) 或選擇承擔風險繼續使用這類應用程式。

[了解更多](#)



Advanced

- **SMTP : Send Email Automatically**

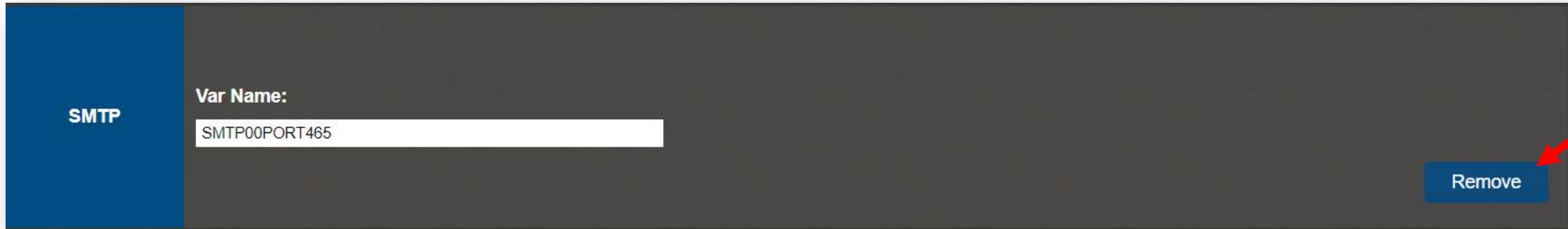
1. **Link Settings** : Enter **Link** page → Communication Mode : **SMTP** → Enter **Server Address, Port, User Name, Password, Email** → Click **Add**

The screenshot shows the 'Link Settings' page in the Nexvic interface. The 'Link' icon in the top navigation bar is highlighted with a red arrow. Below it, the 'Communication Mode' dropdown menu is set to 'SMTP', also indicated by a red arrow. The main form area is titled 'SMTP Setting' and contains several input fields: 'Server Address' (smtp.gmail.com), 'Port' (465), 'User Name' (garry), 'Password' (empty), 'Email' (garry @gmail.com), and 'Var Name' (SMTP00PORT465). A red box highlights the 'Server Address', 'Port', 'User Name', 'Password', and 'Email' fields. The 'Add' button at the bottom right is also highlighted with a red arrow.

Field	Value
Server Address:	smtp.gmail.com
Port:	465
User Name:	garry
Password:	
Email:	garry @gmail.com
Var Name:	SMTP00PORT465

Advanced

- **SMTP : Send Email Automatically**
 1. **Link Settings** : Confirm SMTP link which has been added. Or remove it.



SMTP

Var Name:

SMTP00PORT465

Remove

Advanced

- **SMTP : Send Email Automatically**

2. **Edit Script** : Enter **Script** page → Choose **SEND.EMAIL** in Functions field

The screenshot displays the nexvic software interface for editing a script. The top menu bar includes options: New, Load, Save, Save As, Page, Script, Monitor, Control, Link, and Wizard. The Script editor shows a single line of code: `1 SEND.EMAIL(, , , ,);`. A red box highlights this code, and another red box below it contains the text `SEND.EMAIL`. On the right side, the Functions panel is open, showing a list of functions. The `SEND.EMAIL` function is highlighted with a red box, and a red arrow points to it from the top right. Other functions listed include `SEND.LINE`, `SEND.WECHAT`, `SEND.WECHAT_P`, `LOG`, `PAGE_NO`, `RESULT`, `CURRENT_TIME`, `PLAY.CONTROL`, `CHECK.COLOR`, and `IF-ELSE`. The bottom left corner has an `Apply` button.

Advanced

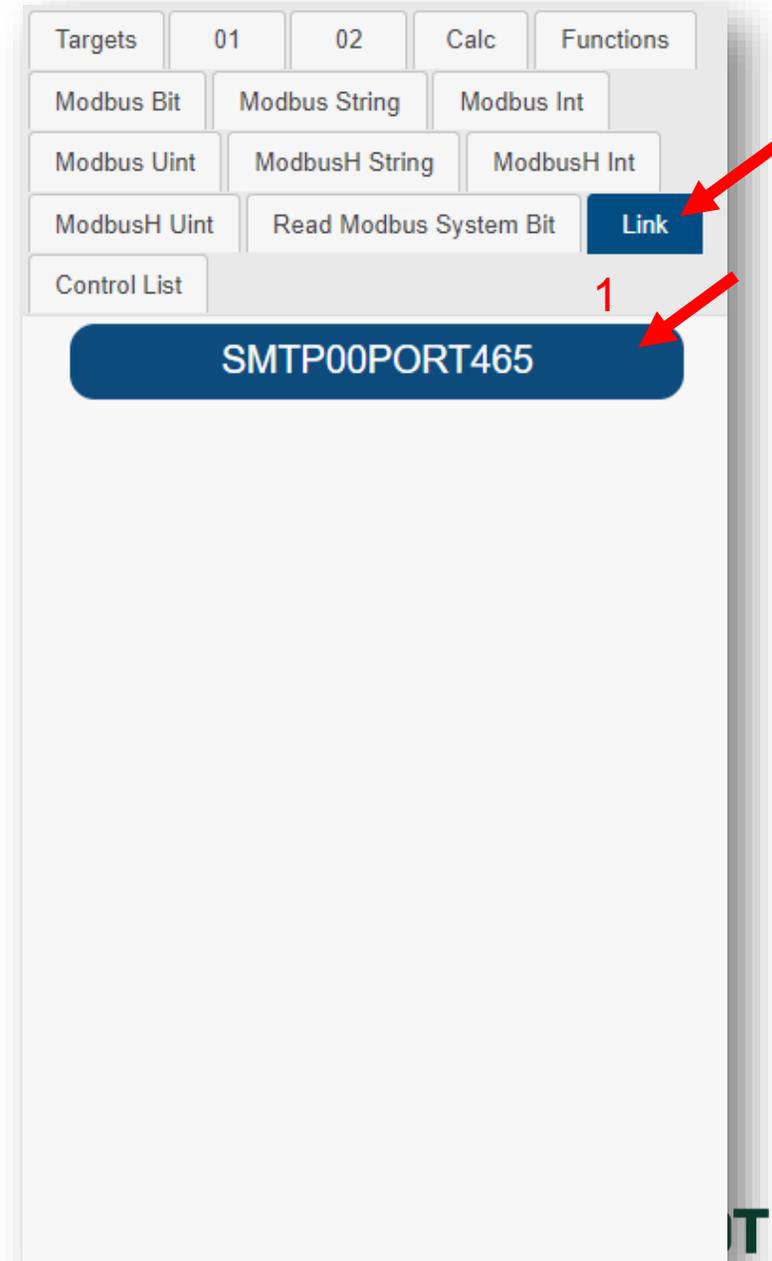
- **SMTP : Send Email Automatically**

2. **Edit Script** : Six parameters

1. id : Used SMTP link (string)
2. to : Recipient (string)
3. subject : mail subject (string)
4. body : mail body (string)
5. send image : Whether to transfer image when execute this command (1 : transfer, 0 : not transfer)
6. sec : Restrict execution again in a period of time (s)

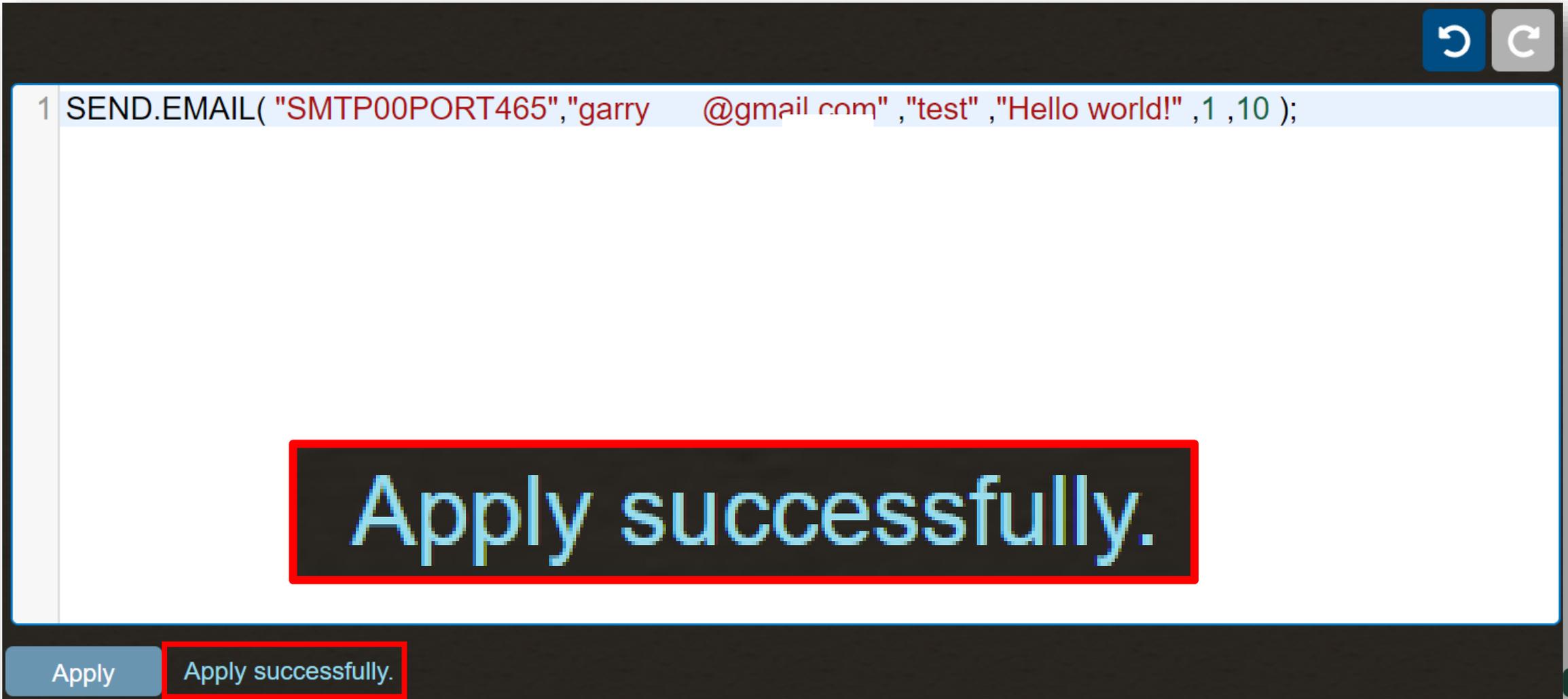
SEND.EMAIL

`SEND.EMAIL(id, to, subject, body, send image, sec)`



Advanced

- **SMTP : Send Email Automatically**
 2. **Edit Script** : Edition is finished → Click **Apply** (ctrl +s)



The screenshot shows a script editor window with a dark background. At the top right, there are two circular icons: a blue one with a left-pointing arrow and a grey one with a right-pointing arrow. The main area is a white text editor containing a single line of code: `1 SEND.EMAIL("SMTP00PORT465", "garry @gmail.com", "test", "Hello world!", 1, 10);`. Below the code, a large black box with a red border contains the text "Apply successfully." in white. At the bottom of the window, there are two buttons: a blue "Apply" button and a white "Apply successfully." button with a red border.

```
1 SEND.EMAIL( "SMTP00PORT465", "garry @gmail.com", "test", "Hello world!", 1, 10 );
```

Apply successfully.

Apply Apply successfully.

Advanced

- **SMTP : Send Email Automatically**

3. **Simulate** : Enter **Monitor** page → Click **Snap** → Check whether there is a mail

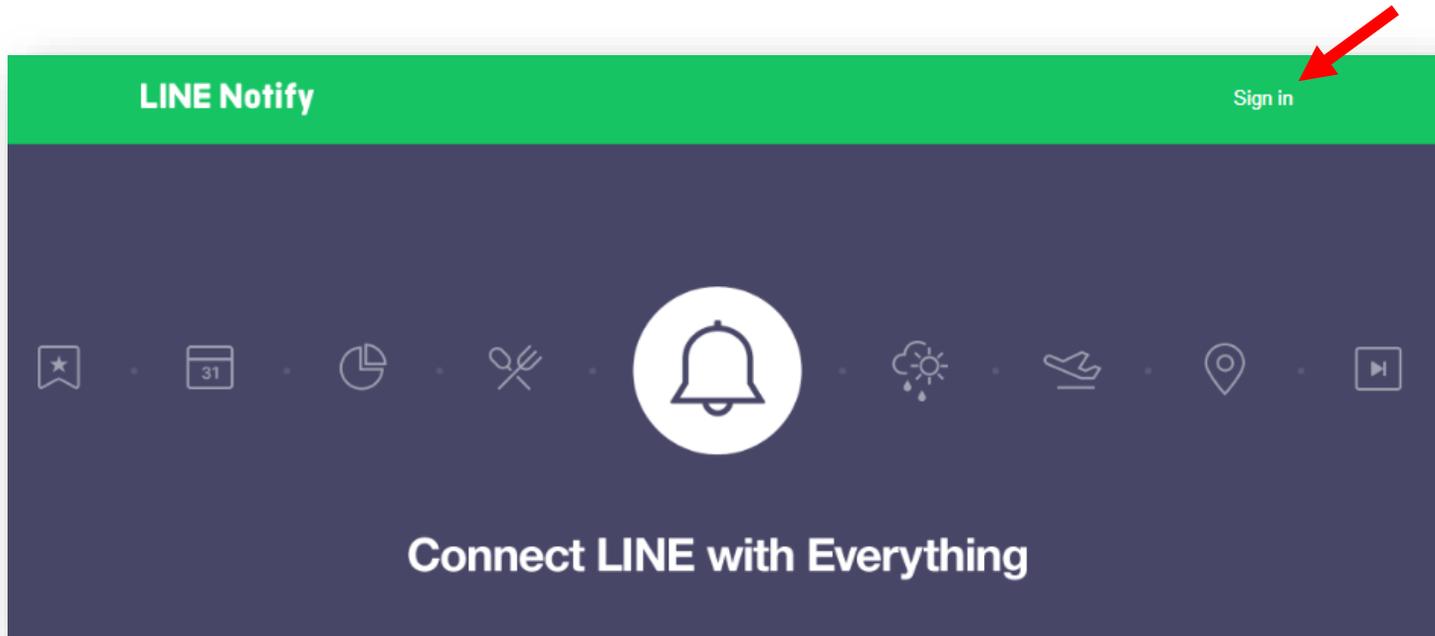
The screenshot shows the nexVIC software interface. The top menu bar includes 'New', 'Load', 'Save', 'Save As', 'Page', 'Script', 'Monitor', 'Control', 'Link', and 'Wizard'. The 'Monitor' button is highlighted with a red arrow. Below the menu bar, there are 'Start', 'Snap', and 'Start' buttons, with the 'Snap' button also highlighted by a red arrow. The main display area shows a 'Pyramax' system monitor window with a table of data. A red box highlights the 'No Matching' text in the top left of the monitor window. A green box highlights '1,1 frames' at the bottom left. A simulated email notification is overlaid on the bottom right, showing a Gmail icon, the text 'GMAIL', and the email content: 'garry [redacted]@gmail.com', 'test', and 'Hello world!'. The Japanese text '現在' (Now) is visible on the right side of the notification box.

Setpoint	65	75	80	85	25	20					
Zone	1T	2T	3T	4T	5T	6T	7T	8T	9T	10T	20
Actual	110	128	125	155	158	180	228	260	288	298	20
Setpoint	110	128	125	155	158	180	228	260	288	298	20
Power	18	15	10	6	7	12	10	22	6	28	

Advanced

- **Line Notify**

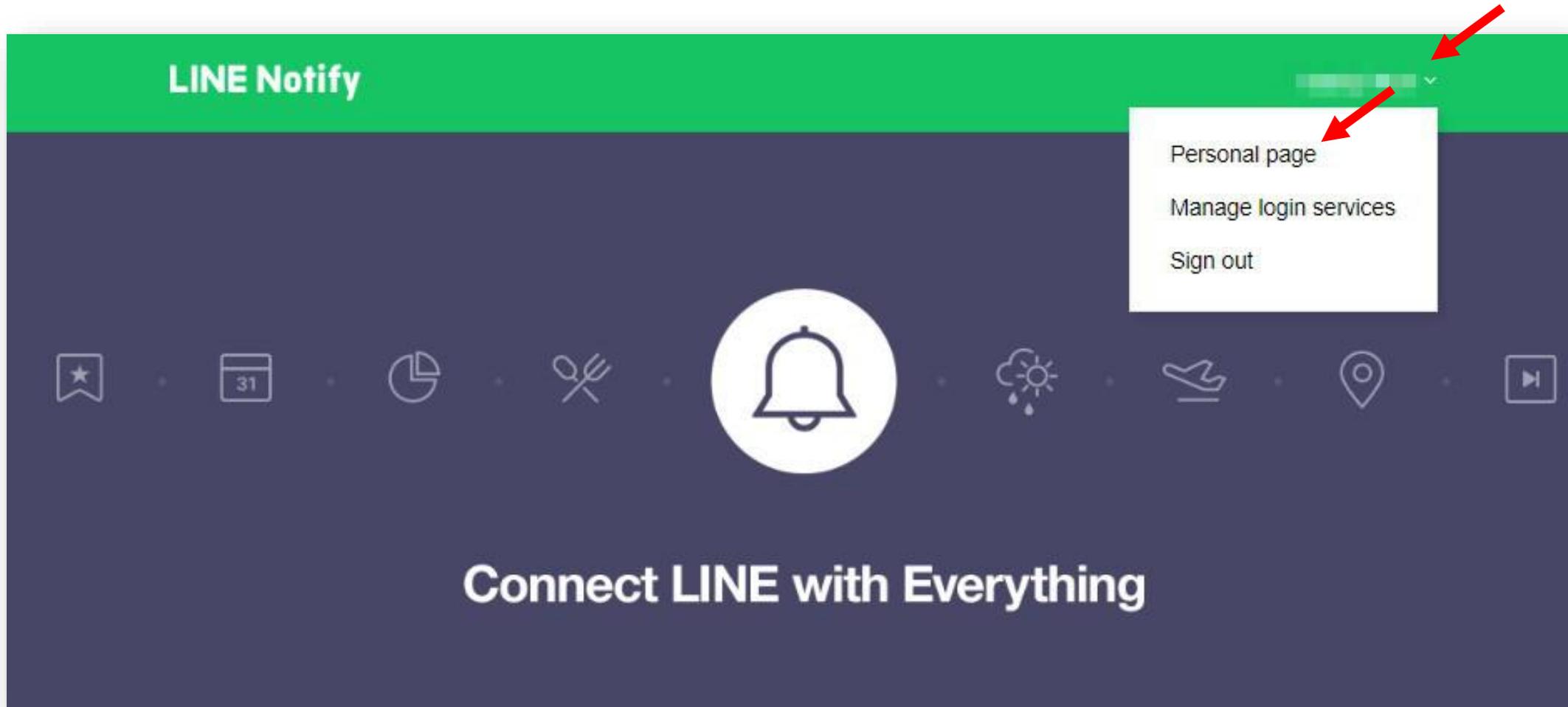
1. **Get token** : Go to the website of Line Notify (https://notify-bot.line.me/zh_TW/) → Click **Sign In**
→ Enter email account name and password



Advanced

- **Line Notify**

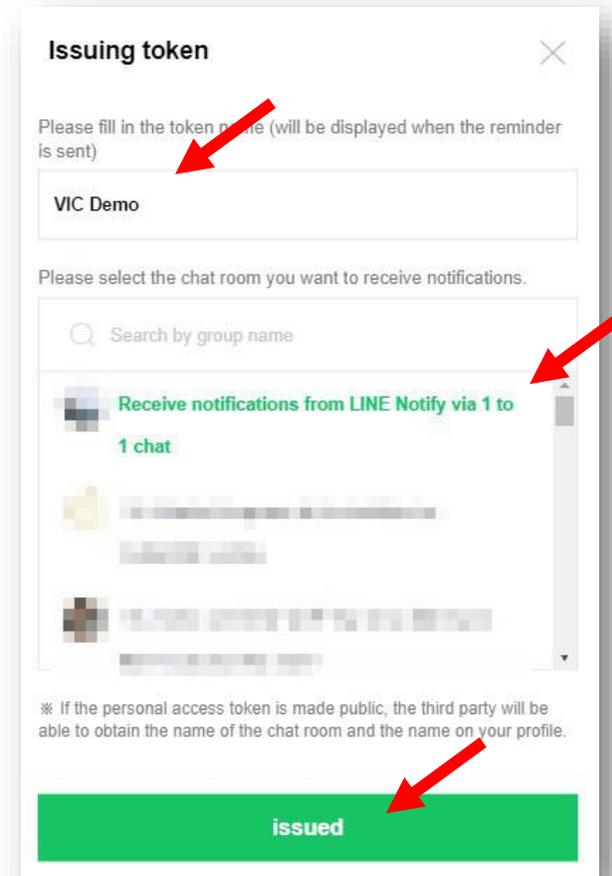
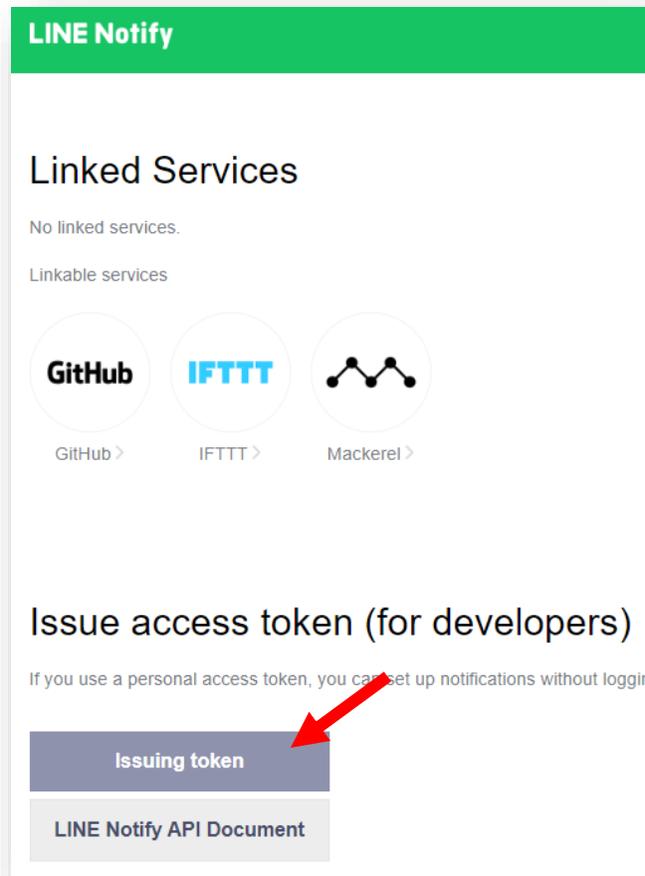
1. **Get token** : Click **account name** → Click **Personal page**



Advanced

- **Line Notify**

1. **Get token** : Click **Issuing token** → Enter Name of token → Choose the chatroom which will receive message → Click **Issued**



Advanced

- **Line Notify**

1. **Get token** : Please copy the issued token

The issued tokens are as follows.

XX

Leaving this page will no longer show newly issued tokens. Before leaving the page, please copy the token.

[copy](#) [shut down](#)

Advanced

- **Line Notify**

2. **Link Settings** : Enter **Link** page → Communication Mode : **LINE Notify** → Enter **Token** and custom **GroupName** → Click **Add**

The screenshot shows the 'Link' settings page in the Nexvic application. The interface includes a top toolbar with icons for 'New', 'Load', 'Save', 'Save As', 'Page', 'Script', 'Monitor', 'Control', 'Link', and 'Wizard'. The 'Link' icon is highlighted with a red arrow. Below the toolbar, the 'Communication Mode' is set to 'LINE Notify', also indicated by a red arrow. The main content area is titled 'Line Notify Setting' and contains three input fields: 'Token:', 'GroupName:', and 'Var Name:'. The 'Token:' and 'GroupName:' fields are highlighted with a red border. An 'Add' button is located at the bottom right, with a red arrow pointing to it.

New Load Save Save As Page Script Monitor Control Link Wizard

Communication Mode LINE Notify

Line Notify Setting

Token:

GroupName:

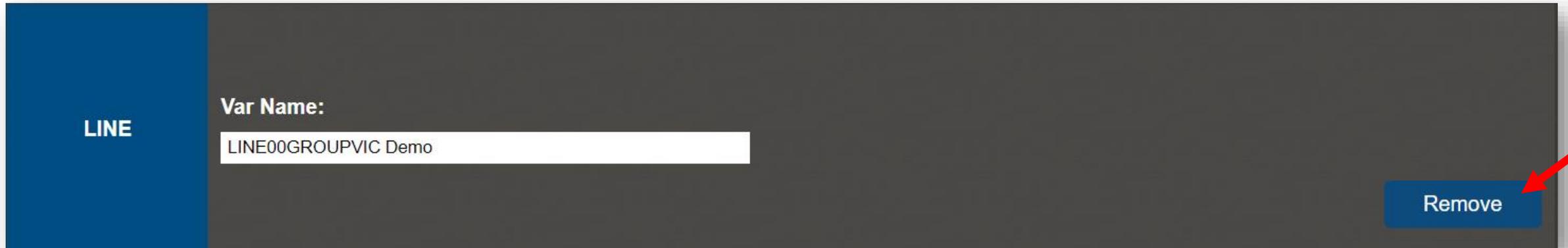
Var Name:

Add

Advanced

- **Line Notify**

2. **Link Settings** : Confirm the LINE Notify link which has been added. Or remove it.



LINE

Var Name:

LINE00GROUPVIC Demo

Remove

Advanced

- Line Notify

3. **Edit Script** : Enter **Script** page → Choose **SEND.LINE** in Functions field

The screenshot shows the nexVIC software interface for editing a script. The title bar indicates the file is 'VIC7300 - VIC7000 Training 2.vic'. The main menu includes buttons for New, Load, Save, Save As, Page, Script, Monitor, Control, Link, and Wizard. The 'Script' button is highlighted with a red arrow. The script editor contains the code '1 SEND.LINE(, , ,);'. A red box highlights this code, and another red box highlights the 'SEND.LINE' button in the 'Functions' list on the right. The 'Functions' list includes various options like SEND.EMAIL, SEND.LINE, SEND.WECHAT, etc. The 'SEND.LINE' button is highlighted with a red arrow. The 'Apply' button is visible at the bottom left.

```
1 SEND.LINE( , , , );
```

SEND.LINE

Advanced

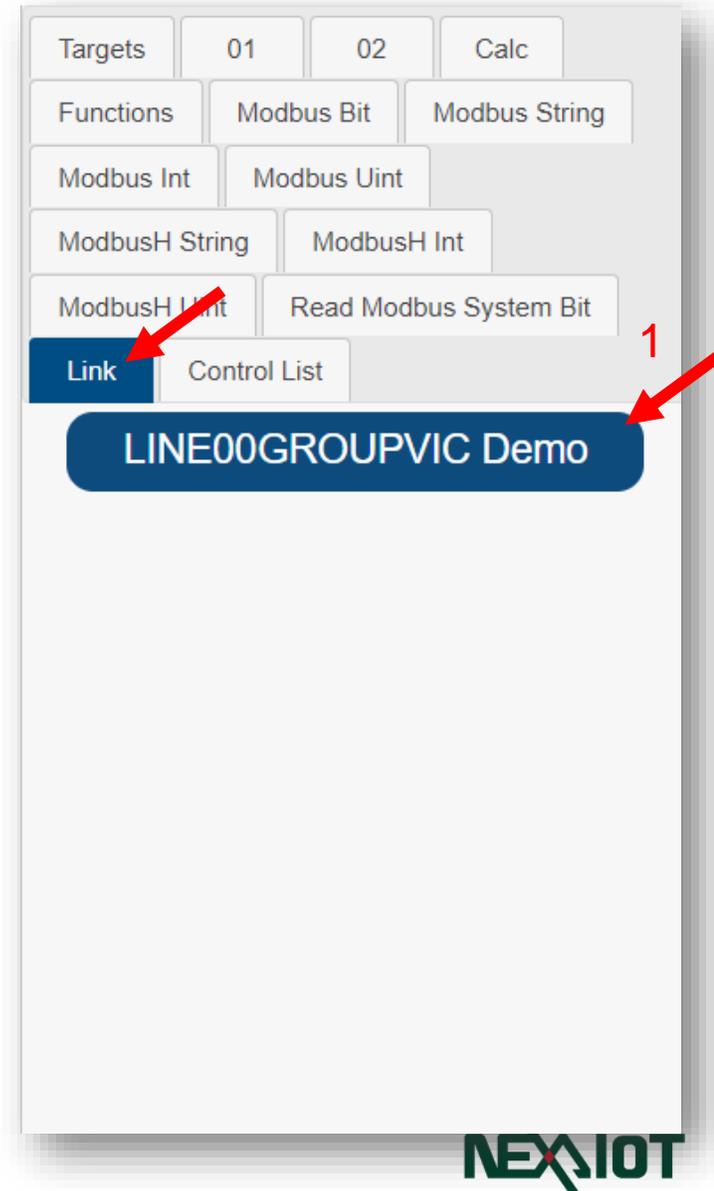
- **Line Notify**

3. **Edit Script** : Four parameters

1. **id** : LINE Notify link (string)
2. **message** : The message that is needed to be sent (string)
3. **send image** : Whether to transfer image when execute this command (1 : transfer, 0 : not transfer)
4. **sec** : Restrict execution again in a period of time (s)

SEND.LINE

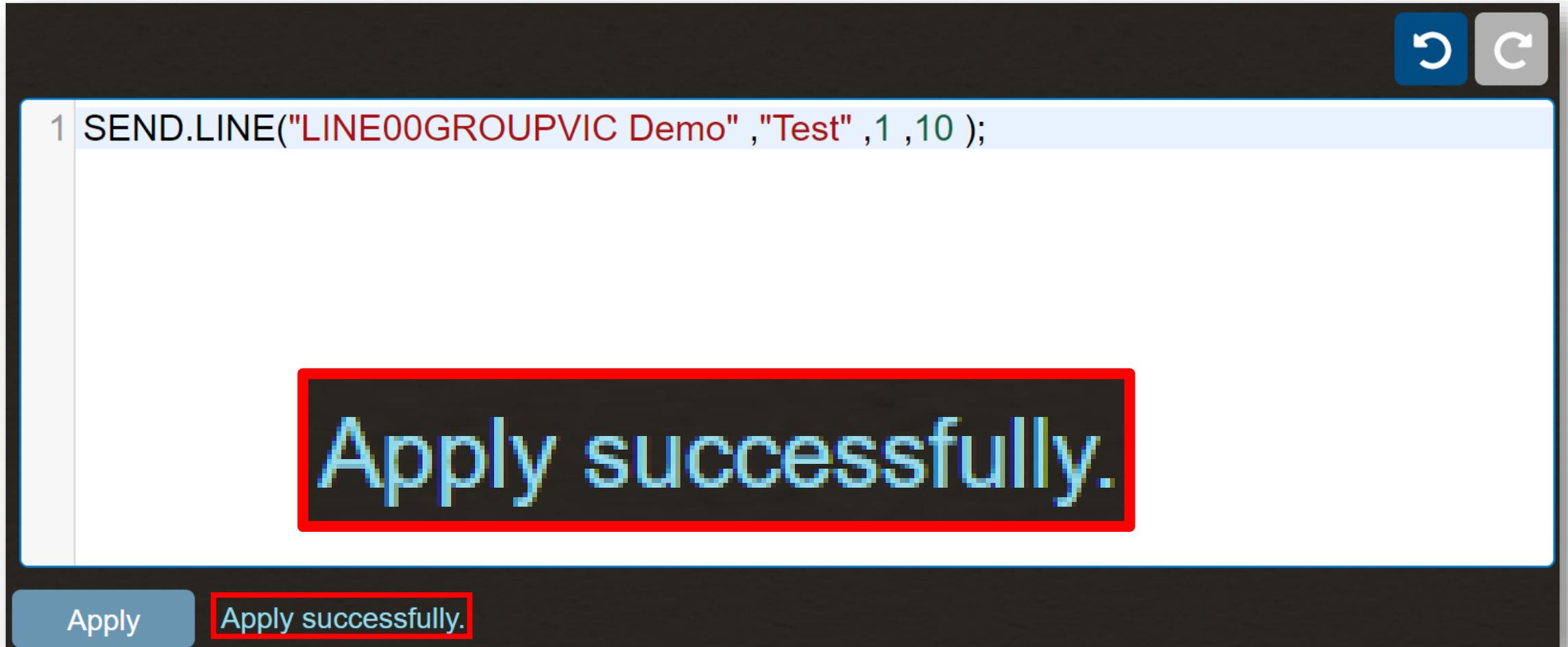
`SEND.LINE(id, message, send image, sec)`



Advanced

- **Line Notify**

3. **Edit Script** : Edition is finished → Click **Apply** (ctrl +s)



The screenshot shows a script editor window with a dark background. At the top right, there are two circular icons: a blue one with a left-pointing arrow and a grey one with a right-pointing arrow. The main area contains a single line of code: `1 SEND.LINE("LINE00GROUPEVIC Demo" ,"Test" ,1 ,10);`. Below the code, a large black box with a red border contains the text "Apply successfully." in a light blue font. At the bottom left, there is a blue button labeled "Apply" and a red-bordered box containing the text "Apply successfully." in a light blue font.

```
1 SEND.LINE("LINE00GROUPEVIC Demo" ,"Test" ,1 ,10 );
```

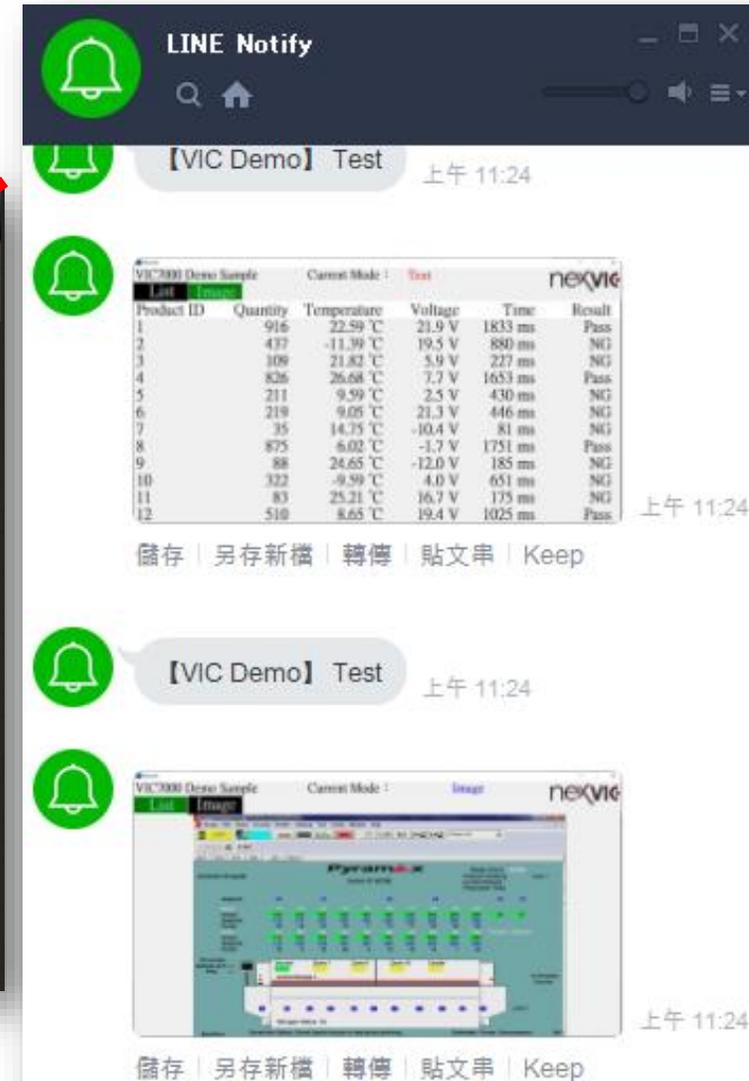
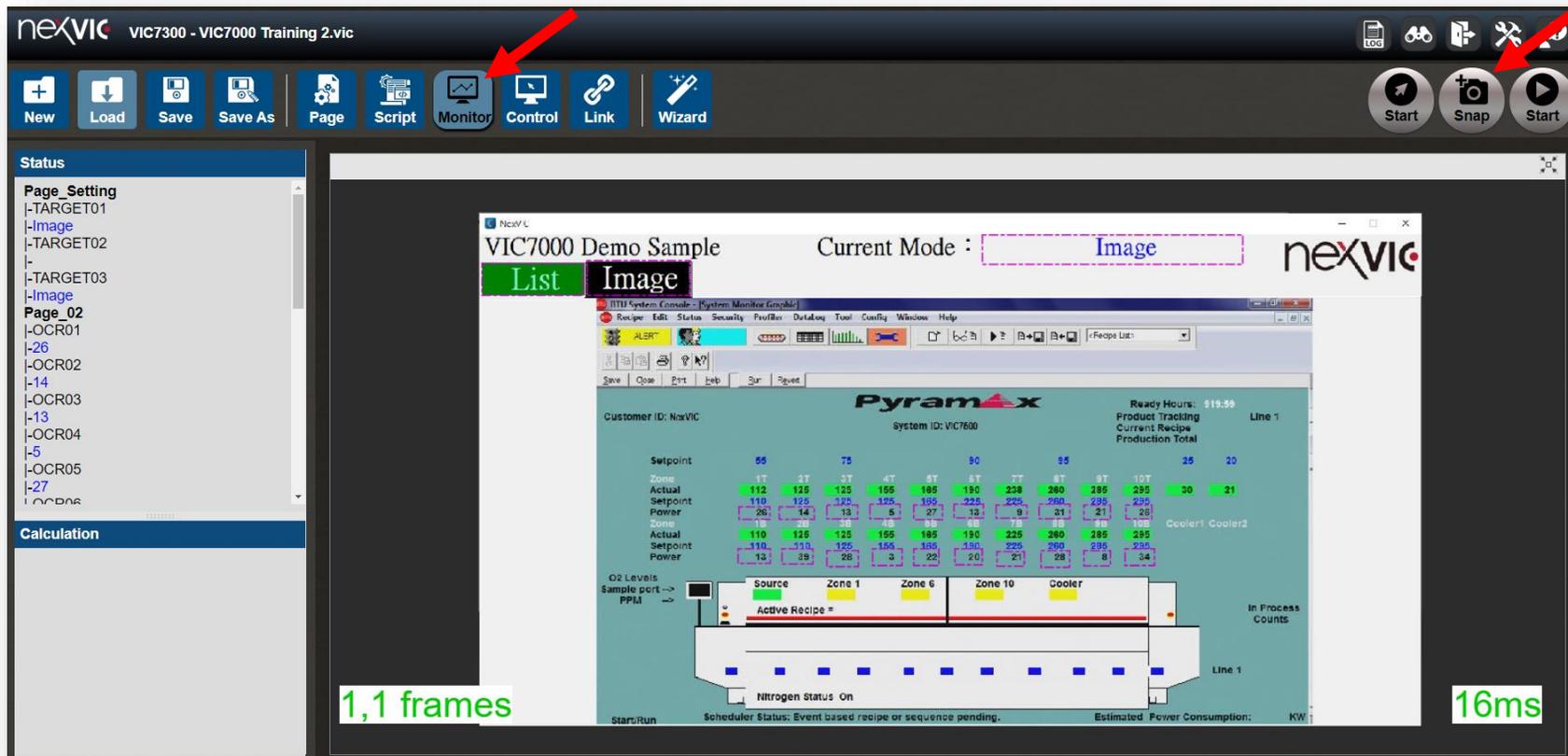
Apply successfully.

Apply Apply successfully.

Advanced

- Line Notify

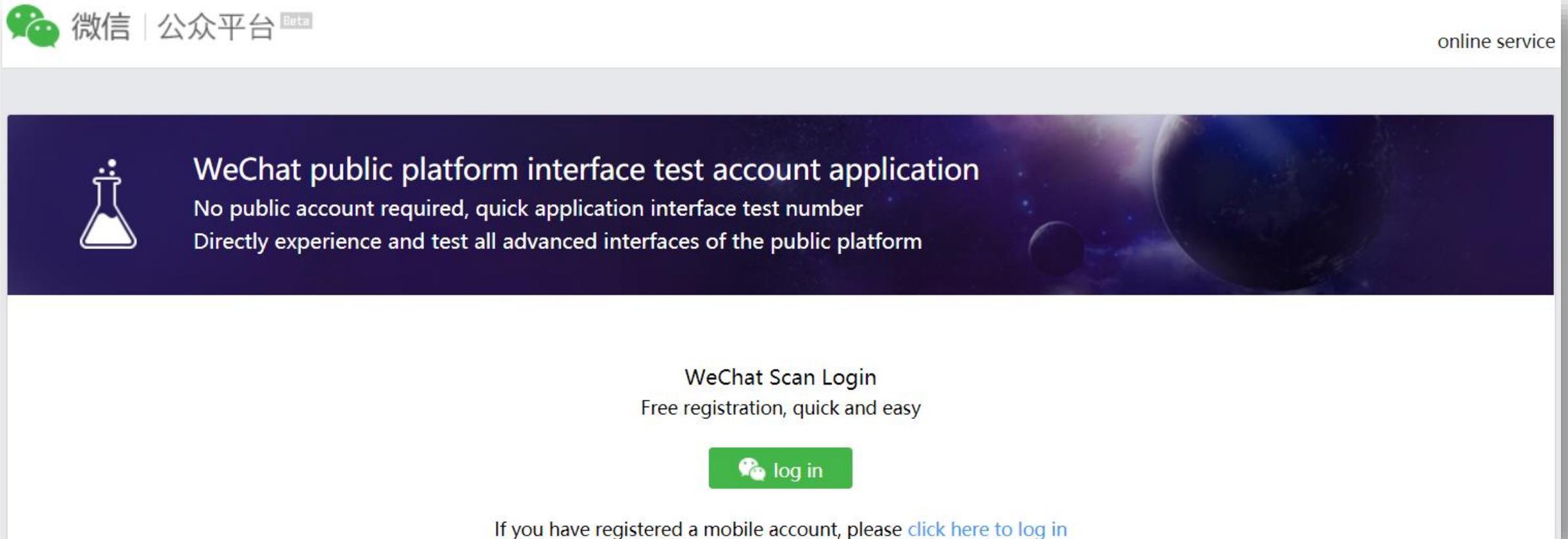
4. **Simulate** : Enter **Monitor** page → Click **Snap** → Check if there is a message in LINE



Advanced

- **WeChat**

1. **Get Information** : Go to WeChat public platform website(<https://mp.weixin.qq.com/debug/cgi-bin/sandbox?t=sandbox/login>) → Click **log in** → Use cell phone to scan QR code and login

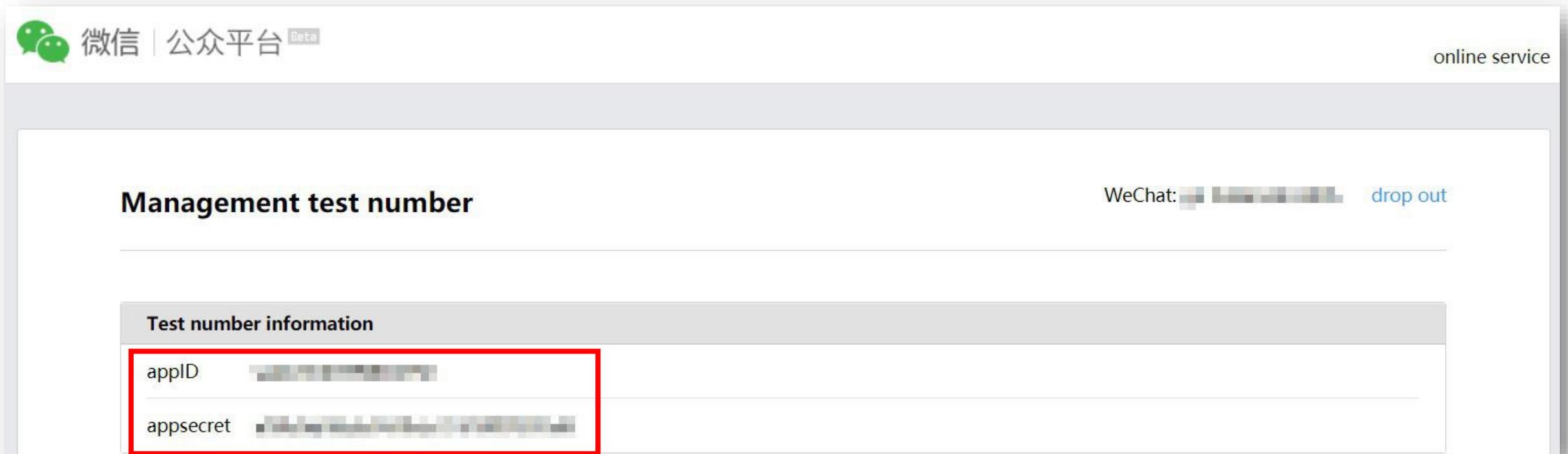


The screenshot shows the WeChat public platform interface test account application page. At the top left, there is a WeChat logo and the text "微信 | 公众平台 Beta". At the top right, it says "online service". The main content area has a dark blue background with a white icon of a flask and the text "WeChat public platform interface test account application". Below this, it says "No public account required, quick application interface test number" and "Directly experience and test all advanced interfaces of the public platform". In the center, there is a white box with the text "WeChat Scan Login" and "Free registration, quick and easy". Below this is a green button with a white WeChat logo and the text "log in". At the bottom, there is a link that says "If you have registered a mobile account, please [click here to log in](#)".

Advanced

- WeChat

1. [Get Information](#) : After logging in, user needs to copy **appID** and **appsecret**



The screenshot shows the WeChat public platform management interface. At the top left, there is a WeChat logo and the text "微信 | 公众平台 Beta". At the top right, it says "online service". The main content area is titled "Management test number". On the right side of this area, it says "WeChat: [blurred] drop out". Below this, there is a section titled "Test number information" which contains two rows of data: "appID" and "appsecret", both with blurred values. A red rectangular box highlights the "appID" and "appsecret" rows.

Advanced

- WeChat

2. Set `templateID` : Click **New test patterns** → Enter **Template title** and **Template content**

Template message interface

New test patterns

up to 10 Ge accept the need to focus

New test template

caution:

1. The template ID of the test template is only used for testing and cannot be used to send template messages to the official account.
2. For the convenience of testing, the test template can be arbitrarily specified, but in fact the template message of the official account can only be obtained from the template library.
3. You need to apply for the official account to add a new template that meets the requirements. You need to use the official number to log in to the public platform and follow the guidelines
- 4, the template content can be set parameters (template title is not available) for the interface call, the parameter must start with {{ and end with .DATA }}

Template title

Template content

submit cancel

Advanced

- WeChat

2. `templateID` : Edition is finished, click **submit**.

Script Parameters	Template corresponding content
keyword1	{{keyword1.DATA}}
keyword2	{{keyword2.DATA}}
keyword3	{{keyword3.DATA}}
Not Script Parameter	Template corresponding content
Current Time	{{currentTime.DATA}}

New test template ✕

caution:

1. The template ID of the test template is only used for testing and cannot be used to send template messages to the official account.
2. For the convenience of testing, the test template can be arbitrarily specified, but in fact the template message of the official account can only be obtained from the template library.
3. You need to apply for the official account to add a new template that meets the requirements. You need to use the official number to log in to the public platform and follow the guidelines
4. the template content can be set parameters (template title is not available) for the interface call, the parameters must start with {{ and end with .DATA }

Template title

Template content

Current time {{currentTime.DATA}}
 keyword1 test value is {{keyword1.DATA}}
 keyword2 test value is {{keyword2.DATA}}
 keyword3 test value is {{keyword3.DATA}}

Advanced

- WeChat

2. Set `templateID` : Generated **templateID** will be used in **SEND.WECHAT** and **SEND.WECHAT_P**

Template message interface

New test patterns up to 10 Ge accept the need to focus on the message template test No.

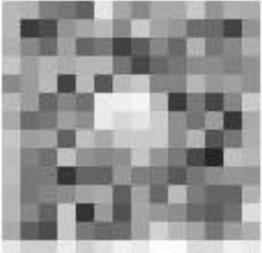
Serial number	Template ID (for interface calls)	Template title	Template content	operating
1	XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXX	VIC7000	Current time {{currentTime.DATA}} keyword1 test value is {{keyword1.DATA}} keyword2 test value is {{keyword2.DATA}} keyword3 test value is {{keyword3.DATA}}	delete

Advanced

- WeChat

3. **Set openID** : Use WeChat APP to scan the **Test number QR code** and **follow the test public account**. To receive message, user must follow the test public account.

Test number QR code



Please use WeChat to scan and follow the test public account

User list (up to 100)			
Serial number	nickname	We chat number	operating

Advanced

- WeChat

4. **Link Settings** : Enter **Link** page → Communication Mode : **WeChat** → Enter **appID** and **appsecret** → Click **Add**

nexVIC VIC7300 - VIC7000 Training 2.vic

New Load Save Save As Page Script Monitor Control Link Wizard

Communication Mode Wechat

WechatSetting

appID:
[Input Field]

appsecret:
[Input Field]

Var Name:
[Input Field]

Add

Advanced

- **WeChat**

4. **Link Settings** : Confirm the WeChat link which has been added. Or remove it.

To check if there is a new account following the test public account, click **Update Group** to refresh **Number of groups**.

Wechat

Var Name:

Wechat00APPIDwxfe4

Number of groups:1

Update Group

Remove

Advanced

- WeChat

5. **Edit Script** : Enter **Script** page → Choose **SEND.WECHAT** and **SEND.WECHAT_P** in

The screenshot shows the nexVIC software interface with the following elements:

- Toolbar:** Includes buttons for New, Load, Save, Save As, Page, Script, Monitor, Control, Link, and Wizard. The 'Script' button is highlighted with a red arrow.
- Script Editor:** Contains three lines of code:


```
1 SEND.WECHAT( , , , , , );
2
3 SEND.WECHAT_P( , , , , , );
```

 Red arrows point to the first and third lines. Red boxes highlight the function names in these lines.
- Function Selection Panel:** Located on the right, it shows a list of functions under the 'Functions' tab. The 'SEND.WECHAT' and 'SEND.WECHAT_P' buttons are highlighted with red boxes and red arrows.
- Bottom:** An 'Apply' button is visible at the bottom left.

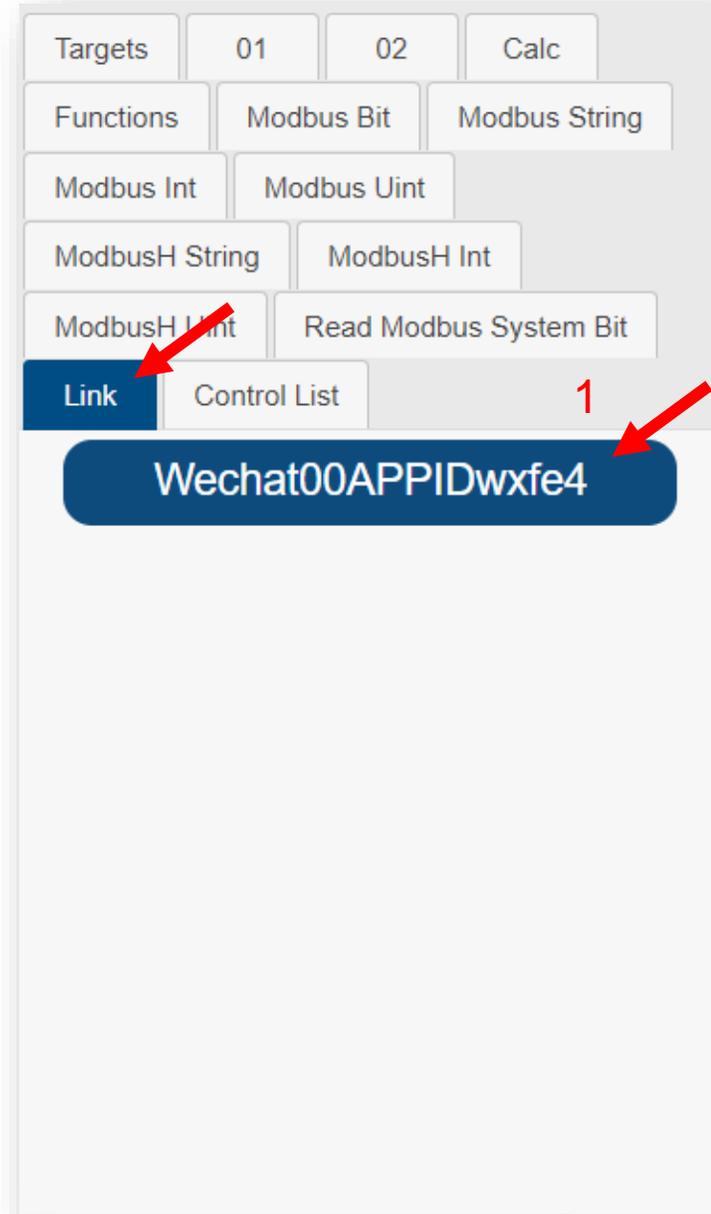
Advanced

- **WeChat**



5. **Edit Script** : Six parameters. Send message to each user following the test public account.

1. **id** : WeChat link (string)
2. **templateID** : templateID (string)
3. **keyword1** : The message will be sent as keyword1, which is same as `{{keyword1.DATA}}` in template (string)
4. **keyword2** : The message will be sent as keyword2, which is same as `{{keyword2.DATA}}` in template (string)
5. **keyword3** : The message will be sent as keyword3, which is same as `{{keyword3.DATA}}` in template (string)
6. **sec** : Restrict execution again in a period (s)



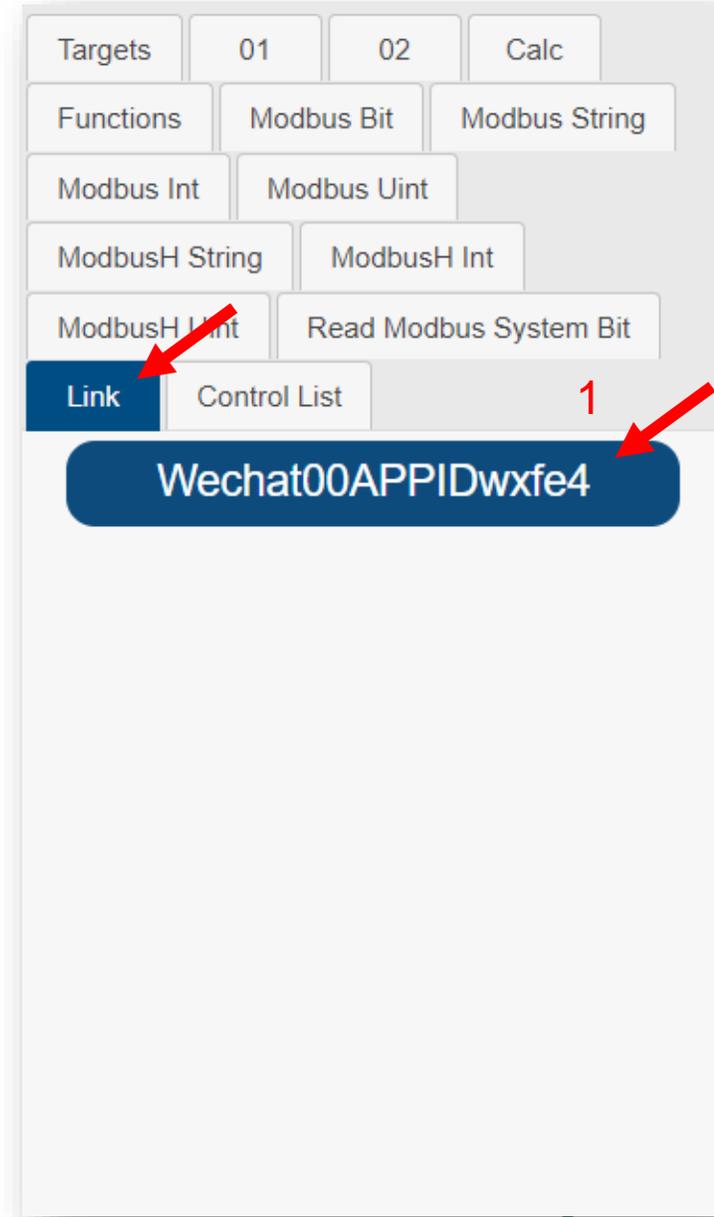
Advanced

```
SEND.WECHAT_P
SEND.WECHAT_P(id, templateID, openID, keyword1, keyword2, keyword3, sec)
```

- WeChat

5. **Edit Script** : Seven parameters. Send message to one user following the test public account.

1. id : WeChat link (string)
2. templateID : templateID (string)
3. openID : OpenID of recipient account (string)
4. keyword1 : The message will be sent as keyword1, which is same as {{keyword1.DATA}} in template (string)
5. keyword2 : The message will be sent as keyword2, which is same as {{keyword2.DATA}} in template (string)
6. keyword3 : The message will be sent as keyword3, which is same as {{keyword3.DATA}} in template (string)
7. sec : Restrict execution again in a period (s)



Advanced

- WeChat

5. **Edit Script** : Edition is finished → Click **Apply** (ctrl +s)

The screenshot shows a script editor with the following code:

```
1 SEND.WECHAT("...", "...',PAGE01.OCR01 , PAGE01.OCR02,PAGE01.OCR03 , 10);  
2  
3 SEND.WECHAT_P("...', "...', "...', PAGE01.OCR01
```

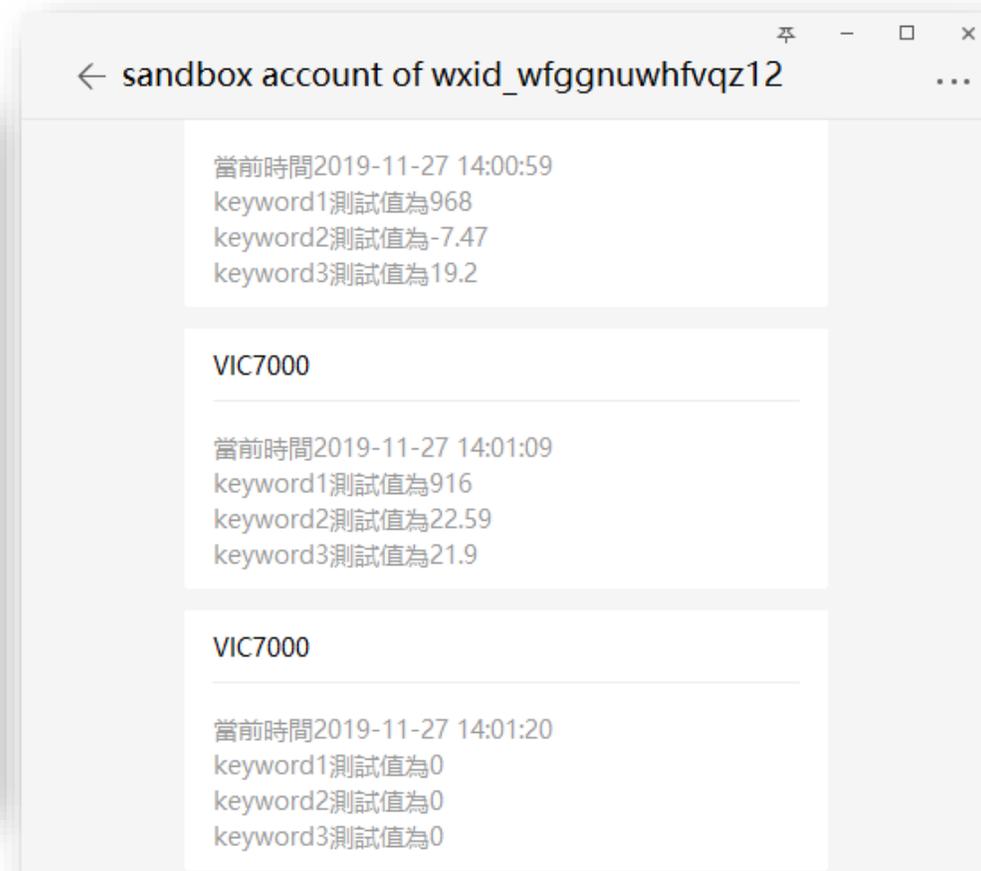
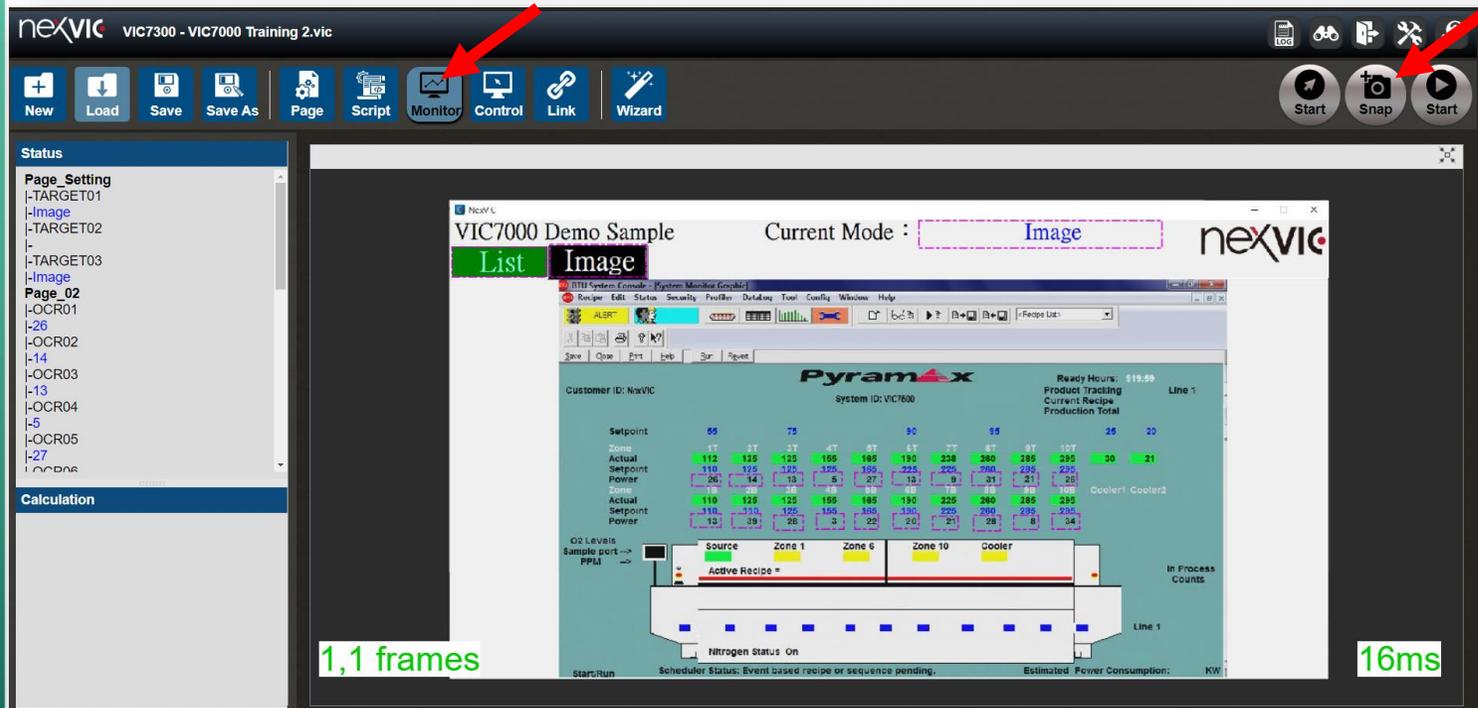
A large red-bordered box in the center of the editor contains the text: **Apply successfully.**

At the bottom of the editor, there are two buttons: "Apply" and "Apply successfully.", with the latter being highlighted by a red border.

Advanced

- WeChat

6. **Simulate** : Entry to **Monitor** page → Click **Snap** → Check if there is a message in WeChat



Advanced

- **Event Trigger**

1. **Link Settings – email** : Enter **Link** page → Communication Mode : **SMTP** → Enter **Server Address, Port, User Name, Password, Email** → Click **Add**

The screenshot displays the Nexvic interface for configuring an event trigger. The top navigation bar includes buttons for 'Save As', 'Page', 'Script', 'Monitor', 'Control', 'Link', and 'Wizard'. The 'Link' button is highlighted with a red arrow. Below the navigation bar, the 'Communication Mode' is set to 'SMTP' in a dropdown menu, also highlighted with a red arrow. The main content area shows the 'SMTP Setting' form, which is highlighted with a red border. The form contains the following fields:

Server Address:	Port:
smtp.gmail.com	465
User Name:	Password:
garry	
Email:	
garry @gmail.com	
Var Name:	
SMTP00PORT465	

The 'Add' button is located at the bottom right of the form and is highlighted with a red arrow.

Advanced

- **Event Trigger**

1. **Link Settings – email** : Confirm SMTP link which has been added. Or remove it.

SMTP

Var Name:

SMTP00PORT465

Remove

Advanced

- **Event Trigger**

1. **Link Settings – LINE Notify** : Enter **Link** page → Communication Mode : **LINE Notify** → Enter **Token**, **GroupName** → Click **Add**

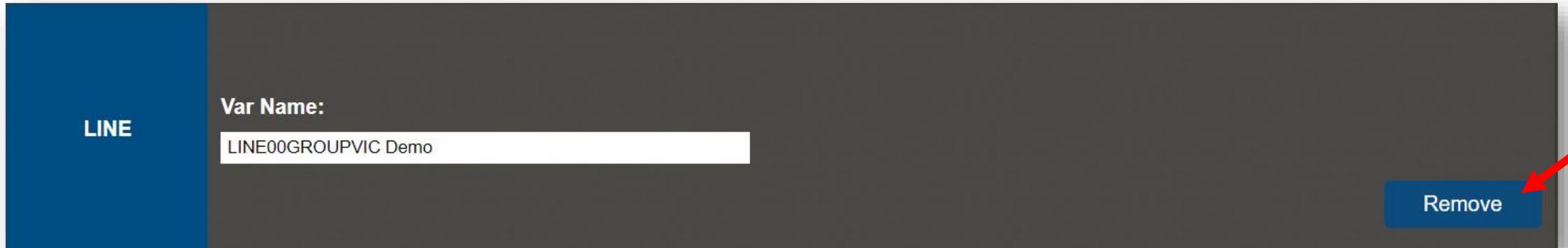
The screenshot displays the 'Link Settings' interface for 'LINE Notify'. The top toolbar includes icons for 'New', 'Load', 'Save', 'Save As', 'Page', 'Script', 'Monitor', 'Control', 'Link', and 'Wizard'. The 'Link' icon is highlighted with a red arrow. Below the toolbar, the 'Communication Mode' dropdown is set to 'LINE Notify', also highlighted with a red arrow. The 'Line Notify Setting' section contains three input fields: 'Token:', 'GroupName:', and 'Var Name:'. The 'Token:' and 'GroupName:' fields are highlighted with a red box. An 'Add' button is located at the bottom right, highlighted with a red arrow.

Advanced

- **Event Trigger**

1. [Link Settings – LINE Notify](#) : Confirm the LINE Notify link which has been added.

Or remove it.



Advanced

- **Event Trigger**

1. **Link Settings – WeChat** : Enter **Link** page → Communication Mode : **WeChat** → Enter **appID**, **appsecret** → Click **Add**

nexVIC VIC7300 - VIC7000 Training 2.vic

New Load Save Save As Page Script Monitor Control Link Wizard

Communication Mode Wechat

WechatSetting

appID:
[Input Field]

appsecret:
[Input Field]

Var Name:
[Input Field]

Add

Advanced

- **Event Trigger**

1. **Link Settings – WeChat** : Confirm the WeChat link which has been added. Or remove it.

To check if there is a new account following the test public account, click **Update Group** to refresh **Number of groups**.

Wechat

Var Name:

Wechat00APPIDwxfe4

Number of groups:1

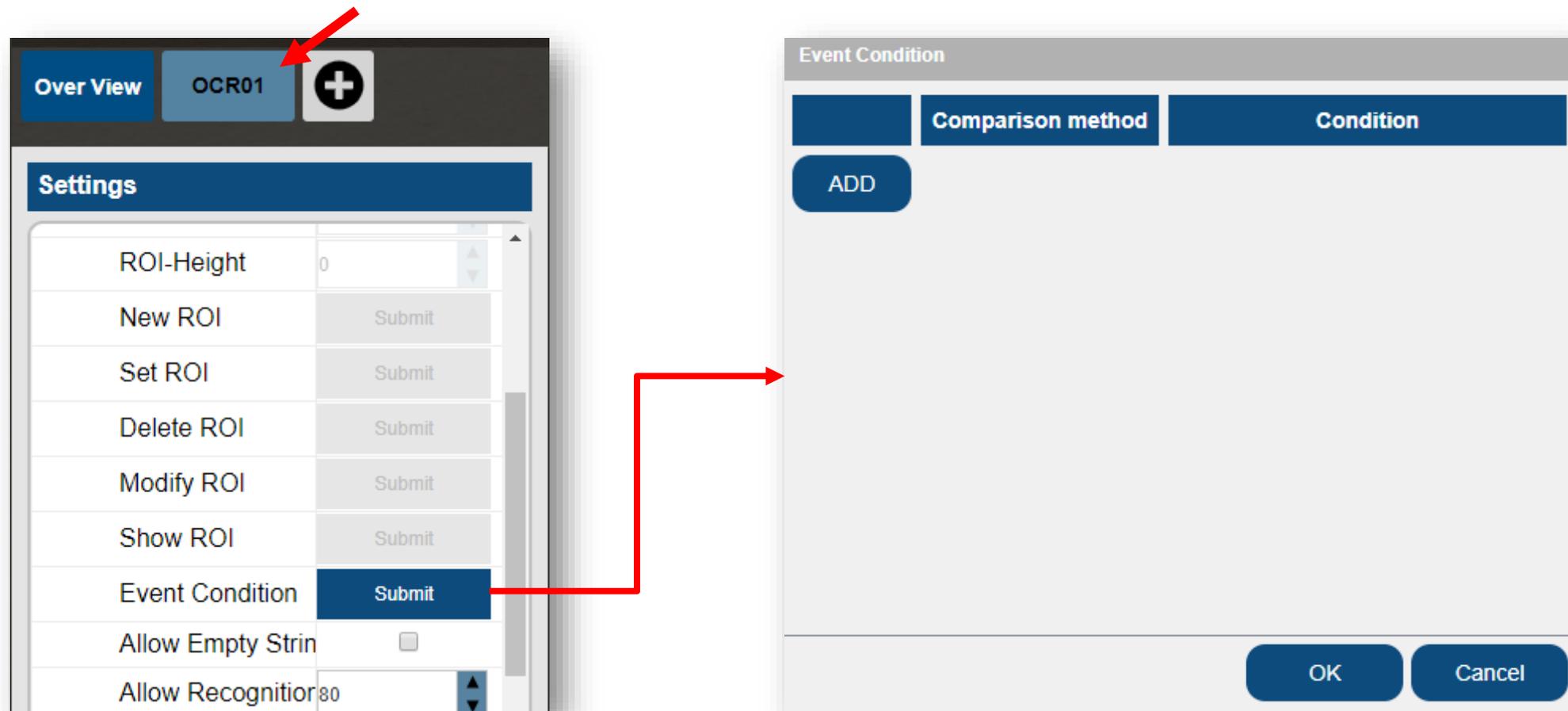
Update Group

Remove

Advanced

- **Event Trigger**

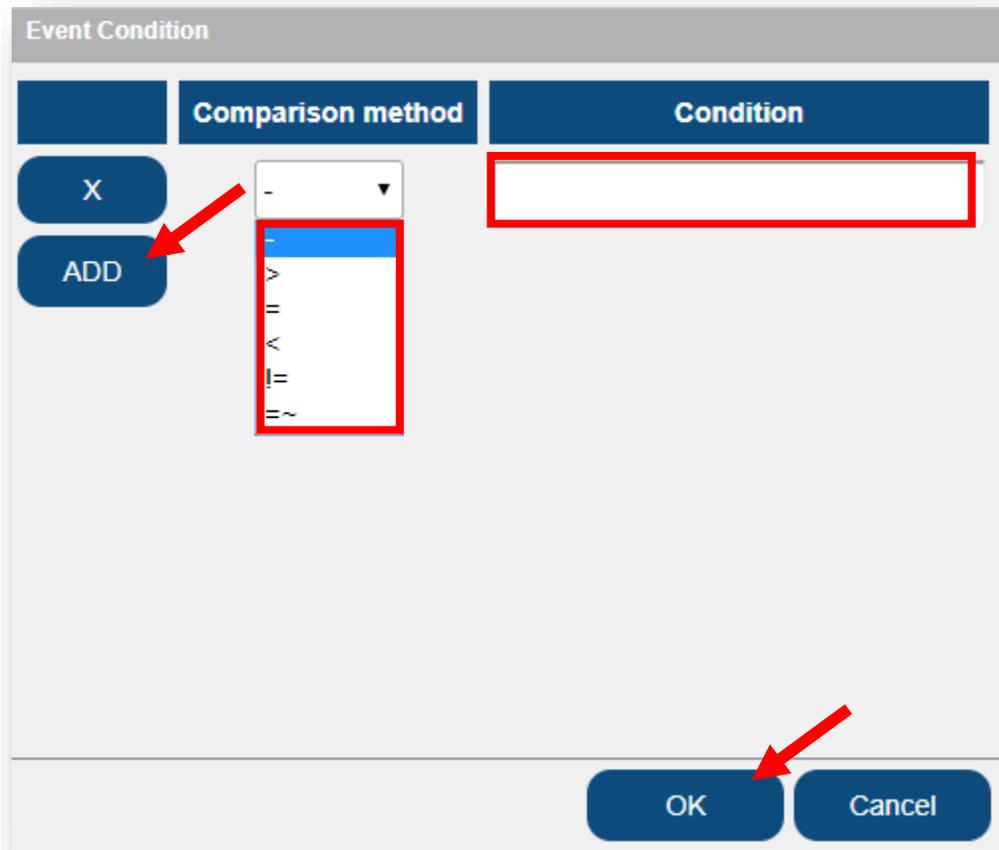
2. **Set Event Condition – OCR** : Click **Event Condition** → The window of **Event Condition** will show up



Advanced

- **Event Trigger**

2. **Set Event Condition – OCR** : Click **Add** → Set **Comparison** → Set **Condition** → Click **OK**



- : Non compare

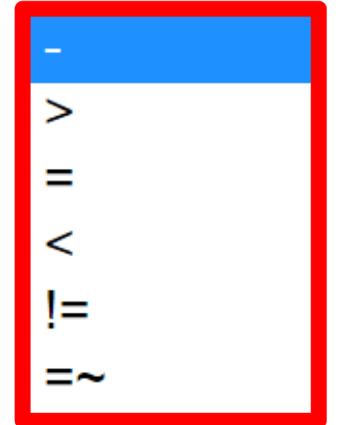
> : Greater than

= : Equal

< : Less than

!= : Not equal

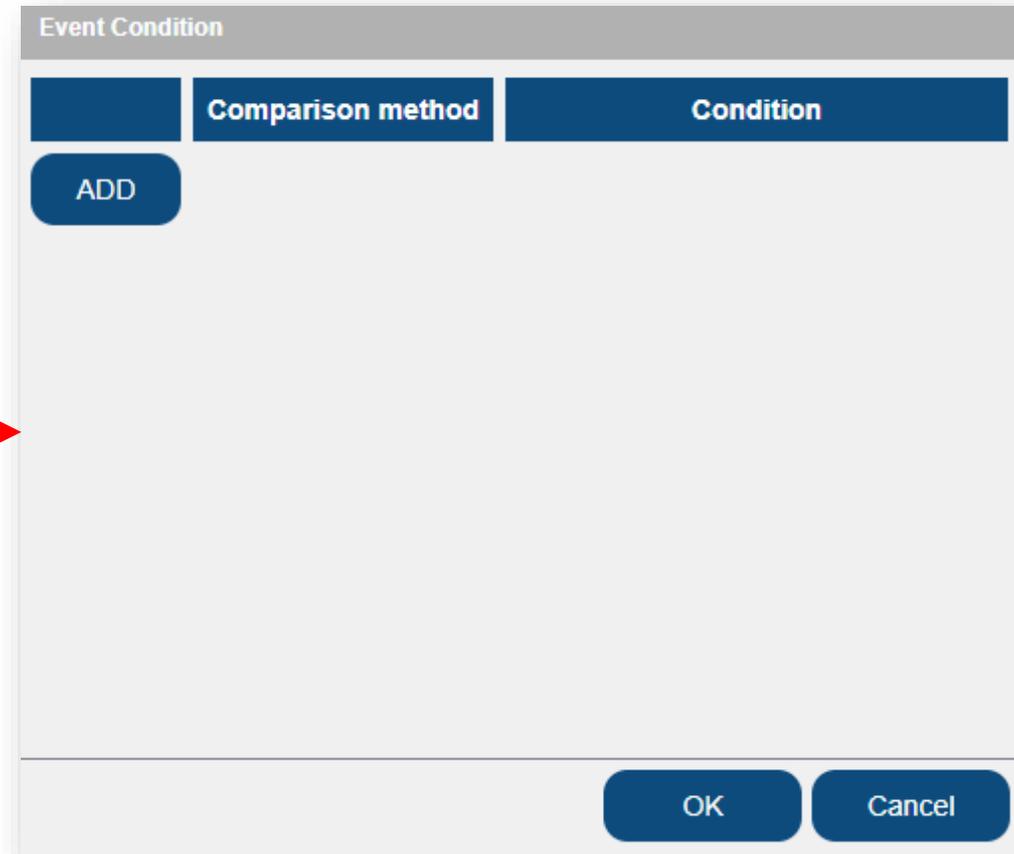
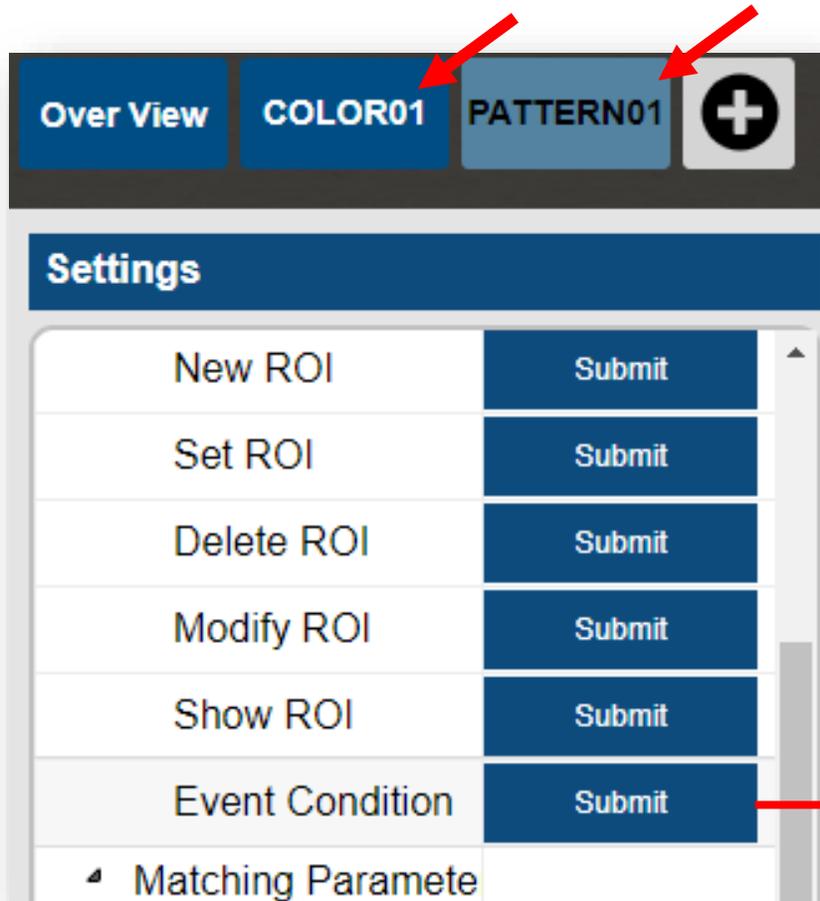
=~ : Including (for String only)



Advanced

- **Event Trigger**

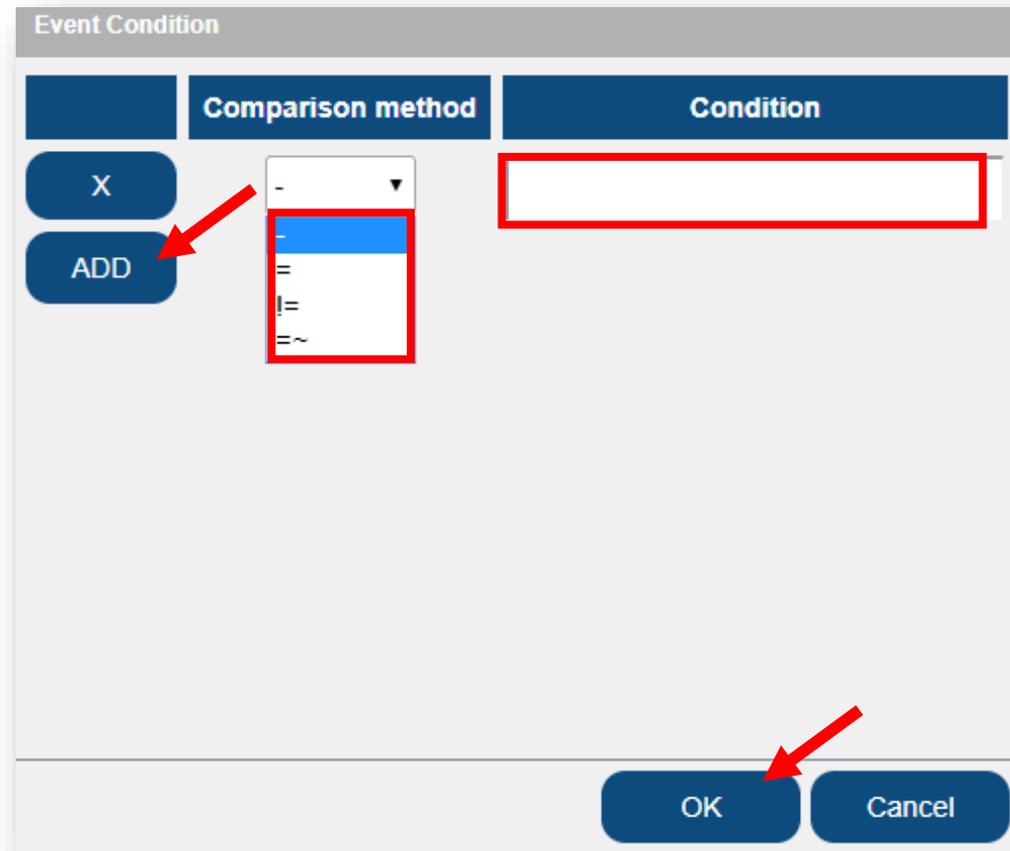
2. **Set Event Condition – COLOR, PATTERN** : Click **Event Condition** → The window of **Event Condition** will show up



Advanced

- **Event Trigger**

2. **Set Event Condition – COLOR, PATTERN** : Click **Add** → Set **Comparison** → Set **Condition** → Click **OK**

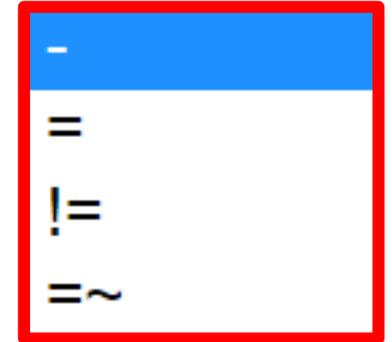


- : Non compare

= : Equal

!= : Not equal

=~ : Including (for String only)



Advanced

- **Event Trigger**

Example – Set Event Condition – OCR : Set the condition of OCR01 greater than 200

The screenshot shows a dialog box titled "Event Condition". It features a table with two columns: "Comparison method" and "Condition". The "Comparison method" column contains a dropdown menu with the greater-than symbol (>) selected. The "Condition" column contains a text input field with the value "200". A red rectangular box highlights the dropdown menu and the text input field. To the left of the table, there are two buttons: "X" and "ADD". At the bottom of the dialog box, there are two buttons: "OK" and "Cancel".

	Comparison method	Condition
X	>	200

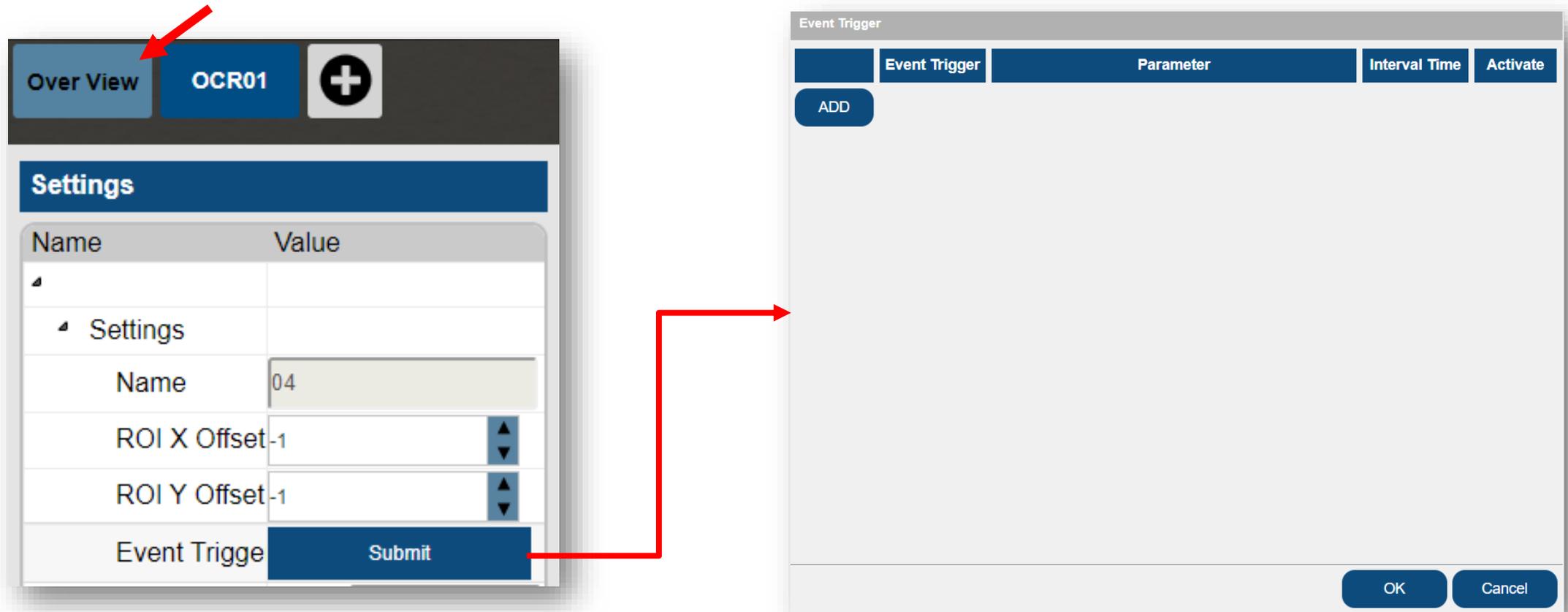
ADD

OK Cancel

Advanced

- **Event Trigger**

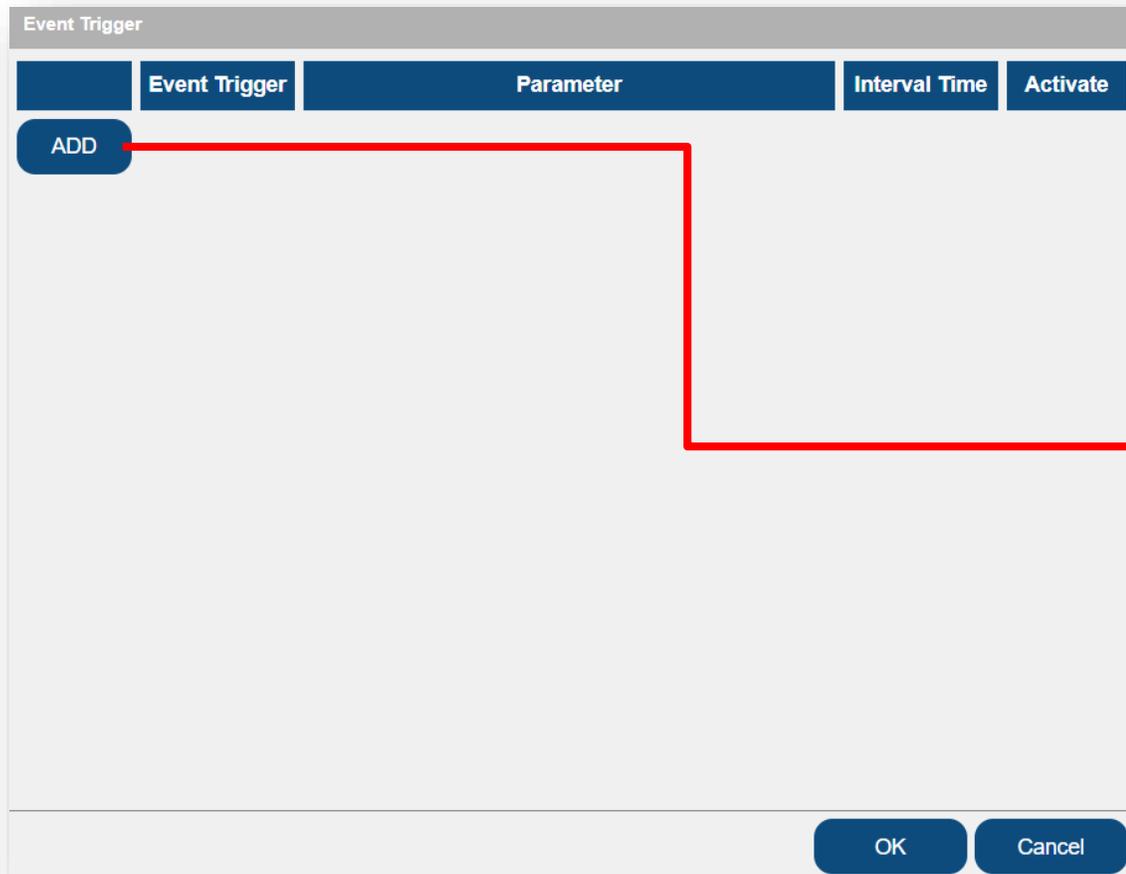
3. **Set Event Trigger** : Click **Event Trigger** → The window of **Event Trigger** will show up



Advanced

- **Event Trigger**

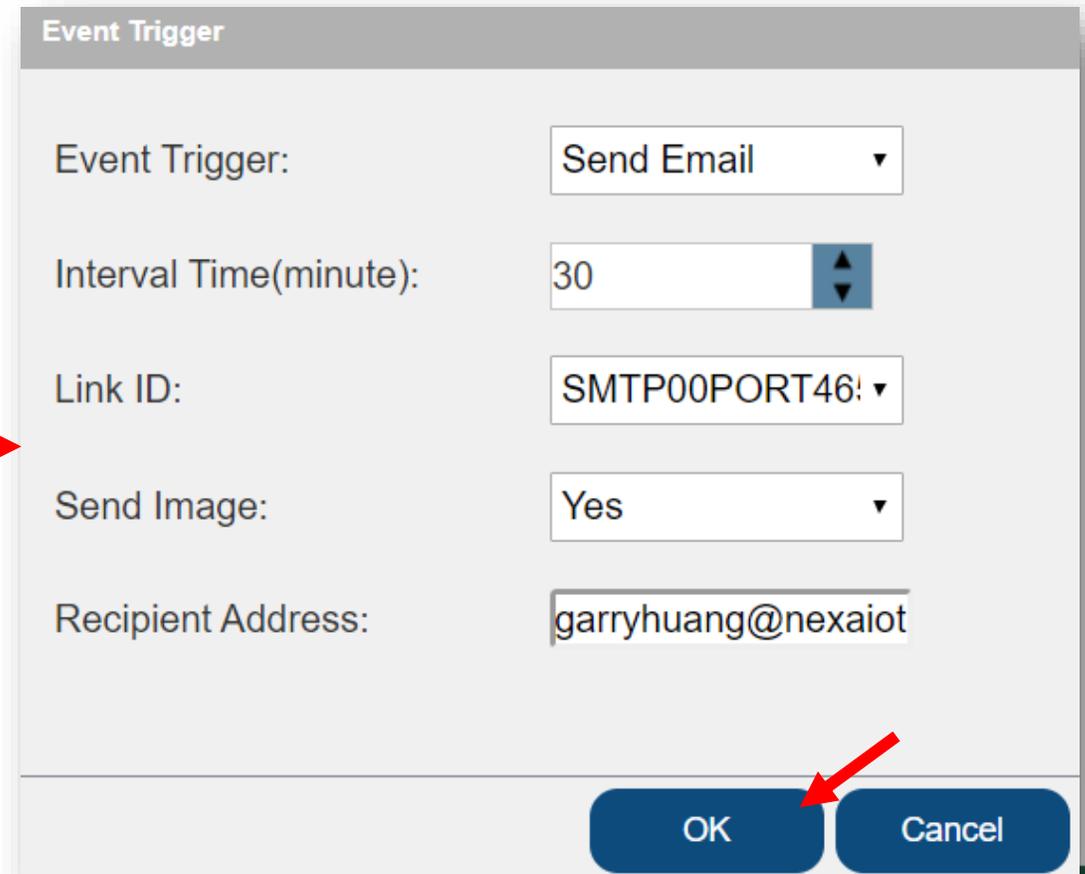
3. **Set Event Trigger – email** : Click **Add** → Event Trigger : **Send Email**, Set **Interval Time**, Link ID : **SMTP link**, whether to **Send Image**, Enter **Recipient Address** → Click **OK**



Event Trigger

Event Trigger	Parameter	Interval Time	Activate
ADD			

OK Cancel



Event Trigger

Event Trigger: Send Email ▼

Interval Time(minute): 30 ▲▼

Link ID: SMTP00PORT46! ▼

Send Image: Yes ▼

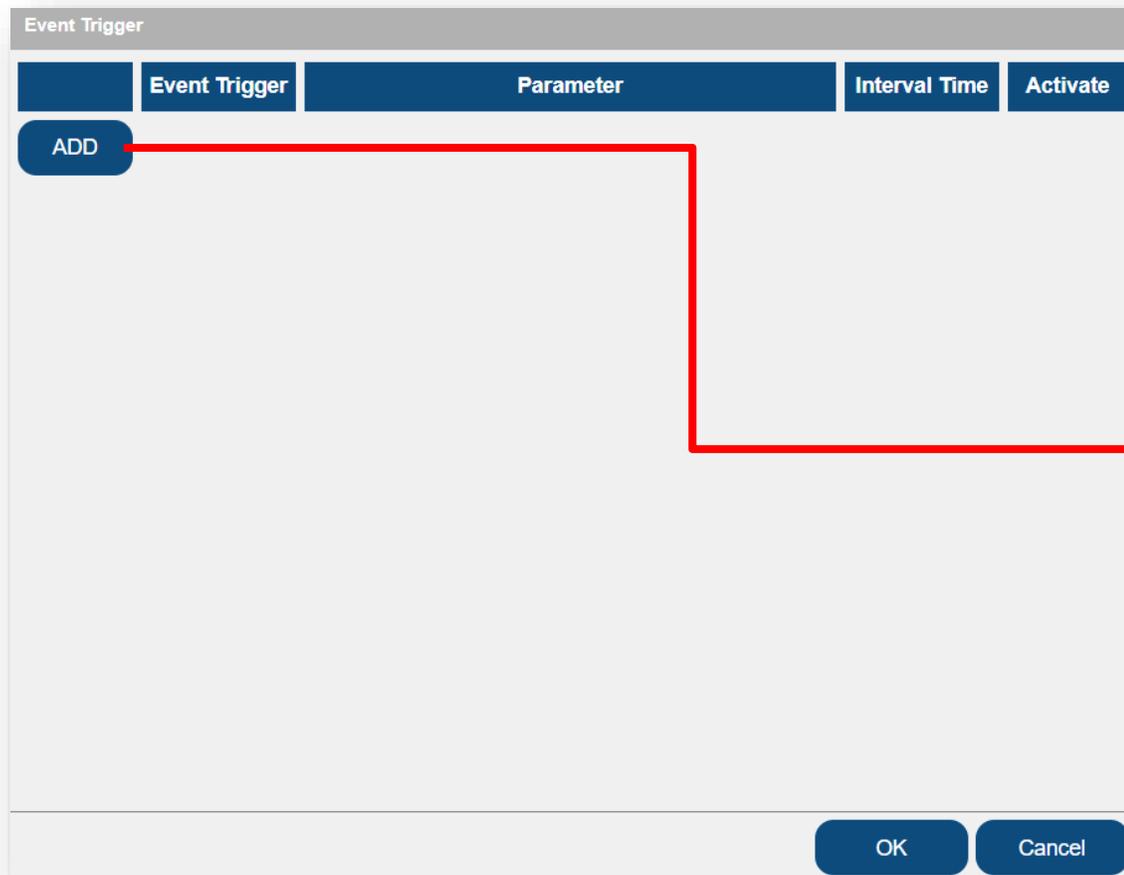
Recipient Address: garryhuang@nexaiot

OK Cancel

Advanced

- **Event Trigger**

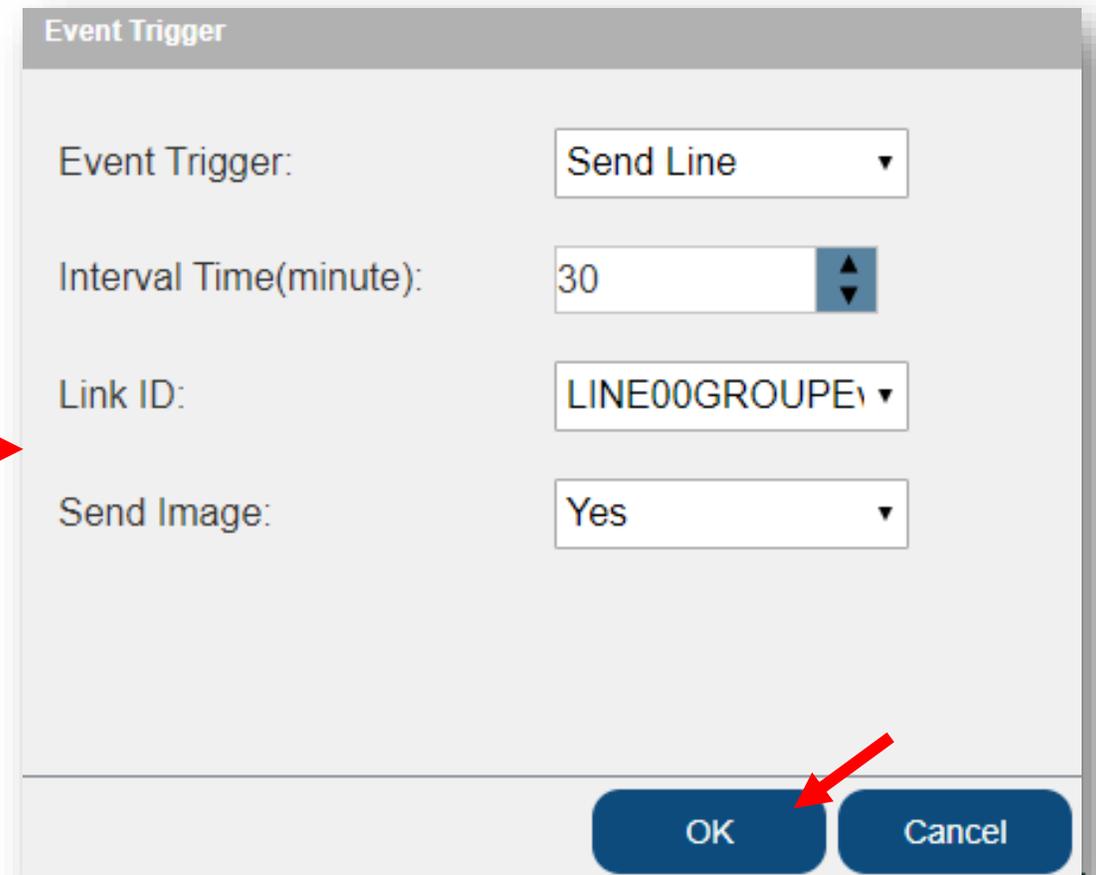
3. **Set Event Trigger – LINE Notify** : Click **Add** → Event Trigger : **Send Line**, Set **Interval Time**, Link ID : **LINE Notify link**, whether to **Send Image** → Click **OK**



Event Trigger

Event Trigger	Parameter	Interval Time	Activate
ADD			

OK Cancel



Event Trigger

Event Trigger: Send Line

Interval Time(minute): 30

Link ID: LINE00GROUPE

Send Image: Yes

OK Cancel

Advanced

- **Event Trigger**

3. **Set Event Trigger – WeChat** : Click **Add** → Event Trigger : **Send WeChat**, Set **Interval Time**, Link ID : **WeChat link**, Enter **templateID** → Click **OK**

Event Trigger

Event Trigger	Parameter	Interval Time	Activate
---------------	-----------	---------------	----------

ADD

OK Cancel

A red arrow points from the 'ADD' button to the 'Event Trigger' dropdown in the next screenshot.

Event Trigger

Event Trigger: Send WeChat

Interval Time(minute): 30

Link ID: Wechat00APPIDv

templateID:
(only use keyword1)

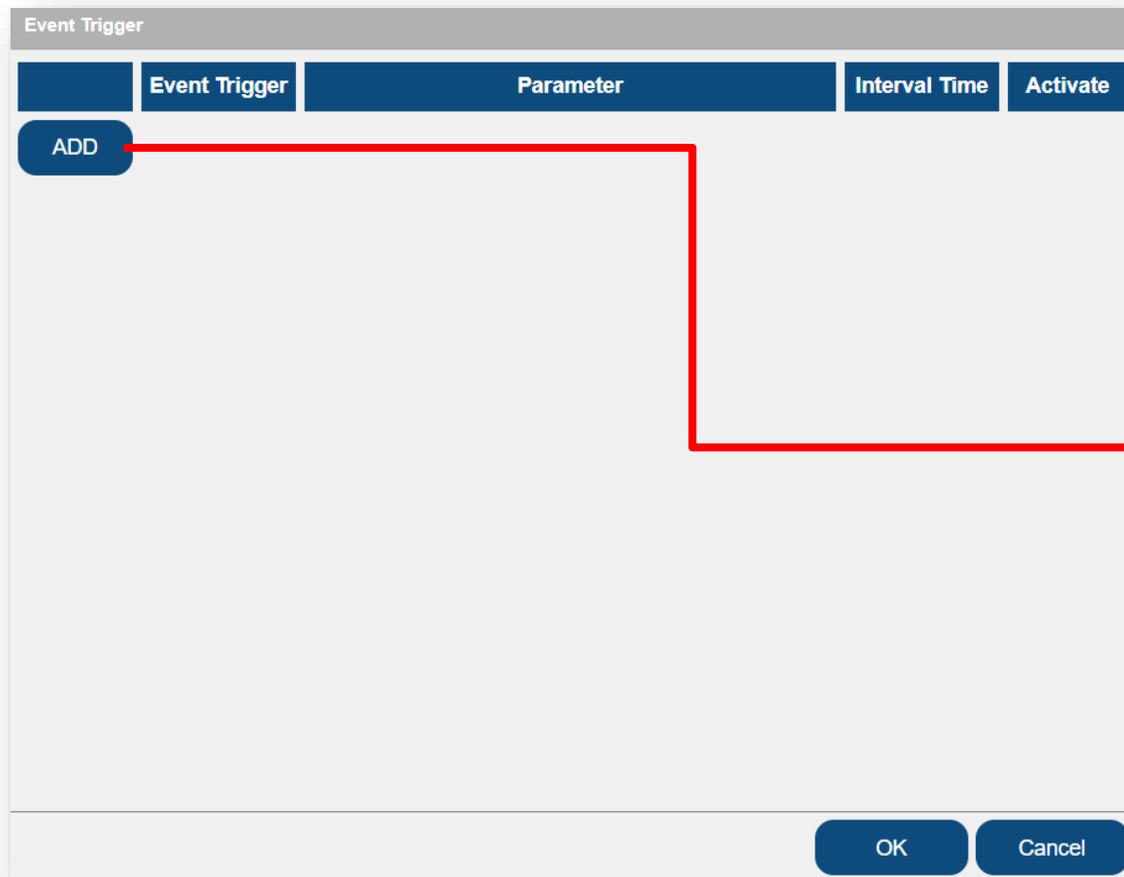
OK Cancel

A red arrow points to the 'OK' button.

Advanced

- **Event Trigger**

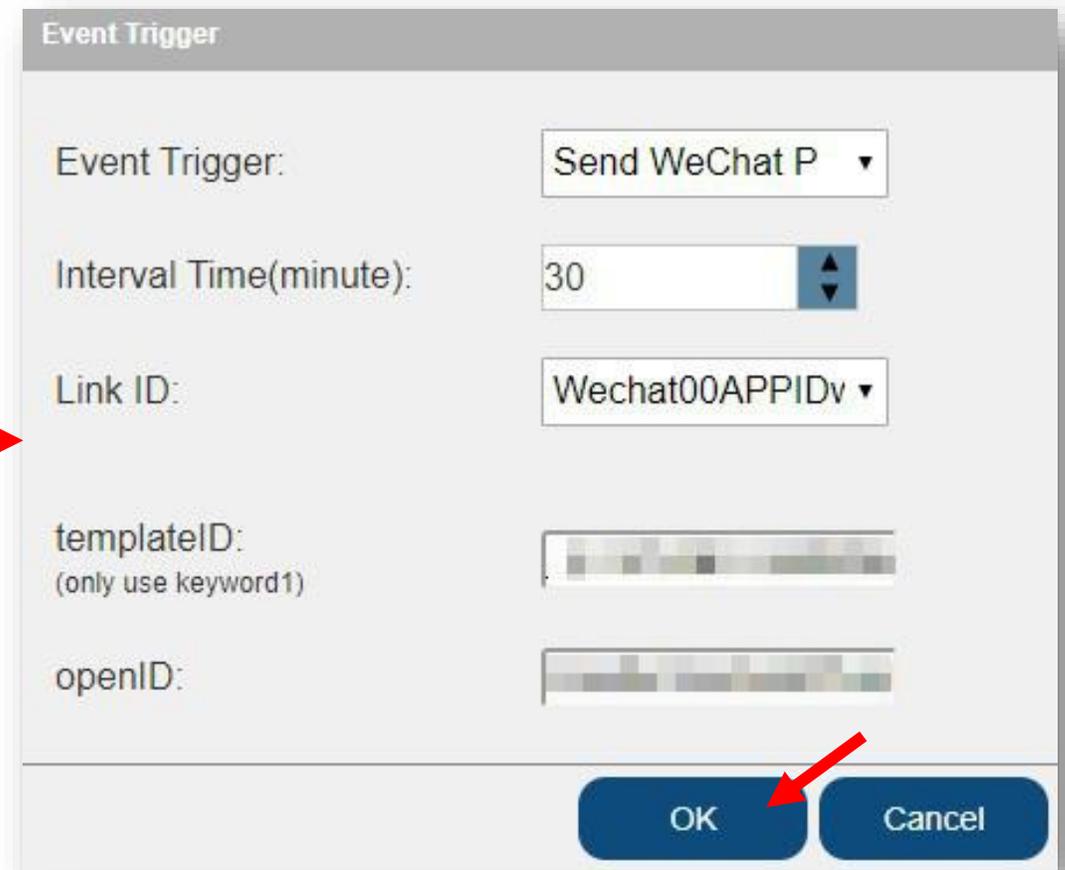
3. **Set Event Trigger – WeChat_P** : Click **Add** → Event Trigger : **Send WeChat P**, Set **Interval Time**, Link ID : **WeChat link**, Enter **templateID**, Enter **openID** → Click **OK**



Event Trigger

Event Trigger	Parameter	Interval Time	Activate
ADD			

OK Cancel



Event Trigger

Event Trigger: Send WeChat P ▼

Interval Time(minute): 30 ▲▼

Link ID: Wechat00APPIDv ▼

templateID:
(only use keyword1)

openID:

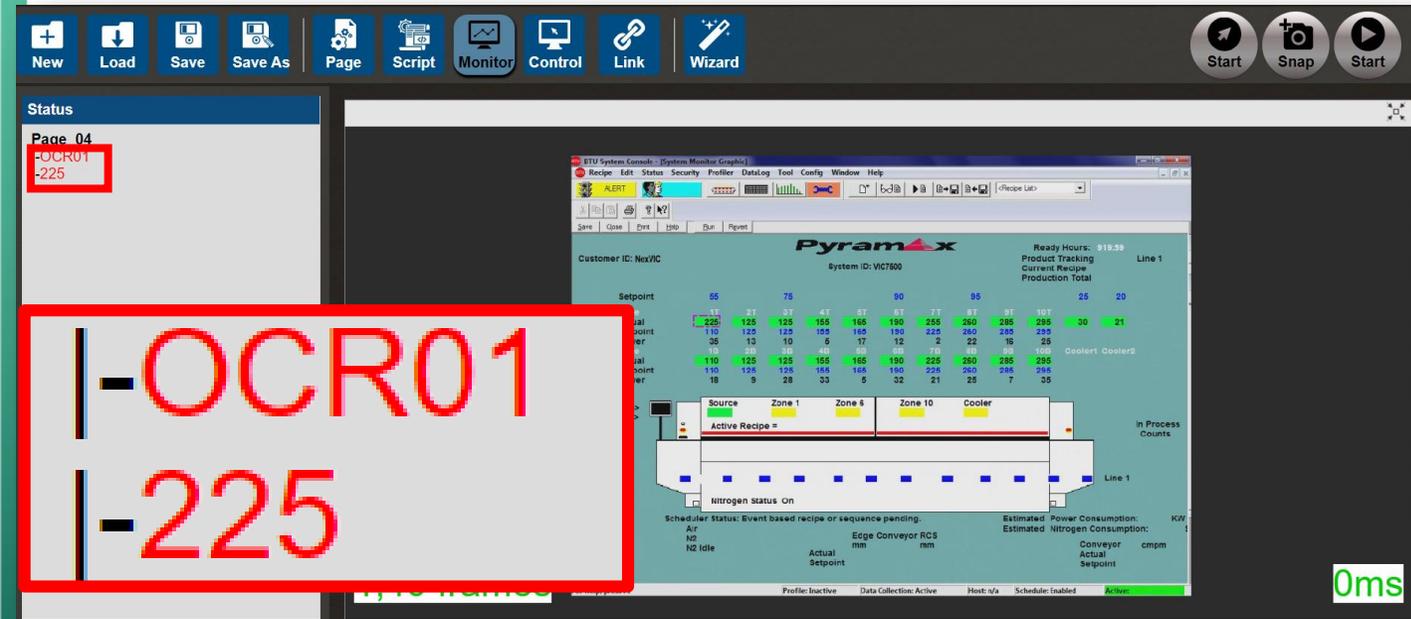
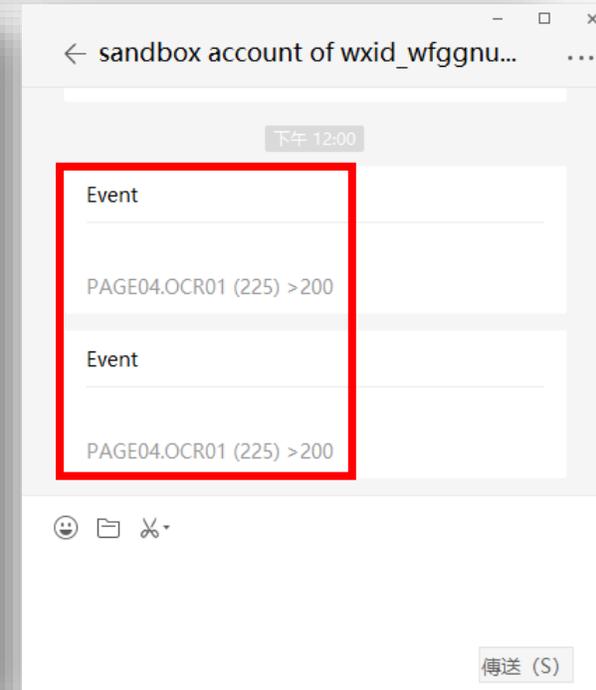
OK Cancel

Advanced

- **Event Trigger**

4. **Simulation** : Entry to **Monitor** page → Click **Snap** → Check if there is a new message

When the condition is met, the item will be displayed in red text

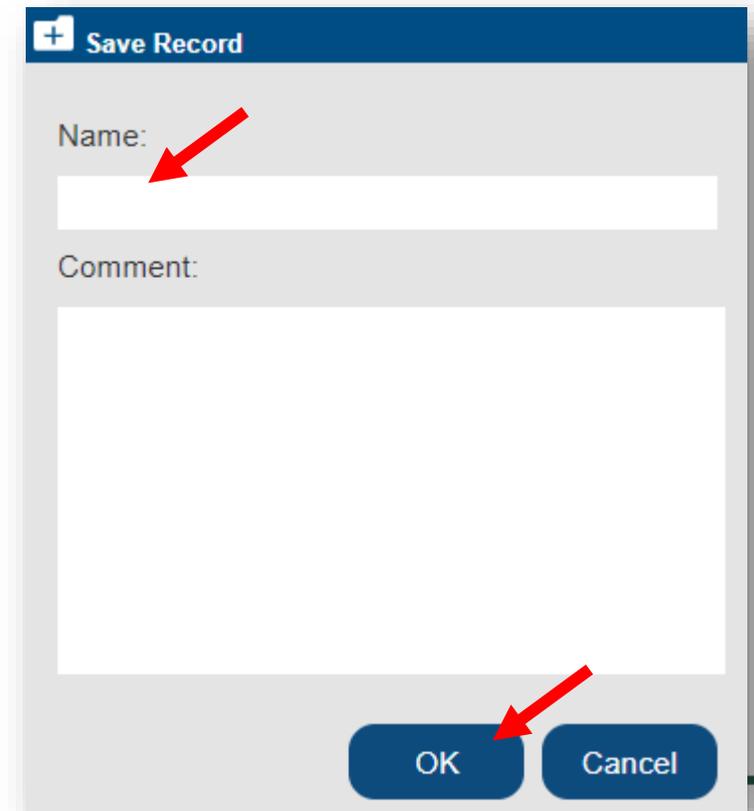
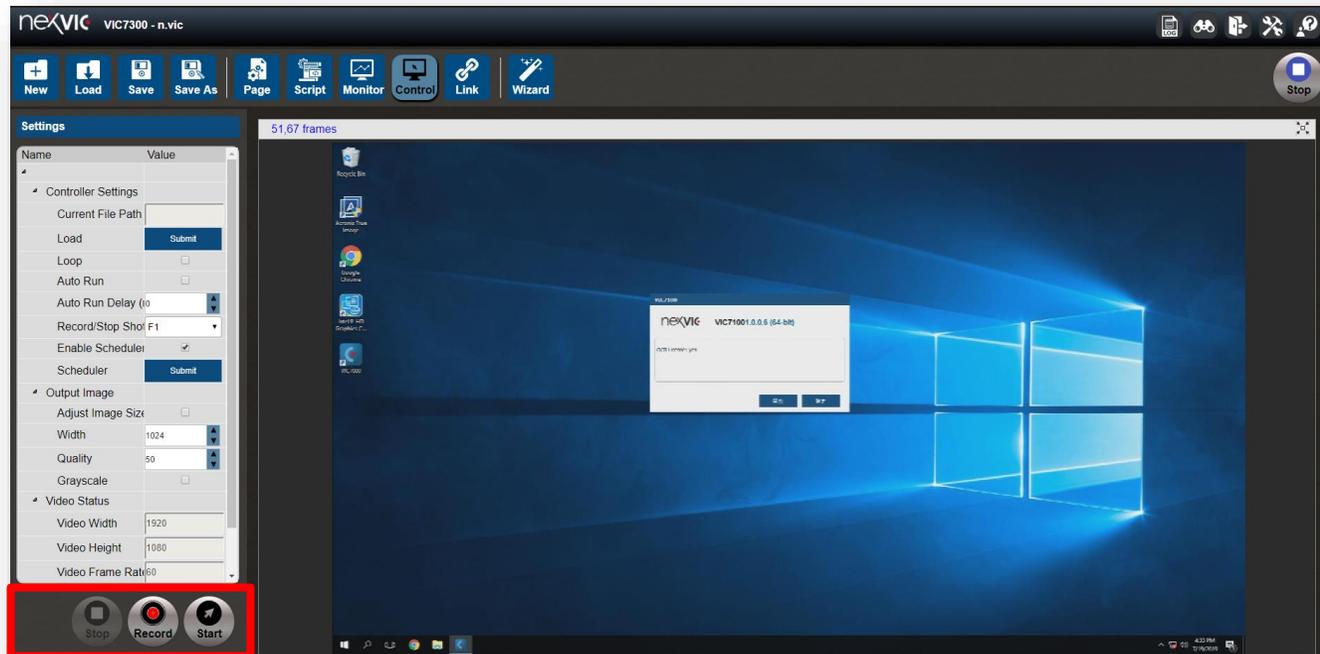


Advanced

- **Control – Input**

1. **Record Control File** : Entry to **Control** page → Click **Record** (press **Record Shortcut Key**) → The action of mouse and keyboard will be recorded → Click **Stop** (press **Stop Shortcut Key**) → Enter **Name** of control file → Click **OK**

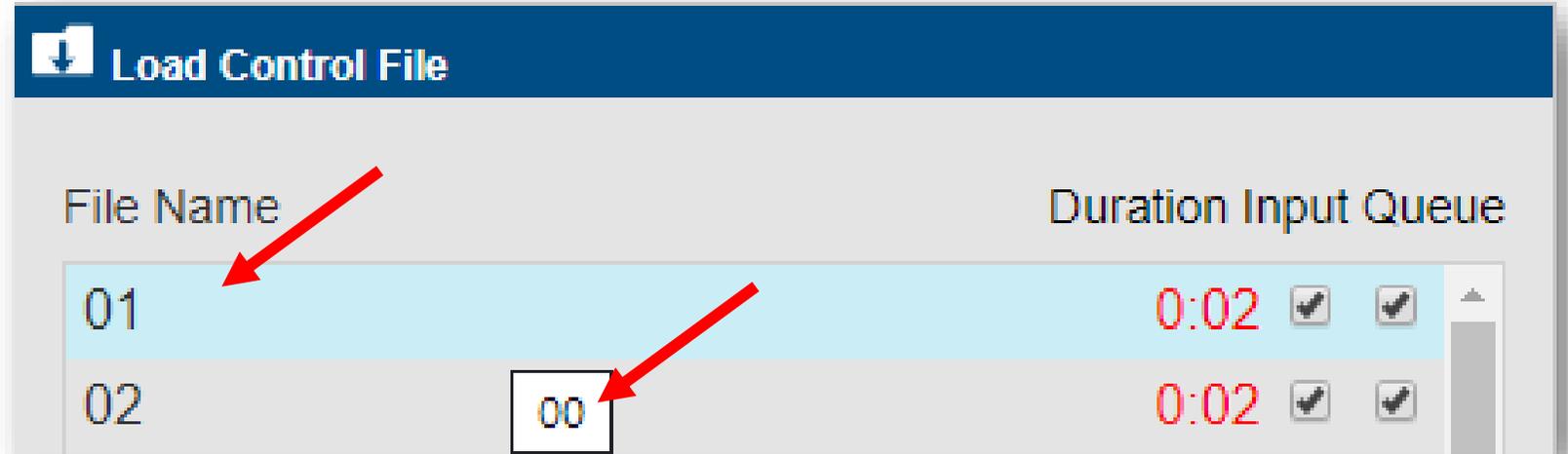
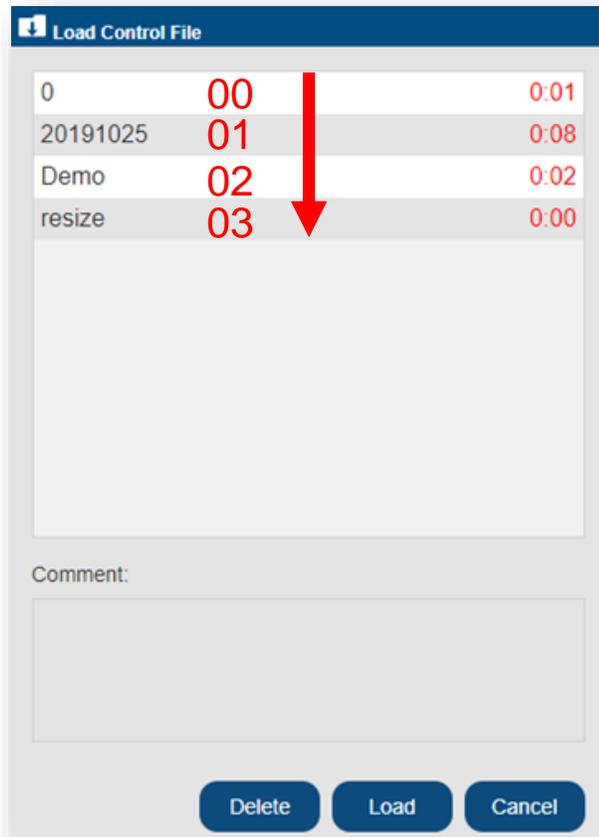
When control play completed, the input data field should be enterable



- **Control – Input**

1. **Record Control File** : Entry the window of **Load Control File**

The index of control files is followed the order listed in the **Load Control File** window of **Control** page. Another way is to put cursor on a file name, the index of the control file will show up.

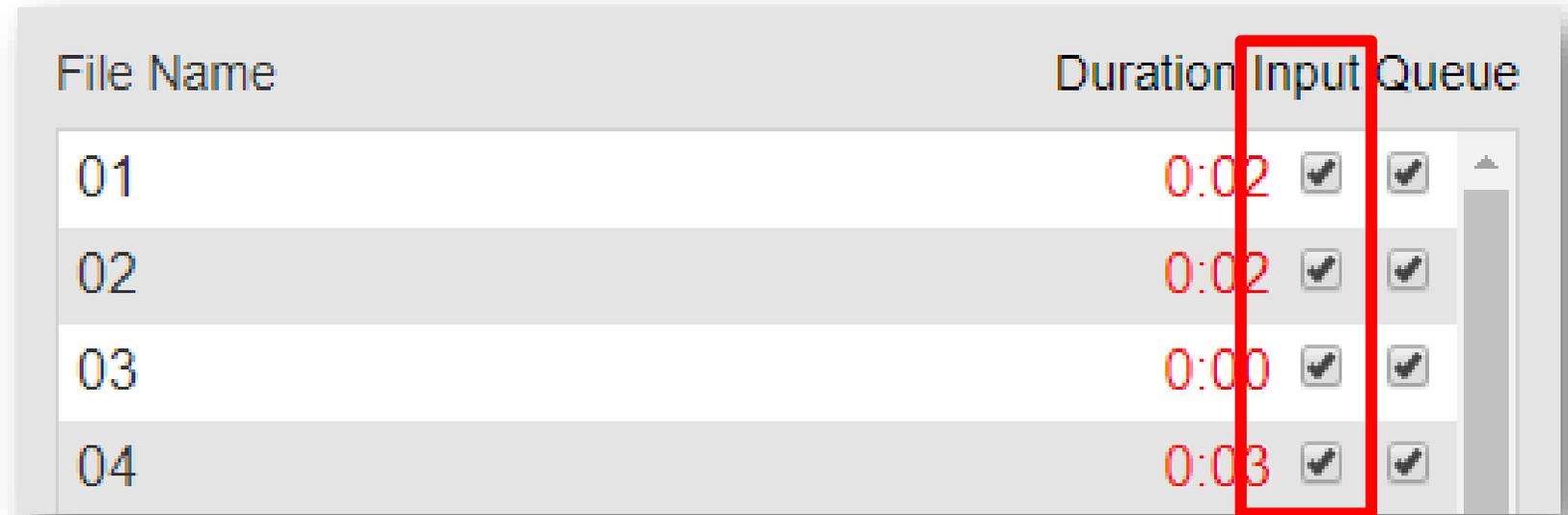
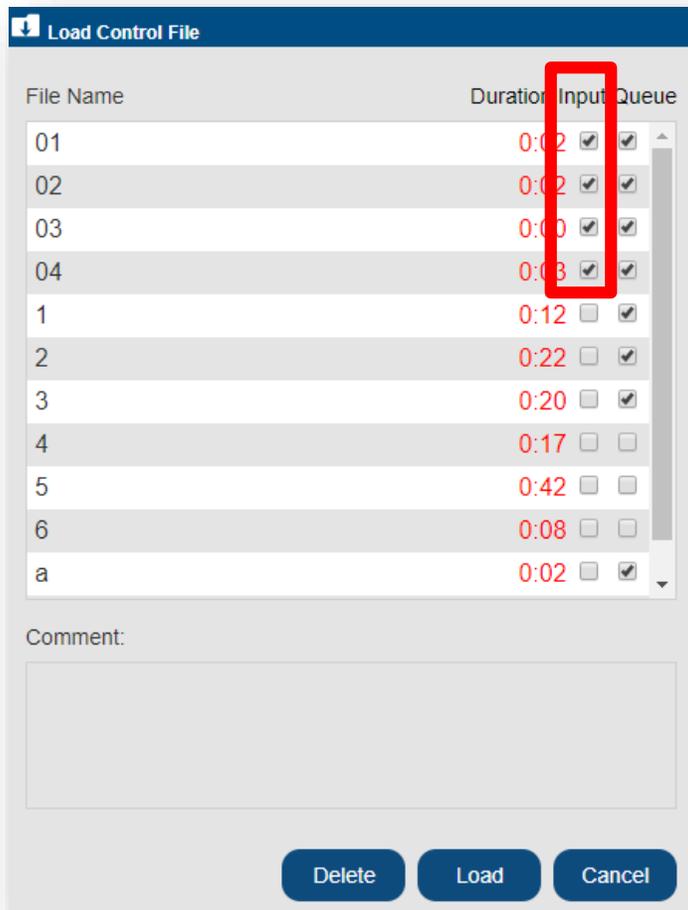


Advanced

- **Control – Input**

2. **Control File Setting – Input** : Entry to the window of **Load Control File** → Check **Input**

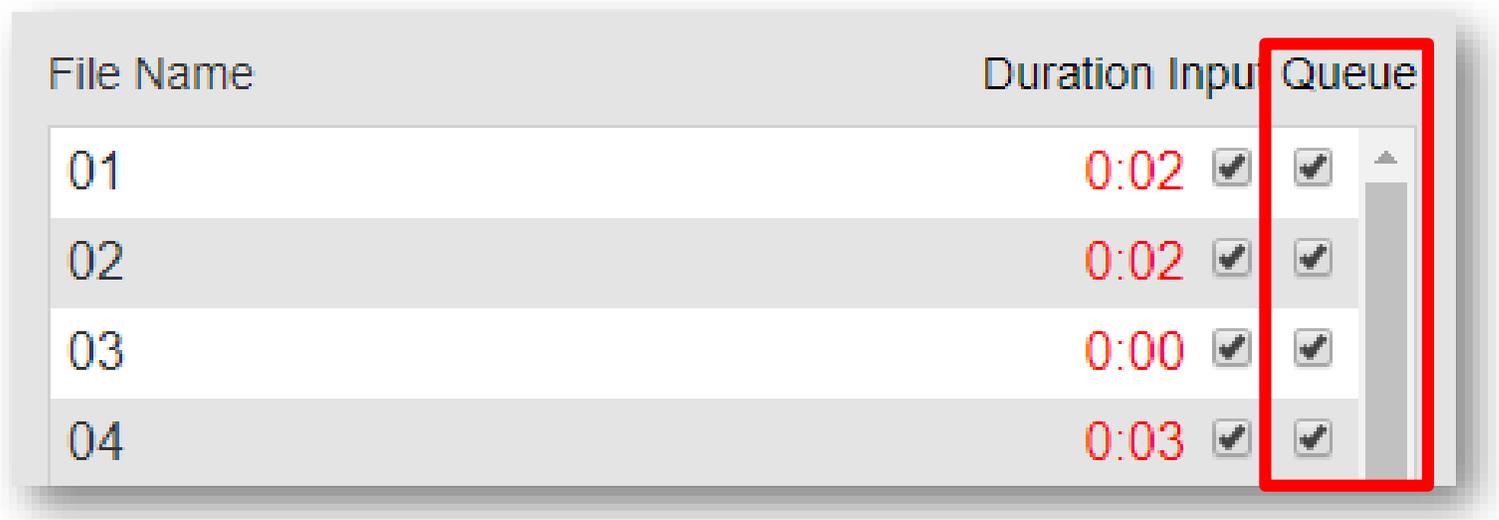
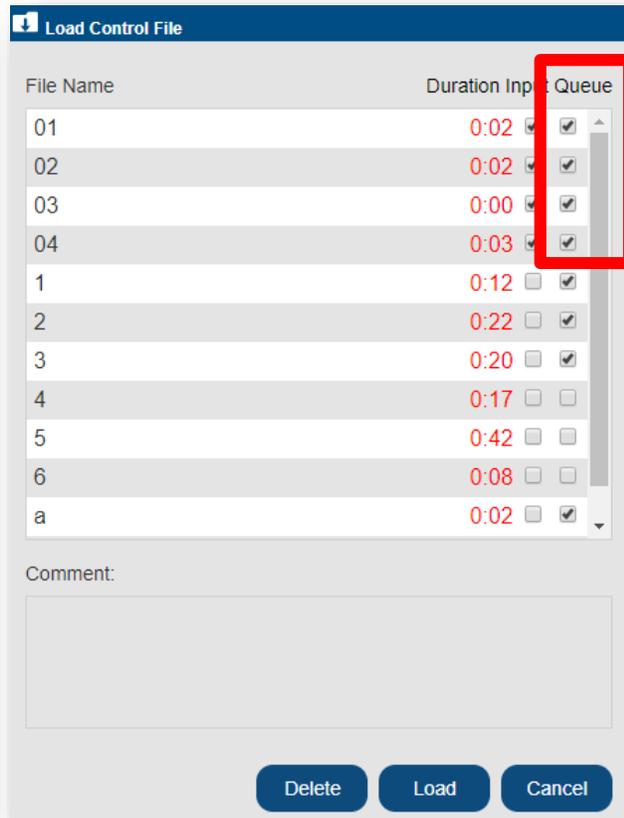
If **Input** is checked, VIC7000 will enter the characters stored in corresponding field after the control file playing is finished.



Advanced

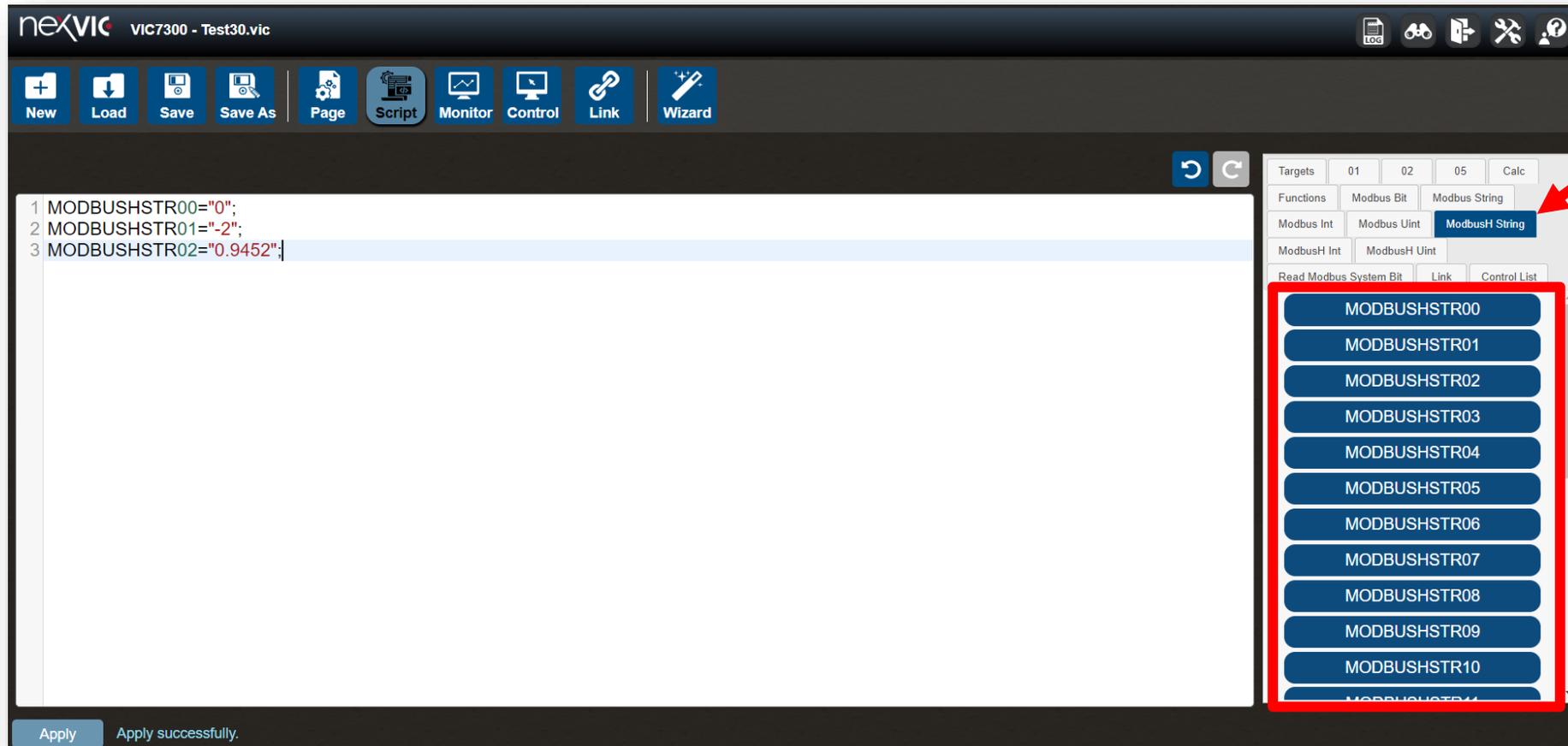
- **Control – Input**

2. **Control File Setting – Queue** : Entry to the window of **Load Control File** → Check **Queue**
 In normal, while the current control file is being played, another control file is start to play, the current file will be stopped and the new ones will start immediately.
 If **Queue** is check, the control file will be played after the current file completely played.



- **Control – Input**

3. **Set Input Content – Script** : Entry to the **Script** page→ Set value of **MODBUSHSTR_n**
n is the index of MODBUSHSTR, and MODBUSHSTR_n is the content that will be entered after the control file with same index playing completely played. For example, MODBUSHSTR00 is the content that will be entered after the control file with index 00 playing is finished.



Advanced

- Control – Input

Example – Set Input Content – Script : Use Script set the value of MODBUSSTR00 to -12.

Then clicking Snap in Monitor Mode, which execute Script.

The screenshot displays the nexvic software interface. The top toolbar includes buttons for New, Load, Save, Save As, Page, Script, Monitor, Control, Link, and Wizard. The main workspace is divided into several panels:

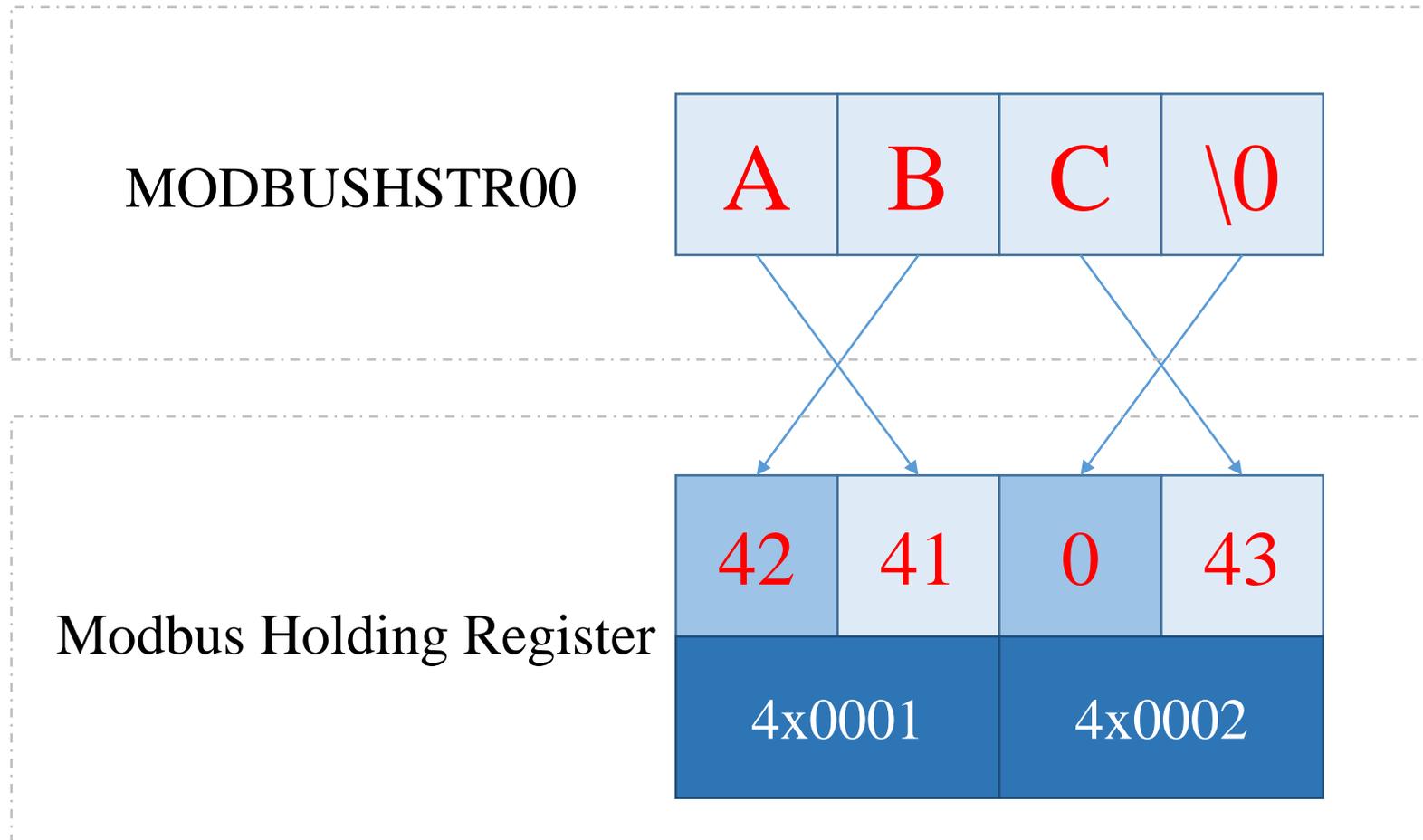
- Script Editor:** Contains the text `MODBUSSTR00="-12";`, which is highlighted with a red box.
- Status Panel:** Shows a tree view of the project structure, including Page_Setting, Page_01, and various OCR elements.
- Calculation Panel:** Displays the results of the script execution.
- Monitor Mode:** A window titled "VIC7000 Demo Sample" showing a table of data. A red arrow points to the "Snap" button in the top right corner of this window.

At the bottom of the interface, a status bar shows "Apply successfully." and "0,0 frames" (highlighted in green). The bottom right corner of the monitor window shows "23ms" (highlighted in green).

Product ID	Quantity	Temperature	Voltage	Time	Result
1	969	4.71 °C	10.7 V	1938 ms	Pass
2	684	15.97 °C	9.6 V	1371 ms	Pass
3	495	25.67 °C	2.5 V	995 ms	NG
4	750	20.03 °C	-2.4 V	1503 ms	Pass
5	607	23.74 °C	2.5 V	1219 ms	Pass
6	219	13.62 °C	1.4 V	445 ms	NG
7	127	10.08 °C	-3.4 V	264 ms	NG
8	272	2.29 °C	8.7 V	551 ms	NG
9	514	-12.49 °C	12.1 V	1034 ms	Pass
10	152	-13.39 °C	3.6 V	314 ms	NG
11	663	-9.61 °C	13.2 V	1328 ms	Pass
12	54	13.02 °C	1.1 V	119 ms	NG

- **Control – Input**

3. **Set Input Content – Modbus TCP** : VIC7000 is little-endian system. Data should be read from lower bits. Data should also be written from lower bits.



Advanced

- **Control – Input**

3. **Set Input Content – Modbus TCP** : Set the value of MODBUSHSTRn, and the data type is ASCII code (8bits). A register (16bits) can store 2 ASCII code, and the ASCII code will be transferred to character. n is the index of MODBUSHSTR, and MODBUSHSTRn is the content that will be entered after the control file with same index playing is completed. For example, MODBUSHSTR00 is the content that will be entered after the control file with index 00 is finished playing.

Holding Register (4X)	
Address Range	Content
40001 ~ 40051	MODBUSHSTR00
40052 ~ 40102	MODBUSHSTR01
40103 ~ 40153	MODBUSHSTR02
40154 ~ 40204	MODBUSHSTR03
40205 ~ 40255	MODBUSHSTR04

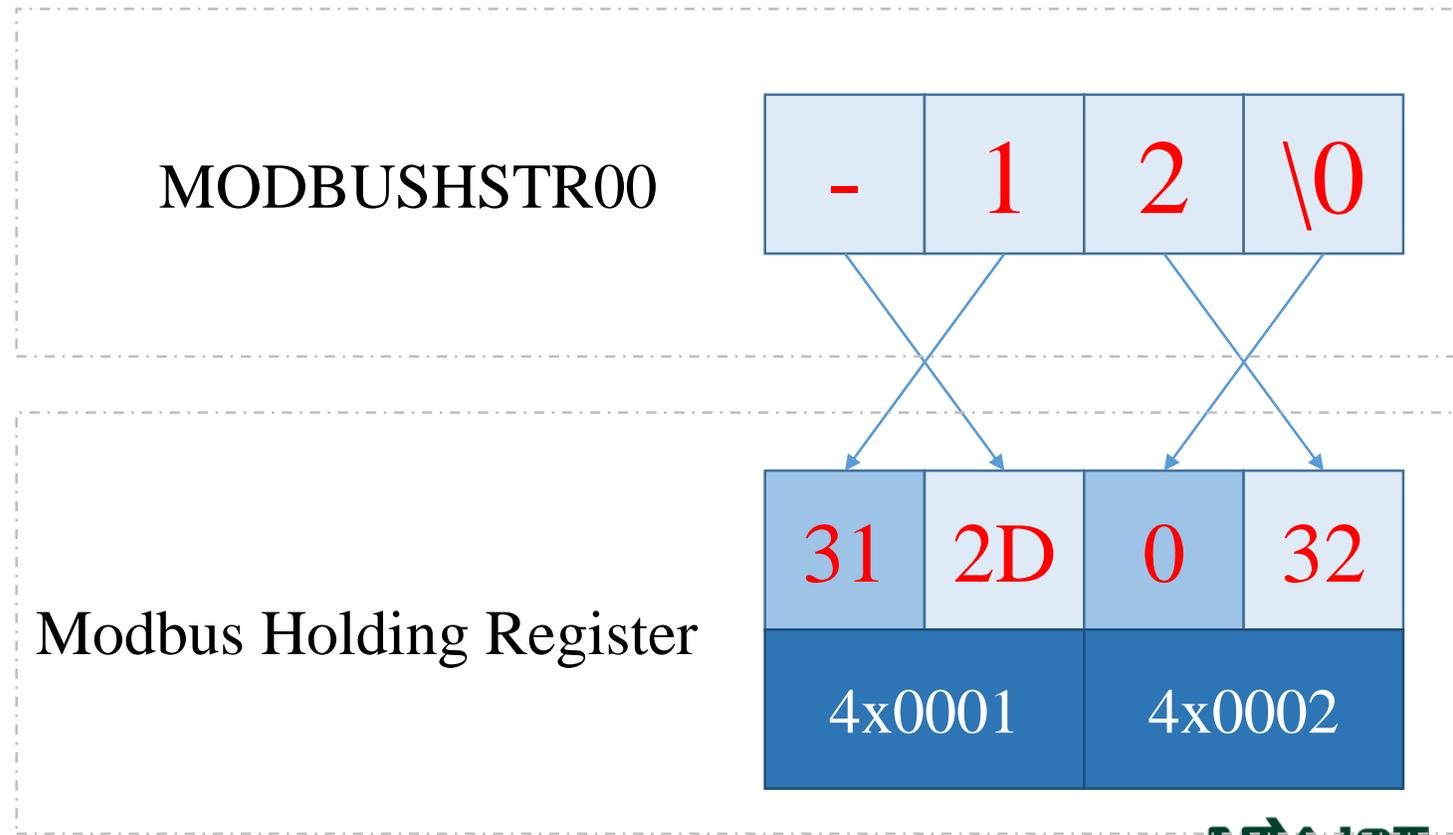
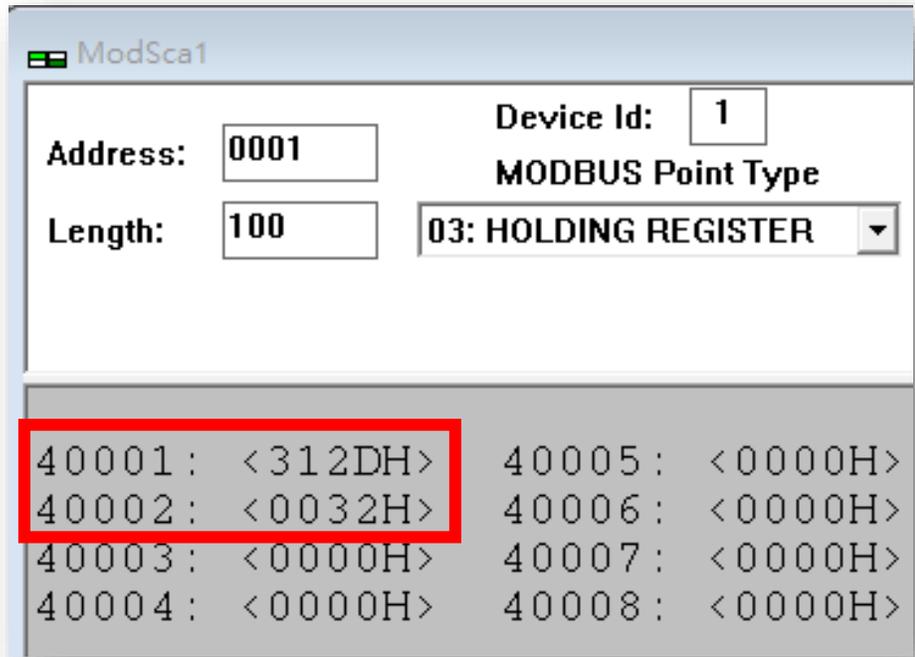
Holding Register (4X)	
Address Range	Content
40001 ~ 410200	MODBUSHSTR00 ~ 199

A MODBUSHSTR can store 101 ASCII code. Another word, it can store 101 characters.

Advanced

- Control – Input

Example – Set Input Content – Modbus TCP : Use Modscan(Hex mode) to set the value of MODBUSSTR00 to -12



Advanced

- **Control – Input**

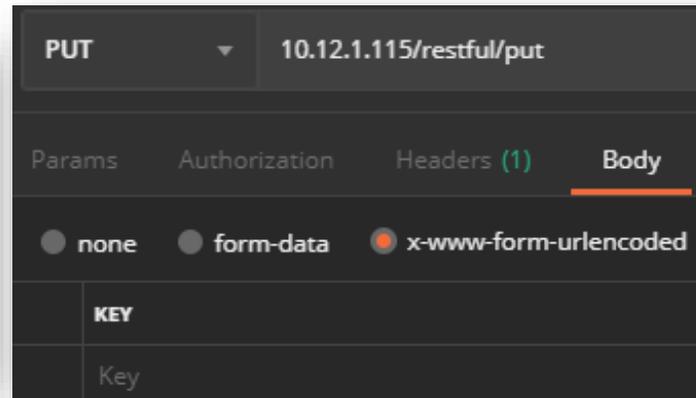
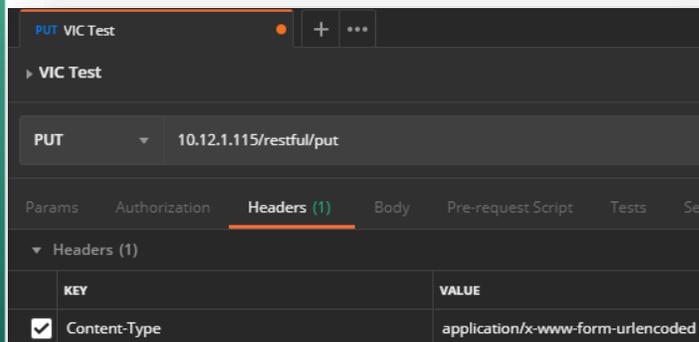
3. **Set Input Content – RESTful API** : Use PUT to set the content that will be entered.

index_value is corresponding to the index of control file, and the set content will be entered after the corresponding control file completely played. For example, MODBUSHSTR00 is the content that will be entered after the control file with index 00 playing is finished.

Here use Postman for testing

Headers : Content-Type: application/x-www-form-urlencoded

Body : x-www-form-urlencoded

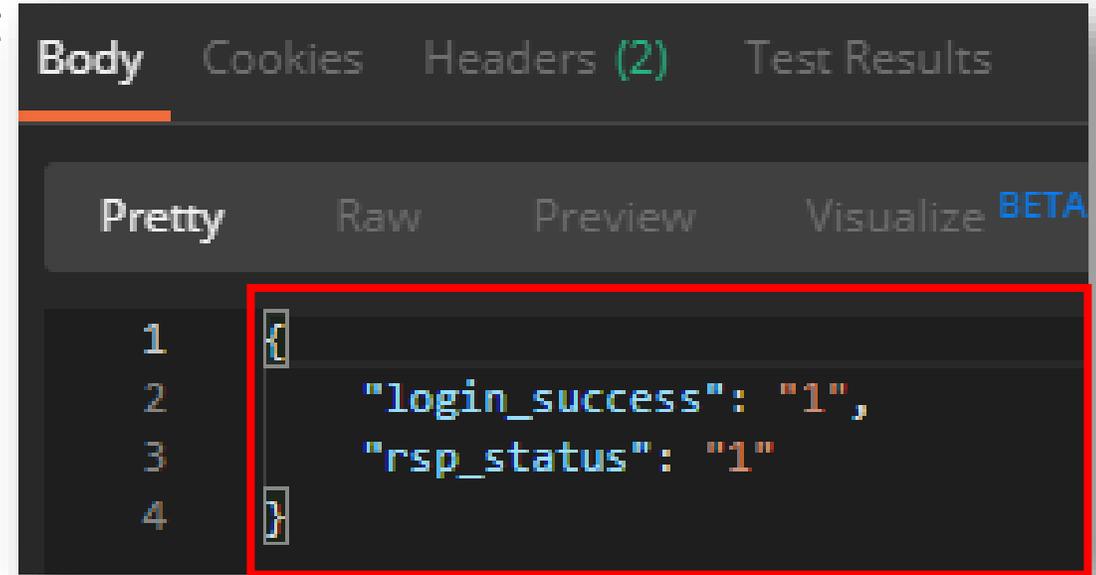
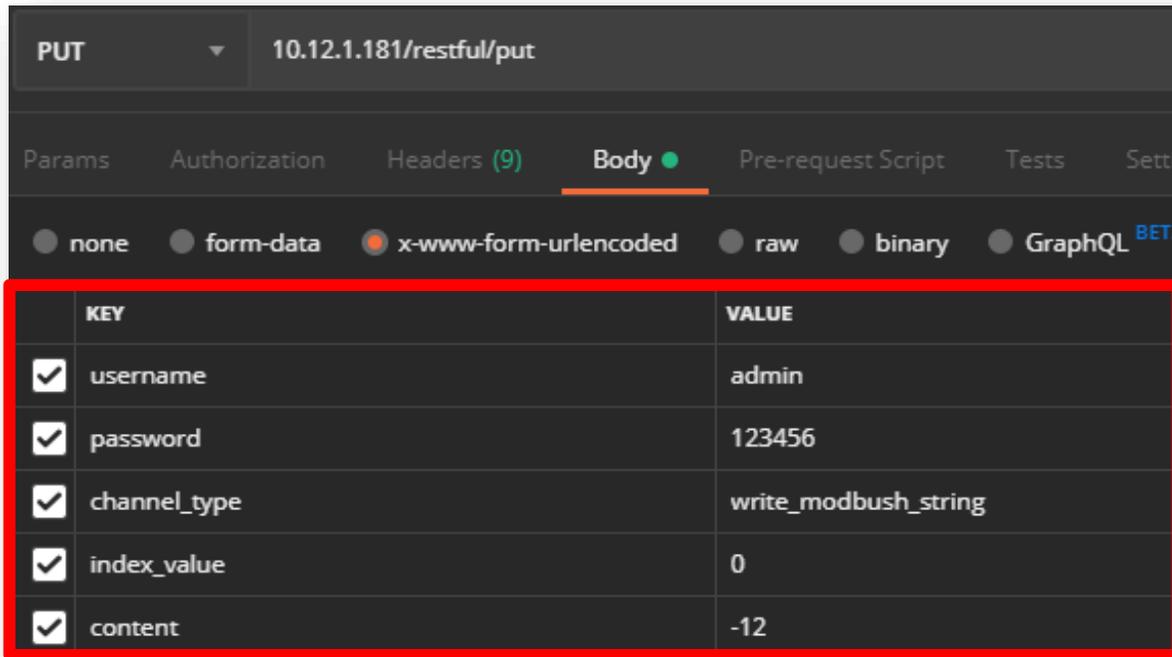


	Set the content that will be entered
username	admin or user
password	123456 (default)
channel_type	write_modbush_string
index_value	0 ~ 199
content	The content that will be entered

Advanced

- Control – Input

Example – Set Input Content – RESTful API : Use Postman to set the content of index_value 00 to -12. Check response after sending request



login_success	Whether logging in is successful. 1 = Successful 0 = Failed
rsp_status	Whether the command is executed 1 = Successful 0 = Failed

- **Control – Input**

3. **Set Input Content – SQL** : Use controller_table in database “vic” to set the content that will be entered. id is corresponding to the index of control file, and value in same row will be entered after the corresponding control file completely played. **When VIC7000 entering data, the content set by Script, Modbus TCP, RESTful API is prior to be used.** For example, the value in same row id 0 is the content that will be entered after the control file with index 00 is finished playing.

The screenshot shows a database management interface with a Navigator on the left and a SQL editor on the right. The Navigator displays a schema named 'vic' with three tables: controller_table, key_table, and ocr_table. The SQL editor contains the query: `SELECT * FROM vic.controller_table;`. Below the query, a Result Grid shows the following data:

id	value	extra
0		NULL
1	12	NULL
2	-4	NULL

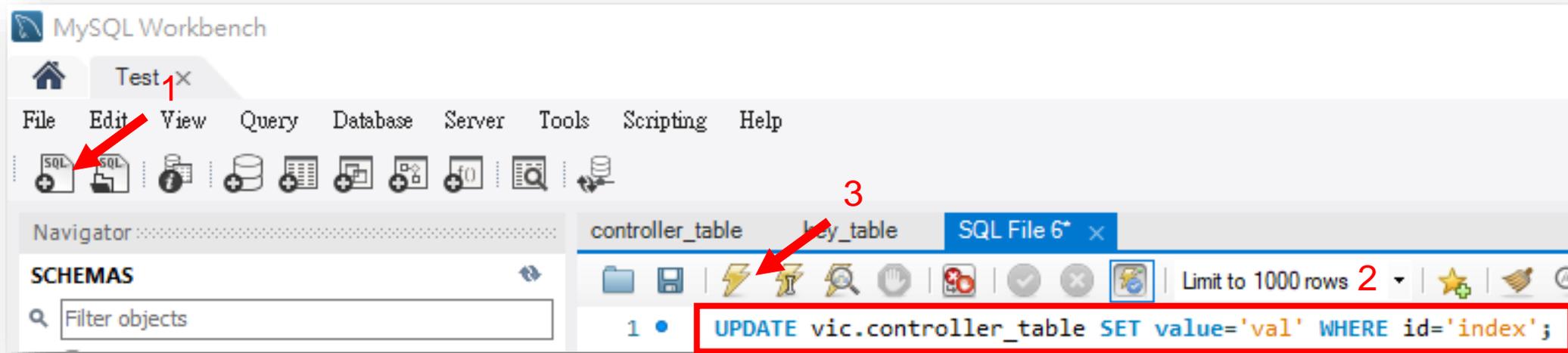
A red arrow points to the 'controller_table' entry in the Navigator, and a red box highlights the first three rows of the Result Grid.

- **Control – Input**

3. **Set Input Content – SQL** : Use UPDATE to set the content that will be entered. index is the index of control file, and val is the content.

Add a SQL file → edit the command → Click Execute

```
UPDATE vic.controller_input SET value='val' WHERE id='index';
```

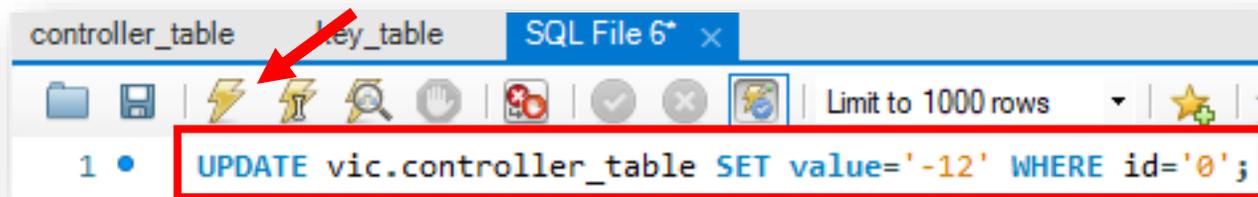


Advanced

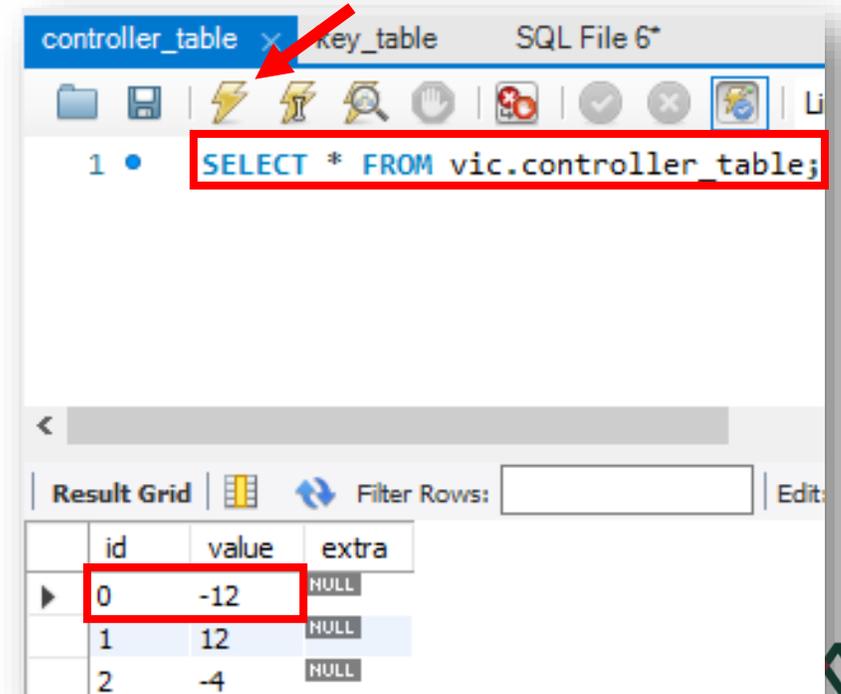
- Control – Input

Example – Set Input Content – SQL : Use Postman to set the value of index_value 0 to -1 User can use SELECT to check whether the set value is correct after executing the command

```
UPDATE vic.controller_table SET value='-12' WHERE id='0';
```



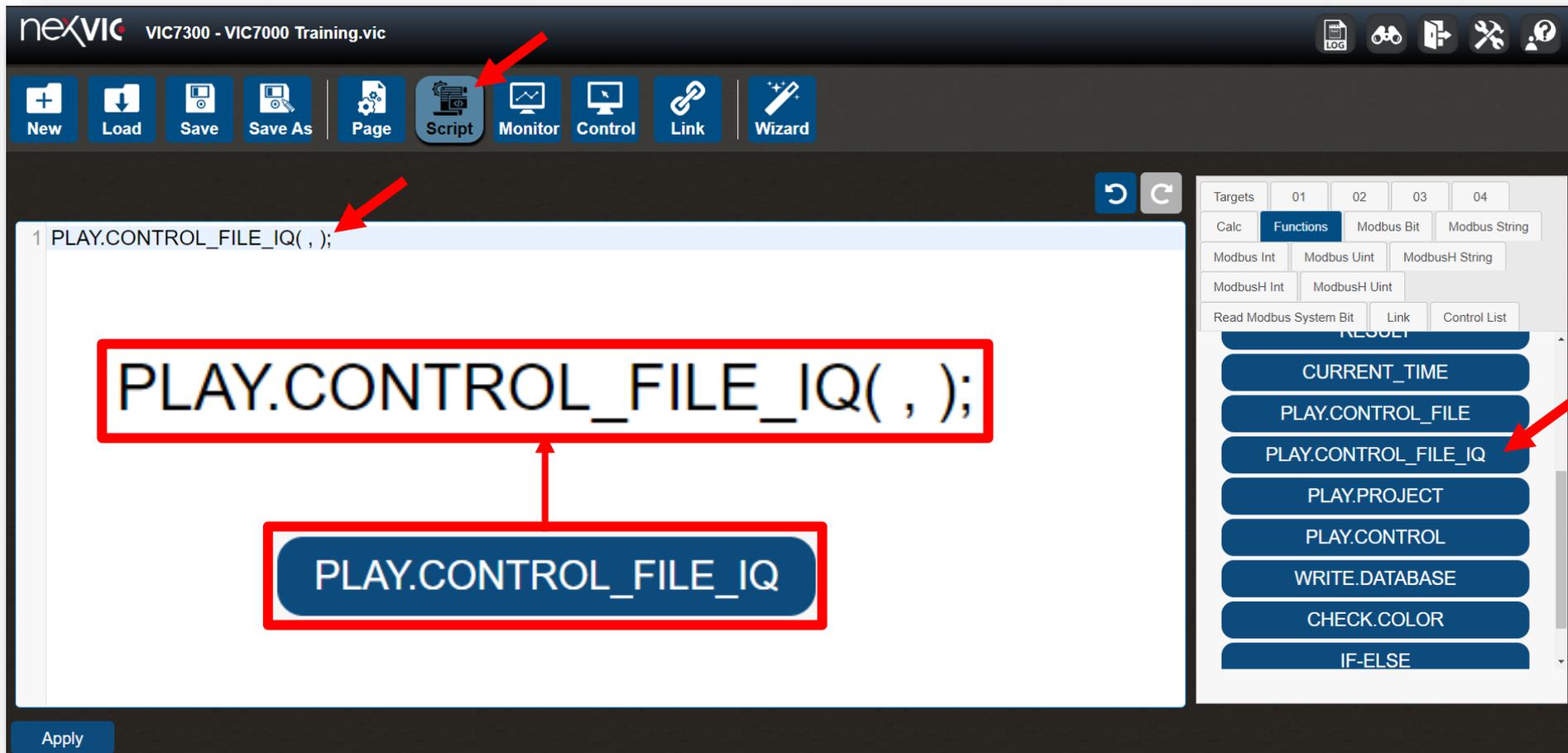
```
SELECT * FROM vic.controller_table;
```



Advanced

- Control – Input

4. Trigger Control File – Script : Enter **Script** page → Choose **PLAY.CONTROL_FILE_IQ** in Functions field



Advanced

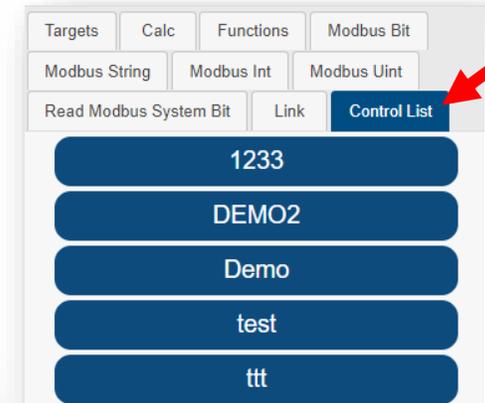
- **Control – Input**

- **PLAY.CONTROL_FILE_IQ** : Play specific control file with input and queue property

1. **control_file_name** : Name of the control file that is about to play.
The file can be picked from control file list
2. **sec** : Restrict execution again in a period of time (s)

*If it needs to use input or queue property, user must check them in Load Control File window

Control file list



```
PLAY.CONTROL_FILE_IQ
PLAY.CONTROL_FILE_IQ(control_file_name, sec)
```

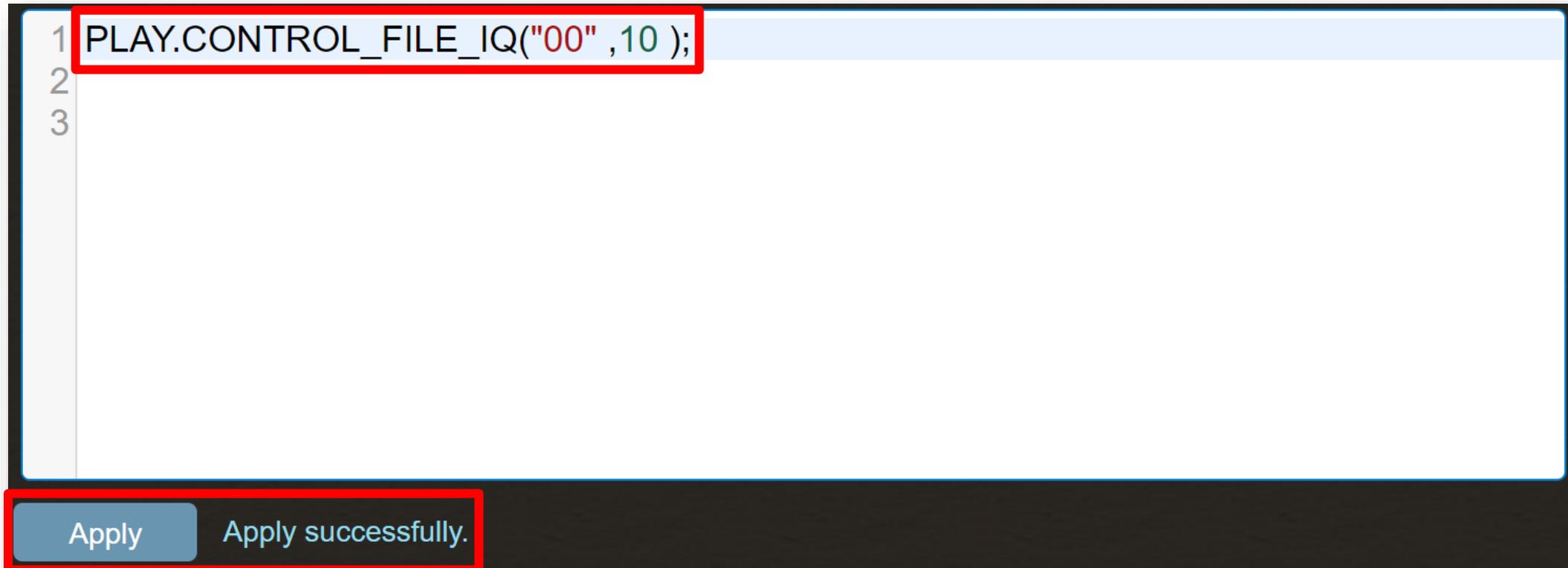
```
PLAY.CONTROL_FILE_IQ( , );
```

File Name	Duration	Input	Queue
01	0:2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
02	0:2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
03	0:0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
04	0:3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1	0:2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	0:22	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	0:20	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	0:17	<input type="checkbox"/>	<input type="checkbox"/>
5	0:42	<input type="checkbox"/>	<input type="checkbox"/>
6	0:08	<input type="checkbox"/>	<input type="checkbox"/>

Advanced

- **Control – Input**

Example – Trigger Control File – Script : Use PLAY.CONTROL_FILE_IQ to trigger the control file named 00. After edition is finished, click Apply(ctrl + s) and the script will take effect.



The screenshot shows a code editor with a light blue background. The first line of code is highlighted in a red box: `1 PLAY.CONTROL_FILE_IQ("00",10);`. The second and third lines are empty. Below the code editor, there is a dark grey bar with a red border. On the left side of this bar is a blue button labeled "Apply". To the right of the button, the text "Apply successfully." is displayed in a light blue color.

```
1 PLAY.CONTROL_FILE_IQ("00",10);  
2  
3
```

Apply Apply successfully.

- **Control – Input**

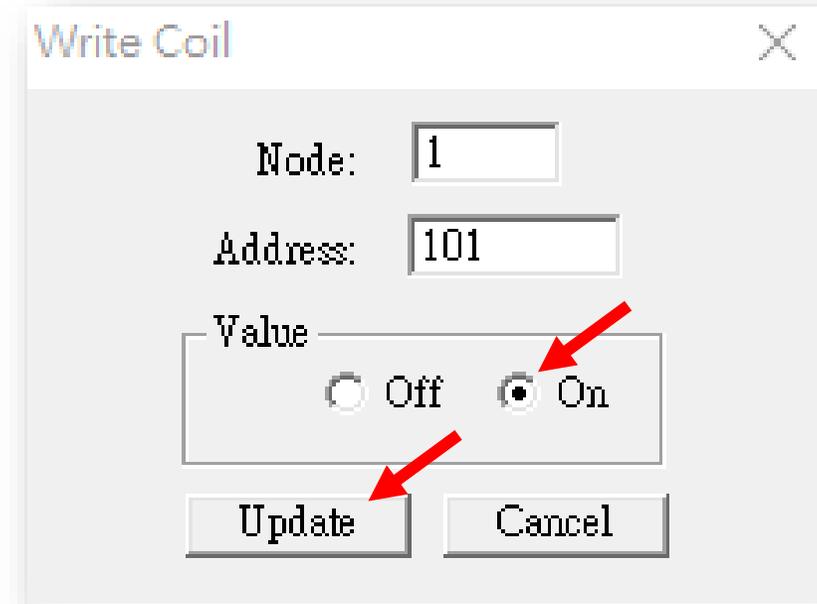
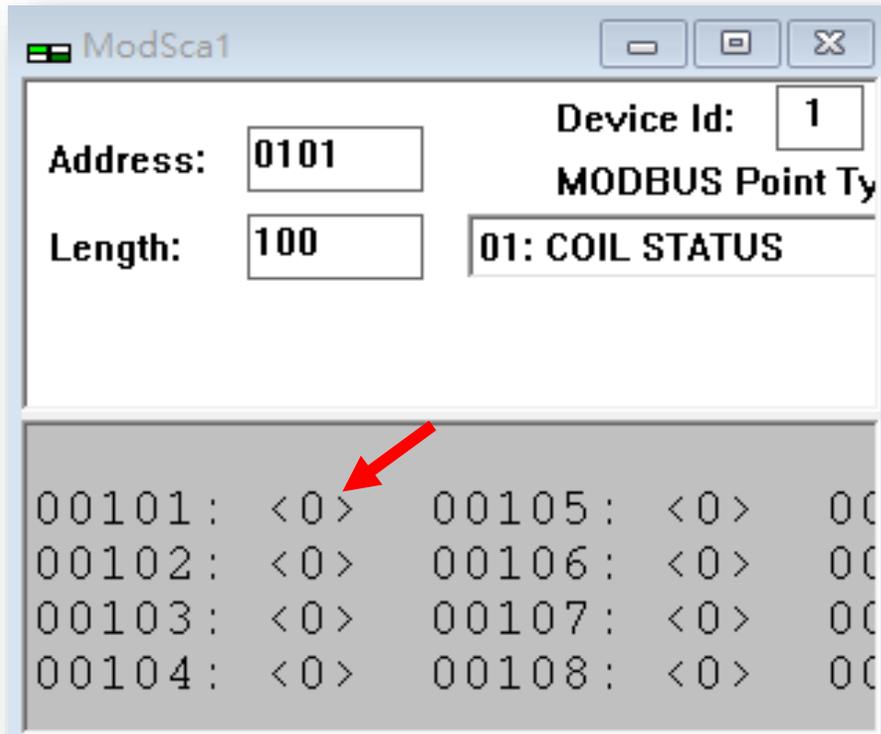
4. **Trigger Control File – Modbus TCP** : Set the value of specific Modbus address, and it can trigger the corresponding control file

Coil Status (0X)	
Address	Content
00101 ~ 00300	Play control file with index 00~199 1 = Play 0 = Stop

Advanced

- Control – Input

Example – Trigger Control File – Modbus TCP : Double click on the value field of address 00101 and update the value to 1(On), then it will trigger the control file with index 00

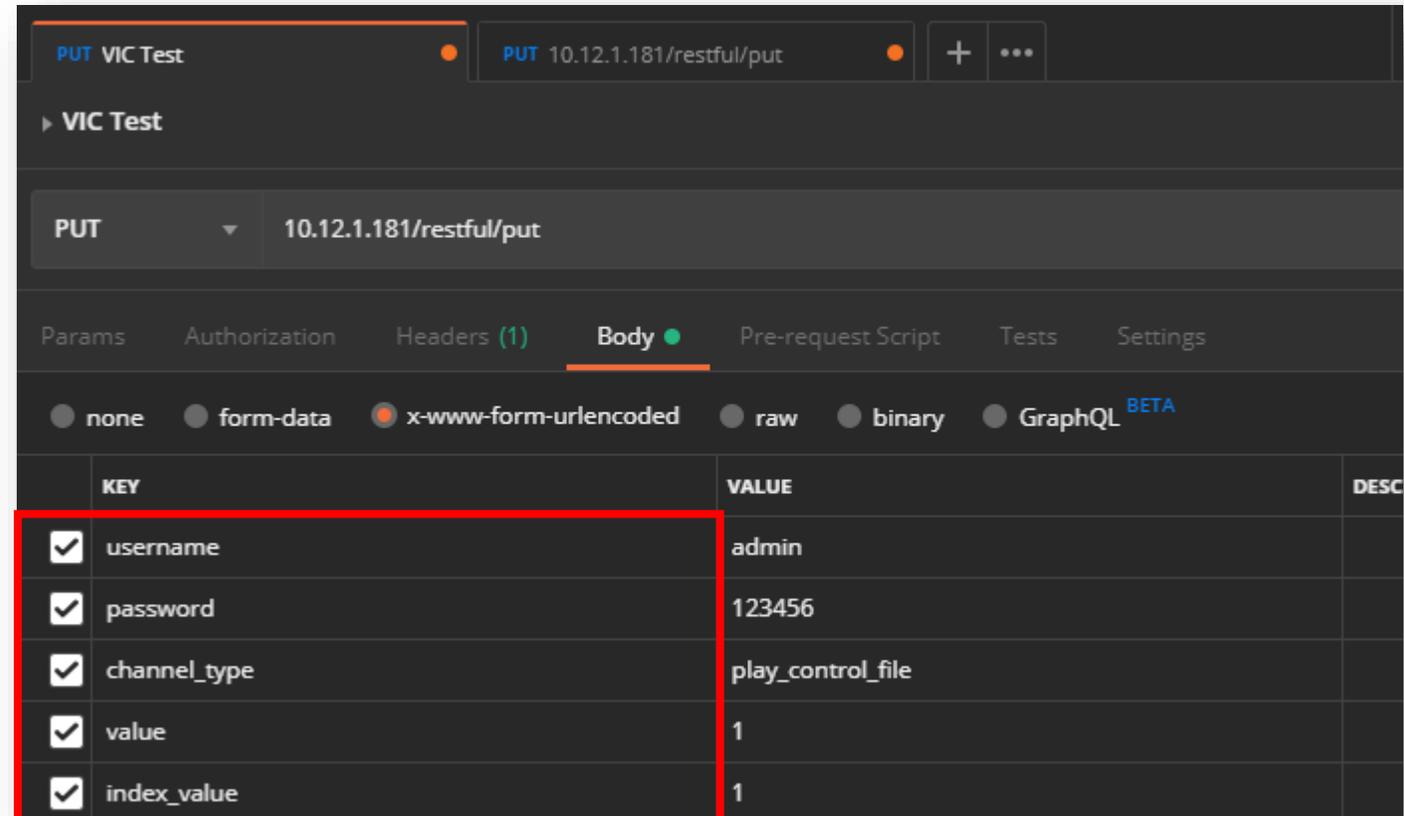


Advanced

- Control – Input

4. Trigger Control File – RESTful API : Use PUT to trigger the control file

	Play control file with index i
username	admin or user
password	123456 (default)
channel_type	play_control_file
value	1 = Play 0 = Stop
index_value	0 ~ 199



Advanced

- Control – Input

4. Trigger Control File – RESTful API : Check response

```

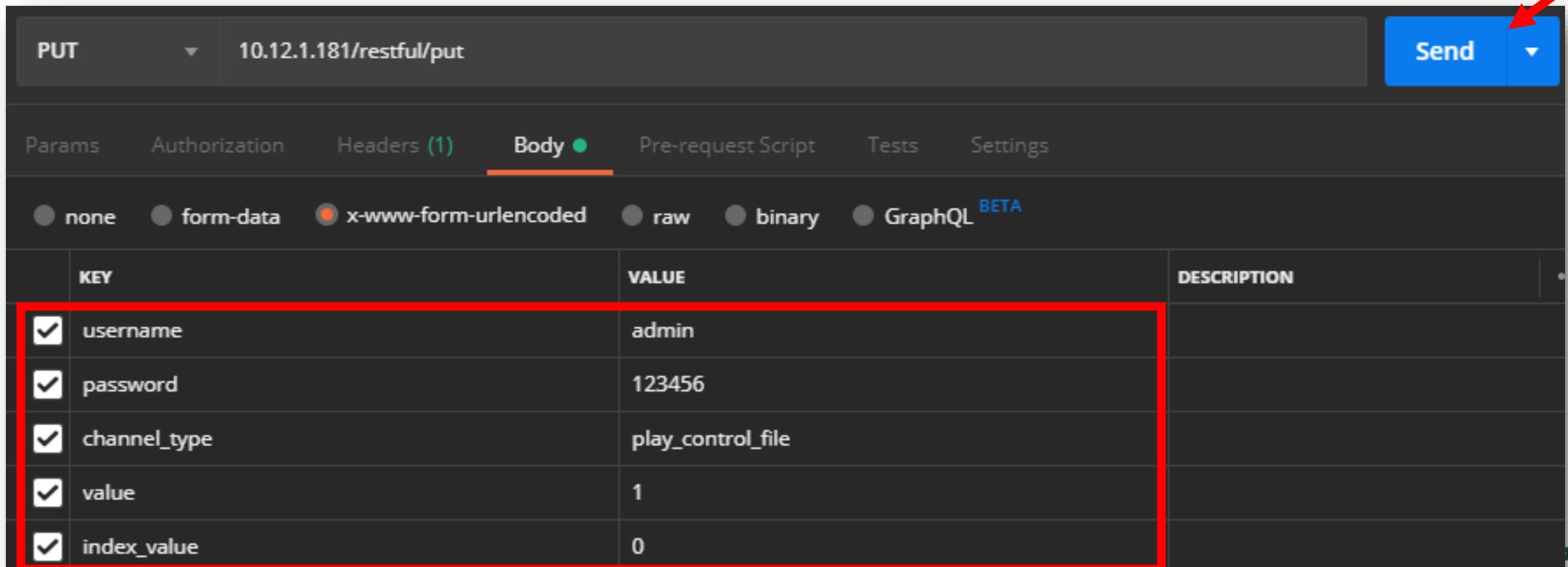
Body  Cookies  Headers (2)  Test Results
Pretty  Raw  Preview  Visualize BETA
1  {
2  "login_success": "1",
3  "rsp_status": "1"
4  }
  
```

login_success	Whether logging in is successful. 1 = Successful 0 = Failed
rsp_status	Whether the command is executed successfully. 1 = Successful 0 = Failed

Advanced

- **Control – Input**

Example – Trigger Control File – RESTful API : Trigger the control file with index 00. Send the request after setting up the parameters



PUT 10.12.1.181/restful/put Send

Params Authorization Headers (1) **Body** Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL BETA

	KEY	VALUE	DESCRIPTION
<input checked="" type="checkbox"/>	username	admin	
<input checked="" type="checkbox"/>	password	123456	
<input checked="" type="checkbox"/>	channel_type	play_control_file	
<input checked="" type="checkbox"/>	value	1	
<input checked="" type="checkbox"/>	index_value	0	

Advanced

- Control – Input

Example – Trigger Control File – RESTful API : Check response after sending the request

```

Body  Cookies  Headers (2)  Test Results
Pretty  Raw  Preview  Visualize BETA
1  {
2  "login_success": "1",
3  "rsp_status": "1"
4  }
    
```

login_success	Whether logging in is successful. 1 = Successful 0 = Failed
rsp_status	Whether the command is executed successfully. 1 = Successful 0 = Failed

- **Control – Input**

4. **Trigger Control File – SQL** : Use key_table in database “vic” to trigger control file. Use UPDATE to trigger the specific control file. index is the index of control file.

User can use SELECT to get the status of Control, 0 = Stop, 1 = Playing

UPDATE vic.key_table SET value='index' WHERE id='1'; SELECT value FROM vic.key_table WHERE id='2';

The screenshot shows a database management interface. On the left, a 'Navigator' pane displays a tree view of the 'vic' database schema. Under 'Tables', 'key_table' is selected, and a red arrow points to its table icon. The main window shows a SQL editor with the query: `SELECT * FROM vic.key_table;`. Below the editor, a 'Result Grid' displays the following data:

id	name	value	extra
1	control_index	-1	NULL
2	control_play_status	0	NULL
NULL	NULL	NULL	NULL

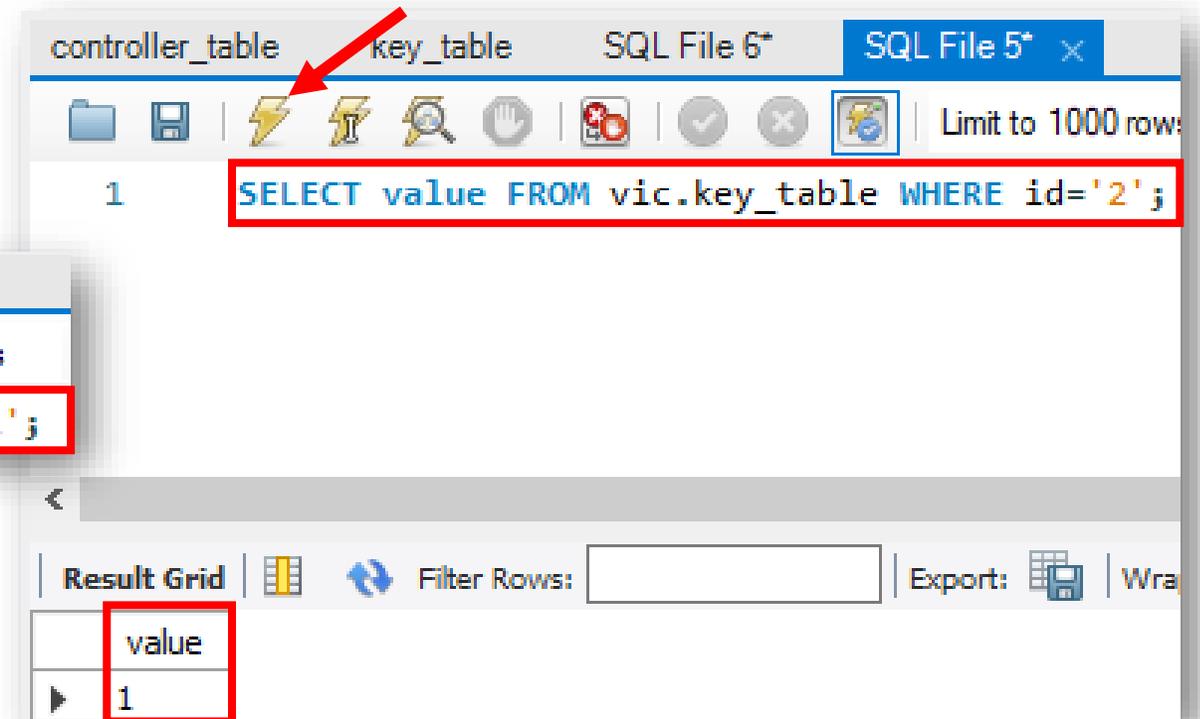
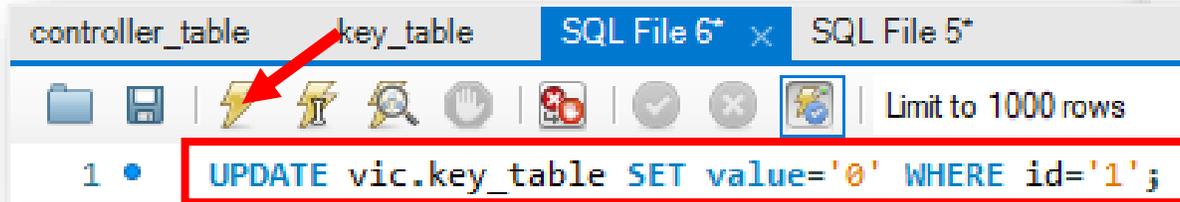
Advanced

- Control – Input

Example – Trigger Control File – SQL : Use UPDATE to trigger the control file with index 00, use SELECT to get the status of Control

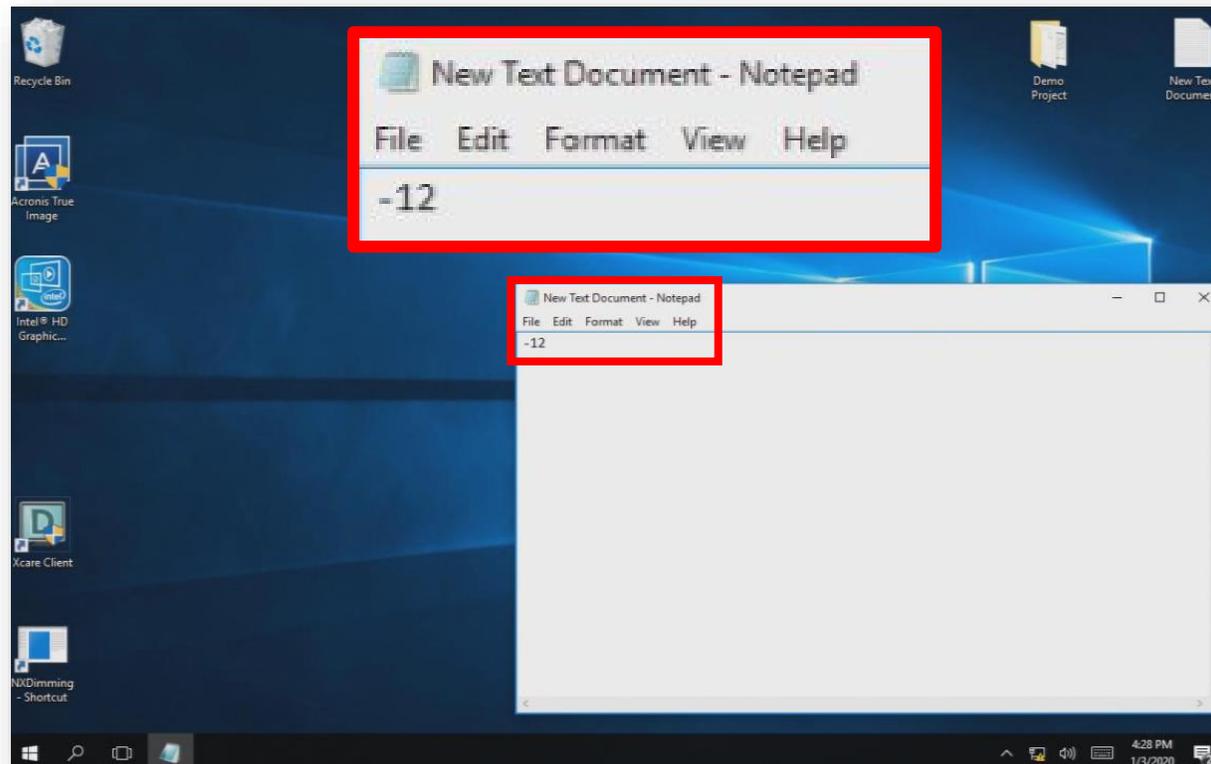
UPDATE vic.key_table SET value='0' WHERE id='1';

SELECT value FROM vic.key_table WHERE id='2';



- **Control – Input**

- 5. **Simulate** : This example illustrates how to use control file to make the notepad enterable and enter -12 after the control file playing is finished playing. When simulating, user can check :
 - ✓ **Whether playing control file is correct**
 - ✓ **Whether entered content is correct**

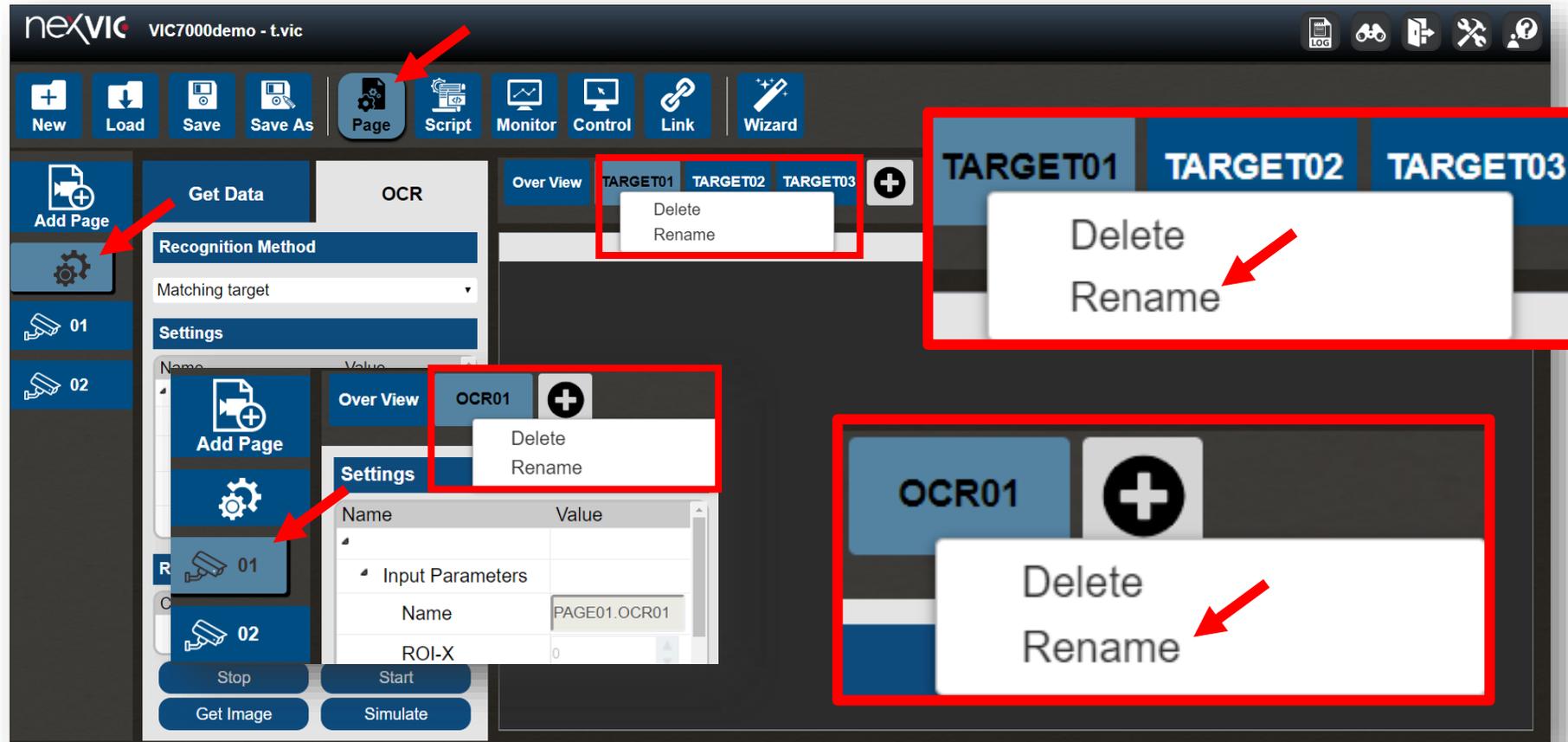


Appendix

- **Rename**

1. **Rename** : Enter Recognition Config Page → Right-click **TARGET** 、 **TARGET_COLOR** 、 **TARGET_PATTERN** 、 **OCR** 、 **COLOR** 、 **PATTERN** → Choose **Rename**

Here use TARGET and OCR to demonstrate this function



Appendix

- **Rename**

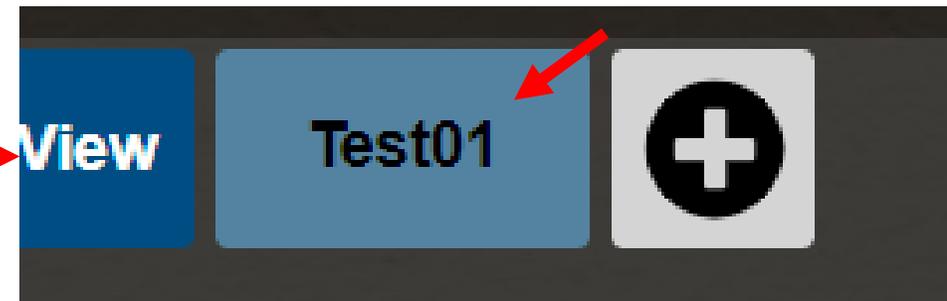
1. **Rename** : Enter the **new Name** (not repeated) → Click **OK**, then TARGET and OCR will be renamed.



Rename dialog box showing the current name 'Test' in the input field. The 'OK' button is highlighted with a red arrow.



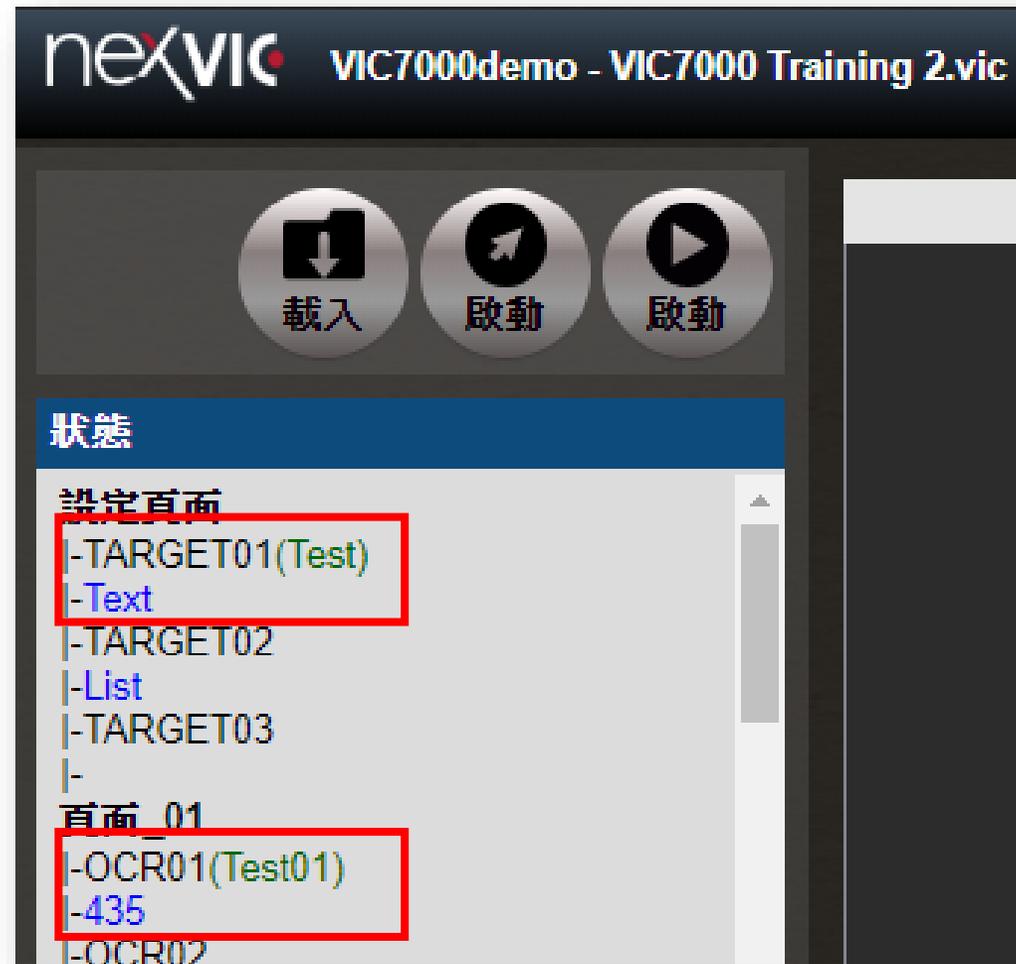
Rename dialog box showing the new name 'Test01' in the input field. The 'OK' button is highlighted with a red arrow.



Appendix

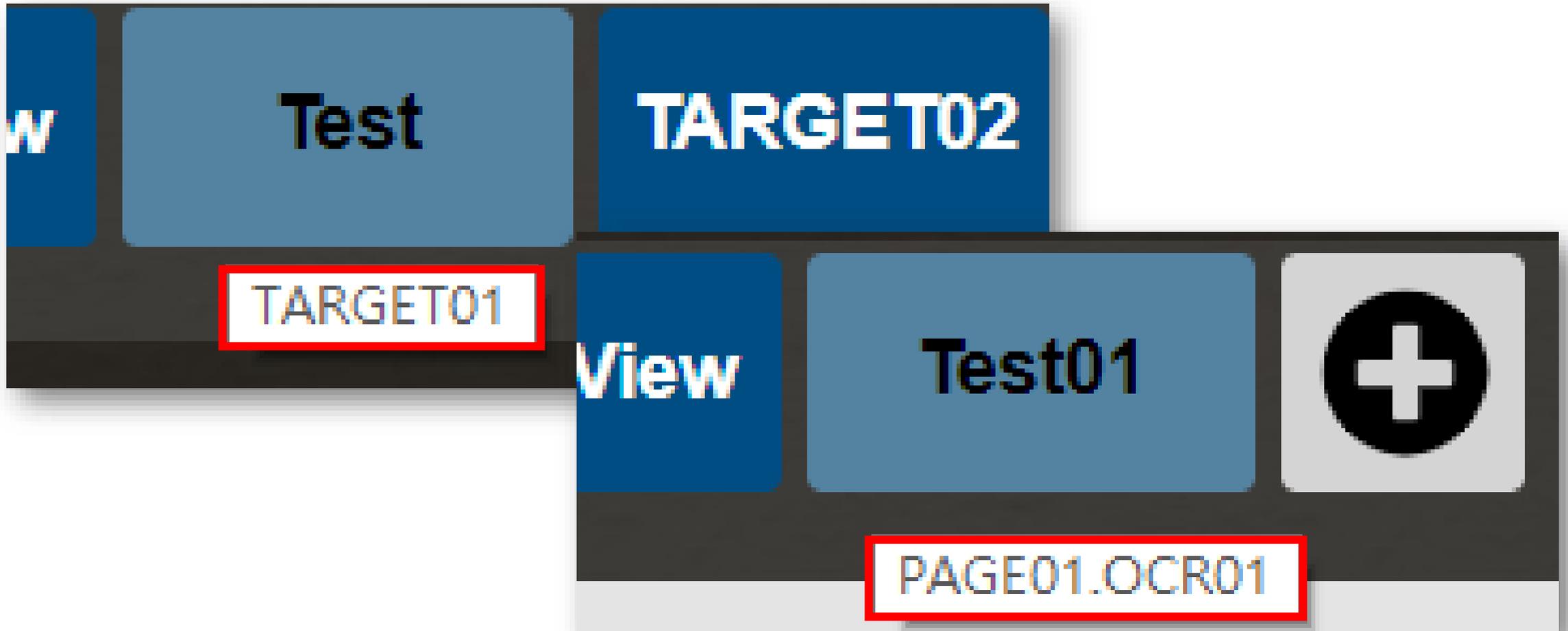
- **Rename**

- **Check Rename** : Rename content will be denoted beside the **TARGET** and **OCR**



Appendix

- **Rename**
 - **Check Rename** : Click the renamed TARGET and OCR, and the original name will show up



Appendix

- **Rename**

- **Check Rename** : In Database page, select renamed TARGET & OCR, and the new name will show up

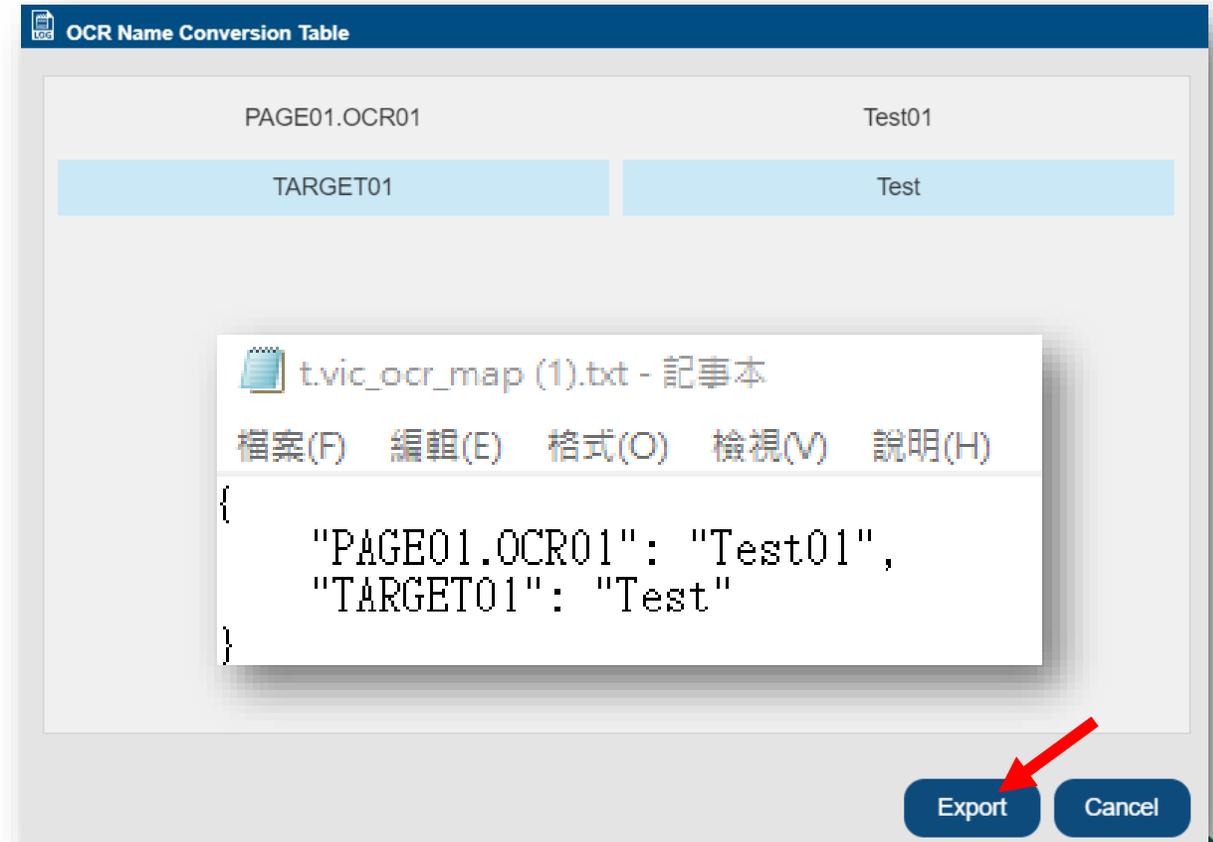
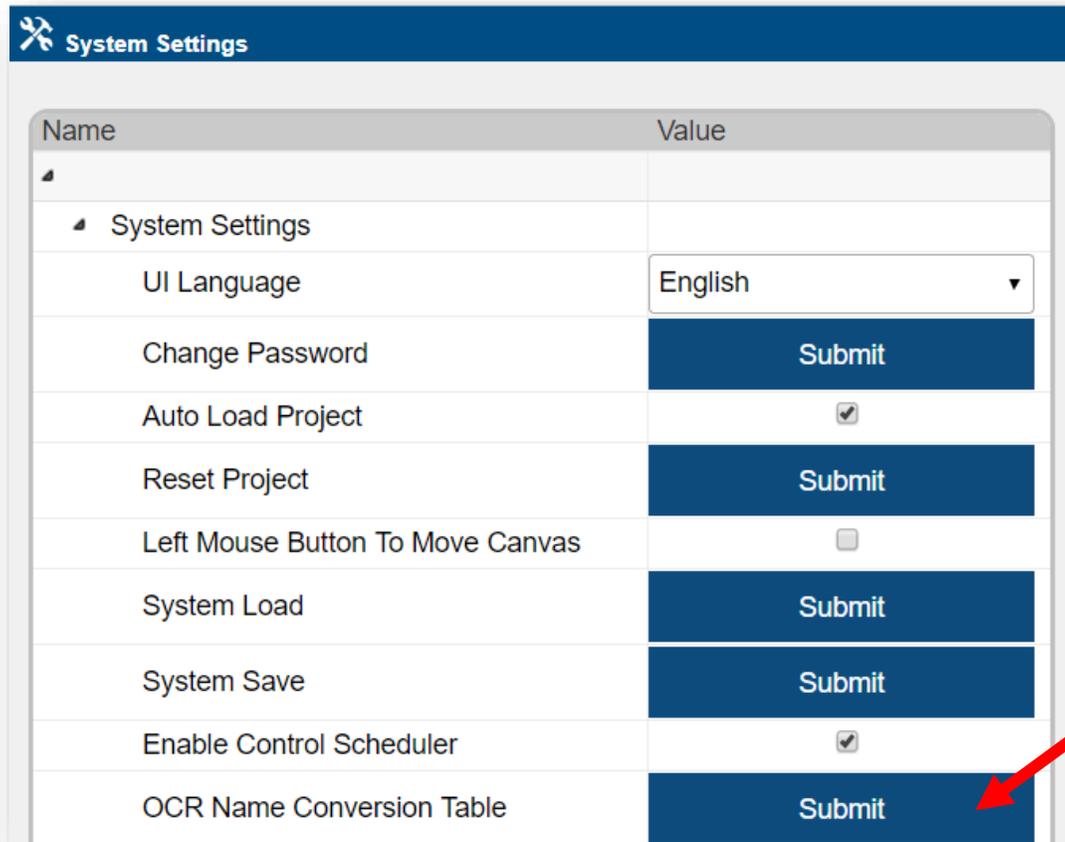
OCR_1	OCR_2	OCR_3
110	110	13
90	PAGE01:1T Actual	6
66	110	2

page	result	timeStamp	image	OCR_1	OCR_2	OCR_3	OCR_4	OCR_5	OCR_6	OCR_7
	Pass	2019-07-19 15:32:59.798		110	110	13	125	125	15	125
	Pass	2019-07-19 15:33:00.734		90	PAGE01:1T Actual	6	125	125	16	125
	Pass	2019-07-19 15:33:01.728		66	110	2	125	125	12	125
	Pass	2019-07-19 15:33:02.723		110	110	13	125	125	12	125
	Pass	2019-07-19 15:33:03.720		155	110	20	125	125	15	125

Appendix

- **Rename**

- **Check Rename** : In System Settings, Click **OCR Name Conversion Table**, and the table listing renamed content will show up, the **JSON file** and can be export to **.txt**



Appendix

- **Rename**

- **Check Rename** : Use with RESTful API, and Enter **IP/restful/ocr_map** in URL field.

The **OCR Name Conversion** Table will show as below.

```
192.168.133.144/restful/ocr_map
```

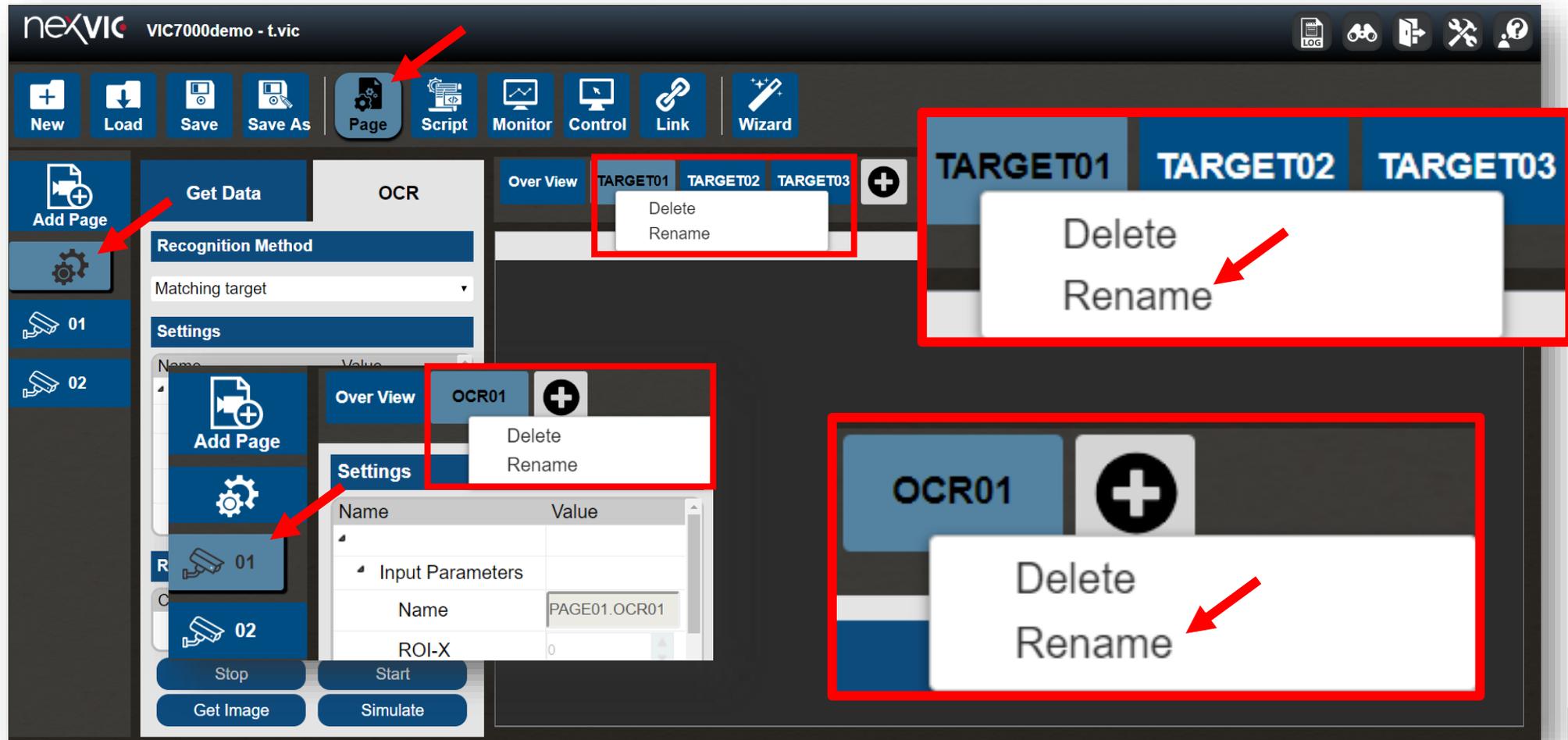


```
{"TARGET01": "Test", "PAGE01.OCR01": "Test01"}
```

Appendix

- **Rename**

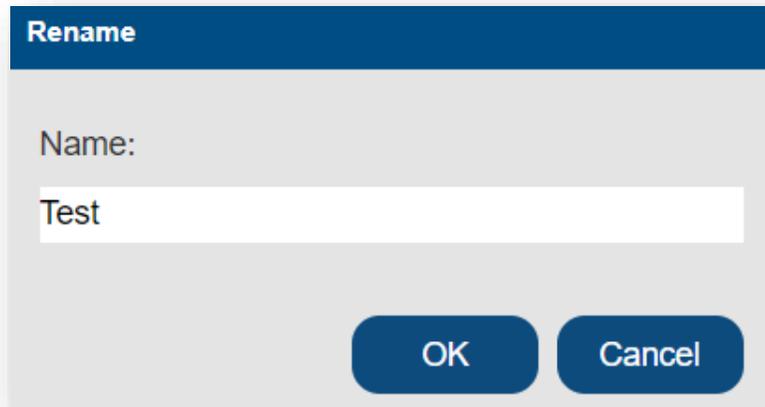
- **Recover** : Enter Recognition Config Page → Right-click renamed **TARGET** and **OCR** → Choose **Rename**



Appendix

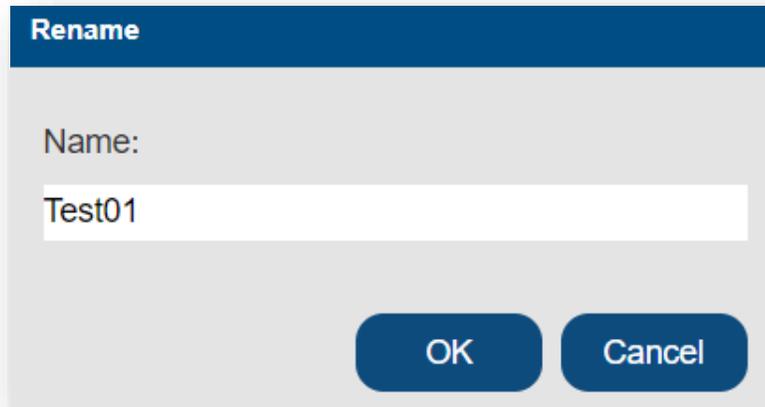
- **Rename**

- **Recover** : **Empty** new Name → Click **OK**, and TARGET & OCR will be recovered to default name.



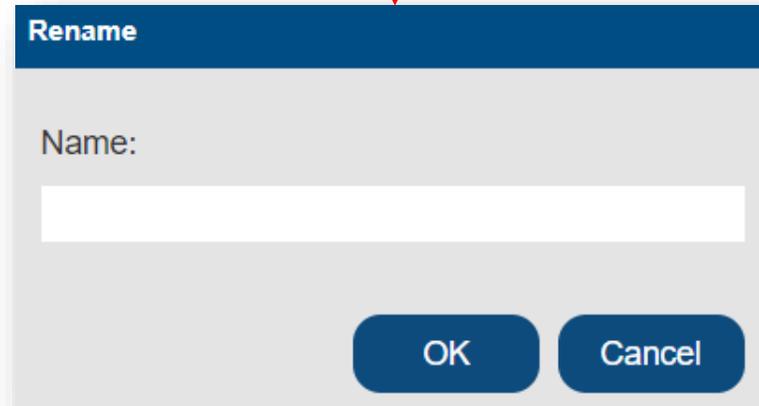
Rename dialog box with the following fields and buttons:

- Title: Rename
- Label: Name:
- Text input: Test
- Buttons: OK, Cancel



Rename dialog box with the following fields and buttons:

- Title: Rename
- Label: Name:
- Text input: Test01
- Buttons: OK, Cancel



Rename dialog box with the following fields and buttons:

- Title: Rename
- Label: Name:
- Text input: (empty)
- Buttons: OK, Cancel





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