

# User's Manual



## Rapid Test View Pro Software RTV\_Ethernet Software

Pacific Image Electronics

Based on RTV1.15\_b0452-1/ERTV1.37 Build 0000

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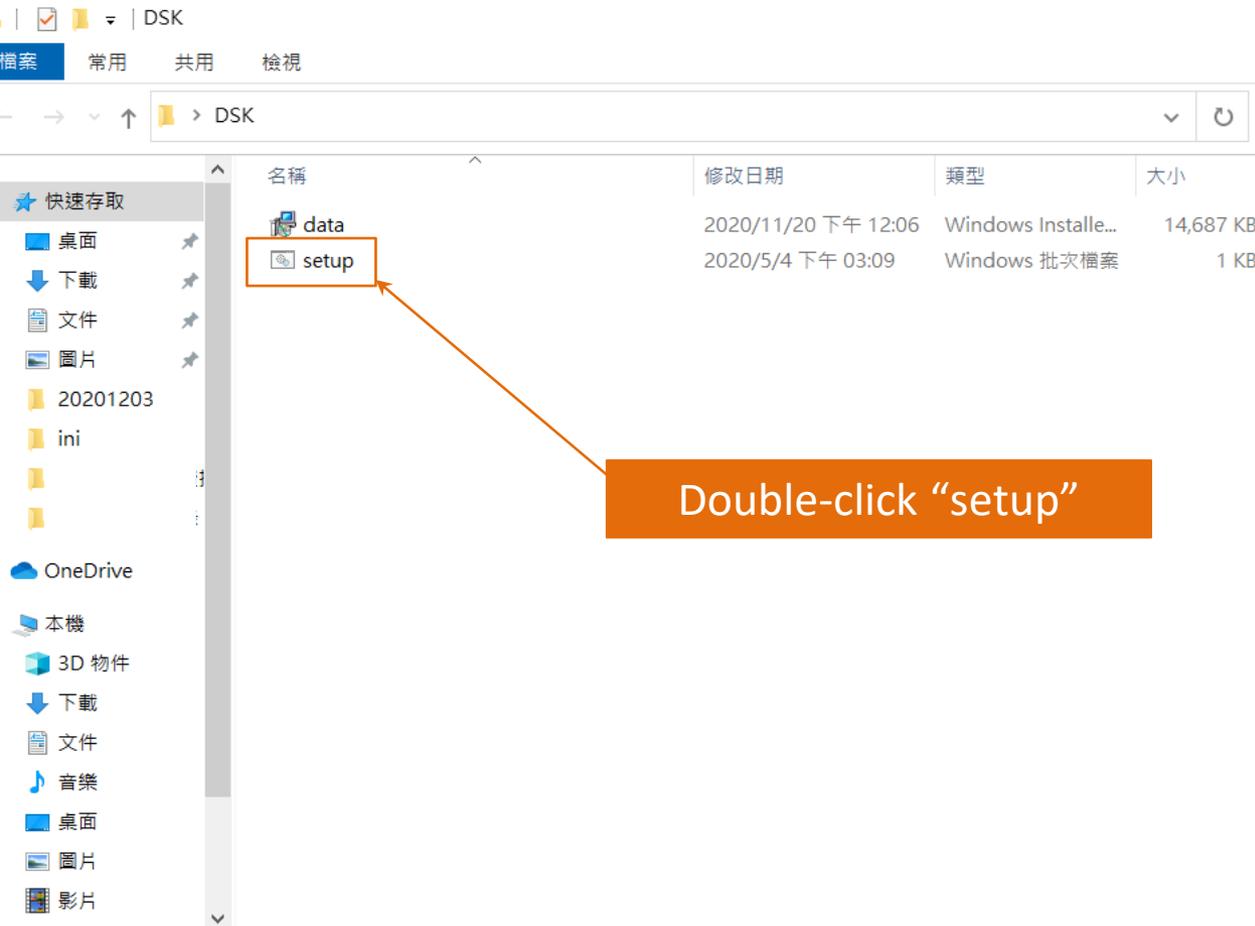
# Notice

This version of the RapidScan Reader and the RapidTestView (RTV)/ RTV\_Ethernet(ERTV) software will allow users to generate new standard curves and cutoff ranges for any existing test profiles. It also has the function to establish new test profiles for new tests or existing tests of different lots.

This is not the version of RapidTestView Basic/ RTV\_Ethernet Basic that we provide for free to end-users. They are not freeware and need a license with a fee to use them.

# RTV Installation

# RTV Installation

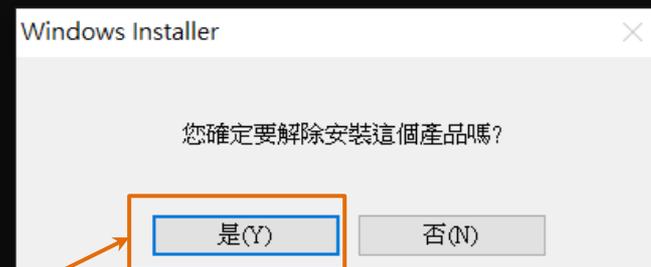


Find the “Setup” file on the provided CD or installation file from supplier. Double click to initiate the software installation.

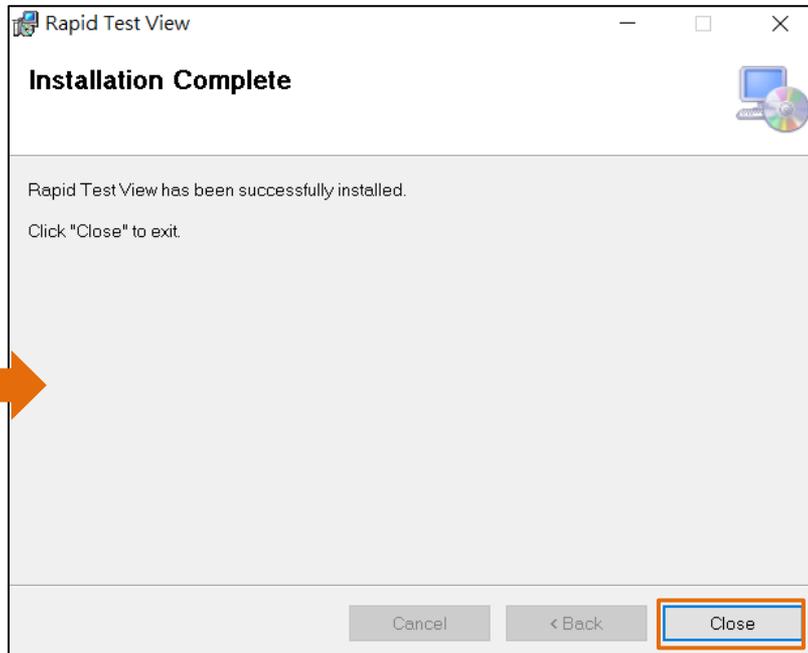
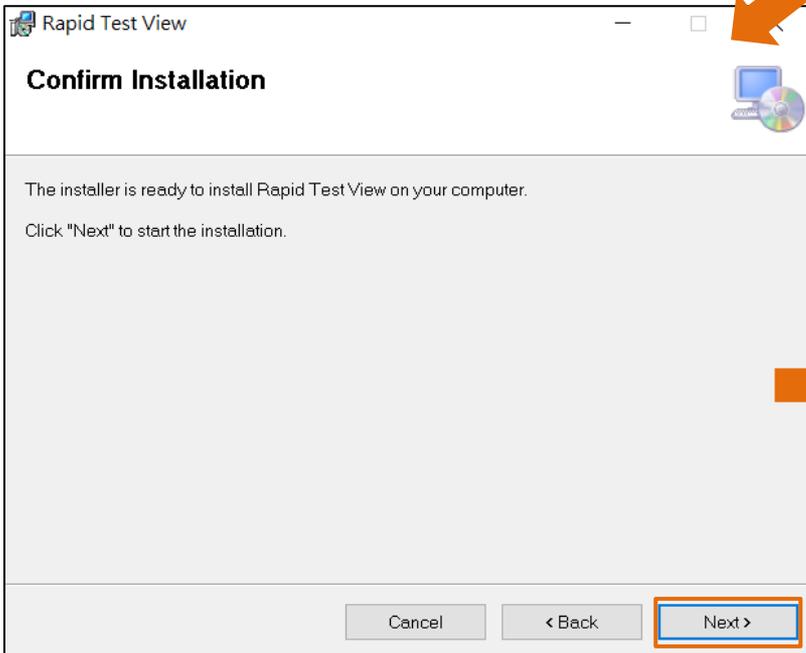
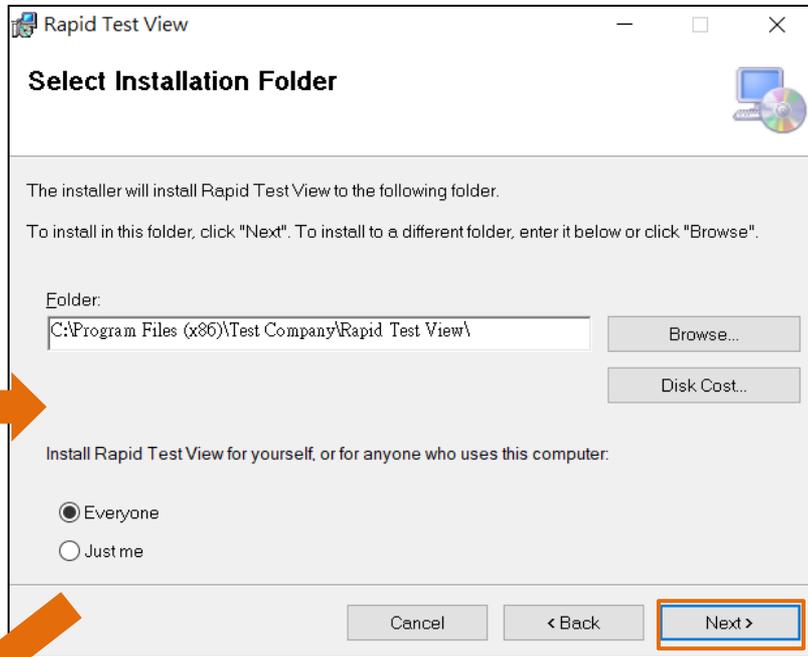
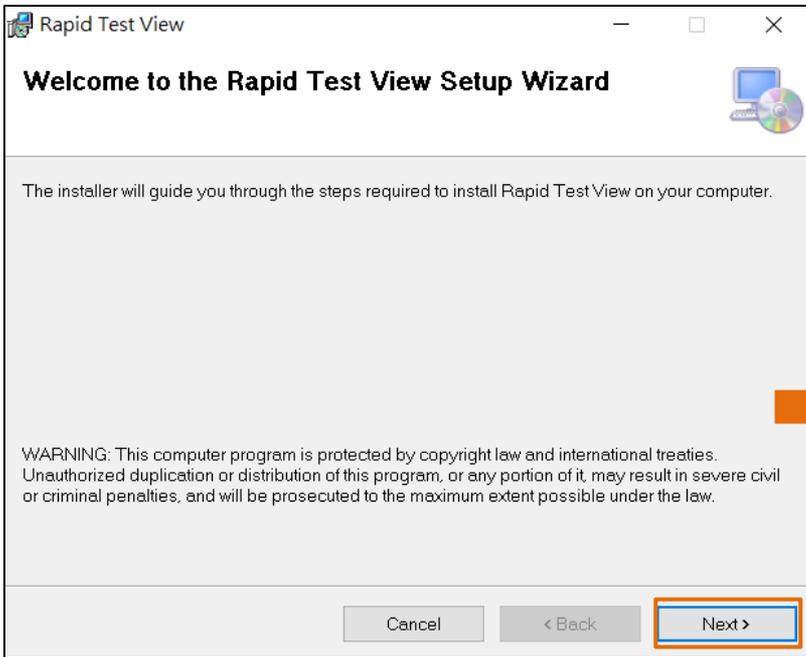
If the installation is successful, the App icon (see below) will appear on your computer desktop.



```
C:\Users\clhsu\Desktop\DSK>msiexec.exe /x {80998DA8-20B0-4A35-8652-BE3725987370}
```



After initiating the setup installer, you will see a dialog saying: Are you sure to uninstall this product? Just click "Yes" no matter what.



# **Log In To RTV & Enable License Key**

# Log In RTV

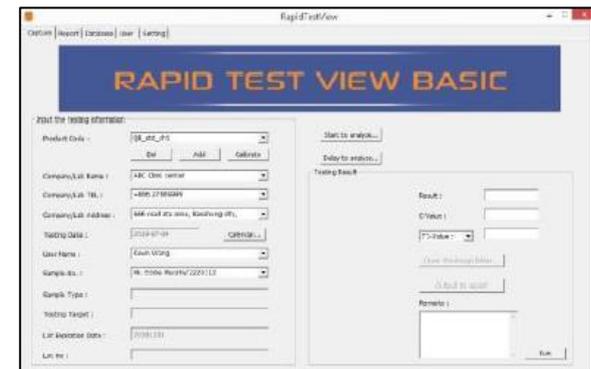
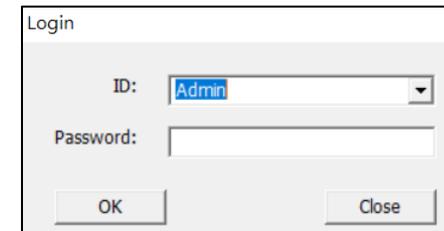
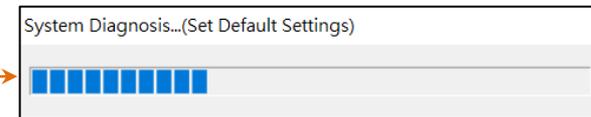
Step1. Connect the reader to your computer running Windows (Windows 7 or above) via flash drive or B to A cable provided in the package.

Step2. Double-click the RTV icon on the desktop to initiate software.

Step3. The software will initiate device parameter settings and go through system diagnosis first.

Step4. Once it passes the system diagnosis, the log-in window will appear. Please contact the supplier to obtain the ID & Password. For user authority management please refer to [link](#) User Management

Step5. After successfully logging in, the UI default page will appear.



# Enable PRO Version Via License Key

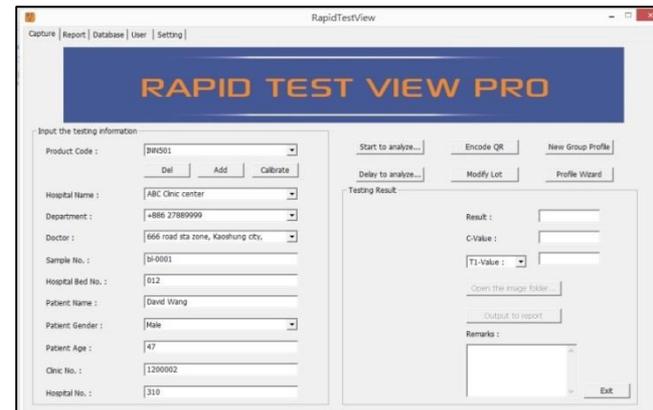
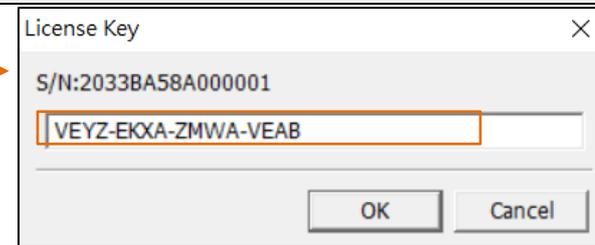
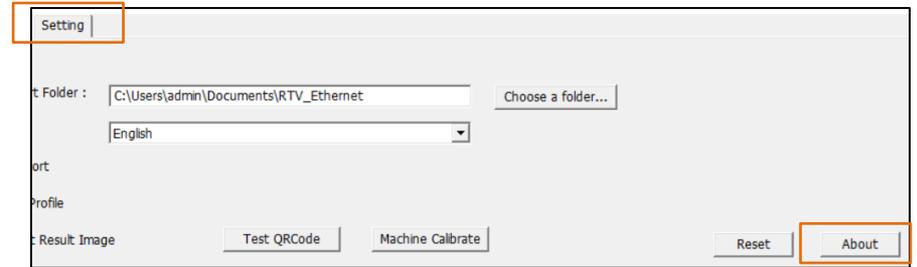
Step1. Go to “Setting” and click “About”

Step2. Click “License Key”

Step3. Key in license key obtained from supplier and press OK

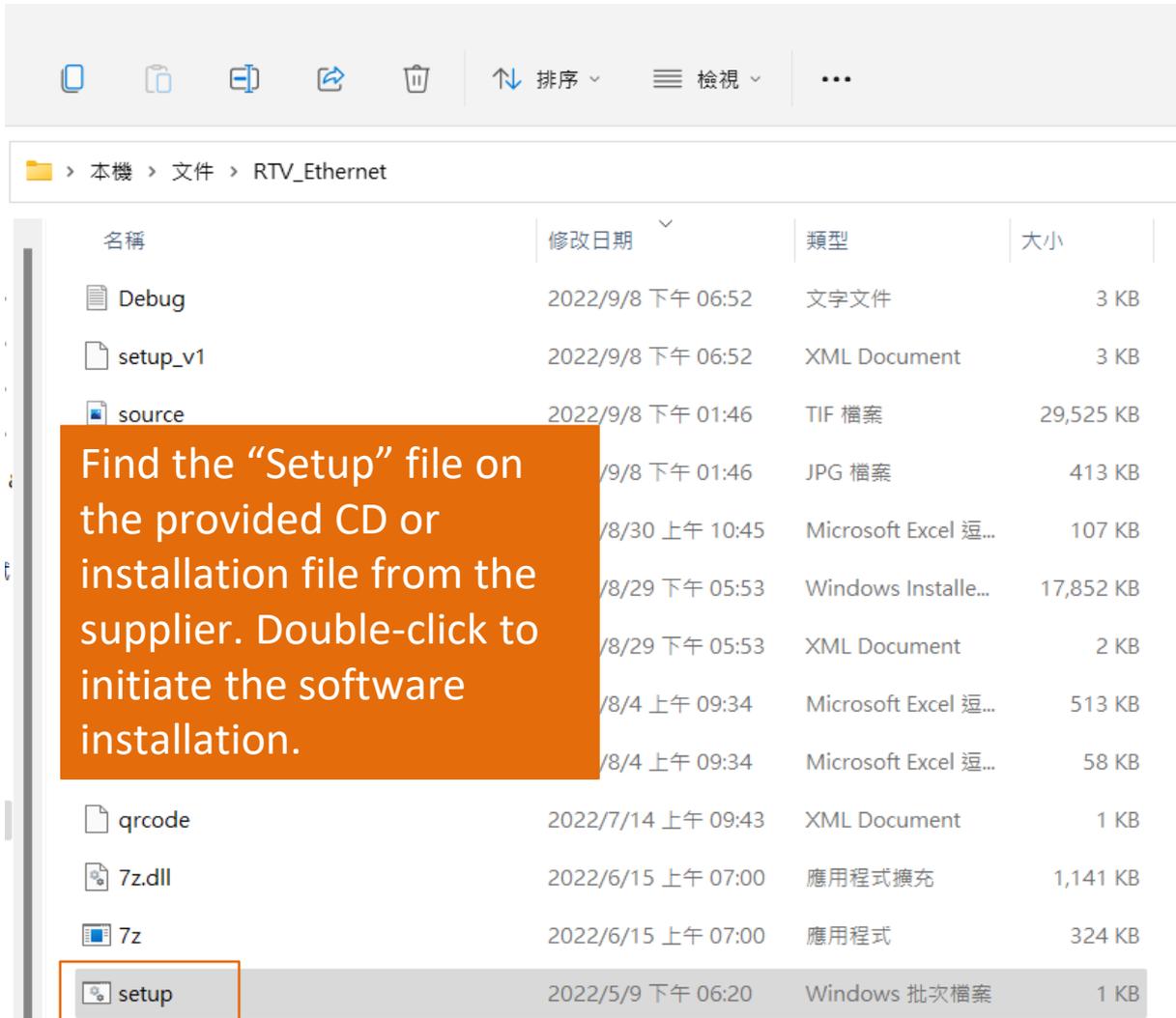
Step4. Exit the software and open it again.

Step5. You will see it becomes the PRO version.



# ERTV Installation

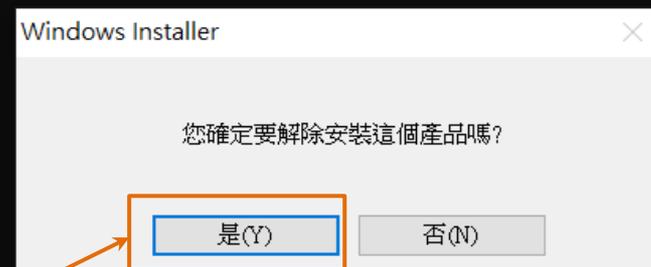
# ERTV Installation



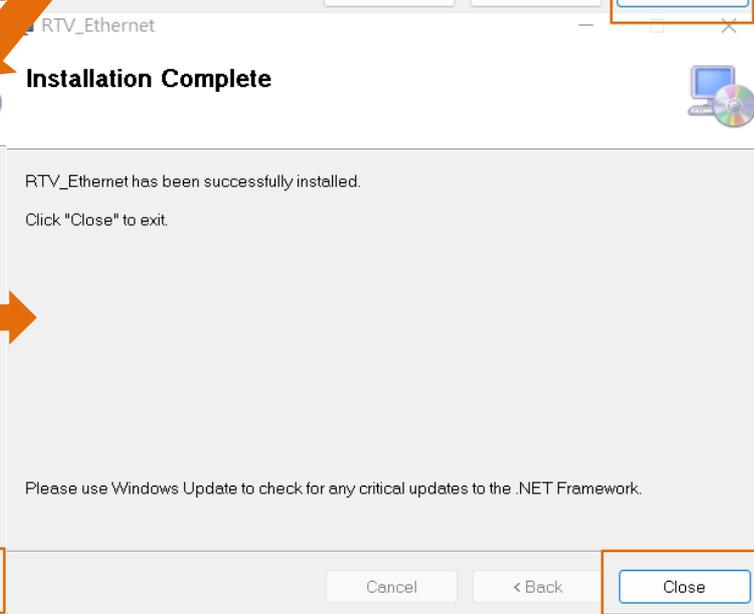
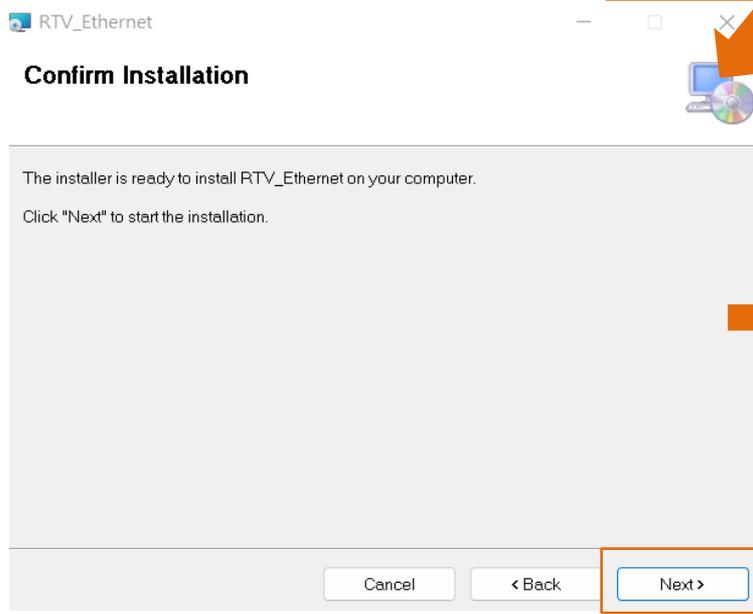
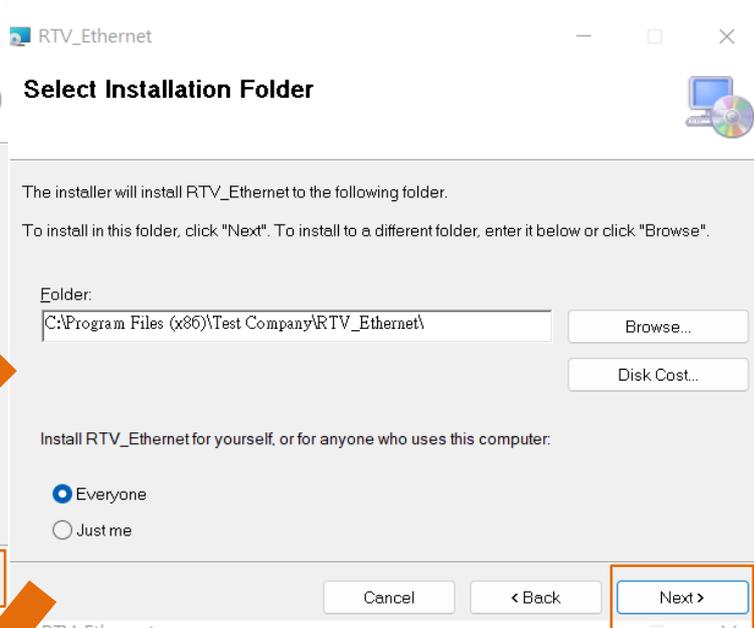
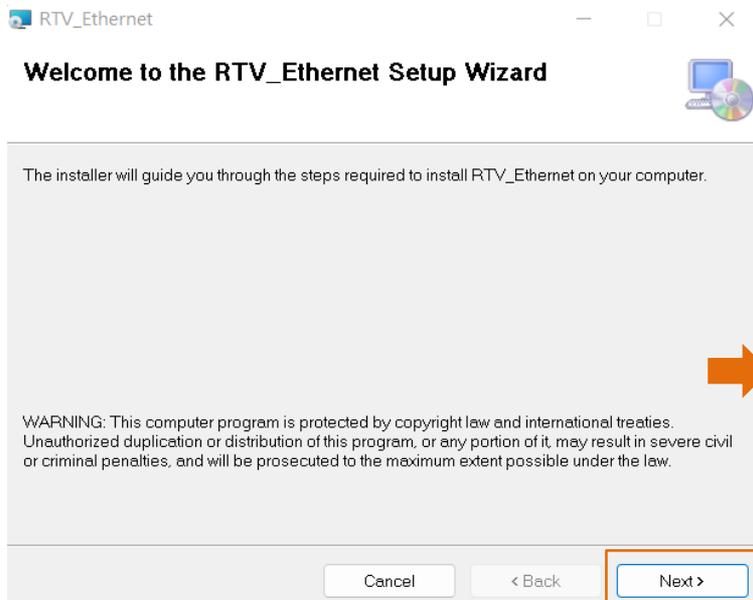
Find the “Setup” file on the provided CD or installation file from the supplier. Double-click to initiate the software installation.

名稱	修改日期	類型	大小
Debug	2022/9/8 下午 06:52	文字文件	3 KB
setup_v1	2022/9/8 下午 06:52	XML Document	3 KB
source	2022/9/8 下午 01:46	TIF 檔案	29,525 KB
	9/8 下午 01:46	JPG 檔案	413 KB
	8/30 上午 10:45	Microsoft Excel 逗...	107 KB
	8/29 下午 05:53	Windows Installe...	17,852 KB
	8/29 下午 05:53	XML Document	2 KB
	8/4 上午 09:34	Microsoft Excel 逗...	513 KB
	8/4 上午 09:34	Microsoft Excel 逗...	58 KB
qrcode	2022/7/14 上午 09:43	XML Document	1 KB
7z.dll	2022/6/15 上午 07:00	應用程式擴充	1,141 KB
7z	2022/6/15 上午 07:00	應用程式	324 KB
setup	2022/5/9 下午 06:20	Windows 批次檔案	1 KB

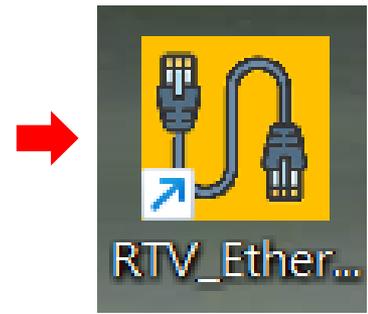
```
C:\Users\clhsu\Desktop\DSK>msiexec.exe /x {80998DA8-20B0-4A35-8652-BE3725987370}
```



After initiating the setup installer, you will see a dialog saying: Are you sure to uninstall this product? Just click "Yes" no matter what.



ERTV icon will appear on your computer desktop after the installation has finished.



# **Reader Connects To ERTV & How To Log In**

# 4 Ways to connect The Reader To ERTV

## AP MODE



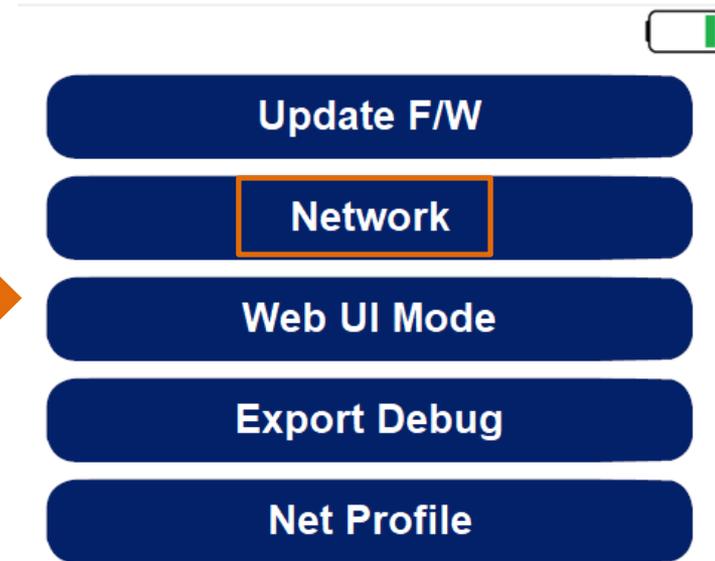
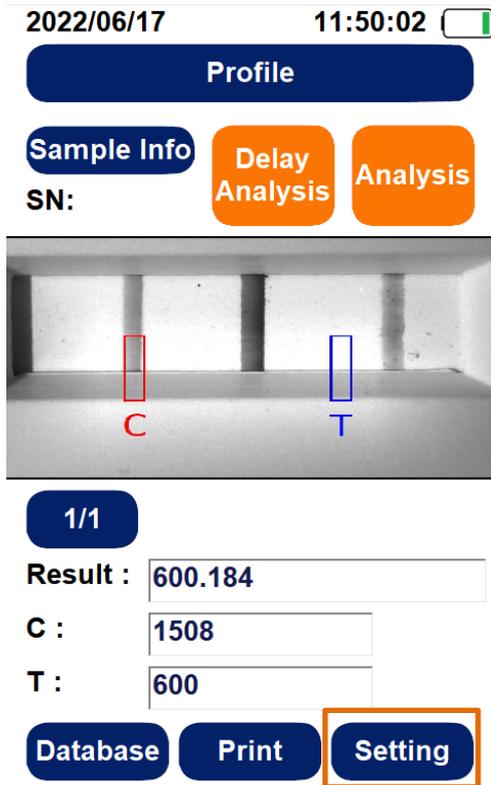
## CLIENT MODE



# **ST5 Connects To ERTV & How to Log In**

# 1<sup>st</sup>: Point-To-Point By Ethernet Wire

Step1. Go to “Web UI Mode”



Name : RapidPlantSTD

AP Client

MAC Addr :  
52:54:00:25:00:80

Segment :  
192.168.0.x

Channel :  
8

Back

Update F/W

Network

Web UI Mode

Export Debug

Net Profile

Mode : AP

SSID : RapidPlantSTD

IP : 192.168.0.13 (LAPTOP-MFEGPH)

stay on this page

Back

Step2. Use an ethernet wire to connect ST5 to the computer  
Step3. Refer to [link](#) to log in to ERTV

# 2<sup>nd</sup>: Point-To-Point By Wi-Fi

Step1. Go to “Web UI Mode”. Refer to [link](#)

Step2. The computer connects to the Wi-Fi built-in ST5

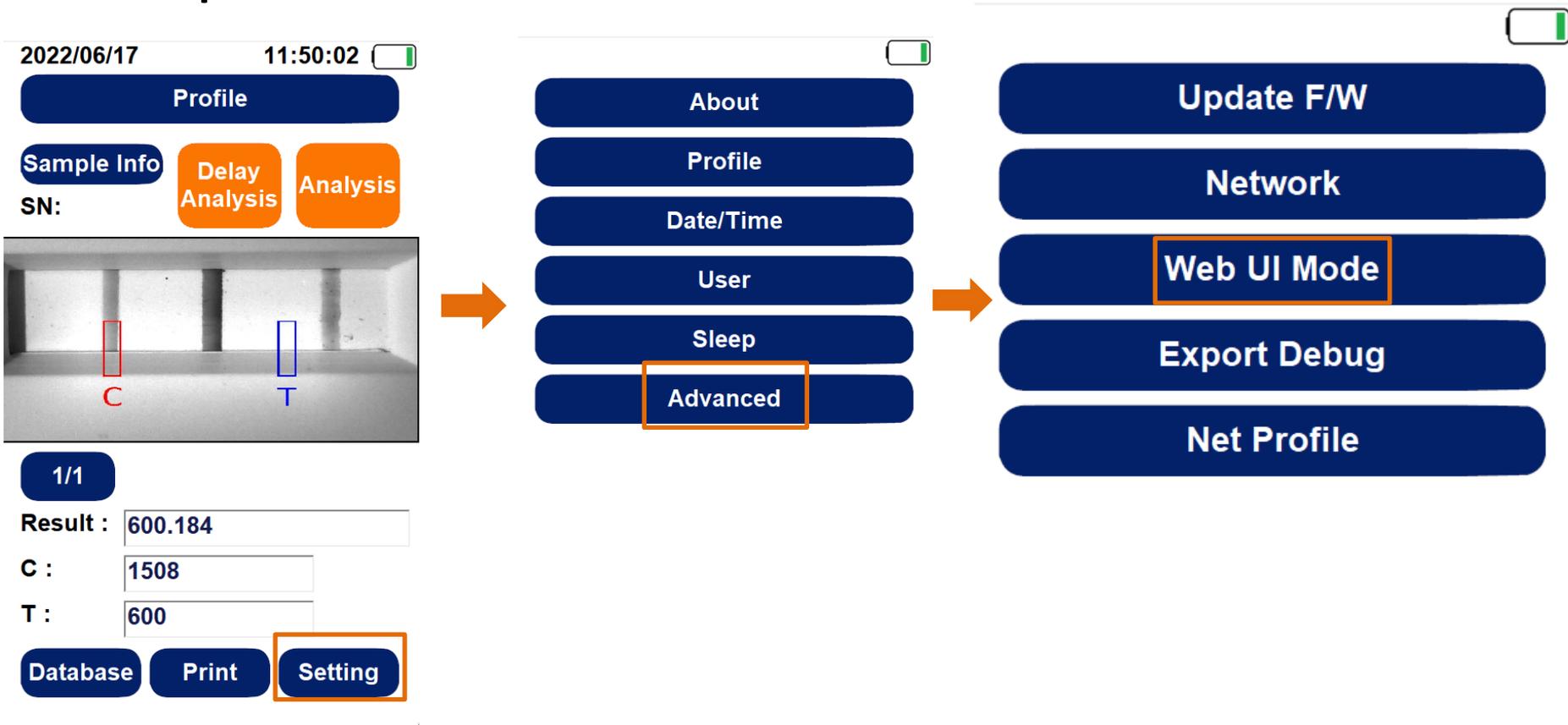


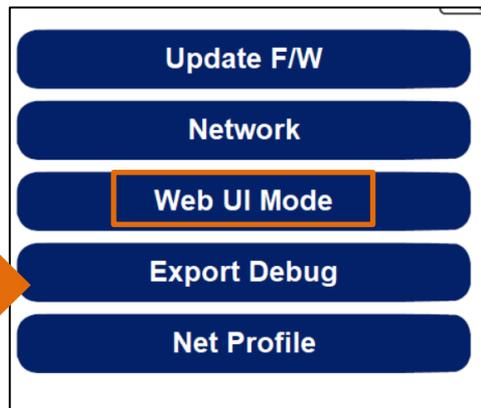
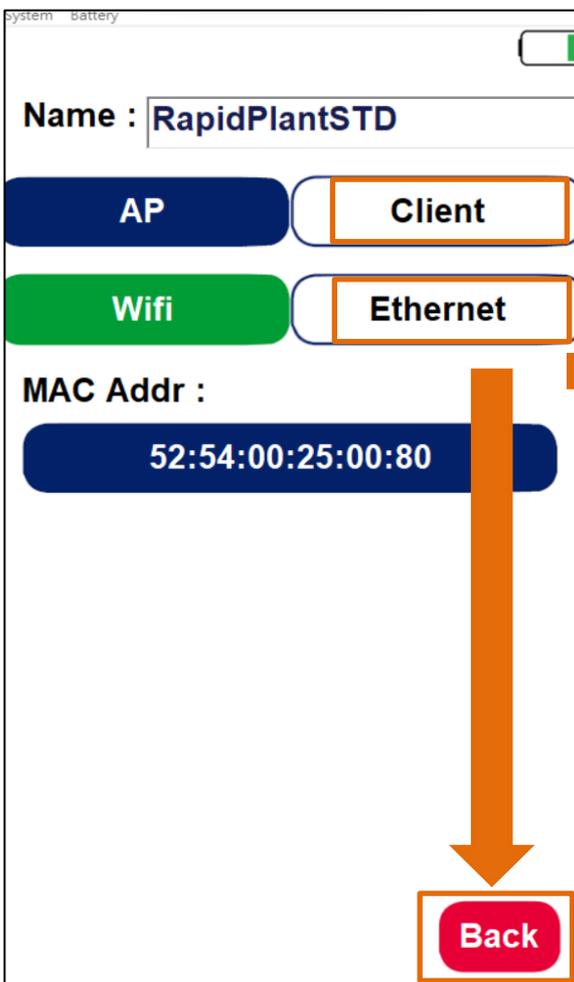
✘Wi-Fi names differ by devices

Step3. Refer to [link](#) to log in to ERTV

# 3<sup>rd</sup>: Connect To The Same LAN

- Step1. Go to “Web UI Mode”.





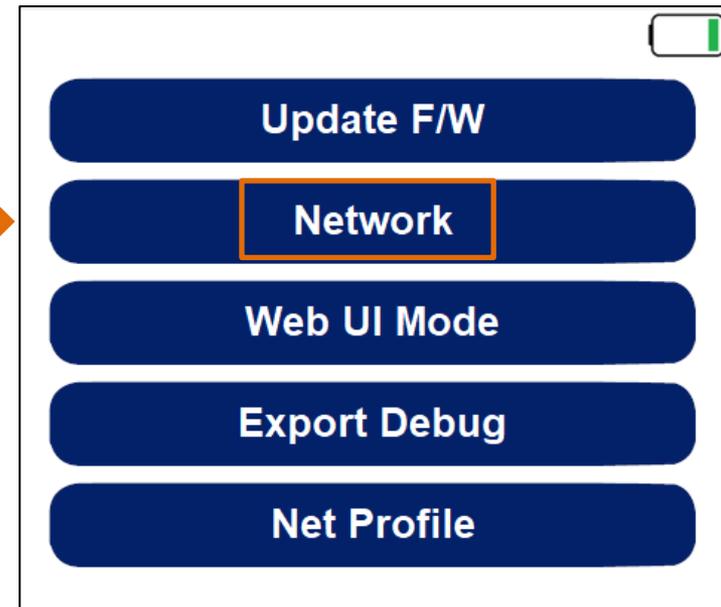
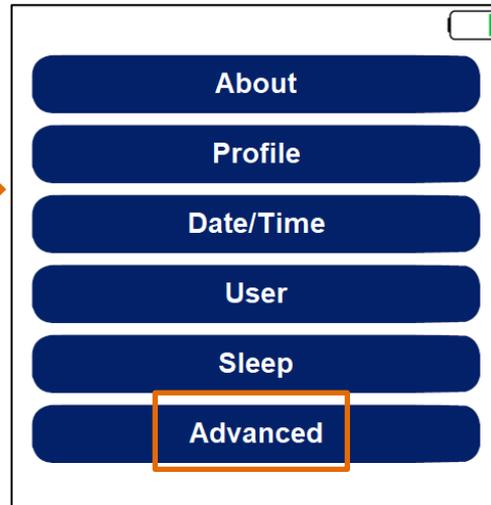
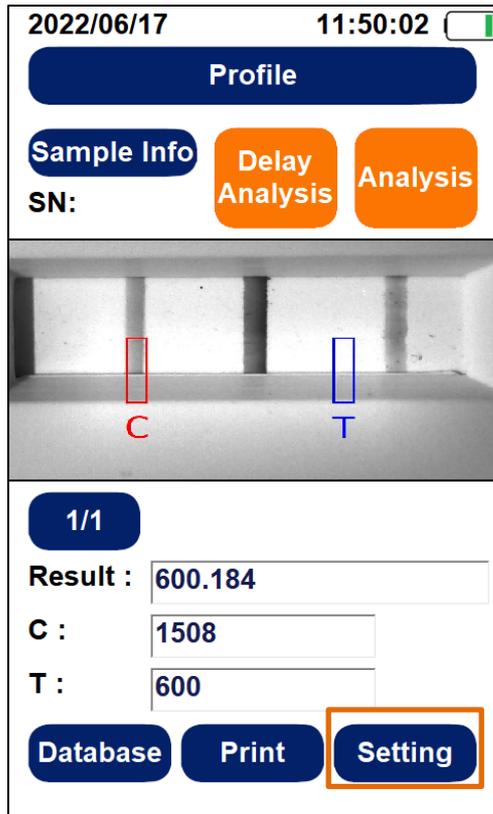
Step2. Use an ethernet wire to connect ST5 to LAN

Step3. Check the computer is also connected to the same LAN as ST5

Step4. Refer to [link](#) to log in to ERTV

# 4<sup>th</sup>: Connect To The Same Wi-Fi

- Step1. Go to “Web UI Mode”.



Name : RapidPlantSTD

AP Client

Wifi Ethernet

MAC Addr :  
52:54:00:25:00:80

SSID :  
Select SSID

Password :

Back

System battery

Select SSID

Re-search SSID

Click on Wi-Fi that you would like to use

- Select SSID
- Re-search SSID
- PIE\_AP2 (Quality:92)
- PIE\_AP (Quality:90)
- RECT-90-HP M148f LaserJet (Quality:5)
- MACROS-Pi3 (Quality:72)
- PIE\_TOTOLINK (Quality:72)

※ Must connect to the same Wi-Fi as your computer

Name : RapidPlantSTD

AP Client

Wifi Ethernet

MAC Addr :

52:54:00:25:00:80

SSID :

Select SSID

Password :

Back

Update F/W

Network

Web UI Mode

Export Debug

Net Profile

Mode : AP

SSID : RapidPlantSTD

IP : 192.168.0.13 (LAPTOP-MFEGPH

Stay on this page.

Back

Step2. Check the computer is also connected to the same Wi-Fi as ST5

Step3. Refer to [link](#) to log in to ERTV

# **One Connects to ERTV & How To Log In**

# 1<sup>st</sup>: Point-To-Point By Ethernet Wire

Step1. Use an ethernet wire to connect One to the computer

Step2. Refer to [link](#) to log in to ERTV

✘ Turn off Wi-Fi on the computer before connecting to ERTV is a must

# 2<sup>nd</sup>: Point-To-Point By Wi-Fi

Step1. The computer connects to the Wi-Fi built-in in One



※Wi-Fi names differ by devices

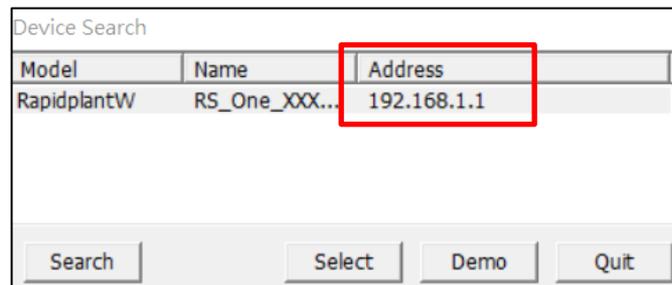
Step2. Refer to [link](#) to log in to ERTV

# 3<sup>rd</sup>: Connect To The Same LAN

Step1. Put RapidScan One into “Client Mode”

※Users need to locate One’s IP address first.

To locate the reader’s IP address, use method 2 to connect ERTV and the reader first



Model	Name	Address
RapidplantW	RS_One_XXX...	192.168.1.1

Search Select Demo Quit

You will see the IP address

# 3<sup>rd</sup>: Connect To The Same LAN

192.168.1.1

Open the browser and type in the IP on the URL bar.  
Then you will see the below page.

**PACIFICIMAGE**  
ELECTRONICS

**RapidScan One**

User

Password

**Log in.** Please ask the supplier for the username and password.

➔ Login    ⌛ Reset

☰

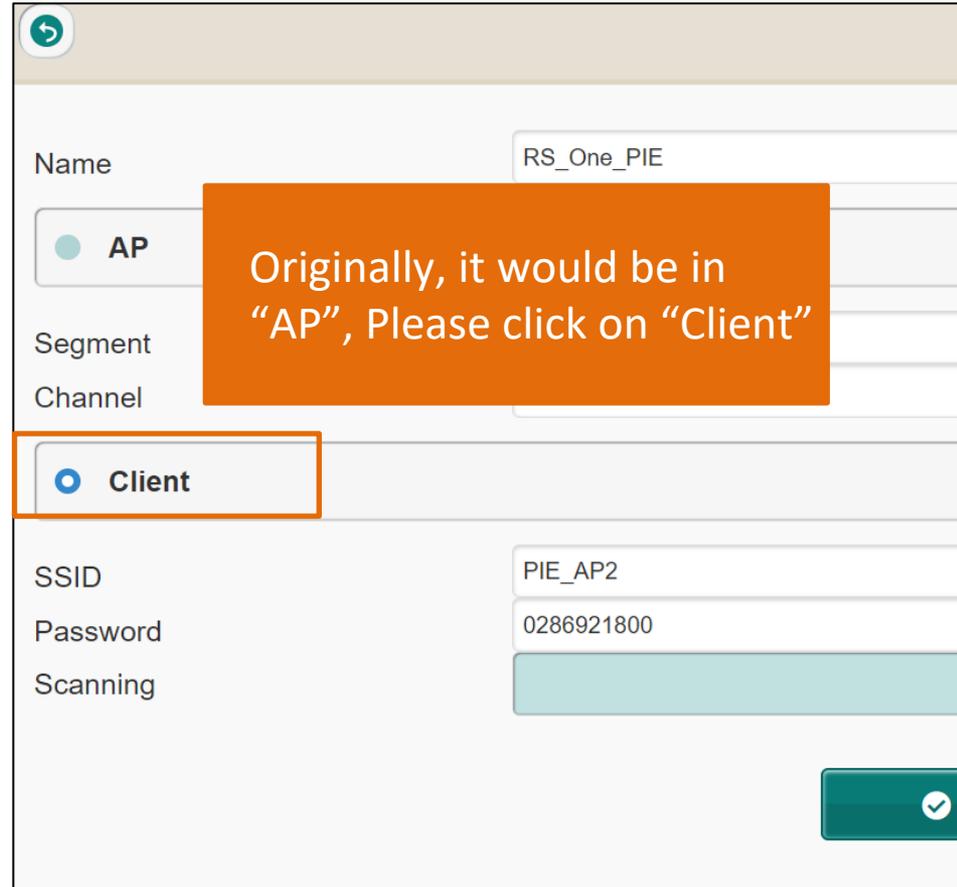
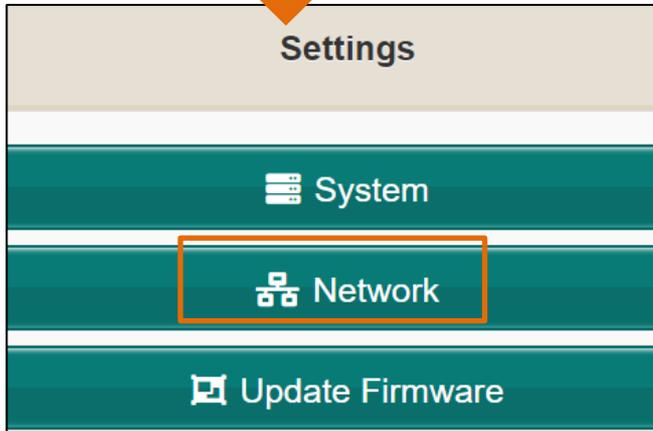
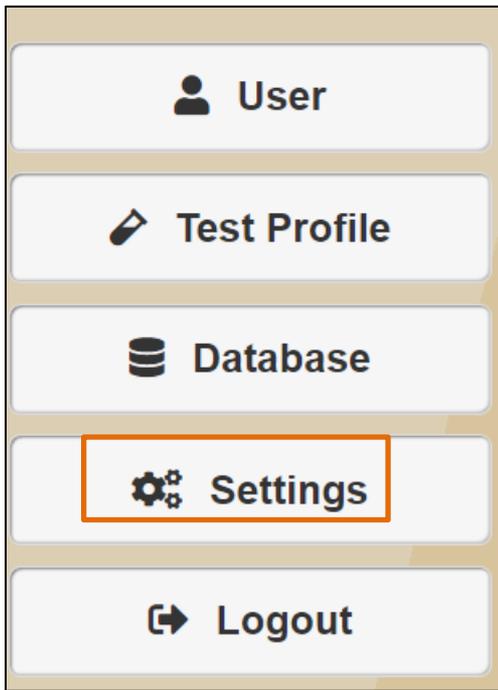
RS\_One\_PIE

**Click it** ⚙️

Test Profile: ONE6001demo-color-01@001

Note: RTV

Sample No.



Client

SSID	PIE_AP2
Password	0286921800
Scanning	Please select SSID for scanning

Please reboot device, close browser and reconnect to it!!

Step2. Connecting One to LAN by an ethernet wire

Step3. Connecting computer to LAN by an ethernet wire

Step4. Refer to [link](#) to log in to ERTV

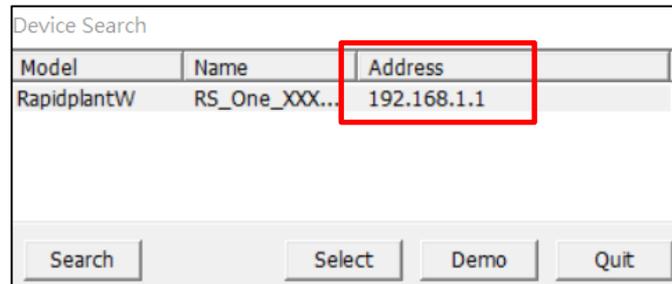
✘Must connect  
to the same  
LAN

# 4<sup>th</sup>: Connect To The Same Wi-Fi

Step1. Put RapidScan One into “Client Mode”

※Users need to locate One’s IP address first.

To locate the reader’s IP address, use method 2 to connect ERTV and the reader first



Model	Name	Address
RapidplantW	RS_One_XXX...	192.168.1.1

Search Select Demo Quit

You will see the IP address

# 4<sup>th</sup>: Connect To The Same Wi-Fi

192.168.1.1

Open the browser and type in the IP on the URL bar.  
Then you will see the below page.

 **RapidScan One**

User

Password

**Log in. Please ask the supplier for the username and password.**

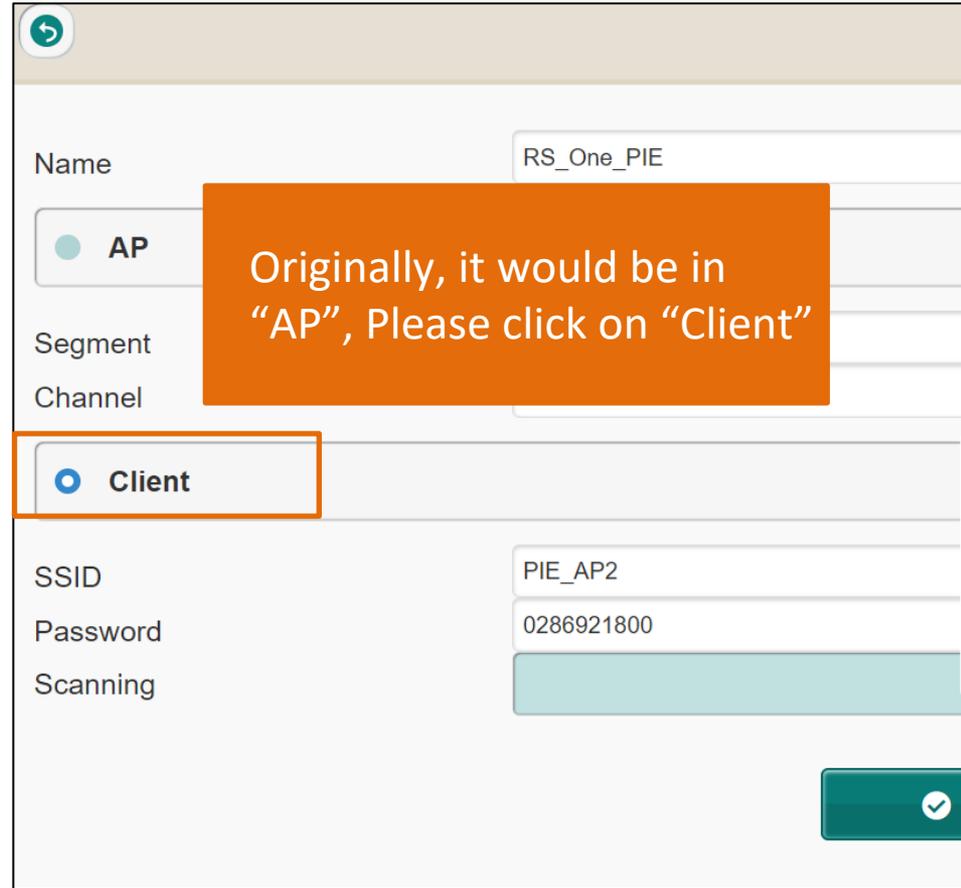
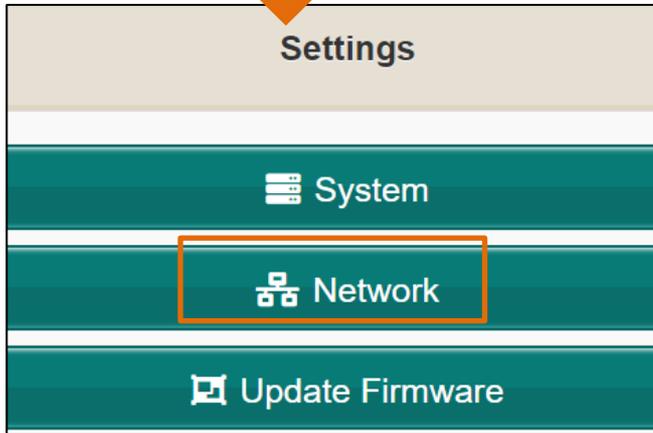
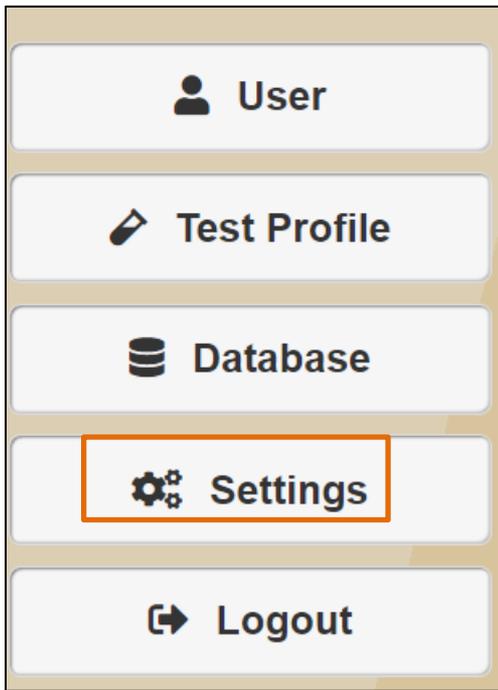
 

 **RS\_One\_PIE**  

Test Profile

Note:

Sample No.



SSID	PIE_AP2
Password	0286921800
Scanning	Please select SSID for scanning
	Please select SSID for scanning
	Re-Scanning
	OK Cancel

- Select Wi-Fi
- Type in the password.



✘Must connect to the same Wi-Fi as the computer

<input checked="" type="radio"/> Client	
SSID	PIE_AP2
Password	0286921800
Scanning	Please select SSID for scanning

Please reboot device, close browser and reconnect to it!!

Step2. Check the computer is also connected to the same Wi-Fi as One

Step3. Refer to [link](#) to log in to ERTV

# Overview: Reader Connects to ERTV & How To Log In

Step1. Plug in the charger to the reader

Step2. The reader connects to ERTV

Step3. Log in to ERTV



Double-click

Device Search

Model	Name	Address
-------	------	---------

Search Select Demo Quit

Device Search

Model	Name	Address
RapidplantW	RS_One_XXX...	192.168.1.1

Double-click

Search Select Demo Quit

Login

ID

Password

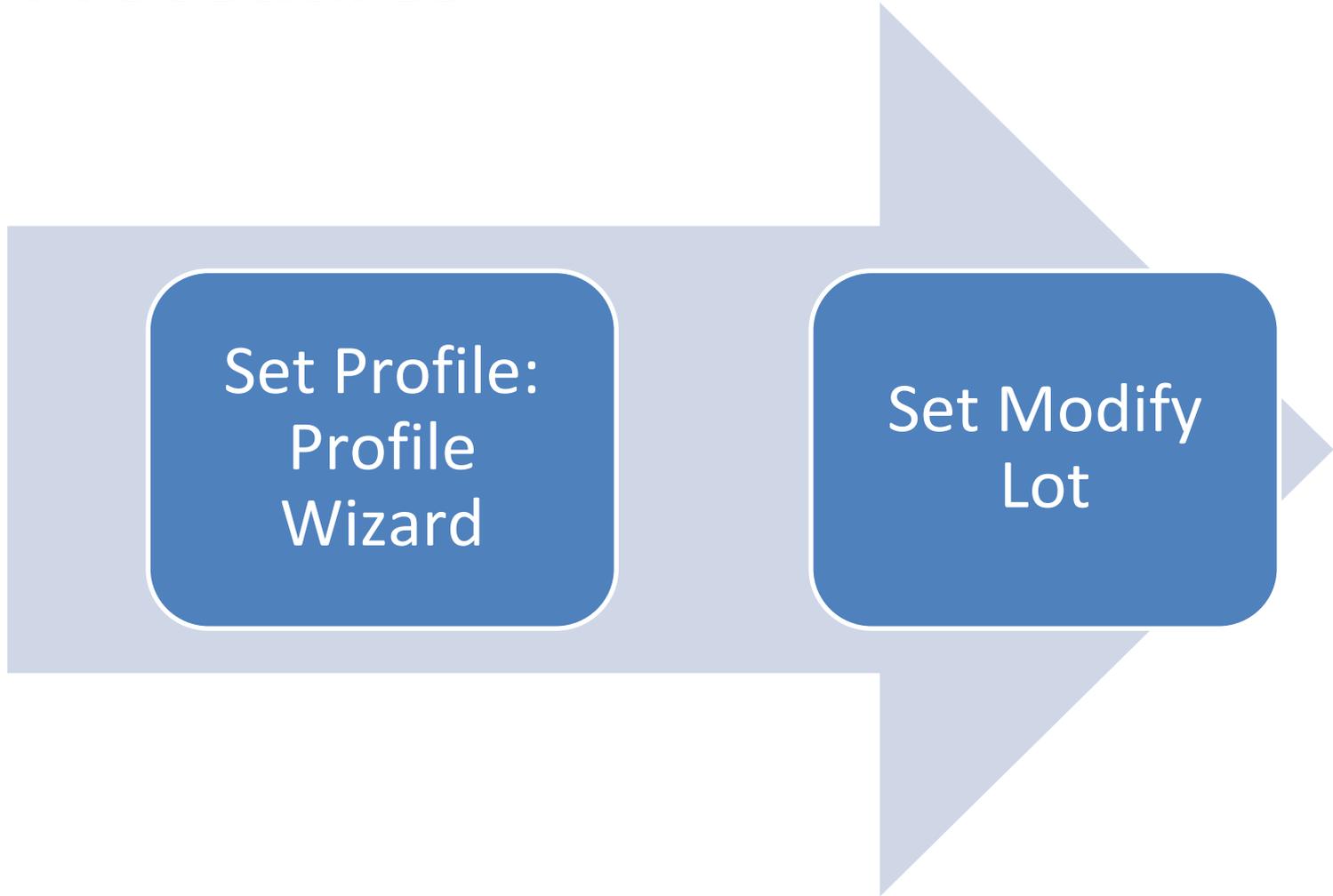
OK Close

✘Reader names  
differ by devices

Log in  
Please contact the  
supplier to obtain the ID  
& password

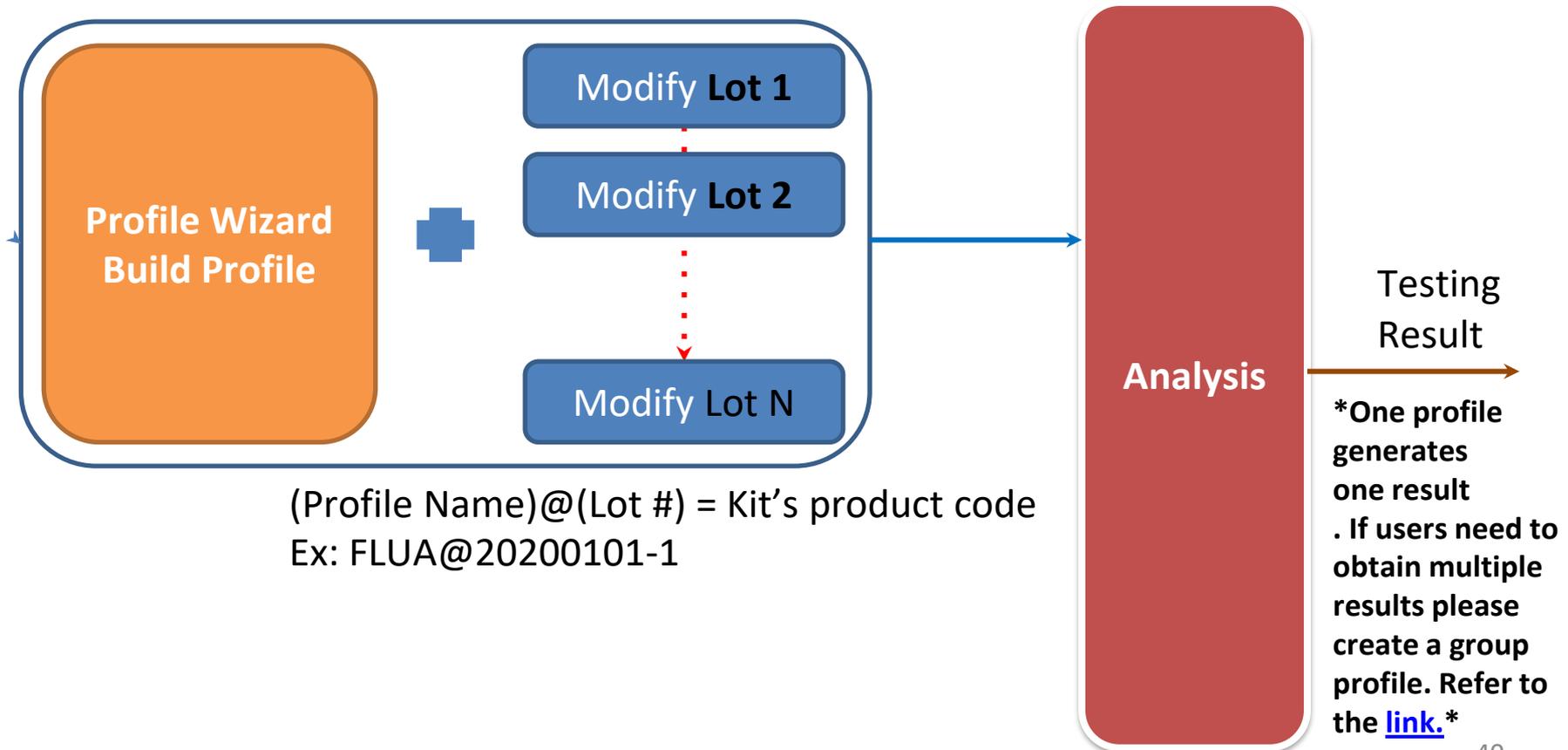
# **How To Establish Your 1<sup>st</sup> Test Kit Via Software**

# 2 Procedures



# Profile + Lot Info → Analysis

A Kit's complete parameters are composed by a profile with calibration data + lot information.



# A Completed Kit Building

- **Profile Wizard**

- Define colorimetric or fluorescent kit
- Define geometric position of detection lines
- Define group/sub profile
- ....
- Fixed for a type of test if strip case is keeping
- Calibration: using image calibration to obtain an optimized image

- **Modify Lot**

- Define the testing result & basic kit information
- Variable formula/statement setting for each kit

# Using Profile Wizard To Create Kit's Profile

Insert a kit with clear C and T line signals into the reader and click on “Profile Wizard” to begin

# Step 1: Know all parameters on Profile Wizard

Profile Wizard

1. Product Code

2. Show Name  3. T Count

4. Color Mode  5. Light Source

Select ROI

X	Y	Width	Height
<input type="text" value="1678"/>	<input type="text" value="738"/>	<input type="text" value="761"/>	<input type="text" value="550"/>
Reserved	Reserved		

Cassette Type

Calibrate Target:  Blank Strip  None

BaseGap:  (C/T ROI Width ratio)

1. **Product Code:** Kit's code
2. **Show Name:** Set the name of the diagnosis item
3. **T Count:** Set T line #
4. **Color Mode:** RGB mode is usually recommended. Please refer to [link](#) for advanced setting
5. **Light Source:**  
Epi White- colorimetric kit  
Epi UV- fluorescent kit

Image method & Integration method. Please refer to [link](#)

For kit use same cassette, input a code so you can save calibration effort on same cassette type of kit

Refer to Steps 2 & 3.

Refer to [link](#)

# Color Mode Setting

Profile Wizard

Product Code

Show Name  T Count

Color Mode  Light Source

Select ROI

X  Y  Width  Height

Reserved  Reserved

Cassette Type

Calibrate Target:  Blank Strip  None

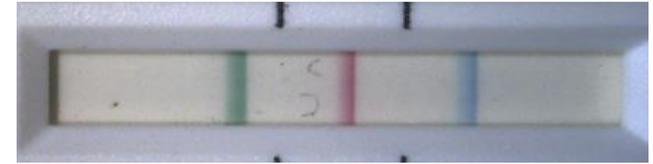
BaseGap:  (C/T ROI Width ratio)

User can select  
RGB/RRR  
/GGG/BBB  
different mode  
to get optimized  
value

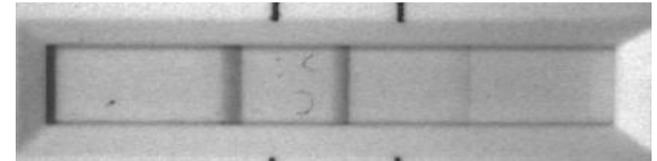
# R/G/B Band Selection

- Besides colloidal gold, there are colored nano-beads available for lateral flow assay development as well. So C&T line can be presented in different colors.
- RapidScan provides 4 types of image spectrum settings:
  - RGB: Color mode
  - RRR: Red channel spectrum only
  - GGG: Green channel spectrum only
  - BBB: Blue channel spectrum only
- Each color mode can bring a different intensity value according to the test line's color. So user can choose a spectrum setting generating the optimized CT line intensity value based on line color.

CH \ Bar	Green	Red	Blue
BBB	1401	1059	162
GGG	1192	1448	710
RRR	1930	545	1148
RGB	1352	1243	615
RGB/Max	70.1%	85.8%	53.6%



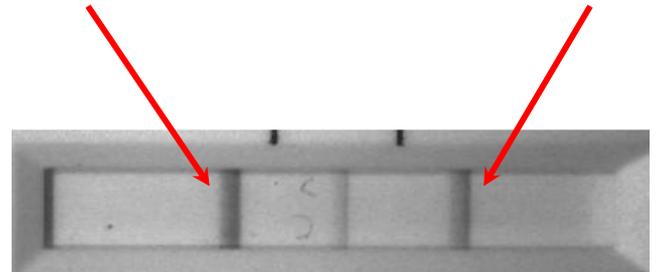
BBB



GGG



RRR



# Image Method: STD/Quality/Excellent

Profile Wizard

Product Code:

Show Name:  T Count:

Color Mode:  Light Source:

Select ROI:

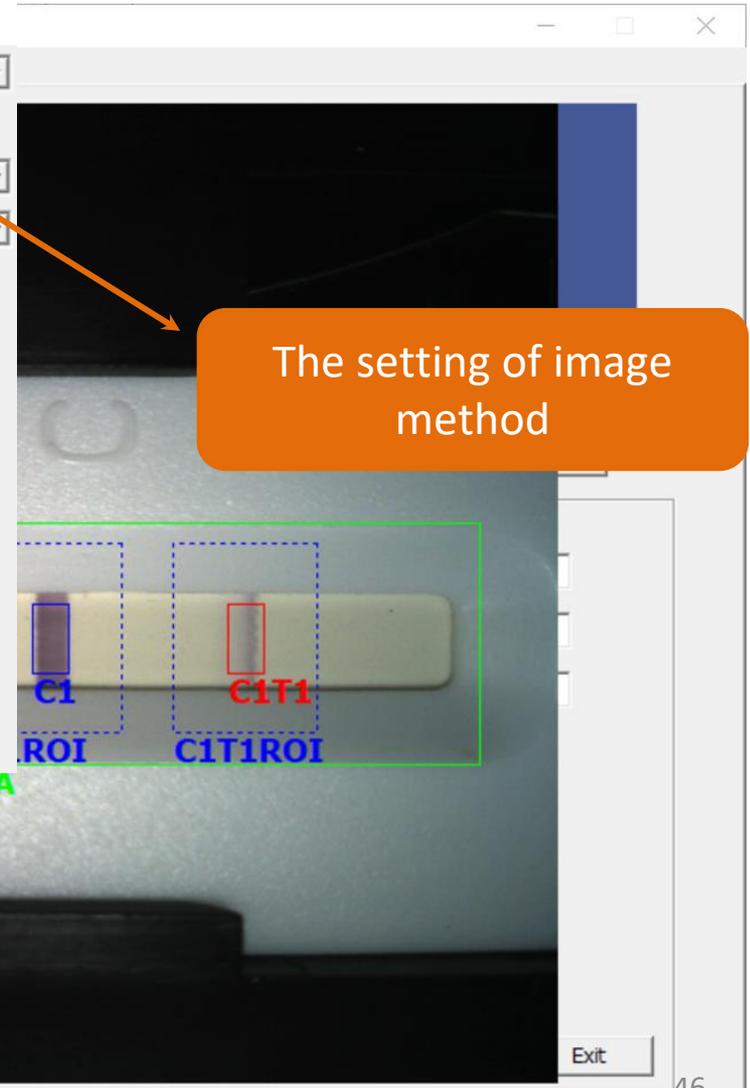
X:  Y:  Width:  Height:

Reserved:

Cassette Type:

Calibrate Target:  Blank Strip  None

BaseGap:  (C/T ROI Width ratio)



The setting of image method

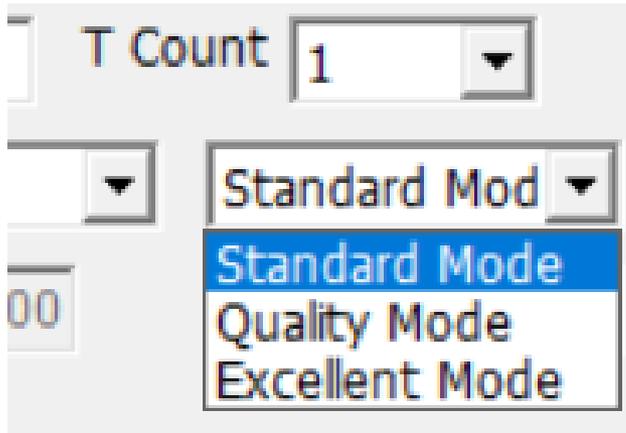
VIEW AREA

Exit

Standard Mode: fastest speed, highest CV

Quality Mode: medium speed & CV (recommended)

Excellent Mode: slowest speed, smallest CV



Quality Mode	C	T1	Item	C	T
Standard	1329	240	Ave	1329.6	245.4
Standard	1327	240	CV%	0.29%	2.67%
Standard	1325	256	Speed	9"	
Standard	1333	246			
Standard	1334	245			
Quality	1328	237	Ave	1332.4	243
Quality	1332	243	CV%	0.27%	1.45%
Quality	1338	246	Speed	12.5"	
Quality	1333	245			
Quality	1331	244			
Excellent	1334	244	Ave	1333.6	241.8
Excellent	1334	240	CV%	0.22%	0.68%
Excellent	1338	241	Speed	16.5"	
Excellent	1331	241			
Excellent	1331	243			

# Integration Method

Profile Wizard

Product Code:  None

Show Name:  T Count:

Color Mode:  Light Source:  Standard Mod:

Select ROI:

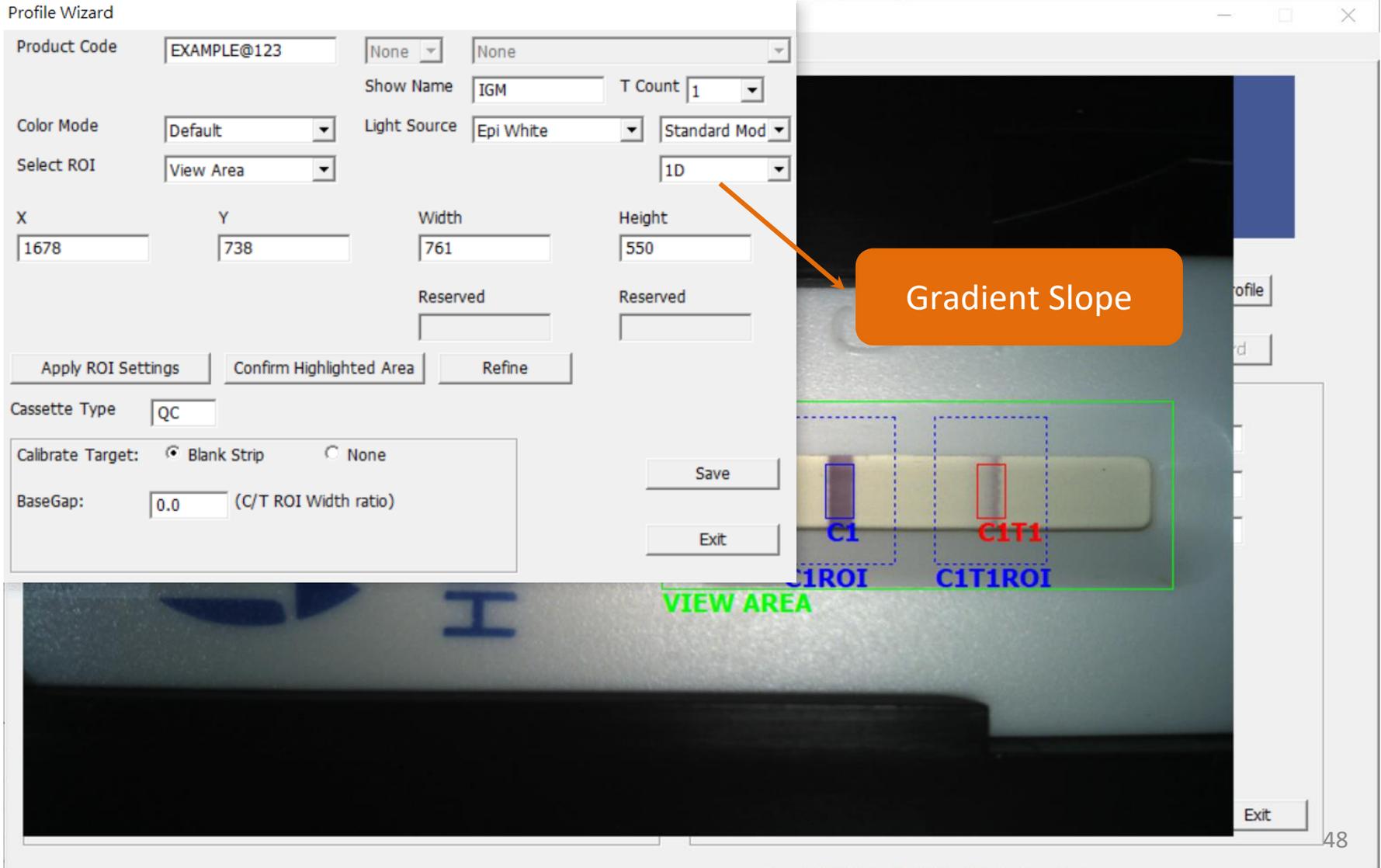
X:  Y:  Width:  Height:

Reserved:

Cassette Type:

Calibrate Target:  Blank Strip  None

BaseGap:  (C/T ROI Width ratio)



The software interface displays a live camera view of a cassette strip. A green box labeled "VIEW AREA" encompasses the strip. Two regions are highlighted with dashed boxes: a blue box labeled "C1" and a red box labeled "C1T1". An orange callout box labeled "Gradient Slope" points to the "1D" dropdown menu in the ROI settings.

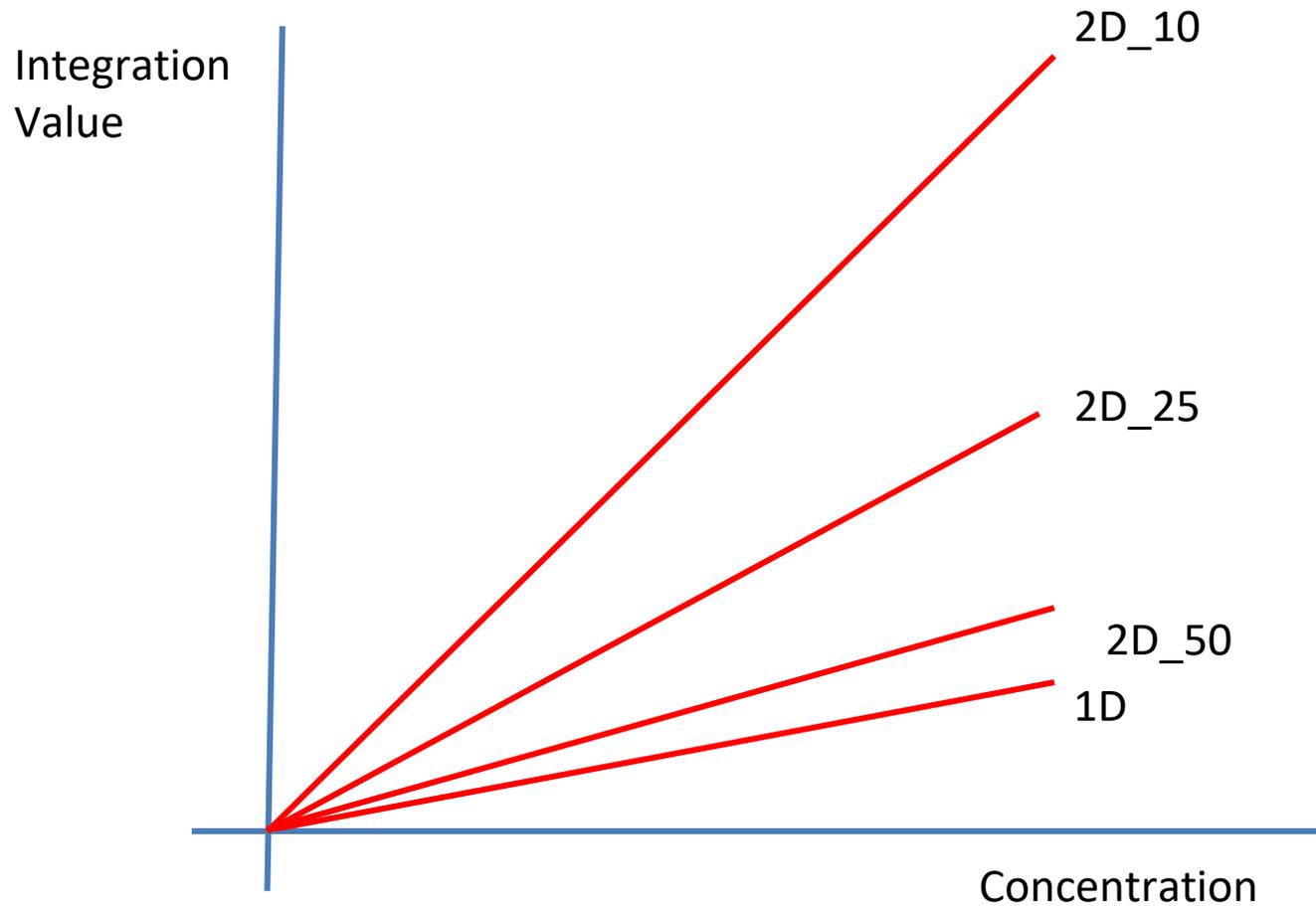
VIEW AREA

C1 C1T1

Exit

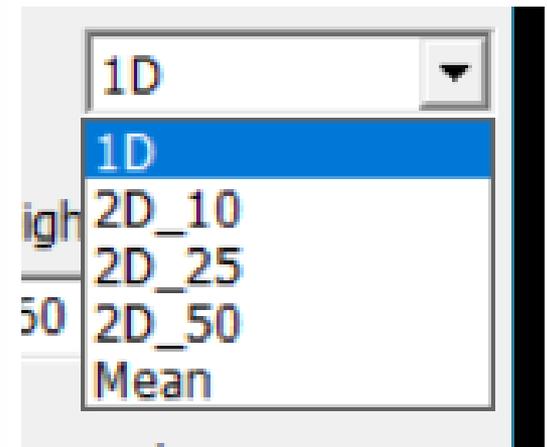
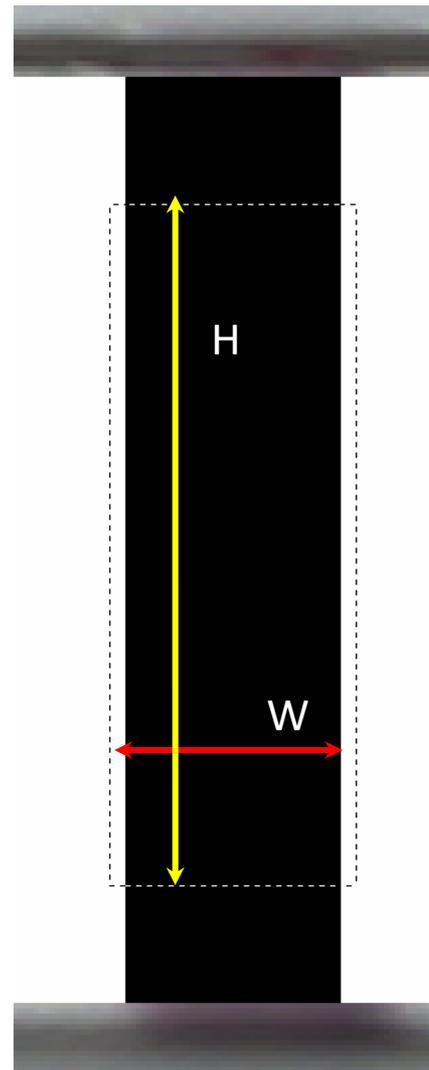
48

# 30 x 70 (WxH) Case



# Integration Method

- **1D**: average each H and sum all W
- **2D**: sum all H x W pixels  
value =  $V_{2D}$ 
  - $2D_{10} = V_{2D}/10$
  - $2d_{25} = V_{2D}/25$
  - $2d_{50} = V_{2D}/50$
- **Mean**: calculate the grey level of the ROI\*For biochemical tests, must choose this method \*
- Value big  $\rightarrow$  slop higher  
 $\rightarrow$  noise high



# Step 2: select view area range of interest (ROI)

Profile Wizard

Product Code: EXAMPLE@123    None    None

Show Name: IGM    T Count: 1

Color Mode: Default    Light Source: Epi White    Standard Mod

Select ROI: View Area    1D

X: 1678    Y: 738    Width: 761    Height: 550

Reserved    Reserved

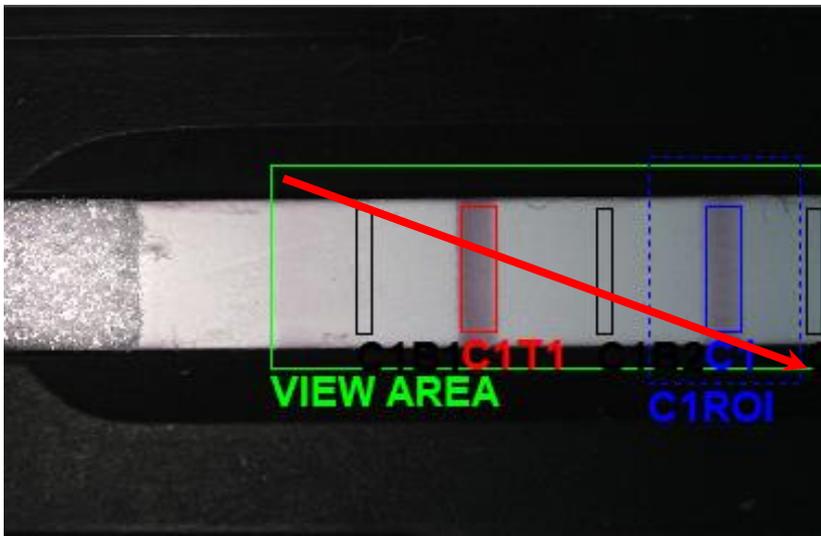
**②** Apply ROI Settings    **①** Confirm Highlighted Area    Refine

Cassette Type: QC

Calibrate Target:  Blank Strip     None

BaseGap: 0.0 (C/T ROI Width ratio)

Save    Exit



In order to highlight the viewing area, drag the mouse from the top of the left to the bottom of the right corner. Recommend highlighting the area as close to the edges as possible. **Remember to click “① Confirm Highlighted Area” to confirm the setting.**

If you input value in X/Y, Width/height column **remember to click “② Apply ROI Settings” to save the setting.**

# Step 3: define C (control) & T (test)line area

1. To define new C or T line area, drag your mouse over an area. It's not necessarily to cover whole C or T line. Instead, you'll get better result when the defined area covers blank area slightly and the most area of C or T line.
2. For existing highlighted area, you may simply enter the X/Y or width/height values to adjust the area.
3. Continue to define T line with same approach. Ensure C, T highlighted area size is same. You can use "refine" to get same size.
4. After setting C & T, click "Refine" to get optimized result. SW would ask shrink % for shrink. **15-20 is recommended.**

The screenshot displays the RapidTestView software interface with several callout boxes and annotations:

- Define C line ROI:** Points to the "Select ROI" dropdown menu in the Profile Wizard, which is currently set to "C1".
- Define searching range to find C line:** Points to a blue dotted rectangle on the image, labeled "C1ROI VIEW AREA".
- Define highlighted area of C line:** Points to a blue solid rectangle on the image, labeled "C1ROI".
- How many % will shrink for the sampling height?:** A dialog box with the value "15" entered in the input field.
- Searching range to find C line (blue dotted line):** Points to the blue dotted rectangle on the image.
- C line ROI (blue solid line):** Points to the blue solid rectangle on the image.

The Profile Wizard window shows the following settings:

- Product Code: EXAMPLE@123
- Show Name: IGM
- T Count: 1
- Color Mode: Default
- Light Source: Epi White
- Standard Mod: Standard Mod
- Select ROI: C1
- X: 1793, Y: 811
- Width: 148, Height: 417
- C1 Width: 37, C1 Height: 146
- Buttons: Apply ROI Settings, Confirm Highlighted Area, Refine, Save, Exit

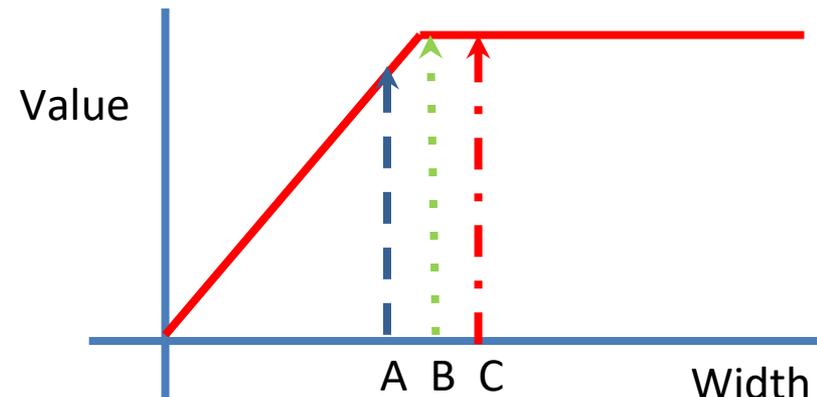
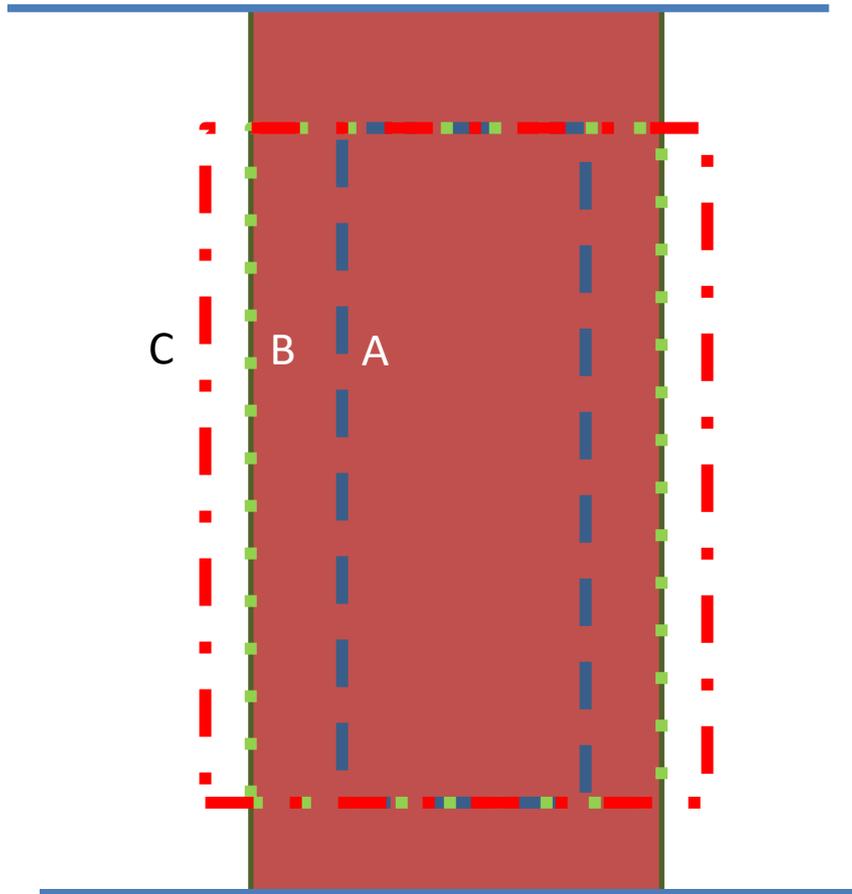
The image shows a control line (C1) and a test line (C1T1) on a strip. The control line is highlighted with a blue solid line, and the test line is highlighted with a red solid line. A green box labeled "VIEW AREA" encompasses both lines.

# **Tips For Optimizing Setting Of Search Area & C, T Line Area**

# Tips For Setting C, T Line Area

**\*This tip is only suitable for lateral flow tests does not suitable for biochemical rapid tests. Click [link](#) for biochemical tests \***

- Width (according to your application's needs)
  - "A" doesn't cover all, may be suitable for some line bars, but it's not recommended.
  - "B" is ideal but not so easy to fit.
  - "C" is the most recommended.
- Height :
  - Shrink 15 ~20%
  - Near the edge of the window has some abnormal shadow or reflections.



# Tips: Using “Refine” To Set Suitable C, T Line Area

\*This tip is only suitable for lateral flow tests does not suitable for biochemical rapid tests. Click [link](#) for biochemical tests \*

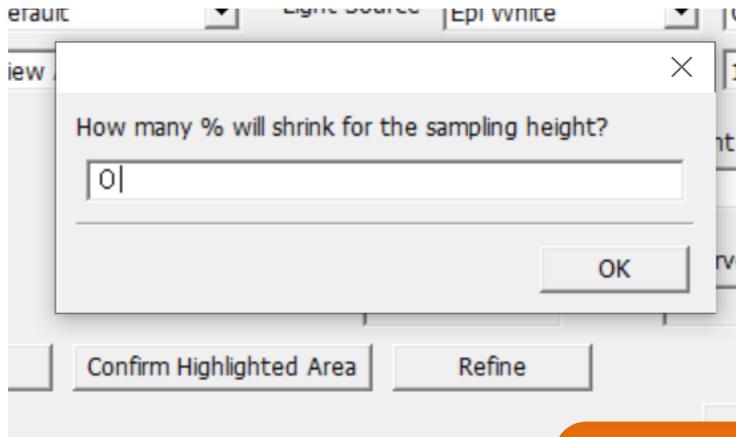
The image shows the RapidTestView software interface. The main window displays a camera view of a lateral flow test strip. A green rectangular box labeled "VIEW AREA" encompasses the test strip. Within this area, two vertical lines are marked with dashed blue boxes: the left one is labeled "C1" and "C1ROI", and the right one is labeled "C1T1" and "C1T1ROI".

Overlaid on the left is the "Profile Wizard" dialog box. It contains the following fields and controls:

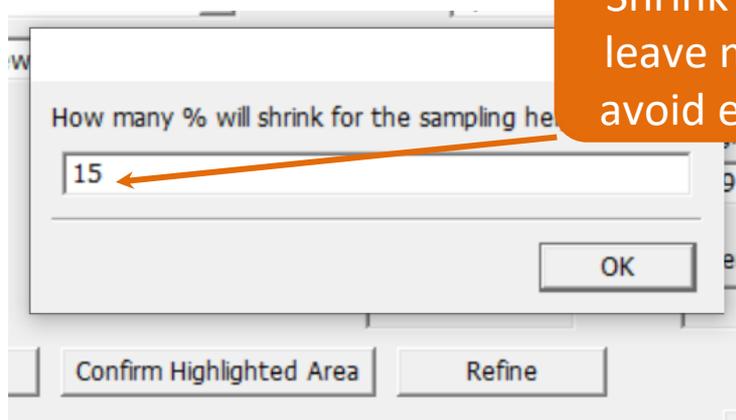
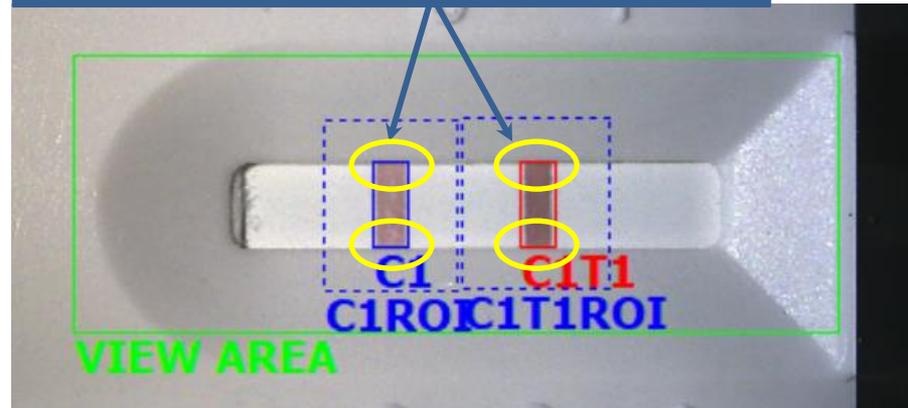
- Product Code: EXAMPLE@123
- Show Name: IGM
- T Count: 1
- Color Mode: Default
- Light Source: Epi White
- Select ROI: View Area
- X: 1678
- Y: 738
- Width: 761
- Height: 550
- Reserved (left): 37
- Reserved (right): 146
- Buttons: Apply ROI Settings, Confirm Highlighted Area, Refine
- Cassette Type: QC
- Calibrate Target: Blank Strip (selected), None
- BaseGap: 0.0 (C/T ROI Width ratio)
- Buttons: Save, Exit

An orange callout box with the text "Tools for helping set the right area" has an arrow pointing to the "Refine" button in the Profile Wizard dialog.

# “Refine” Helps You To Set Equal-sized C, T Line Area & Avoid Edge Shadow

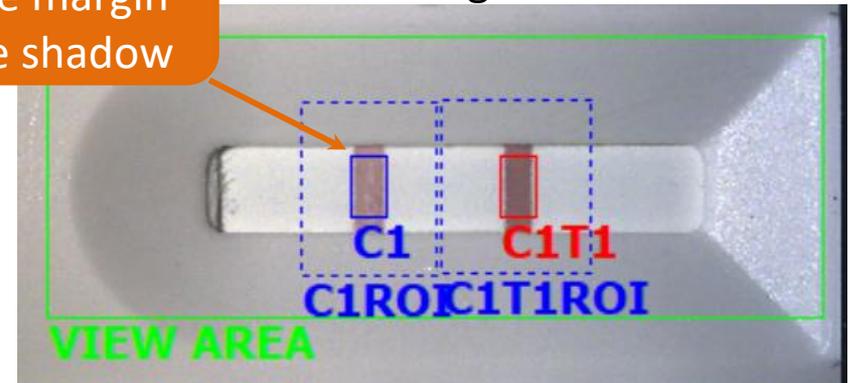


The shadow of the edge of the strip might interfere with the result.



Shrink height 15%,  
leave more margin  
avoid edge shadow

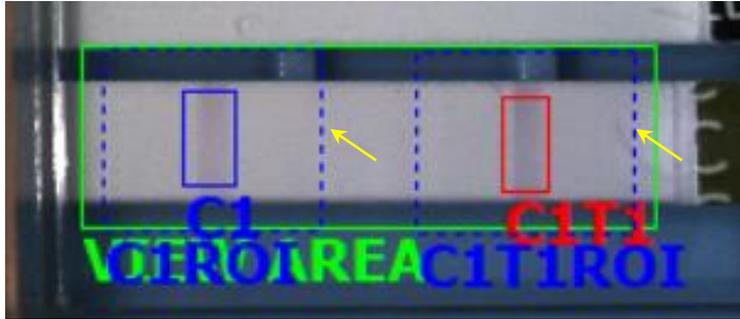
Ideal settings



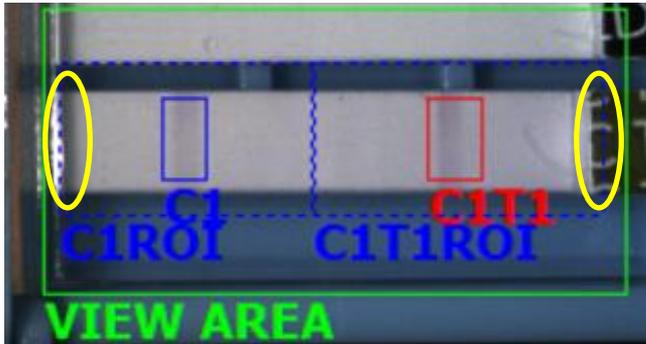
※ 15-20 shrink % is recommended.

# Definitions Of Good & Bad Search Areas

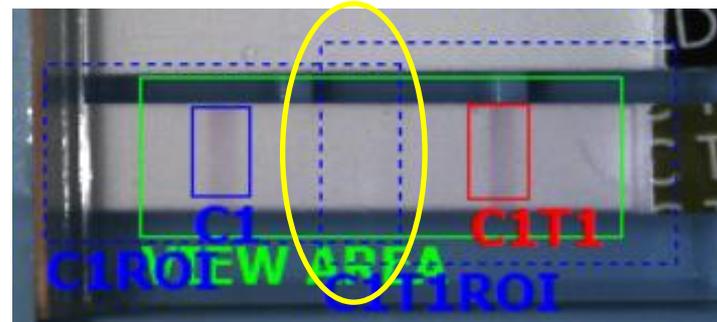
\*This is only suitable for lateral flow tests does not suitable for biochemical rapid tests. Click [link](#) for biochemical tests \*



The search areas cover in a perfectly balanced range.



Reader might misread the image if you cover C & T search areas into the edge of the cassette/strip.



C & T search areas are not recommended to overlapping with each other.

# Tips For Setting C, T Line Area of Biochemical Rapid Tests

ROI Wizard

Product Code: democloud@one6001

Show Name: W\_CH1

Color Mode: Default

Select ROI: View Area

X: 1417

Y: 865

Width: 880

Height: 382

Light Source: Epi White

Reserved

Reserved

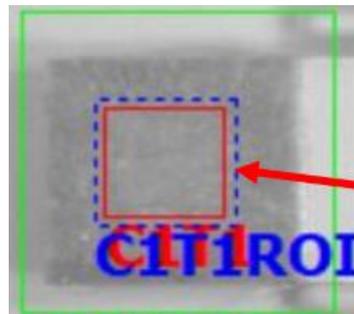
Buttons: Apply ROI Settings, Confirm Highlighted Area, Refine, Save, Exit

Cassette Type: RTV

Calibrate Target:  Blank Strip  None

BaseGap: 0.0 (C/T ROI Width ratio)

- Select “Excellent Mode” and “Mean”



- Ignore C-line setting
- The ROI of T-line must be in the middle of the colored area, and smaller.

# Guidance Of Setting

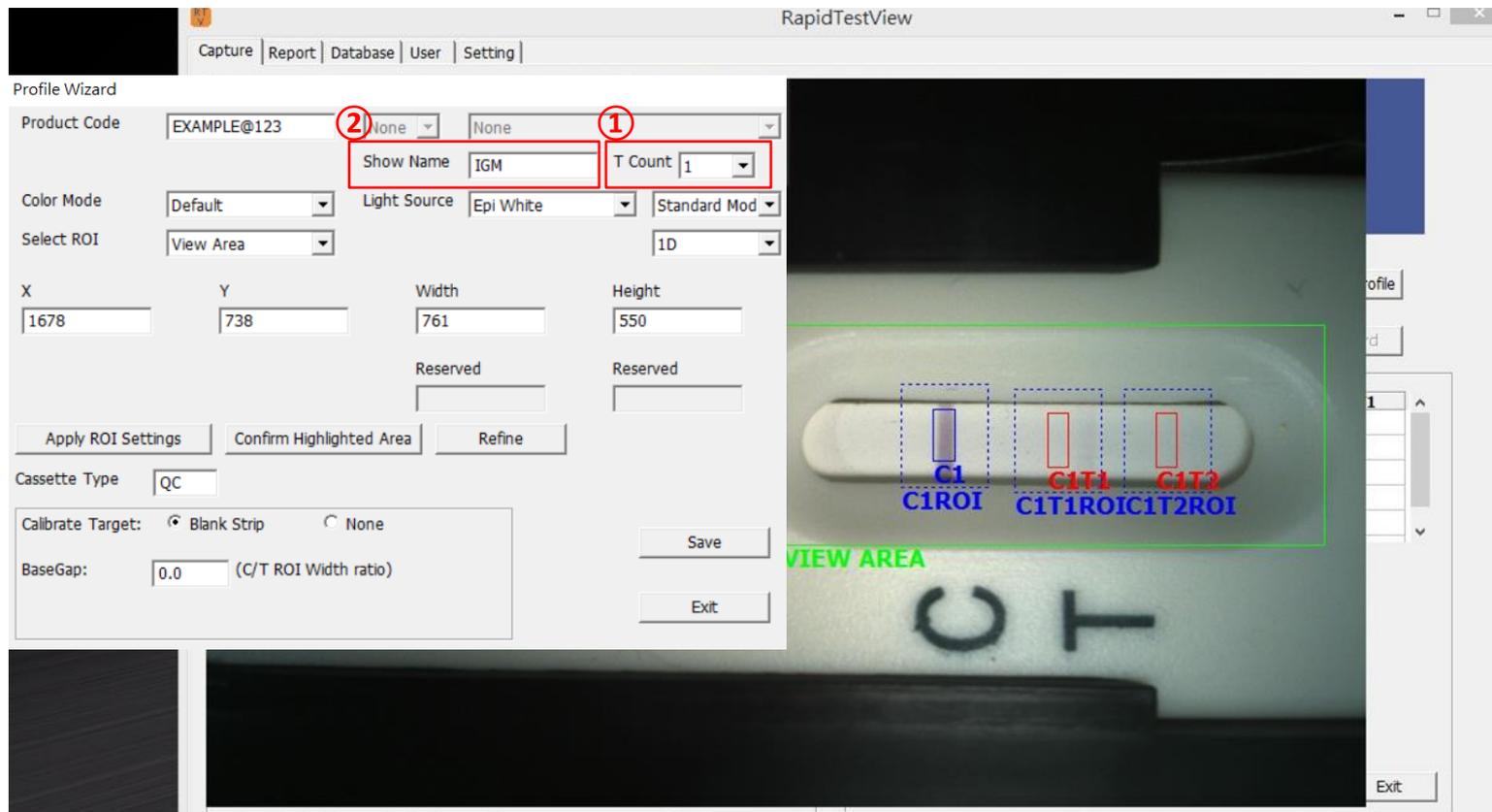
Kits With Multiple T Lines

Kits With Multiple Strips

Kits With Multiple T Lines & Strips

# Setting Kits With Multiple T Lines

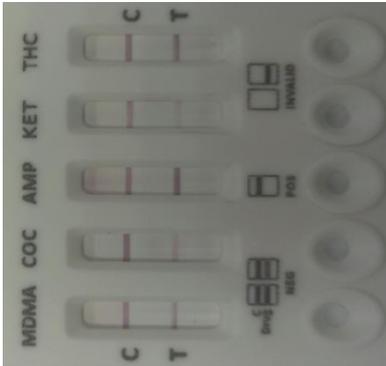
1. If there is more than 1 T line on test kit. Click “**①** T count” to select correct # of T line.
  2. Use the same approach to define T1, T2, ...as last page’s instruction
  3. You can set testing target name at “**②** Show Name” column for each T line.
  4. There are 3 analysis modes available: standard, quality, excellent. Quality mode is recommended.
- PS. Selecting “Quality” or” Excellent” takes longer time for analysis because more images will be captured.



# **New Group Profile**

# Setting C & T Line Area For Multiple-channel Cassette

## Scenario 1 : 5-channel test kit with 1 T line in each channel



1. Using Profile Wizard to establish profile for each channel.
2. In this case, you can set THC, KET, AMP, COC, MOMA 5 independent product codes following previous instructions.
3. Then click “New Group Profile”. You will be asked how many strips/T lines per strip # are.
4. Then set a product code name for this group.
5. Follow the **instructions below** to add those 5 independent product code to this “Group Product Code”.

1. Click “New Group Profile” on UI default page after you set 5 product codes



2. Input strip count #. In this case, input 5 and press OK.

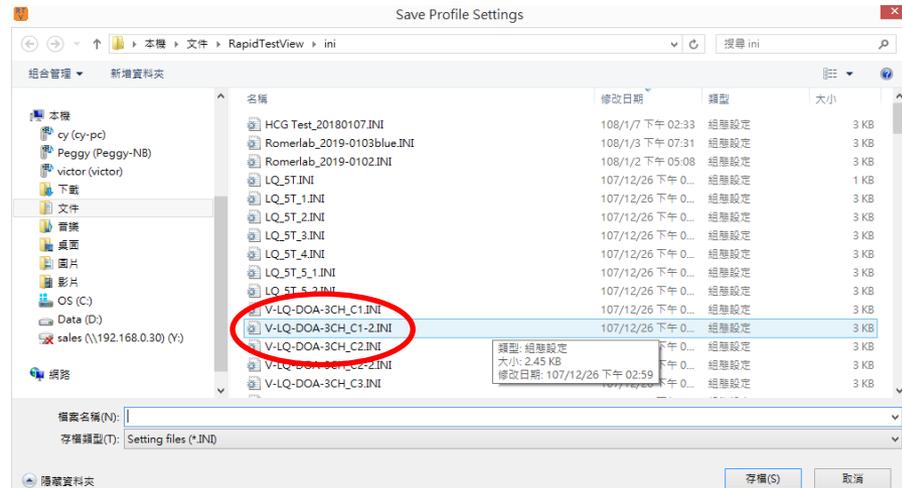
### MultiChannel Options

Multiple T @ 1 Strip

Multiple Strip

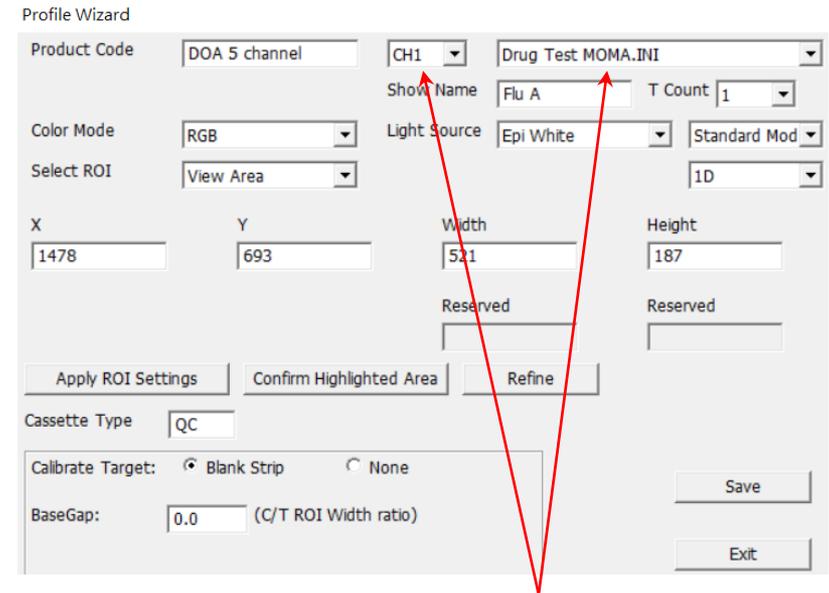
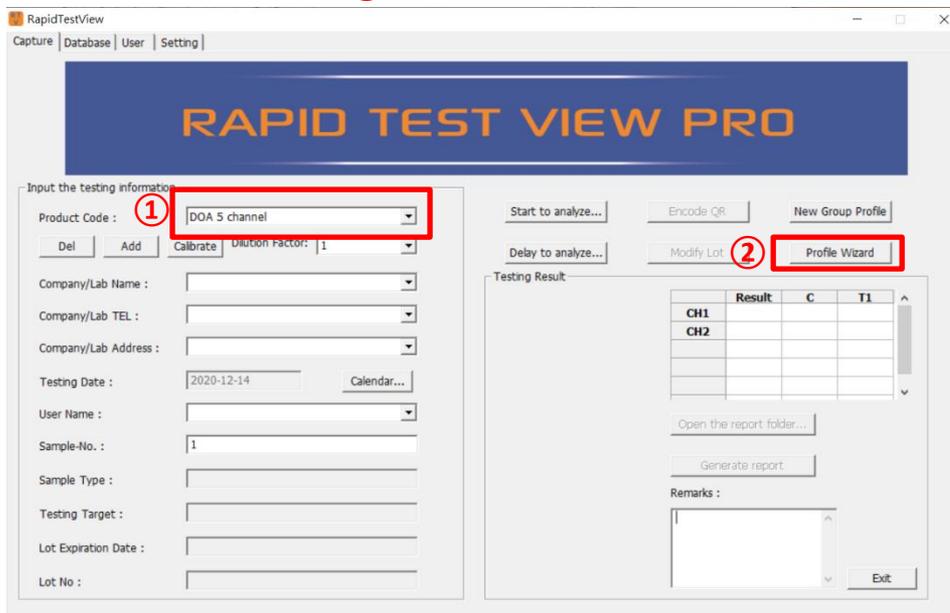
Note :Input 1~9,but not both of 1

3. Then input a new product code for this 5 channel test kit and save . Let’s use “DOA 5 channel” as product code

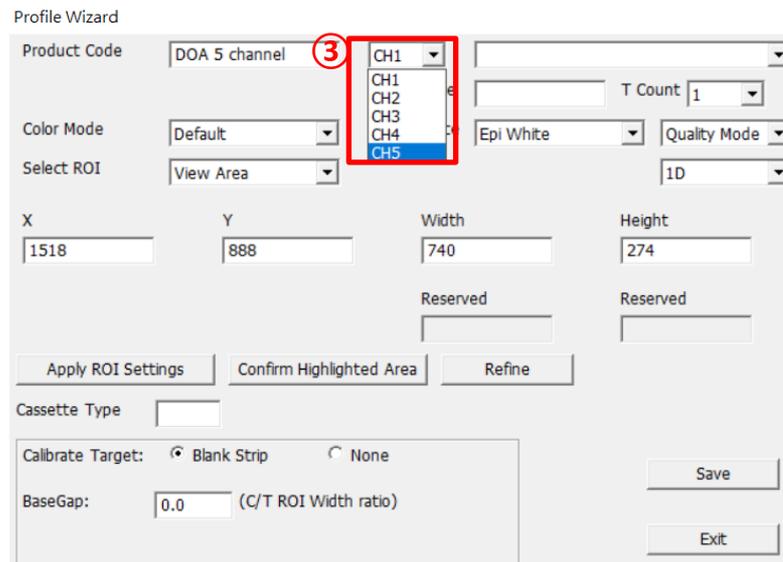


# Setting C & T Line Area For Multiple Channel Cassette

4. After saving, back to UI and find “**①** DOA 5 channel” product code, then click “**②** Profile Wizard”.



5. You will see **③** CH1 –CH5 available. Go to select each product code correspondent to the channel #.

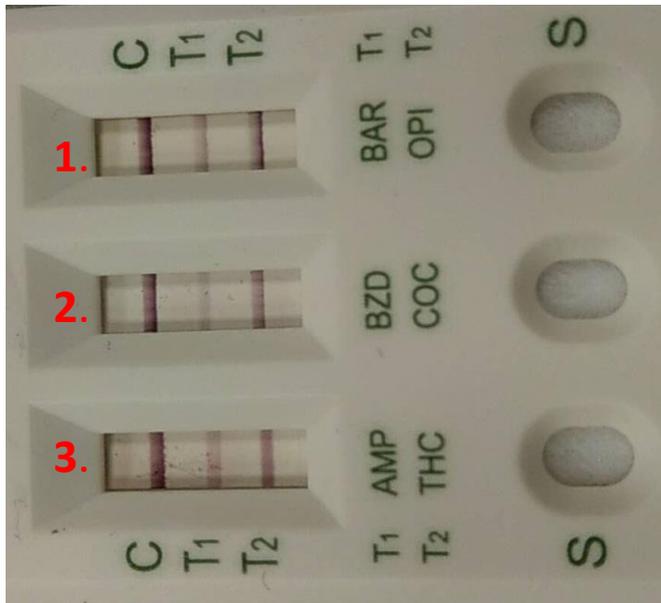


6. Follow the same procedure to finish all 5 channels' product code mapping one by one and then press “Save”. The Profile Setting is done.

Then you can select “DOA 5 channel” product code to analyze this 5 channel test kit. Analysis result for all channels will be done in one click.

# To set C & T Line Area For Multiple-channel Cassette

Scenario 2 : multiple-channel test kit with 2 x T lines in each channel



Step1. Using Profile Wizard to establish profiles for 3 channels.

Step2. In each channel, you set, set 2 T lines.

Step3. Then click “New Group Profile” and **set strip & T line #.**

Step4. Refer to the description on [link](#) to finish the setting.

## MultiChannel Options

Multiple T @ 1 Strip

Multiple Strip

Note :Input 1~9,but not both of 1

OK

Close

# Calibration

Auto Calibration  
Manual Calibration

# Auto Calibration

- Engineers have developed a set of algorithms that can automatically calibrate the system, so users of the new version of the DSK software will only need to do “one-time” calibration. (Refer to [link](#) “Manual calibration”) After that, the system will do auto-calibration every time users start to analyze.
- We recommend users use the back of the cassette as the calibration base.

# How To Do It

Calibrate Target:  Blank Strip  None ← Select "None".

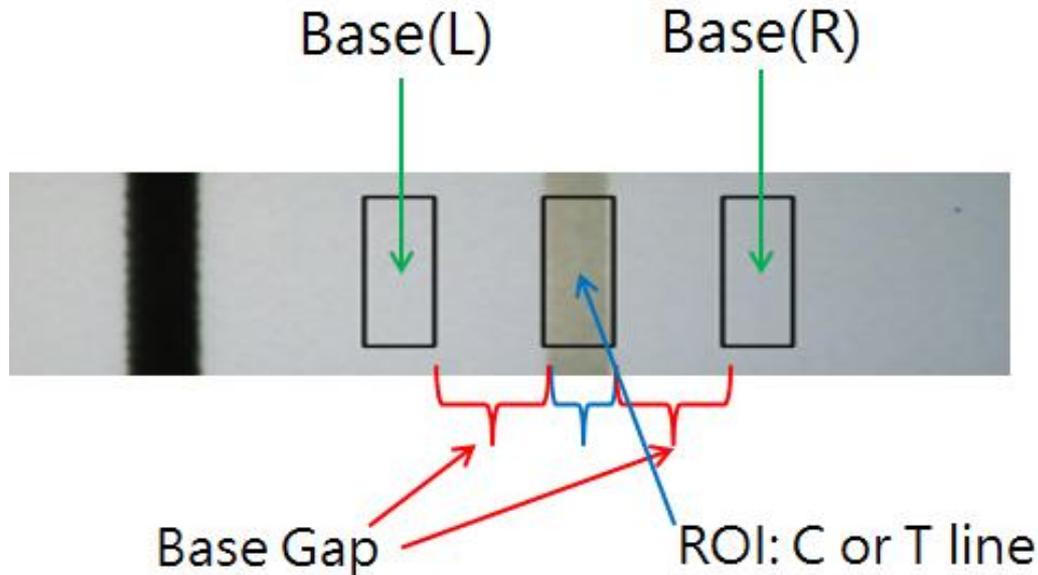
BaseGap:  (C/T ROI Width ratio)

↑  
Define the gap between ROI and base.  
This unit is the width of ROI.

See the next page description.

# Base Gap

- Base (L) & Base (R) have the same area of ROI
- Base Gap: leave enough space (Base areas don't overlay C/T line)
  - 0 if your ROI (Width) is wider than C/T width
  - If ROI (Width) is shorter than C/T width, make sure  $\text{ROI(Width)} + \text{Base Gap} > \text{C/T width}$
  - Shorter is better (Base closer to ROI)



# Manual calibration

- Users of the old version must use the following steps to perform manual calibration.
- After you set Profile Wizard, **please do calibration before setting Modify Lot.**
- You need to do calibration again if you change the following settings in the profile wizard: (refer to next page)
  - Change the “Cassette Type”
  - Color Mode
  - Light source
- You also need to calibrate again if you use the software on another PC because calibration data is saved in the original PC’s storage.

# Remember To Set Up Cassette Type In Profile Wizard

Profile Wizard

Product Code: EXAMPLE@123    None    None

Show Name: IGM    T Count: 1

Color Mode: Default    Light Source: Epi White    Standard Mod

Select ROI: View Area    1D

X: 1678    Y: 738    Width: 761    Height: 550

Reserved:    Reserved

Apply ROI Settings    Confirm Highlighted Area    Refine

Cassette Type: QC

Calibrate Target:  Blank Strip     None

BaseGap: 0.0 (C/T ROI Width ratio)

Save

Exit

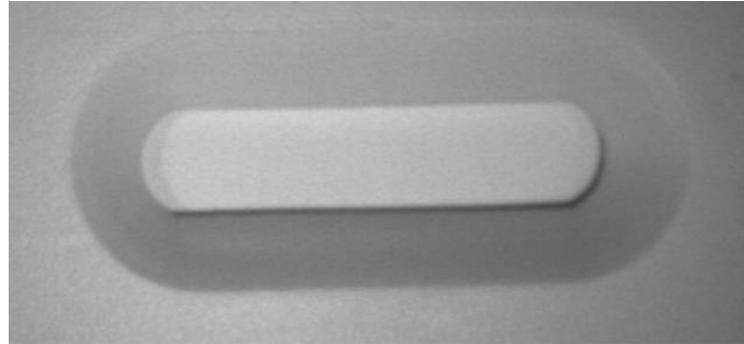
※ You can put any code just for you to identify the cassette type easily.

Select "Blank Strip".

# How To Do Calibration

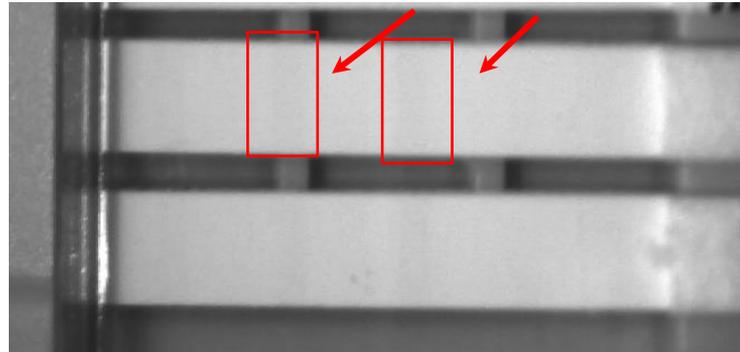
Find a blank strip, and use it as your calibration chart.

Good



You can see there appear to have some shadow

Not Good



# Calibration Process

- Go to the homepage
- Insert blank strip
- Click “Calibrate”
- Follow the instructions to finish calibration

The screenshot shows the 'RapidTestView PRO' software interface. The title bar includes 'RapidTestView' and menu options: 'Capture', 'Database', 'User', and 'Setting'. A blue header bar displays 'RAPID TEST VIEW PRO'. Below this, a section titled 'Input the testing information' is highlighted with a red box. This section contains a 'Product Code' dropdown menu set to 'Flu A@86', a 'Del' button, an 'Add' button, a 'Calibrate' button, and a 'Dilution Factor' dropdown menu set to '1'. Below this section are various input fields for 'Company/Lab Name', 'Company/Lab TEL', 'Company/Lab Address', 'Testing Date', 'User Name', 'Sample-No.', 'Sample Type', 'Testing Target', 'Expiration Date', and 'Lot No.'. To the right of the 'Input the testing information' section are buttons for 'Start to analyze...', 'Encode QR', 'New Group Profile', 'Delay to analyze...', 'Modify Lot', and 'Profile Wizard'. Below these buttons is a 'Testing Result' section with fields for 'Result', 'C-Value', and 'T1-Value', along with buttons for 'Open the report folder...', 'Generate report', and 'Remarks'. An 'Exit' button is located at the bottom right of the 'Testing Result' section. A red arrow points from the 'Calibrate' button in the 'Input the testing information' section to a zoomed-in view of the same section below.

This is a zoomed-in view of the 'Input the testing information' section from the previous screenshot. It shows the 'Product Code' dropdown menu set to 'Flu A@86', the 'Del' button, the 'Add' button, the 'Calibrate' button (which is highlighted with a red box), and the 'Dilution Factor' dropdown menu set to '1'.

# **Using Modify Lot To Set Analysis Formula For Obtaining Result**

# Modify Lot → Testing Result

Modify Lot

Product Code :

Lot No :  Expiration Date :

Analyte:  Sample Type :

Invalid Condition C <   T <

Background  (Range:0-255) Incubation Period

Dilution Statement  
Menu(Max. 6)  Factor:

Qualitative Statement  
Statement    
Formula   
Result Text  Text 2:

Quantitative Mapping Curve  
Bias  Result Significant Digits:   
Result Formula    
Concentration  ppm

4PL Parameters  
Working Range: Concentration  -   
a  b  c  d

Statement  
Setting

Qualitative /  
Quantitative

Formula Setting

Quantitative

Mapping Curve  
Setting

Product information editing

Cutoff range setup

Standard curve data input and curve fitting

4PL (input)

Generate curve graph

The actual reading of a standard strip

Product Code :

Lot No :  Expiration Date :

Analyte:  Sample Type :

Invalid Condition C <  AND

Background  (Range:0-255) Incubation Period

Dilution Statement  
Menu(Max. 6)  Factor:

Qualitative Statement  
Statement    
Formula   
Result Text  Text 2:

Quantitative Mapping Curve  
Bias  Result Significant Digits:   
Result Formula    
Concentration  ppm

4PL Parameters  
Working Range: Concentration  -   
a  b  c  d

Test kit failure condition setting

Please refer [link](#) dilution factor setting

Clear cut-off range setup

Cut-off range logic statements

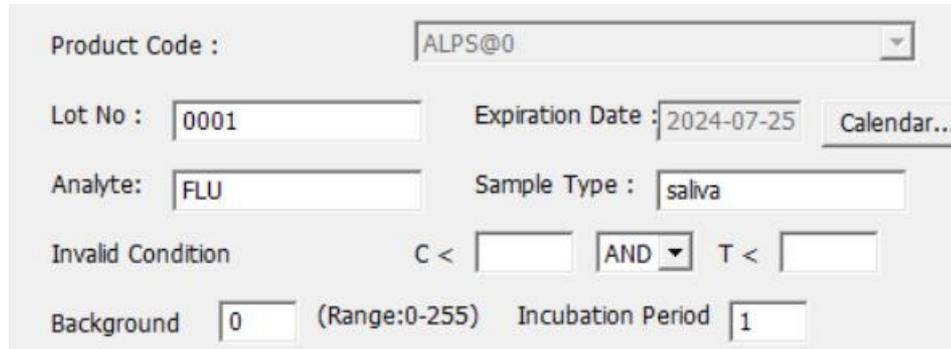
Report statement if a test value is within the range

Result value calculation formula

Input concentration value & unit  
**Log:** Log transformation of concentrations  
**Read:** To read strip value  
**Add:** Manually add test values

Select Curve fitting models

# Setting Up Lot Information



Product Code : ALPS@0

Lot No : 0001 Expiration Date : 2024-07-25 Calendar...

Analyte: FLU Sample Type : saliva

Invalid Condition C < AND T <

Background 0 (Range:0-255) Incubation Period 1

- Product Code: Cannot be modified in this section
- Lot No: Type Lot Number in Lot column
- Expired Date: Set the expiration date in this column
- Analyte: The analyte that the test kit will be analyzing.
- Sample Type: Testing sample type required by this test kit.
- Invalid Condition: Test kit failure condition setting.
- Background: It's a tool for users to notice if there's some unbalanced color in the background between C and T lines. If the result is under the number you set, a note will show up.  
✘Background "much dark 0-255 much light"
- Incubation Period: The delay time to analyze.

# Setting up an Invalid Condition

- To ensure the test kit's quality is qualified according to your company's standard.
- You can set C, T line's intensity value with the "And" & "Or" condition
- When the test kit's result fits the condition you set, the "Failure" result will show

The screenshot shows a software interface for configuring test kit parameters. The 'Invalid Condition' field is highlighted with a red box. The interface includes the following fields and controls:

- Product Code :
- Lot No :
- Expiration Date :
- Analyte:
- Sample Type :
- Invalid Condition : C <  AND  T <
- Background :  (Range:0-255)
- Incubation Period :

# Setting Up The Cut-Off Value In Qualitative Statement

Step1. Setting up a cut-off value. E.g. Input  $T1 < 1000$  as negative. Then set  $T1 \geq 1000$  as Positive.

✘ **must include all possible calculation results.**

Qualitative Statement

Statement

Formula

Result Text  Text 2:

Qualitative Statement

Statement

Formula

Result Text  Text 2:

Step2-1. Setting up a formula e.g. T-value for positive and negative results

“Statement” is linked to “Result Text”

Step2-2. **If you want the results to be shown as a value instead of positive or negative.**

- Click “Clear” to delete all of the “Formula”
- Setting up the formula at “Result Formula” e.g. T1 or T1/C1 etc.

If you set T1 in Result Formula, it is the image intensity of the T1 line calculated by the algorithm. If you set T1/C1, it is the figure of the T1/C1 intensity ratio.

Qualitative Statement

Statement

Formula

Result Text  Text 2:

Quantitative Mapping Curve

Bias    Result Significant Digits:

Result Formula

Concentration

# Setting Up Cut-off Ranges

- Up to 12 cut-off statements can be set up.
- In the Result Text, enter the report result for a specific cut-off range. Say ~1 ppb. Then in the Formula, define the cut-off range with >, <, and =. Say  $T1\_CONCENTRATON \geq 0.65 \ \& \ T1\_CONCENTRATON < 1.75$ . Step by step to finish all of your cut-off ranges and the report results.
- Please remember to save your settings by clicking “Save”. Please save the correct file name as well.
- The final cut-off ranges should be adjusted based on your further validation using more standard strips or actual sample strips before its release.

# Statement Setting

Modify Lot

Product Code :

Lot No :       Expiration Date :

Analyte:       Sample Type :

Invalid Condition      C <   T <

Background  (Range:0-255)      Incubation Period

Dilution Statement

Menu(Max. 6)  Factor:

Qualitative Statement

Statement

Formula

Result Text

Quantitative Mapping

Bias       Significant Digits:

Result Formula

Concentration

Curve

4PL Parameters

Working Range: Concentration  -

a       b       c       d

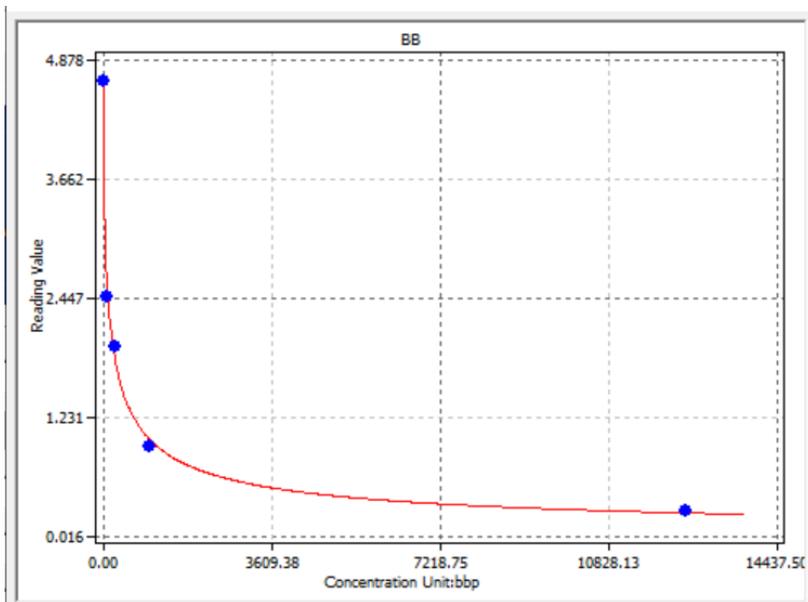
Up to 12 cut-off statements can be added

# Summary Of Qualitative/Quantitative Setting

Result Type	Formula	Mapping Curve	Statement	Note
Qualitative / Quantitative	Quantitative	Quantitative	Qualitative	
Assignment	T1_RESULT	T1_CONCENTRATION	Statement	
Priority	3	2	1	
Operation Type	Arithmetic	Data to Concentration Mapping	Arithmetic + Logic --> Logic	
	+	Interval Linear	+	Arithmetic PLUS
	-	Linear	-	Arithmetic MINUS
	*	Quadratic	*	Arithmetic MULTIPLY
	/	4PL	/	Arithmetic DIVIDE
	( )			Parenthesis (Formula only)
			&	Logic AND
				Logic OR
			>, =, <, <>	Logic COMPARE
			\$	Mark for Quantitative Data
Examples	T1/C1		T1/C1 >= 100	
	T1+100		T1<100   C1<50	
	T1/C1-100		T1 + T2 <= C1	
	T1 * T2 / C1		T1_RESULT > 1 & C1 > 50	refer Formula value
	(T1-T2)/(C1-T2)		\$ T1_CONCENTRATION	show Curve Mapping value
	T1+T2-C1		T1_CONCENTRATION < 0.5	refer Curve Mapping value

# How To Set Mix Of Qualitative/Quantitative Statement

- Using "Statement" to show the quantitative value @ working range



Qualitative Statement

Statement: <125

Formula: T1\_CONCENTRATION<125

Result Text: <125

Qualitative Statement

Statement: CONCENTRATION

Formula: T1\_CONCENTRATION <=12500 & T1\_CONC

Result Text: \$T1\_CONCENTRATION

Special Mark for the variation of T1, T2, ..., C, T1\_RESULT, T1\_CONCENTRATION, ...

Qualitative Statement

Statement: >12500

Formula: T1\_CONCENTRATION>12500

Result Text: >12500

# When & How to Use “Bias”

- When: You want the T-value to be 0 when the result is negative
- How:
  - Step1. Go to “Modify Lot”
  - Step2. Set bias number.
- You will get 2 results:
  1. When the T-value is smaller than the bias number → T-value would be 0
  2. When the T value is larger than bias number → T-value would be the original value minus bias number

The screenshot shows the 'Modify Lot' interface with the following fields and values:

- Product Code: Profile\_W@1
- Lot: 1
- Expired Date: 2020-12-25
- Analyte: Test
- Type: DSA
- Invalid Condition: C < 10 AND T < 10
- BackGround Setting: 0 (Range:0-255)
- Dilution Statement: Dilution Menu(6 items) 1, Factor: 1.000
- Qualitative Statement: Statement Positive, Formula T1>100, Result Text Positive
- Quantitative Mapping Curve: Bias 200, Result Significant Digits 5, Result Formula T1, Concentration 0.00 mg/ml

Step 2: input the number at Bias

Step 1: press Modify Lot

Original test data (Bias=0)

Modify Lot

Product Code :

Lot :  Expired Date :

Analyte :  Type :

Invalid Condition : C <   T <

BackGround Setting:  (Range:0-255)

Dilution Statement

Dilution Menu(6 items)  Factor :

Qualitative Statement

Statement

Formula

Result Text

Quantitative Mapping Curve

Bias    Result Significant Digits:

Result Formula

Concentration

4PL Parameters

Working Range : Concentration  -

a  b  c  d

T VIEW PRO

Testing Result

20201224-2

Result :

C-Value :

T1-Value :

Remarks :

RapidTestView

Capture | Database | User | Setting

# RAPID TEST VIEW PRO

Input the testing information

Product Code : Profile\_W@1

Del Add Calibrate Dilution Factor: 1

Company/Lab Name : ABC Clinic Center

Company/Lab TEL : +886 23881234

Company/Lab Address :

Testing Date : 2020-12-24 Calendar...

User Name : Kevin Wang

Sample-No. : 3

Sample Type : DSA

Testing Target : Test

Lot Expiration Date : 2020-12-25

Lot No : 1

Start to analyze... Encode

Delay to analyze... Modify

Testing Result



20201224-2

Result : Positive

C-Value : 450

T1-Value : 540

Open the report folder...

Generate report

Remarks :

Exit

The result value after setting Bias 200, C & T all subtract about 200.

# Dilution Factor

# When To Use

The rapid test cassettes used are the same, and the target analytes are also the same, but the specimens are different.

Different excess toxin content → When processing samples, use dilution to reach the working range of the rapid test cassette.

e.g., aflatoxin may exist in rice, beans, corn, and other substances, but the amount of toxin that needs to be detected might be different. → dilute the sample.

# Interface Description

Modify Lot

Product Code :

Lot No :  Expiration Date :

Analyte:  Sample Type :

Invalid Condition C <  AND  T <

Background  (Range:0-255) Incubation Period

Dilution Statement

Menu(Max. 6)  Factor:

Qualitative Statement

Statement

Formula

Result Text

Quantitative Mapping Curve

Bias  Result Significant Digits:

Result Formula

Concentration

Curve

4PL Parameters

Working Range: Concentration  -

a  b  c  d

Click "menu"

# Interface Description

Dilution Statement

Menu(Max. 6) wheat Factor: 1.000 Inc.1 Del

Qualitative Statement

Statement Positive Clear

Formula T1>10

Result Text Positive

Dilution Statement

Menu(Max. 6) peanut Factor: 1.000 Inc.1 Del

Qualitative Statement

Statement Positive Clear

Formula T1>40

Result Text Positive

Certain "Menu" corresponds to certain qualitative/quantitative statement

# Hypothesis

Rapid test for wheat to detect aflatoxin

Wheat detection range is 10~30  $\mu\text{g}/\text{mL}$

Peanut detection range is 40~120  $\mu\text{g}/\text{mL}$

# Qualitative Test

Measuring wheat: Positive →  $T1\_CONCENTRATION > 10$

Negative →  $T1\_CONCENTRATION \leq 10$

The sample must be diluted about 4 times first, Factor=4.00

Test peanuts: Positive →  $T1\_CONCENTRATION > 40$

Negative →  $T1\_CONCENTRATION \leq 40$

⌘Note:  $T1\_CONCENTRATION$  at this time has been multiplied by Factor

# Quantitative Test

Measuring wheat:  $>30 \mu\text{g/mL} \rightarrow \text{T1\_CONCENTRATION} > 30$

Actual measured value  $\rightarrow 10 \leq \text{T1\_CONCENTRATION} \leq 30$

$<10 \mu\text{g/mL} \rightarrow \text{T1\_CONCENTRATION} < 10$

The sample must be diluted about 4 times first, Factor=4.00

Test peanut:  $>120 \mu\text{g/mL} \rightarrow \text{T1\_CONCENTRATION} > 120$

Actual measured value  $\rightarrow 40 \leq \text{T1\_CONCENTRATION} \leq 120$

$<40 \mu\text{g/mL} \rightarrow \text{T1\_CONCENTRATION} < 40$

⌘Note: T1\_CONCENTRATION at this time has been multiplied by Factor

# Capture & Analysis

# Default Page: Capture

## 1. Product Code selection:

users can select different diagnosis products in this section. Users can delete, add products or do calibration for each product.

1

## 2. Testing information:

this section on UI is for users to input lab information, testing date, and patient/sample information.

2

## 3. Analyze:

**Start to analyze:** Click this icon to proceed with analysis immediately.

**Delay to analyze:** Users can set a certain period of time to let the system begin analysis after it reaches the preset time

RapidTestView-Ethernet(Demo Mode)

Capture Database User Setting

# E RAPID TEST VIEW PRO

1 Input the testing information

Product Code : ALPS@0

Del Add Calibrate Dilution Factor menu

2

Company/Lab Name : 全谱科技股份有限公司

Company/Lab TEL : 8692-1800

Company/Lab Address :

Testing Date : 2022-10-03 Calendar...

User Name : 于晨心

Sample-No. : 3

Sample Type : saliva

Testing Target : FLU

Expiration Date : 2024-07-25

Lot No : 0001

3

Start to analyze...

Delay to analyze...

Encode QR

New Group Profile

Modify Lot

Profile Wizard

Testing Result

20221003-2

Result : Positive

C-Value : 1667

T1-Value : 2156

Open the report folder...

Generate report

Remarks :

Load Image

Exit

# Default Page: Capture

RapidTestView-Ethernet(Demo Mode)

Capture Database User Setting

## E RAPID TEST VIEW PRO

Input the testing information

Product Code : ALPS@0

Del Add Calibrate Dilution Factor menu

Company/Lab Name : 全譜科技股份有限公司

Company/Lab TEL : 8692-1800

Company/Lab Address :

Testing Date : 2022-10-03 Calendar...

User Name : 于晨心

Sample-No. : 3

Sample Type : saliva

Testing Target : FLU

Expiration Date : 2024-07-25

Lot No : 0001

Start to analyze... Encode QR New Group Profile

Delay to analyze... 5 Modify Lot Profile Wizard 4

Testing Result

20221003-2

Result : Positive

C-Value : 1667

T1-Value : 2156

Open the report folder...

Generate report

Remarks :

Load Image Exit

### 5. Modify Lot:

To set Cut Off value.  
To set Result Formula  
To set Standard Curve for quantitative analysis

### 6. New Group Profile:

For multiple channel assay, users will need to use this function to integrate each channel's profile into 1 single group profile.

### 4. Profile Wizard:

To set each kit's image, C, T line's detection position & area size here.  
To set colorimetric/fluorescent kit detection light source.  
To set the algorithm here

# Default page: Capture

**7.Encode QR:** To create product profile's QR code image

**8. Testing Result:** present result information including an image.

**Result:** Can show negative/positive or any statement preset.

**C Value:** control line image intensity value

**T-1 Value:** Test line image intensity value

**Open the report folder:** To access the preset folder for image saving

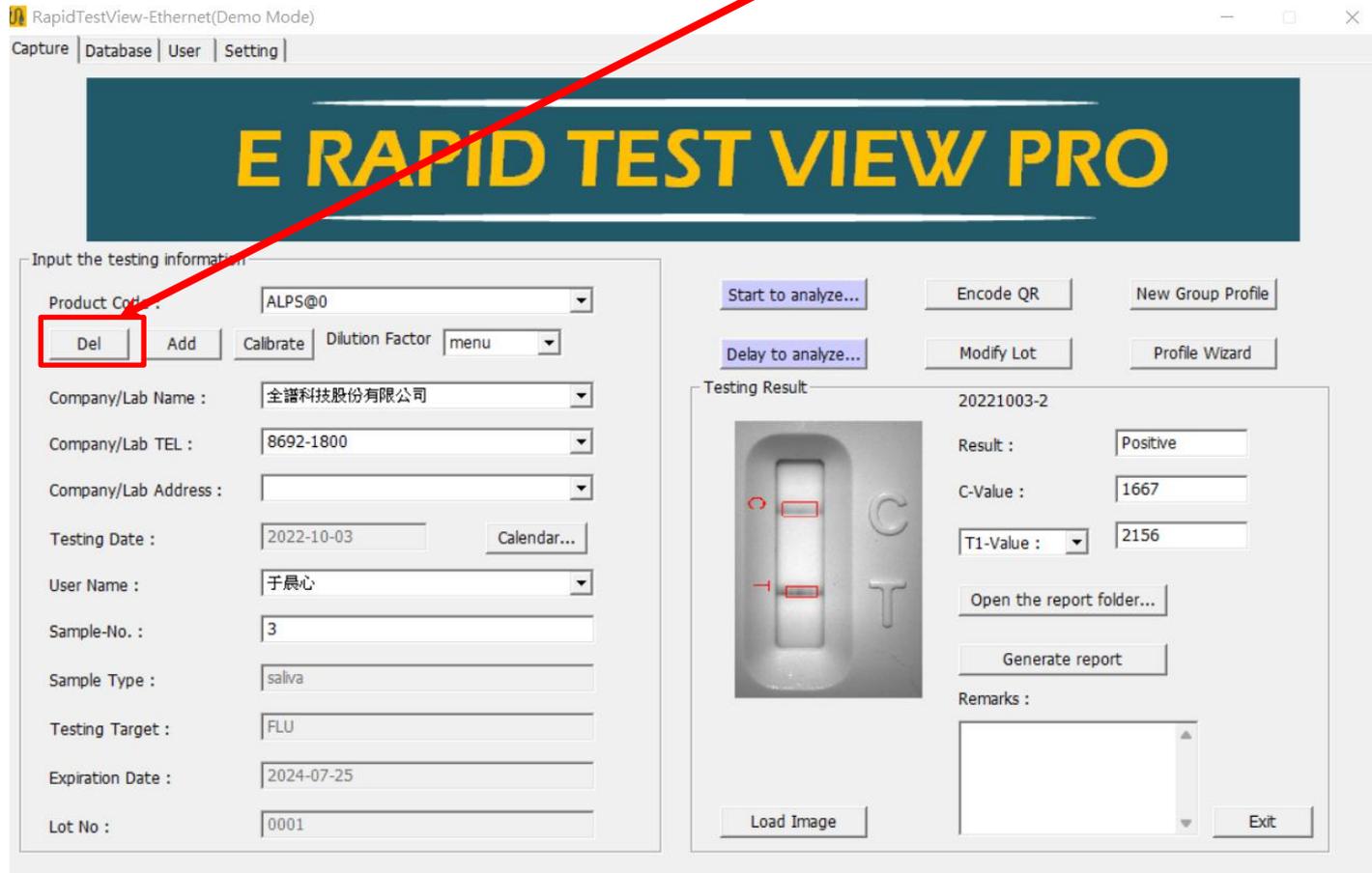
**Generate report:** Generate PDF report

**9. Remarks:** For users to put other information about the experiment. E.g. concentration etc.

# Delete Profiles

How to delete useless or invalid product profiles in software?

Select product code for deletion and then press “Del” to remove selected product profile.



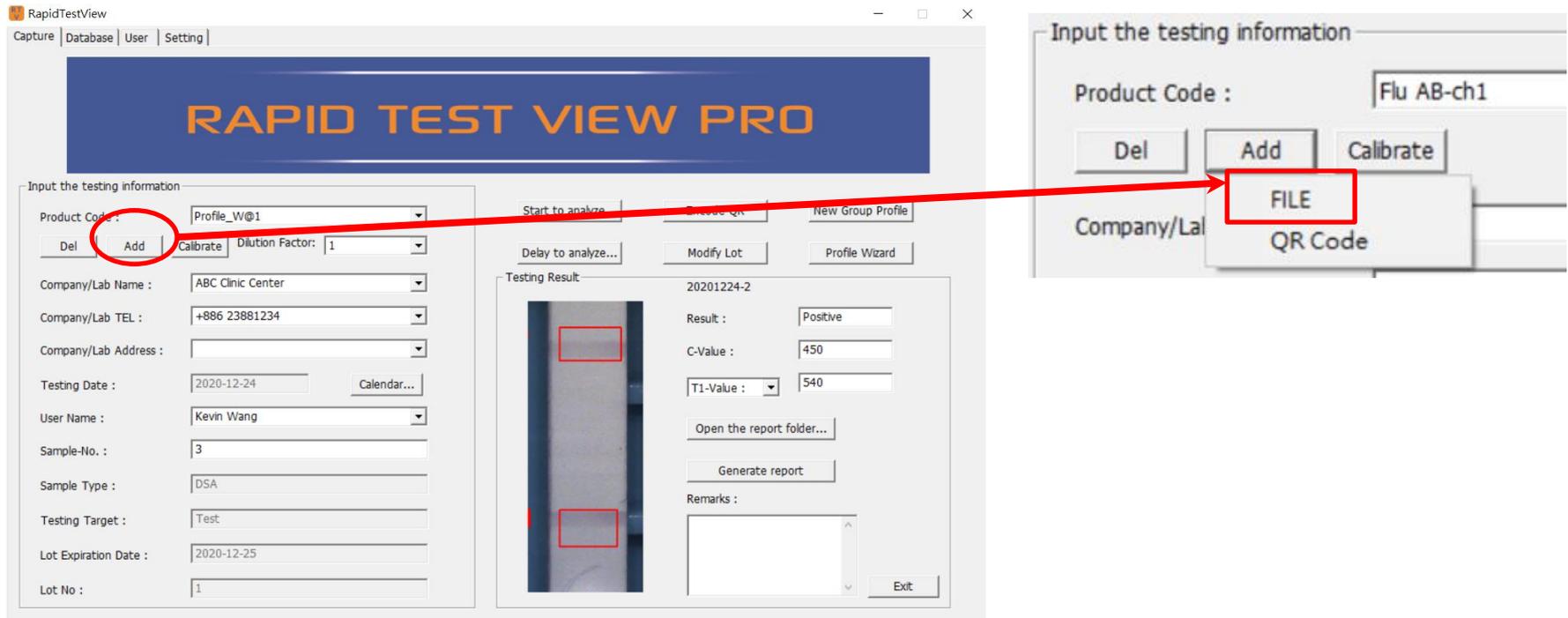
# Add Profiles

Click “Add” to increase product profiles to software

Click “File” to select the product profile saved on the PC.

(Please contact the supplier to know more about the QR code function)

Added profiles will display in the Product Code column if adding profile step is successfully done.

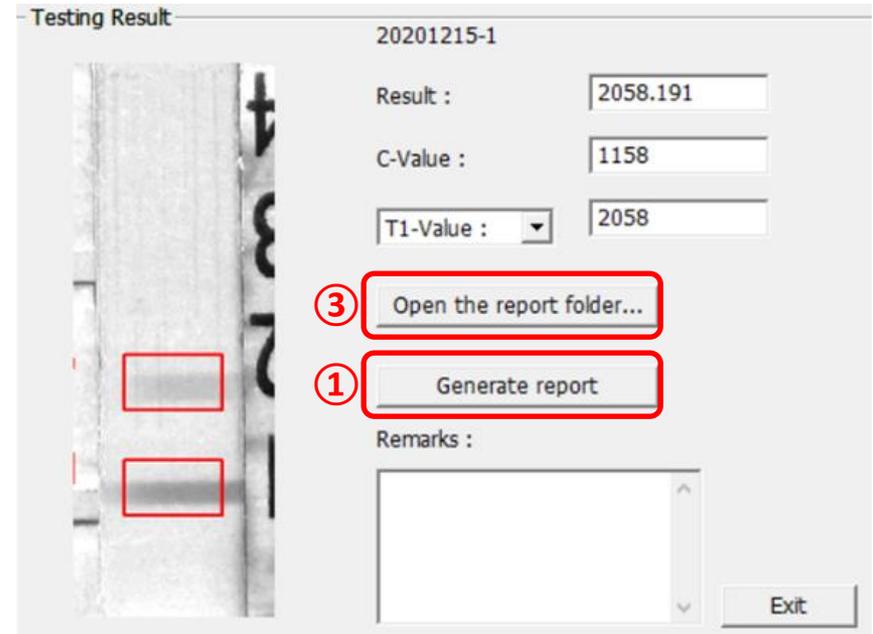


# Report

# Report

The SW can generate a PDF report by clicking “**①** Generate report” on UI home page .

After showing “Detail report is complete”, click **②** 確定 and then **③** open the report folder. You can see there’s **④** a PDF report in the folder.



RapidTestView



Detail report is complete .

**②** 確定



# Report

## Example of PDF report

TEL :

### Inspection Report

Testing Time : 20201215 163024

Testing Target :

Lot Number :

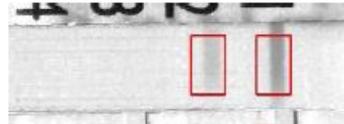
Sample Type :

Remarks :

Sample-No. : 2

Name	Result	Note
	2068.586	Fig.1

Fig 1.



Report Signed

Tester : \_\_\_\_\_(MM/DD/YYYY)

Supervisor : \_\_\_\_\_(MM/DD/YYYY)

# Database

# Database

All levels of users can obtain diagnosis history from this section. Select the testing date or a certain period to show the diagnosis results, then click “Find”

RapidTestView

Capture Database User Setting

2020-12-02 ~ 2020-12-15 Find Export

No.	Date	Time	Profile	DeviceSN	SampleNo	Sample Type	User	Result
2	2020-12-15	16:30:24	Flu A	2033BA58A0...	2			2068.586
1	2020-12-15	13:45:03	Flu A	2033BA58A0...	1			2058.191
25	2020-12-03	17:07:49	Flu B	2033BA58A0...	25			6.035 ng/r
25	2020-12-03	17:07:49	Flu A	2033BA58A0...	25			2.141 ppm
24	2020-12-03	16:37:55	Flu B	2033BA58A0...	24			6.170 ng/r

The test results within the time period you selected will show up

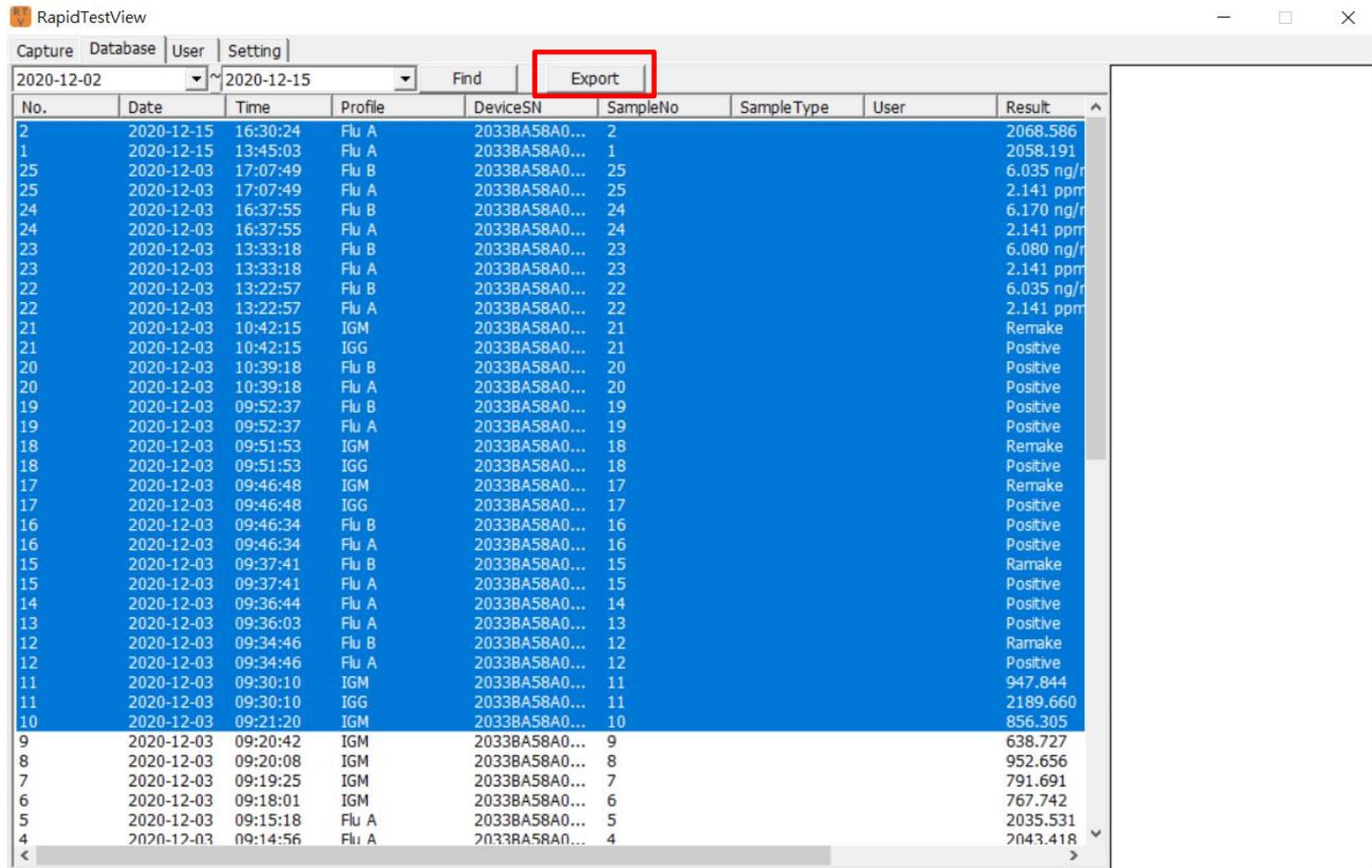
RapidTestView

Capture Database User Setting

2020-12-02 ~ 2020-12-15 Find Export

No.	Date	Time	Profile	DeviceSN	SampleNo	SampleType	User	Result
2	2020-12-15	16:30:24	Flu A	2033BA58A0...	2			2068.586
1	2020-12-15	13:45:03	Flu A	2033BA58A0...	1			2058.191
25	2020-12-03	17:07:49	Flu B	2033BA58A0...	25			6.035 ng/r
25	2020-12-03	17:07:49	Flu A	2033BA58A0...	25			2.141 ppm
24	2020-12-03	16:37:55	Flu B	2033BA58A0...	24			6.170 ng/r
24	2020-12-03	16:37:55	Flu A	2033BA58A0...	24			2.141 ppm
23	2020-12-03	13:33:18	Flu B	2033BA58A0...	23			6.080 ng/r
23	2020-12-03	13:33:18	Flu A	2033BA58A0...	23			2.141 ppm
22	2020-12-03	13:22:57	Flu B	2033BA58A0...	22			6.035 ng/r
22	2020-12-03	13:22:57	Flu A	2033BA58A0...	22			2.141 ppm
21	2020-12-03	10:42:15	IGM	2033BA58A0...	21			Remake
21	2020-12-03	10:42:15	IGG	2033BA58A0...	21			Positive
20	2020-12-03	10:39:18	Flu B	2033BA58A0...	20			Positive
20	2020-12-03	10:39:18	Flu A	2033BA58A0...	20			Positive
19	2020-12-03	09:52:37	Flu B	2033BA58A0...	19			Positive
19	2020-12-03	09:52:37	Flu A	2033BA58A0...	19			Positive
18	2020-12-03	09:51:53	IGM	2033BA58A0...	18			Remake
18	2020-12-03	09:51:53	IGG	2033BA58A0...	18			Positive
17	2020-12-03	09:46:48	IGM	2033BA58A0...	17			Remake
17	2020-12-03	09:46:48	IGG	2033BA58A0...	17			Positive
16	2020-12-03	09:46:34	Flu B	2033BA58A0...	16			Positive
16	2020-12-03	09:46:34	Flu A	2033BA58A0...	16			Positive
15	2020-12-03	09:37:41	Flu B	2033BA58A0...	15			Remake
15	2020-12-03	09:37:41	Flu A	2033BA58A0...	15			Positive
14	2020-12-03	09:36:44	Flu A	2033BA58A0...	14			Positive
13	2020-12-03	09:36:03	Flu A	2033BA58A0...	13			Positive
12	2020-12-03	09:34:46	Flu B	2033BA58A0...	12			Remake
12	2020-12-03	09:34:46	Flu A	2033BA58A0...	12			Positive
11	2020-12-03	09:30:10	IGM	2033BA58A0...	11			947.844
11	2020-12-03	09:30:10	IGG	2033BA58A0...	11			2189.660
10	2020-12-03	09:21:20	IGM	2033BA58A0...	10			856.305
9	2020-12-03	09:20:42	IGM	2033BA58A0...	9			638.727
8	2020-12-03	09:20:08	IGM	2033BA58A0...	8			952.656
7	2020-12-03	09:19:25	IGM	2033BA58A0...	7			791.691
6	2020-12-03	09:18:01	IGM	2033BA58A0...	6			767.742
5	2020-12-03	09:15:18	Flu A	2033BA58A0...	5			2035.531
4	2020-12-03	09:14:56	Flu A	2033BA58A0...	4			2043.418

# Database



The screenshot shows the RapidTestView application window. The 'Database' tab is active, displaying a table of test results. The 'Export' button in the top menu bar is highlighted with a red box. The table contains the following data:

No.	Date	Time	Profile	DeviceSN	SampleNo	SampleType	User	Result
2	2020-12-15	16:30:24	Flu A	2033BA58A0...	2			2068.586
1	2020-12-15	13:45:03	Flu A	2033BA58A0...	1			2058.191
25	2020-12-03	17:07:49	Flu B	2033BA58A0...	25			6.035 ng/r
25	2020-12-03	17:07:49	Flu A	2033BA58A0...	25			2.141 ppm
24	2020-12-03	16:37:55	Flu B	2033BA58A0...	24			6.170 ng/r
24	2020-12-03	16:37:55	Flu A	2033BA58A0...	24			2.141 ppm
23	2020-12-03	13:33:18	Flu B	2033BA58A0...	23			6.080 ng/r
23	2020-12-03	13:33:18	Flu A	2033BA58A0...	23			2.141 ppm
22	2020-12-03	13:22:57	Flu B	2033BA58A0...	22			6.035 ng/r
22	2020-12-03	13:22:57	Flu A	2033BA58A0...	22			2.141 ppm
21	2020-12-03	10:42:15	IGM	2033BA58A0...	21			Remake
21	2020-12-03	10:42:15	IGG	2033BA58A0...	21			Positive
20	2020-12-03	10:39:18	Flu B	2033BA58A0...	20			Positive
20	2020-12-03	10:39:18	Flu A	2033BA58A0...	20			Positive
19	2020-12-03	09:52:37	Flu B	2033BA58A0...	19			Positive
19	2020-12-03	09:52:37	Flu A	2033BA58A0...	19			Positive
18	2020-12-03	09:51:53	IGM	2033BA58A0...	18			Remake
18	2020-12-03	09:51:53	IGG	2033BA58A0...	18			Positive
17	2020-12-03	09:46:48	IGM	2033BA58A0...	17			Remake
17	2020-12-03	09:46:48	IGG	2033BA58A0...	17			Positive
16	2020-12-03	09:46:34	Flu B	2033BA58A0...	16			Positive
16	2020-12-03	09:46:34	Flu A	2033BA58A0...	16			Positive
15	2020-12-03	09:37:41	Flu B	2033BA58A0...	15			Ramake
15	2020-12-03	09:37:41	Flu A	2033BA58A0...	15			Positive
14	2020-12-03	09:36:44	Flu A	2033BA58A0...	14			Positive
13	2020-12-03	09:36:03	Flu A	2033BA58A0...	13			Positive
12	2020-12-03	09:34:46	Flu B	2033BA58A0...	12			Ramake
12	2020-12-03	09:34:46	Flu A	2033BA58A0...	12			Positive
11	2020-12-03	09:30:10	IGM	2033BA58A0...	11			947.844
11	2020-12-03	09:30:10	IGG	2033BA58A0...	11			2189.660
10	2020-12-03	09:21:20	IGM	2033BA58A0...	10			856.305
9	2020-12-03	09:20:42	IGM	2033BA58A0...	9			638.727
8	2020-12-03	09:20:08	IGM	2033BA58A0...	8			952.656
7	2020-12-03	09:19:25	IGM	2033BA58A0...	7			791.691
6	2020-12-03	09:18:01	IGM	2033BA58A0...	6			767.742
5	2020-12-03	09:15:18	Flu A	2033BA58A0...	5			2035.531
4	2020-12-03	09:14:56	Flu A	2033BA58A0...	4			2043.418

To select multiple results, hold the “shift” key and select the first and the last results. Then press “Export” on the top of the windows. The SW will create a “CSV” file immediately.

# Database

- ADMIN

RapidTestView

Capture Database User Setting

2020-12-02 ~ 2020-12-25 Find Export

Time	Profile	DeviceSN	SampleNo	SampleType	User	Result	C	T1
14:29:56	Profile_W@1	2033BA58A0...	2	DSA	Kevin Wang	Positive	417	550
14:26:26	Profile_W@1	2033BA58A0...	1	DSA	Kevin Wang	Positive	446	544
11:10:34	Profile_W@1	2033BA58A0...	2	DSA	Kevin Wang	Positive	450	540
11:08:28	Profile_W@1	2033BA58A0...	1	DSA	Kevin Wang	Positive	445	539

- USER & USER-ALL

**ADMIN user** sees diagnosis result and C, T value.  
**USER & USER-ALL** can see only results.

RapidTestView

Capture Database Setting

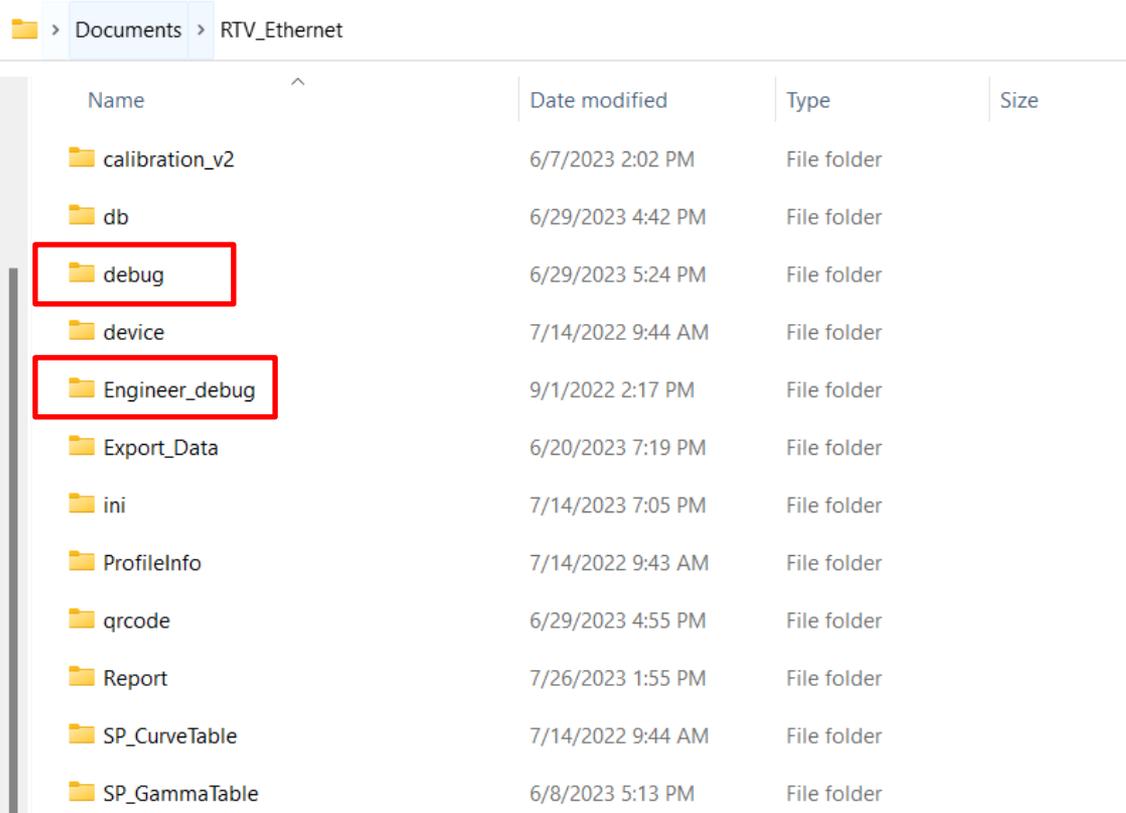
2020-12-02 ~ 2020-12-25 Find Export

No.	Date	Time	Profile	DeviceSN	SampleNo	SampleType	User	Result
2	2020-12-24	14:29:56	Profile_W@1	2033BA58A0...	2	DSA	Kevin Wang	Positive
1	2020-12-24	14:26:26	Profile_W@1	2033BA58A0...	1	DSA	Kevin Wang	Positive
2	2020-12-24	11:10:34	Profile_W@1	2033BA58A0...	2	DSA	Kevin Wang	Positive
1	2020-12-24	11:08:28	Profile_W@1	2033BA58A0...	1	DSA	Kevin Wang	Positive
2	2020-12-24	09:47:24	Profile_W@1	2033BA58A0...	2	DSA	Kevin Wang	Positive

# Export Debug Files

# Export Debug and Engineer\_debug

- Step1. Go to RapidTestView folders or RTV\_Ethernet folders (Depending on which software you use)
- Step2. Copy two folders.



The screenshot shows a Windows File Explorer window with the address bar set to 'Documents > RTV\_Ethernet'. The main pane displays a list of folders with columns for Name, Date modified, Type, and Size. Two folders, 'debug' and 'Engineer\_debug', are highlighted with red rectangular boxes.

Name	Date modified	Type	Size
calibration_v2	6/7/2023 2:02 PM	File folder	
db	6/29/2023 4:42 PM	File folder	
debug	6/29/2023 5:24 PM	File folder	
device	7/14/2022 9:44 AM	File folder	
Engineer_debug	9/1/2022 2:17 PM	File folder	
Export_Data	6/20/2023 7:19 PM	File folder	
ini	7/14/2023 7:05 PM	File folder	
ProfileInfo	7/14/2022 9:43 AM	File folder	
qrcode	6/29/2023 4:55 PM	File folder	
Report	7/26/2023 1:55 PM	File folder	
SP_CurveTable	7/14/2022 9:44 AM	File folder	
SP_GammaTable	6/8/2023 5:13 PM	File folder	

**\*These two folders are normally big. Compressing them before sending them to suppliers is a must.**

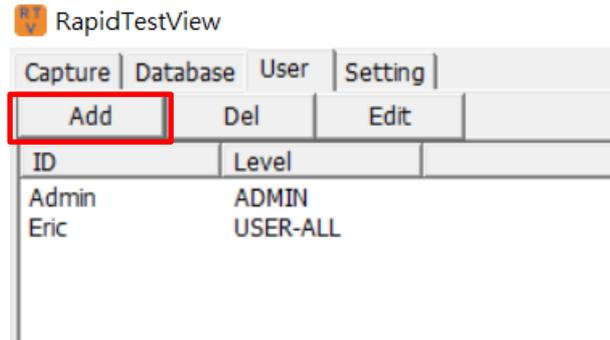
# User Management

# User Management

- Rapid Test View software has an authority management function to let the different levels of users obtain different diagnosis results
- ADMIN
  - ADMIN is the administration level of the user. He/she can see all diagnosis results including images.
  - ADMIN can add/delete/edit USER-ALL & USER level of users
  - Only ADMIN can change ID/PW for USER-ALL & USER level of users
- USER-ALL
  - USER-ALL is the leader of his/her team. He/She can see all users' diagnosis result
- USER
  - USER can only see his/her own sample's diagnosis result

# ADMIN: Add New User

Go to User section, Click on “Add”



Input ID & password. Select level for user and press OK

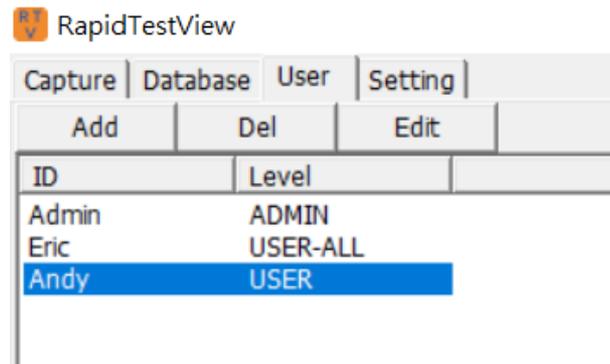
Login

ID:

Password:

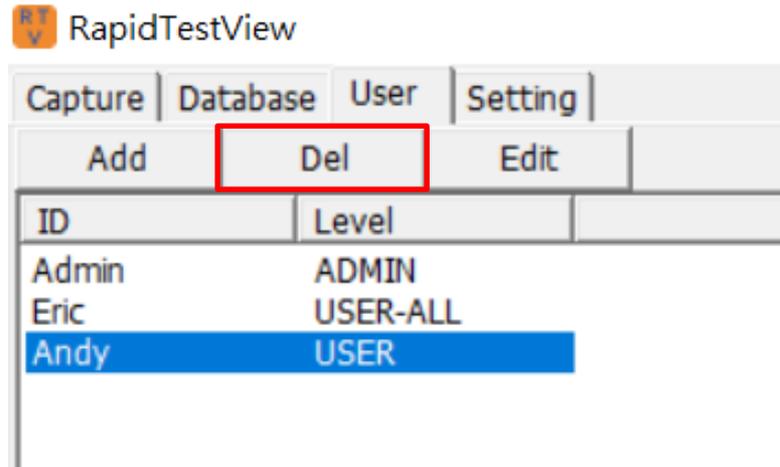
Level:

New user is successfully added

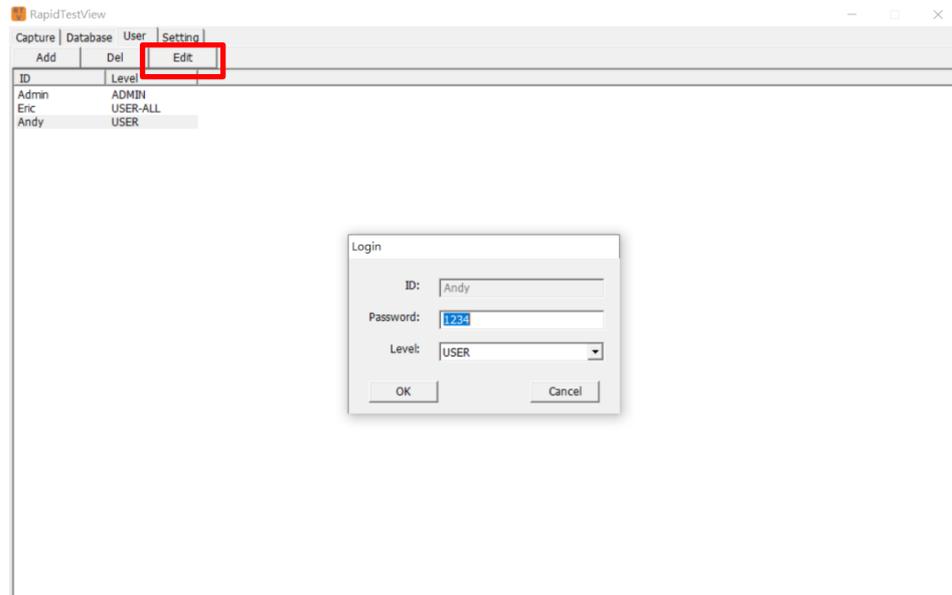


# ADMIN: Del/Edit User

How to delete: simply select user you want to remove and click on “Del”



How to edit: select user you want to edit and click “Edit”. Then edit ID, password, and level press OK to finish



**Note:** If the user forgets PW, he/she has to ask ADMIN to edit a new PW for his/her ID. There is no PW checking function.

# Setting

# Setting

These setting are

- Data file's location
- Language
- Whether to generate the report automatically

These setting are

- When users tick the box → there will only be group profiles for users choosing to analysis
- When users tick the box → the resulting image will have C & T frame in it

Capture | Database | User | Setting |

Rapid Test Data Export Folder : C:\Users\admin\Documents\RapidTestView Choose a folder...

Language : English

Auto generate report

Only Show Group Profile

Mark C/T Frames at Result Image Test QRCode Machine Calibrate

Reset About

Device Maintain

Reader Check Reader Calibration

System Manager Settings

QR Code Light Setting 2nd Light

Data Transform  Elaborated T  Significant Digits  Background Lot No. Mark: @  T go with C  ReduceQRCode

Result Color

Auto Detect Cassette: Manual

“About” reveals SW version and license key information

Refer [link](#)

# Setting

Capture | Database | User | Setting |

Rapid Test Data Export Folder :

Language :

Auto generate report

Only Show Group Profile

Mark C/T Frames at Result Image

Device Maintain

System Manager Settings

QR Code Light Setting

Data Transform  Elaborated T  Significant Digits  Background Lot No. Mark:   T go with C  ReduceQRCode

Result Color

Auto Detect Cassette:

Refer [link](#)

# Device Maintain

- **Reader Check**

- Purpose:

- Make sure the reader is working in a good condition

- Preparation

- Check chart
- Profile “Calibration\_XXX”

**\*The chart's format was made based on users' tests and comes with all kinds of types.**



# Reader Check

1

Go to “Setting” and click “Reader Check”

Device Maintain

Reader Check Reader Calibration

System Manager Settings

QR Code Light Setting 1st Light(for Strip)

Data Transform  Elaborated T  Significant Digits  Background  LotNumber Mark (Select it is '\_')  T go with C

Result Color

Auto Detect Cassette: Manual

2

Select the calibration profile then click “OK”

Factory-Profile

Only Show Group Profile

Mark C/T Frames at Result In

Device Maintain

Reader Check Rea

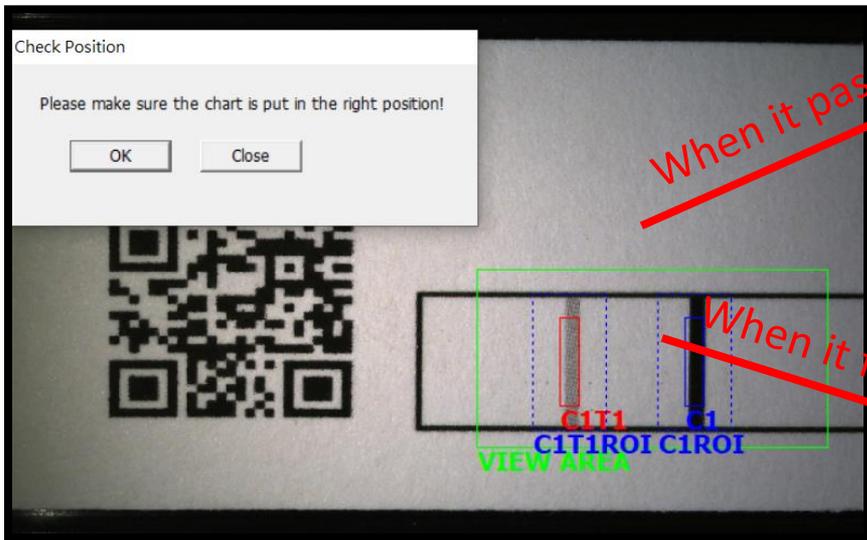
Profile Calibration-

OK Exit

# Reader Check

3

After making sure the chart is in the right position click "OK". Reader will start checking

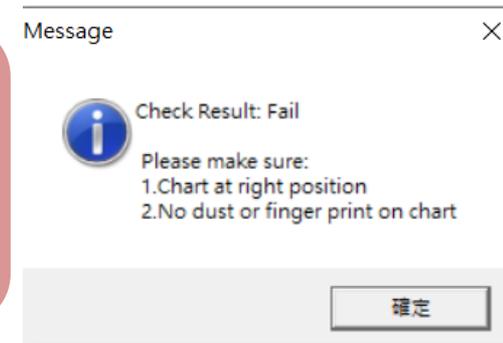


4

The reader is in good condition and is capable of analyzing tests

4

The reader might need to be calibrated. It's suggested users check the chart first.



# Reader Calibration

**\*Please consult the supplier before doing reader calibration. Calibrating the reader might affect the reader's intensity value setting.**

- Purpose:
  - When the reader check fails. It's required to calibrate the reader intensity detection

- Preparation:
  - Calibration chart
  - Profile “Calibration\_XXX”

**\*The chart's format was made based on users' tests and comes with all kinds of types.**

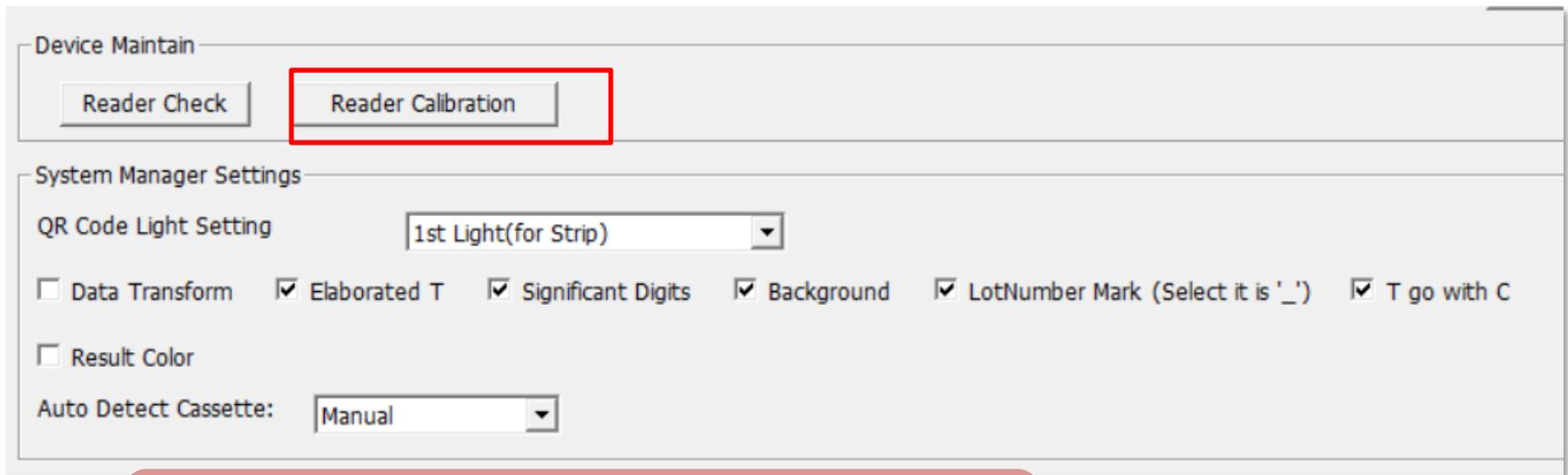


- Please note:
  - Keep the chart in a flat, dry, and dark place.
  - If it has obvious dust or damage at the calibration area or QR code, don't use it to calibrate

# Reader Calibration

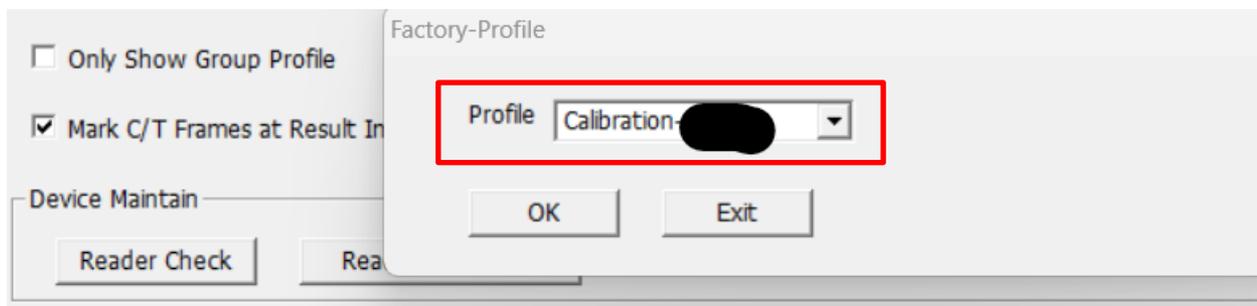
1

Go to “Setting” and click “Reader Calibration”



2

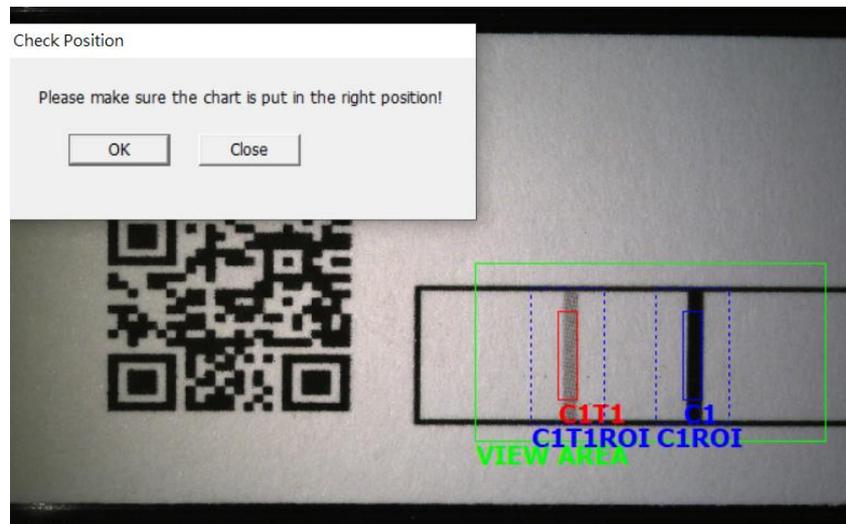
Select the calibration profile then click “OK”



# Reader Calibration

3

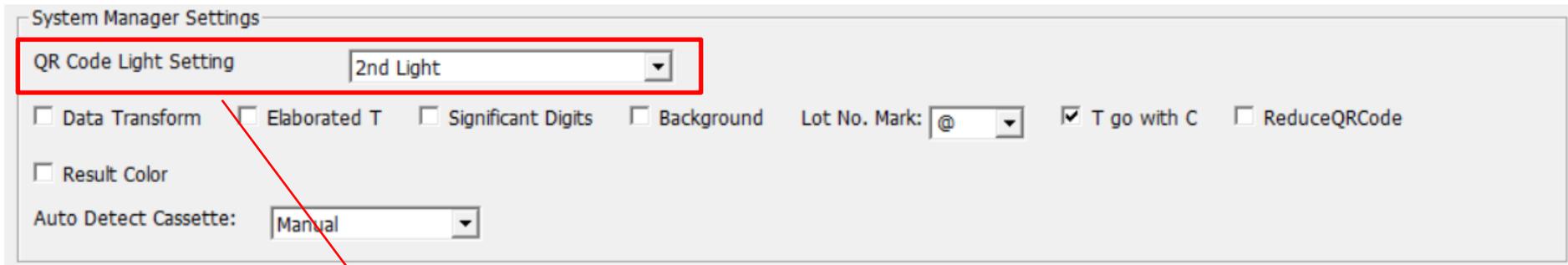
After making sure the chart is in the right position click “OK”. Reader will start checking



4

It will show the message “Success” when it’s done.

# System Manager Settings



System Manager Settings

QR Code Light Setting: 2nd Light

Data Transform    Elaborated T    Significant Digits    Background   Lot No. Mark: @    T go with C    ReduceQRCode

Result Color

Auto Detect Cassette: Manual

This setting is for users to choose a light source capturing the QR code. 3 light sources can be chosen

# System Manager Settings

System Manager Settings

QR Code Light Setting: 2nd Light

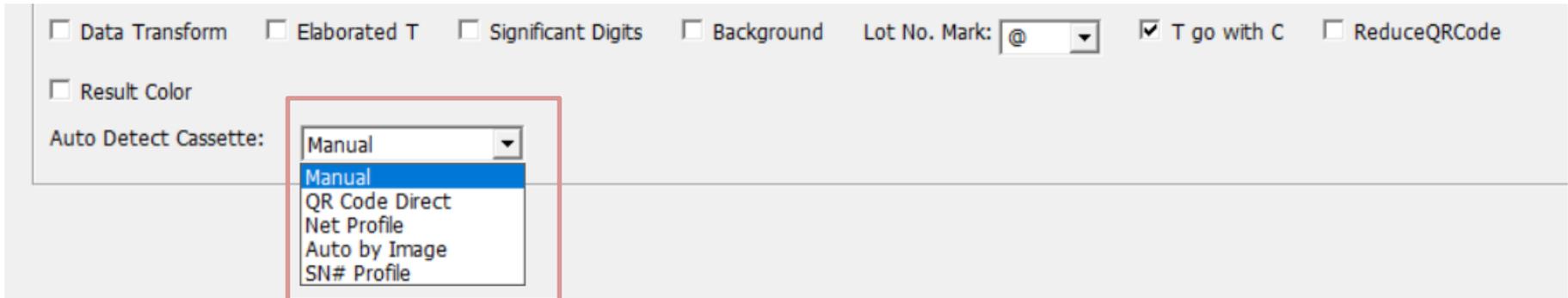
Data Transform    **1.** Elaborated T    **2.** Significant Digits    **3.** Background   Lot No. Mark:     **5.** T go with C    **6.** ReduceQRCode

**7.** Result Color

Auto Detect Cassette:

1. Elaborated T: When users tick the checkbox → the testing result won't show C-value, will show the concentration unit. **\*This feature is for certain users\***
2. Significant Digits: When users tick the checkbox → The result value will have decimal places.
3. Background: When users tick the checkbox → A warning will show up when the background of the C & T line is too dark.
4. LotNo. Mark: Users can choose "@", "-" or "none" to put between the product name and the lot number. **\*If you don't use this feature, choose "none".\***
5. T go with C: When users tick the checkbox → use the location of the C line to find the T line. **\*Tick it is recommended\* \*invalid when users select "mean" as integration method\***
6. Reduce QRCode: When users tick the checkbox → QRCode generated by RTV will be compressed. **\*This feature is for certain users\***
7. Result Color: When users tick the checkbox → the word "Positive" will be in red color when the test result is positive.

# System Manager Settings



The screenshot displays the 'System Manager Settings' interface. At the top, there are several checkboxes: 'Data Transform', 'Elaborated T', 'Significant Digits', 'Background', 'T go with C' (checked), and 'ReduceQRCode'. Below these is a 'Lot No. Mark:' dropdown menu with '@' selected. A 'Result Color' checkbox is also present. The 'Auto Detect Cassette:' label is followed by a dropdown menu with a red border. The dropdown menu is open, showing the following options: 'Manual' (highlighted in blue), 'QR Code Direct', 'Net Profile', 'Auto by Image', and 'SN# Profile'.

- Manual: Selecting tests that the users insert into the reader to analyze manually
- QR Code Direct: (E)RTV receiving test strip information that the users insert into the reader by scanning the QR Code
- Net Profile: (E)RTV receiving test strip information that the users insert into the reader from the internet
- Auto by Image: (E)RTV receiving test strip information that the users insert into the reader by scanning images
- SN# Profile: (E)RTV receiving test strip information that the users insert into the reader by scanning the serial numbers

# How To Create The Test QR Code

# Build the QR Code of the Test

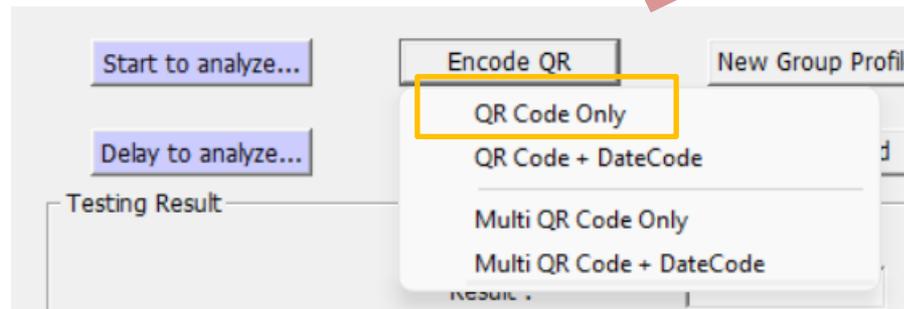
**\*Please remember to measure the size of the blank space on the cassette to determine how big the QR code will be printed\***

## Step. 1 to Know the test profile's QR data size



1. Select the profile you're making the QR of.

2. Click "Encode QR"

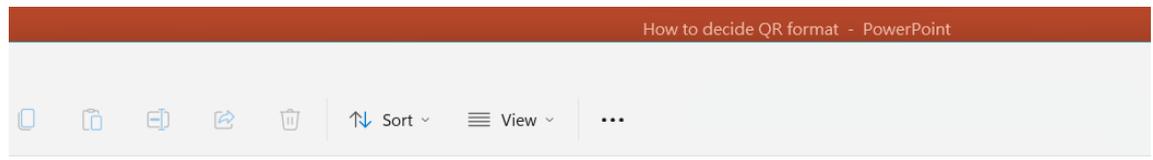


3. Click "QR Code Only"

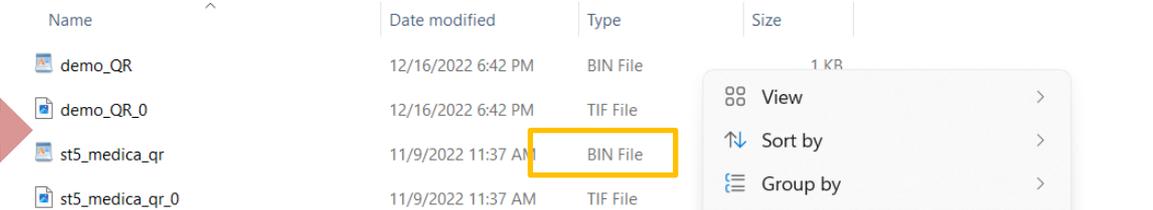
This PC > Documents > RTV\_Ethernet > qrcode



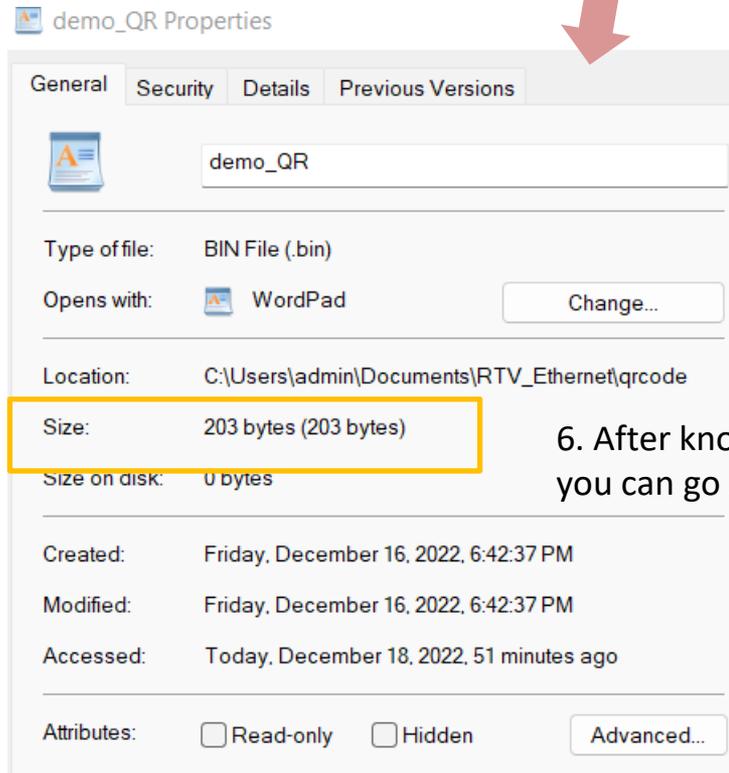
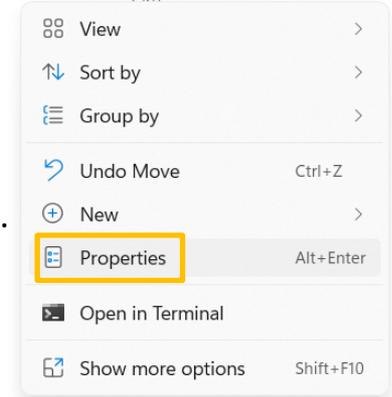
4. Go to the qrcode folder



This PC > Documents > RTV\_Ethernet > qrcode

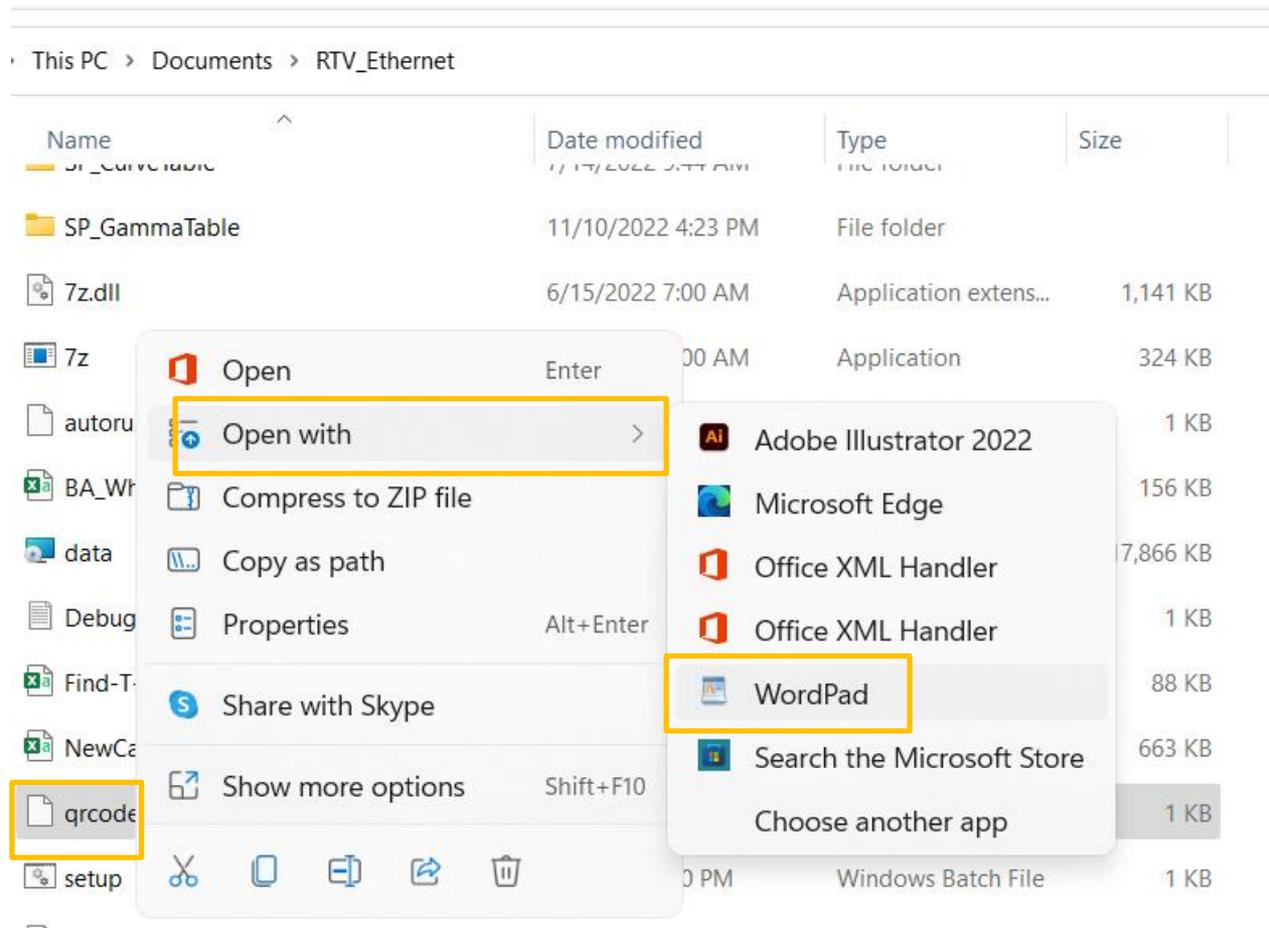


5. Select the "BIN File" of the QR code. And check on its properties.

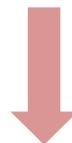


6. After knowing the size of the QR, you can set its format.

## Step. 2 modify the default setting to fit the tests' QR



1. Click on “qrcode” and open it with WordPad or Notepad.



```
<?xml version="1.0f" ?>
<root>
  <PerChartCountH Value="2" />
  <PerChartCountW Value="3" />
  <SpliteLineH Value="16" />
  <SpliteLineW Value="12" />
  <DataSize Value="250" />
  <LineColorH Value="1" />
  <LineColorW Value="0" />
  <ThresholdStart Value="128" />
  <ThresholdEnd Value="32" />
  <ThresholdDelta Value="4" />
  <RotateMax Value="10" />
  <RotateDelta Value="1" />
  <ExtFactor Value="20" />
  <Debug Value="False" />
</root>
```

Numbers of QR Codes vertically

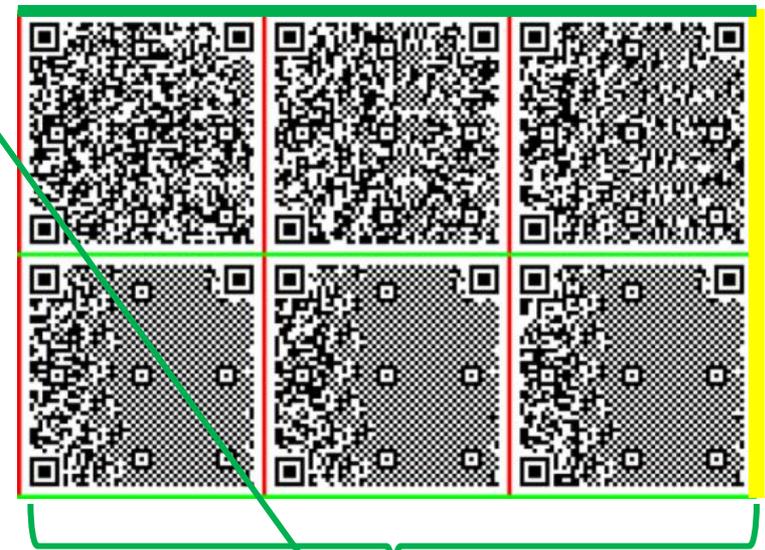
\*E.g. for one QR code, set both values 1 \*

Number of QR Codes horizontally

Each QR Codes data size

2

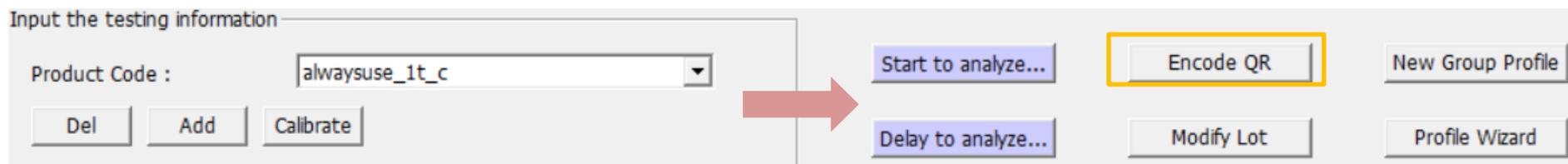
3



2. Modify the above 3 parameters if needed

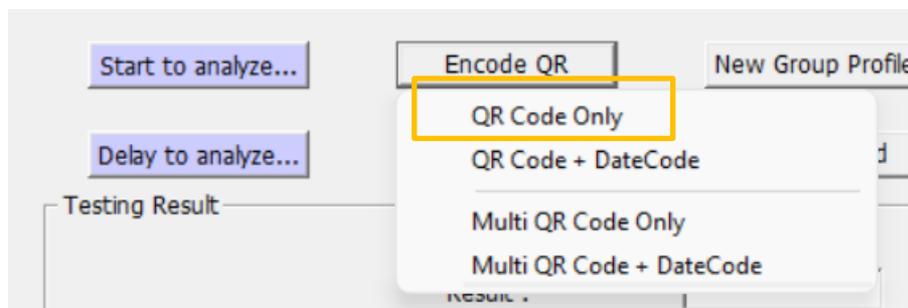
# Encode the QR Code and Print it Out

## Step. 1 go to RTV or ERTV



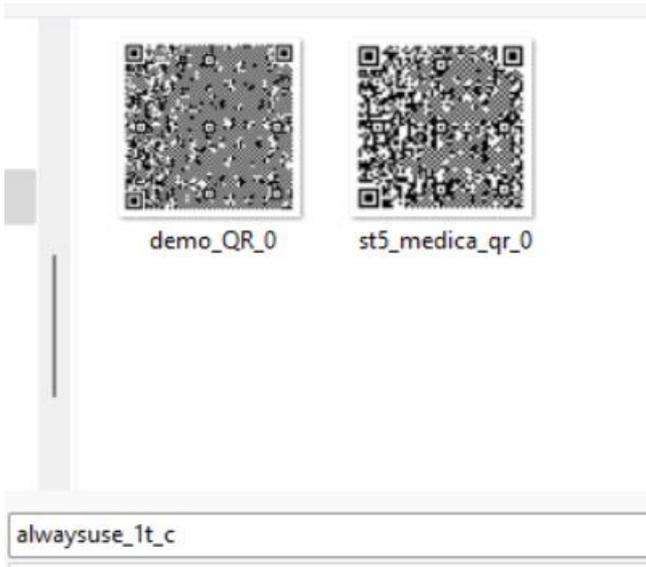
1. Select the product code you're making the QR of.

2. Click "Encode QR"

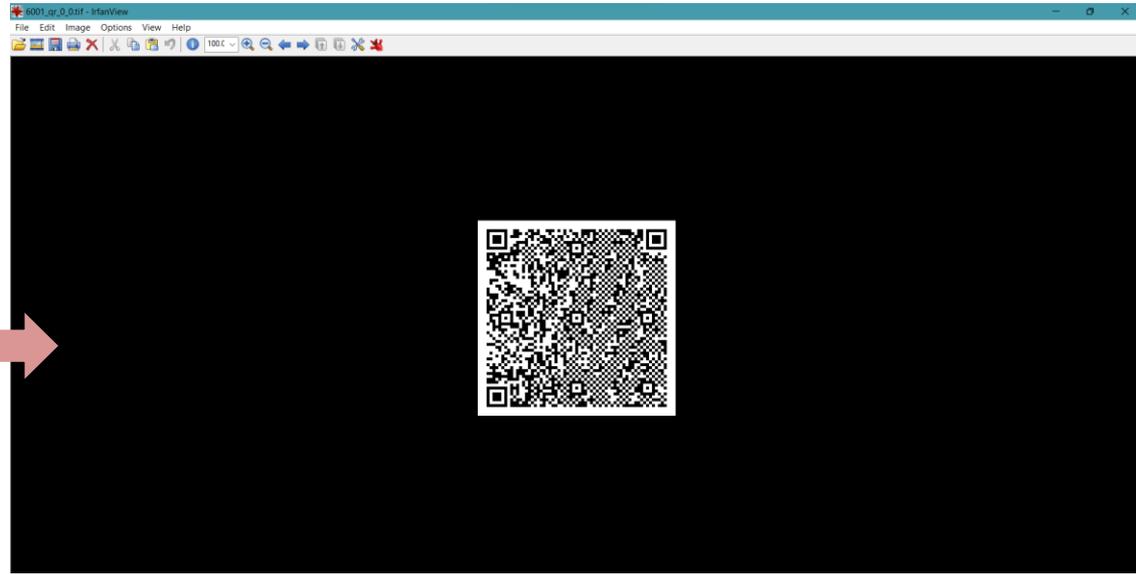


3. Click "QR Code Only"



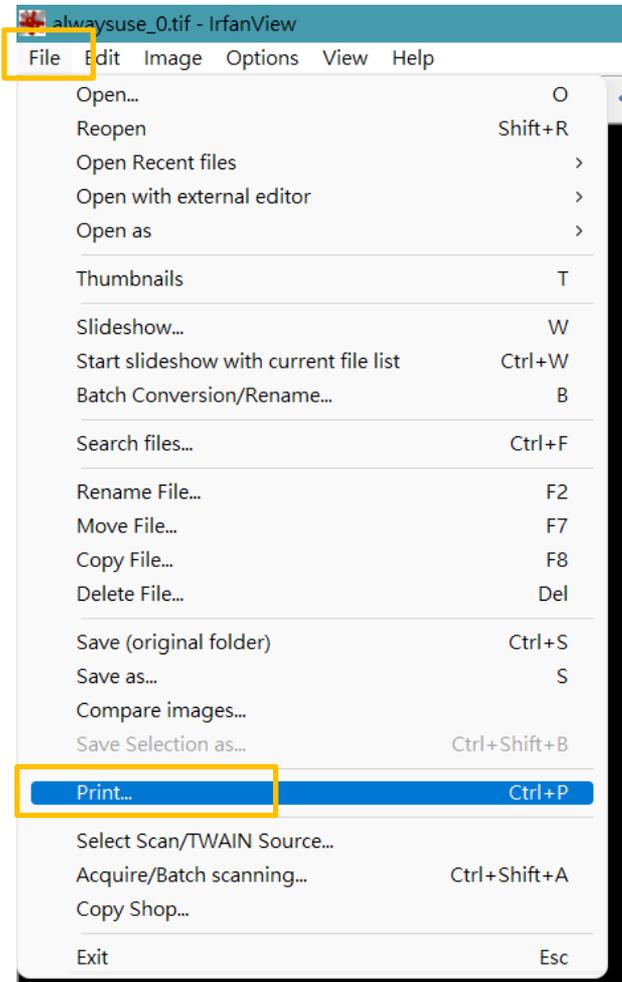


4. Type in QR's name and click "Save"

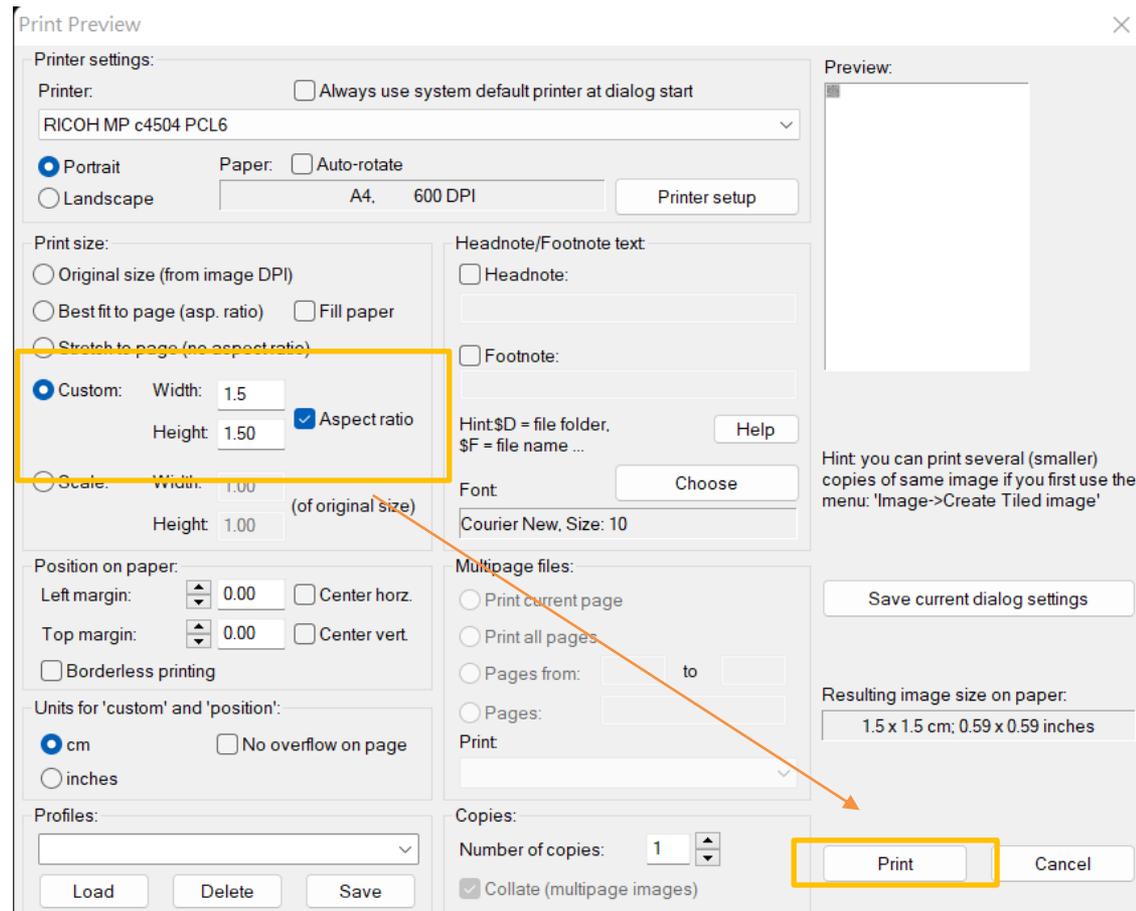


5. You can get **Photoshop or IrfanView** to print the QR code. Link to download IrfanView: <https://www.irfanview.com/>

**\*Here we use Irfan View to demonstrate\***



6. Click "Print"



7. Set the area of the QR, and print the QR code.

**\*The area not being smaller than 1.5x1.5cm is suggested.**

# Some Tips

- **Sizes**

- **Physical size: Not smaller than 1.5cm x 1.5cm**
- **Data size: Maximum 500 bytes per QR code**

- Expect the data size is smaller than 500 bytes. You can downsize “Datasize value” [link](#) first. Then you can downsize the physical size of the QR.
- If the printer you use is really good, you can try to downsize the QR as well.

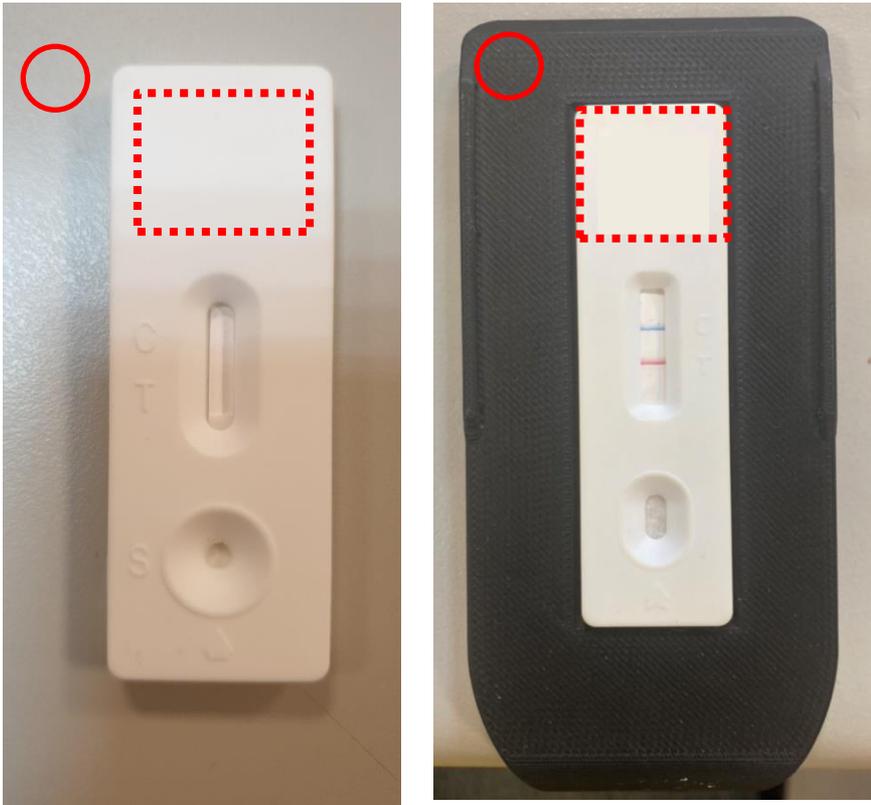
PIE tested printer  
Printer: Canon PIXMA MG3070  
Color Bubble Jet  
Resolution setting: 600 dpi or higher

Suggested Printing SW: IrfanView (Freeware)  
Output size programmable  
No edge smoothing

If the printer you use is really good, you can try to set the data size to be bigger than 500 bytes.

## • Quantity

Cassette's blank space for QR code label .**\*Must leaves some space for the joint between the cassette and the reader, unless its been put into an adpater\***



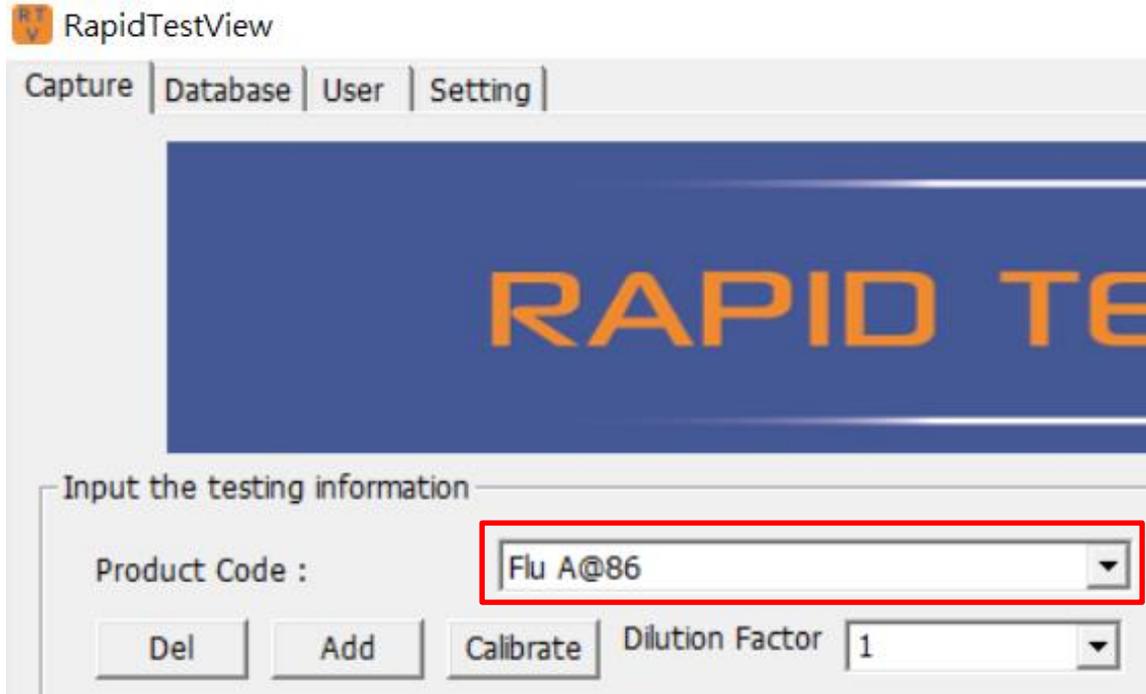
- When the test's QR data size is >500 bytes-create more than one QR code by modifying "PerChartCountH Value" and "PerChartCountW Value" refer to [link](#) **\*Remember to check if there are enough spaces on the cassette.**

**\* if there is not enough space, consider using a cassette just to put the QR code labels on. This means this certain cassette cannot be used for LFT. It's only for the reader to recognize the QR code\***

# **Step By Step Tutorial: Creating Your First Test Profile**

# Basic Settings Of The New Test Layout

## Step. 1 Select an existing profile to modify



Choose the default profile template. Select any other preset profile in product code column.  
Please contact supplier if yours don't exist any profile in product code column.

## Step. 2 Enter “Profile Wizard” to modify profile

Click “Profile Wizard” to initiate the Profile Wizard editor.  
The software will show a dialog as below.

Profile Wizard

The Profile Wizard dialog box contains the following fields and controls:

- Product Code:** Text input field containing "Flu A@86".
- None:** Two dropdown menus, both set to "None".
- Show Name:** Text input field containing "Flu A".
- T Count:** Dropdown menu set to "1".
- Color Mode:** Dropdown menu set to "RGB".
- Light Source:** Dropdown menu set to "Epi White".
- Standard Mod:** Dropdown menu set to "Standard Mod".
- Select ROI:** Dropdown menu set to "View Area".
- 1D:** Dropdown menu set to "1D".
- X:** Text input field containing "1633".
- Y:** Text input field containing "726".
- Width:** Text input field containing "783".
- Height:** Text input field containing "569".
- Reserved:** Two empty text input fields.
- Buttons:** "Apply ROI Settings", "Confirm Highlighted Area", and "Refine".
- Cassette Type:** Text input field containing "QC".
- Calibrate Target:** Radio buttons for "Blank Strip" and "None" (selected).
- BaseGap:** Text input field containing "0.0" with the label "(C/T ROI Width ratio)".
- Buttons:** "Save" and "Exit".

## Step. 3 Rename and set parameters

Profile Wizard

1 Product Code: Flu A@86    None    None

2 Color Mode: RGB    3 Show Name: Flu A    T Count: 1

4 Light Source: Epi White    5 Standard Mod

Select ROI: View Area    1D

X	Y	Width	Height
1633	726	783	569
Reserved	Reserved		

Apply ROI Settings    Confirm Highlighted Area    Refine

Cassette Type: QC

Calibrate Target:  Blank Strip     None

BaseGap: 0.0 (C/T ROI Width ratio)

Save    Exit

① Rename Product Code: The suggested format is 3 segments connected by a dash “-” symbol and a day code but you can define the segment’s contents as you want to make a quick sorting.

Example: [Company Name]-[Part No.]-[Application]\_[Day Code or other code]

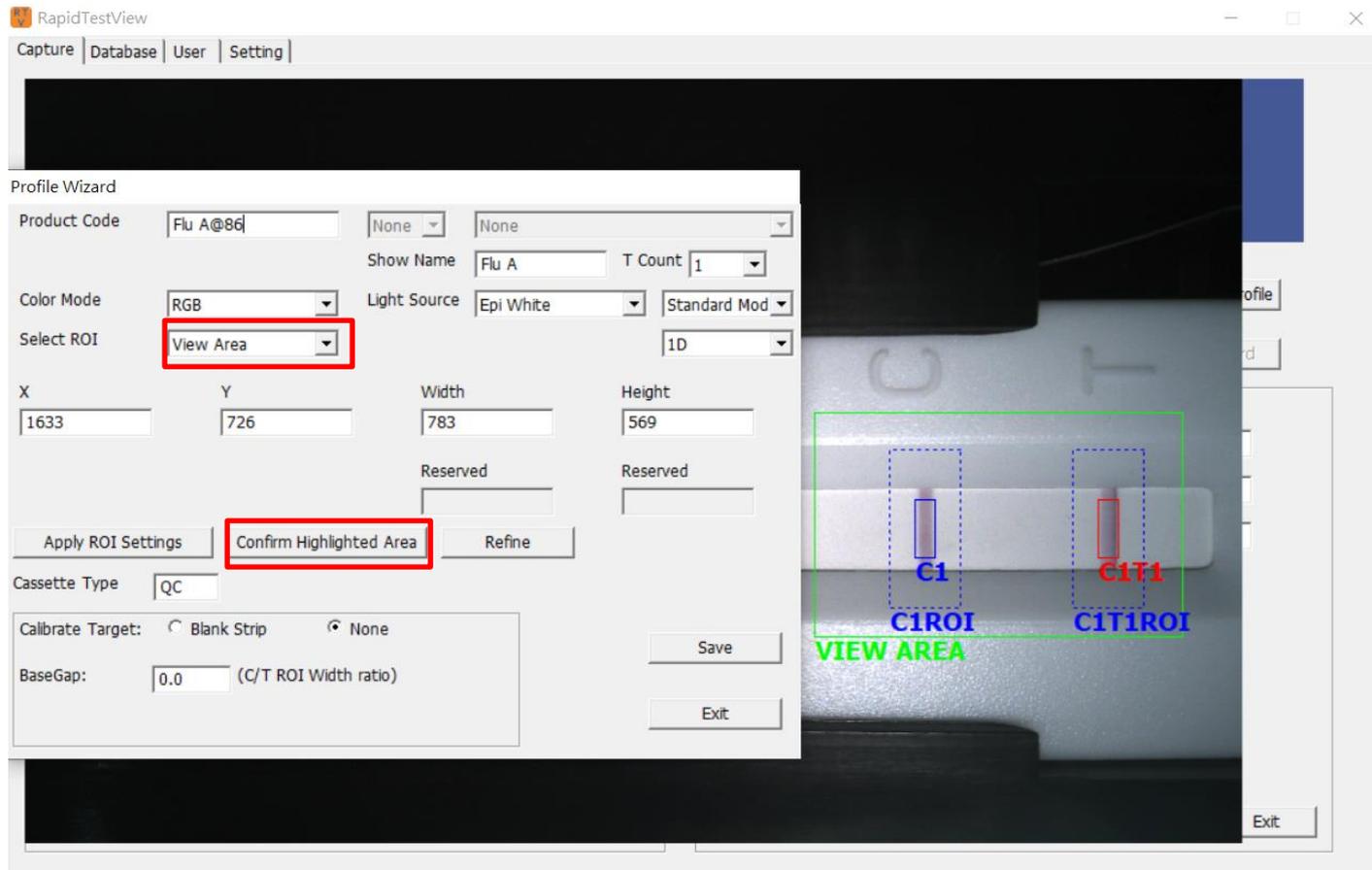
② Set Color Mode: “Default” is recommended. Please consult with the supplier before the change.

③ Show Name: Input application name. T Count: Test line numbers

④ Light Source: Epi White - For Colloidal Gold. EPI UV for fluorescent applications. (The Device Must support UV function)

⑤ Set The Sampling: Standard Mode - Sample 1 time for signal calculation. Quality Mode - Sample 8 times for signal calculation. Excellent Mode - Sample 16 times for signal calculation.[For Colloidal Gold applications]

## Step. 4 Set view area ROI (View Area is image area)



1. Set the "Select ROI" to "View Area". Use mouse cursor drag a highlight area on the image viewer.
  2. Click "Confirm Highlighted Area" to apply the area as "View Area".
- The View Area will be displayed on Screen and Test Report as the result image.

## Step. 5 Set C (control line) detection area

Profile Wizard

Product Code: Flu A@86    None    None

Show Name: Flu A    T Count: 1

Color Mode: RGB    Light Source: Epi White    Standard Mod

Select ROI: **1** C1    1D

X: 1793    Y: 820    **3** Width: 150    Height: 400

C1 Width: 42    C1 Height: 146

Apply ROI Settings    **2** Confirm Highlighted Area    Refine

Cassette Type: QC

Calibrate Target:  Blank Strip     None

BaseGap: 0.0 (C/T ROI Width ratio)

Save    Exit

**1** Set the “Select ROI” to “C1”. Use mouse cursor drag a highlight area on the C line area.

**2** Click “Confirm Highlighted Area” to apply the area as “C1”

Tips : To fine adjust the Area Size and Position, simply input the number in X,Y, C1 Width,C1 Height then click “Apply ROI Settings”.

**3** Width & Height: This is setting of signal search area. It is shown as above blue dotted line area. SW will search image signal within this area.

## Step. 6 Set T (test line) detection area

Profile Wizard

Product Code

Show Name  T Count

Color Mode  Light Source

Select ROI **①**

C1T1 Ofs X  C1T1 Ofs Y  Width  Height

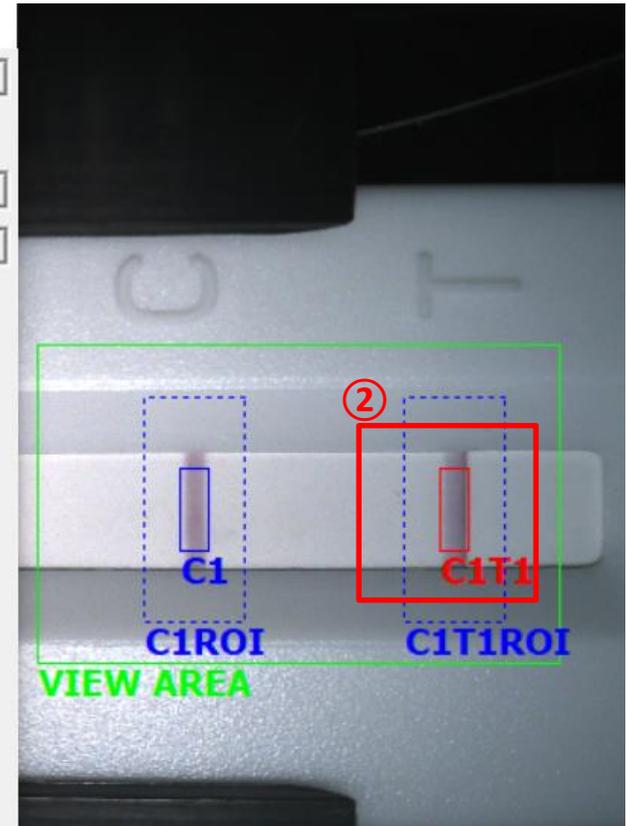
C1T1 Width  C1T1 Height

**③**

Cassette Type

Calibrate Target:  Blank Strip  None

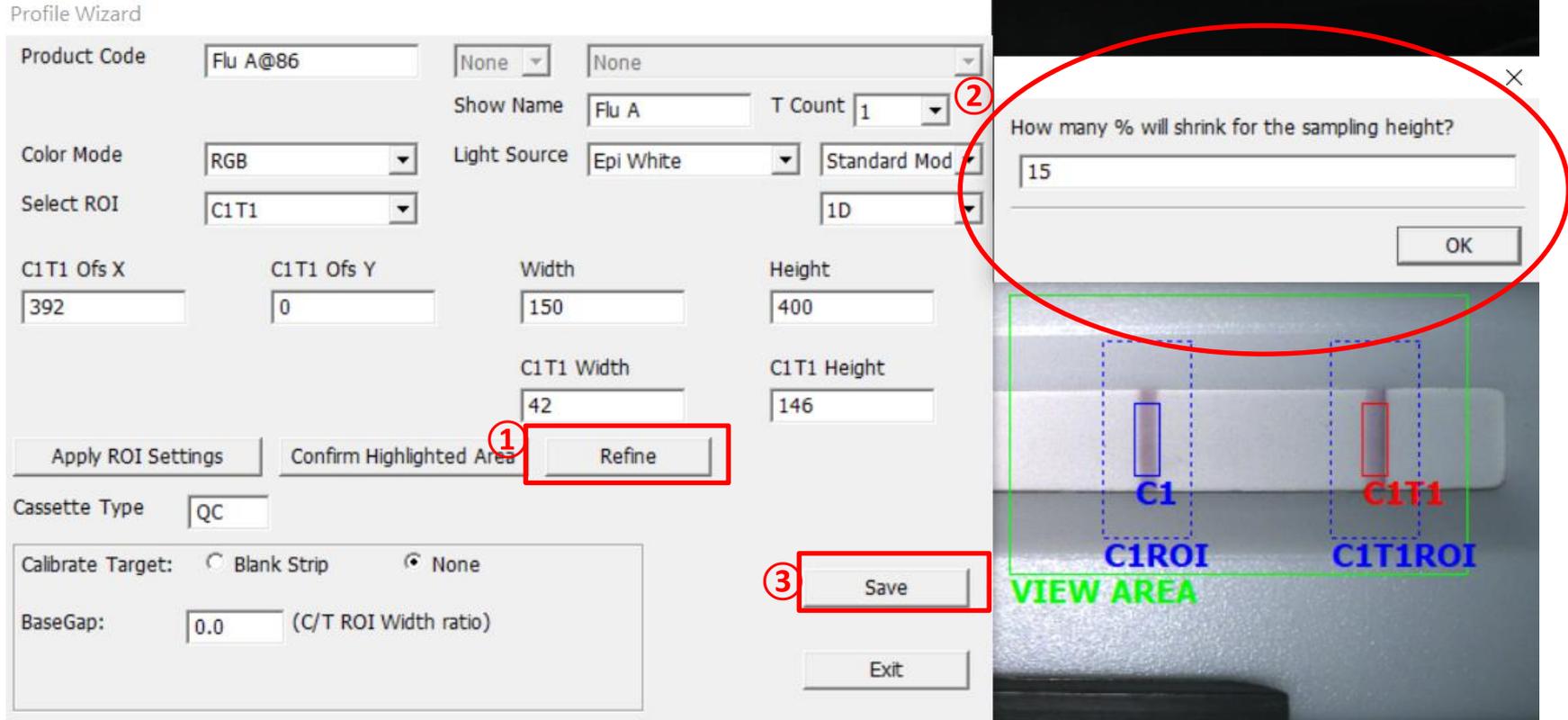
BaseGap:  (C/T ROI Width ratio)



- ① Set the “Select ROI” to “C1T1”.
- ② Use mouse cursor drag a highlight area on the T line area.
- ③ Click “Confirm Highlighted Area” to apply the area as “C1T1”

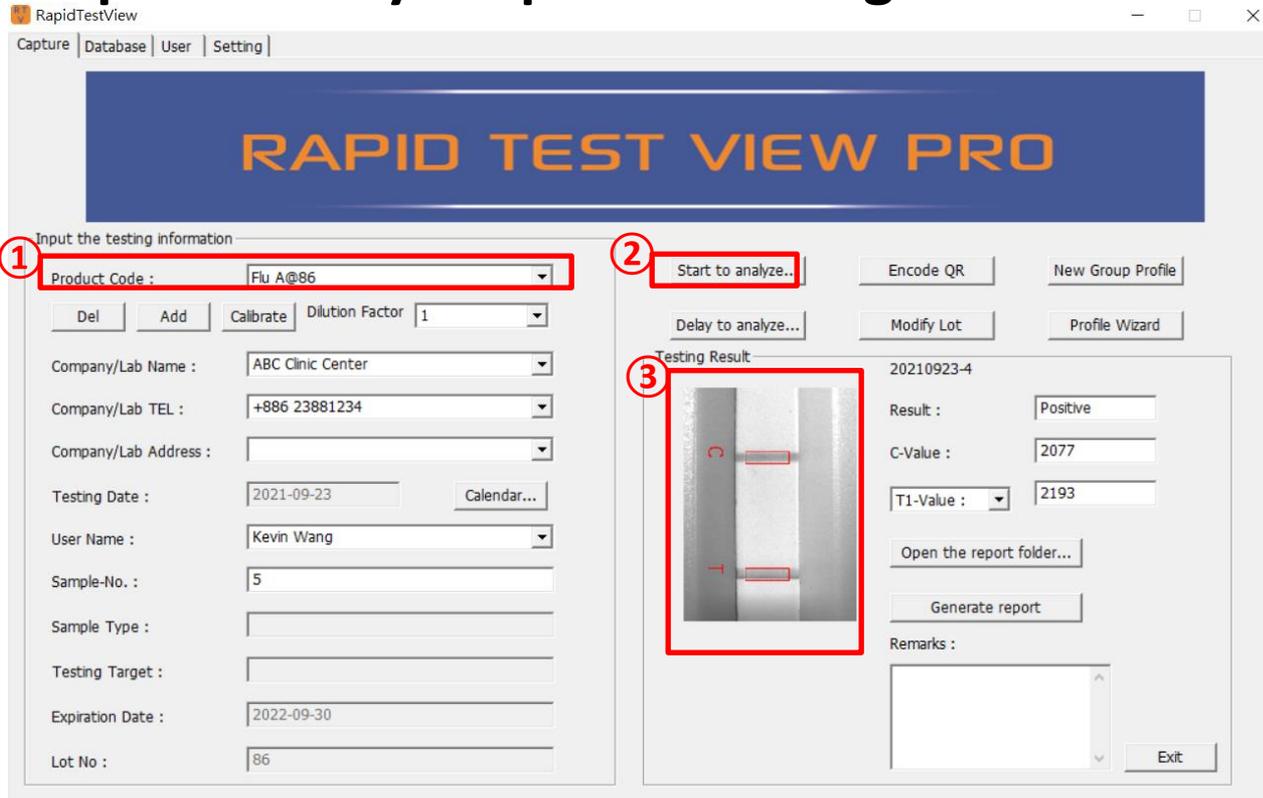
Tips. To fine adjust the Area Size and Position, simply input the number in CT1T Ofs X, C1T1 OfsY, C1T1 Width,C1T1 Height, then click “Apply ROI Settings”.

# Step. 7 Refine settings



- ① After finish View Area, C, T line setting. Click “Refine”
- ② SW will ask you how many % shrink for height. 15% is recommended. So input 15 and press OK. SW will automatically fine-tune your setting of C, T detection area.
- ③ If you are satisfied with refine result, click “Save” to save your profile setting.

# Step. 8 Check your profile setting



Now, check if the newly created profile can be executed.

- ① Select the Product Code with the profile you saved.
- ② Click “Start to analyze” button to perform an analysis.
- ③ Check the strip image is created and the highlighted areas of C and T line are correct.

If the profile can be executed, you will see C-Value and T-Value are reported.

At the moment, don't worry about “Result” reported, because you need to set something in “Modify Lot” function to make it output correct data.

# Strip Lot Information & Result Calculation Formula

## Step. 1

RapidTestView

Capture | Database | User | Setting

### RAPID TEST VIEW PRO

Input the testing information

1 Product Code : Flu A@86

Del Add Calibrate Dilution Factor 1

Company/Lab Name : ABC Clinic Center

Company/Lab TEL : +886 23881234

Company/Lab Address :

Testing Date : 2021-09-23 Calendar...

User Name : Kevin Wang

Sample-No. : 5

Sample Type :

Testing Target :

Expiration Date : 2022-09-30

Lot No : 86

Start to analyze... Encode QR New Group Profile

Delay to analyze... 2 Modify Lot Profile Wizard

#### Testing Result

20210923-4

Result : Positive

C-Value : 2077

T1-Value : 2193

Open the report folder...

Generate report

Remarks :

Exit

Check the newly created profile if it can be executed and correctly analyze your test strips.

- 1 Select the Product Code with the profile you saved in Phase-1.
- 2 Click “Modify Lot” button to open Lot Information / Result setting dialog.

## Step. 2

Modify Lot

Product Code : Flu A@86

Lot No : 86      Expiration Date : 2022-09-30      Calendar...

Analyte:      Sample Type :

Invalid Condition      C <      AND      T <

Background 0 (Range:0-255)      Incubation Period 1

Dilution Statement  
Menu(Max. 6) 1      Factor: 1.000      Inc.1      Del

Qualitative Statement  
Statement Positive      Clear  
Formula T1>1500  
Result Text Positive

Quantitative Mapping Curve  
Bias 0      Result Significant Digits: 5  
Result Formula T1      Single  
Concentration 0.00      Read      0.00      Add

Curve Interval Linear      Log      Reset

4PL Parameters  
Working Range: Concentration 0.000000 - 0.000000  
a 0.000000      b 0.000000      c 0.000000      d 0.000000

Save      Cancel

**Lot No** - Test kit lot number.

**Expired Date** - The Expiration Date of the test kit.

The software will give out a warning when the test kit expires.

**Analyte** - The analyte that the test kit will be analyzing.

**Sample Type** - Testing sample type required by this test kit.

**Invalid Condition** - Test kit failure condition setting.

**Background Setting** – It's a tool for users to notice if there's some unbalanced color in the background between C & T line. If the result is under the number you set, a note will show up.

**Incubation Period** – The delay time to analyze.

## Step. 3

Modify Lot

Product Code : Flu A@86

Lot No : 86 Expiration Date : 2022-09-30 Calendar...

Analyte: Sample Type :

Invalid Condition C < AND T <

Background 0 (Range:0-255) Incubation Period 1

**Dilution Statement**

Menu(Max. 6) 1 Factor: 1.000 Inc.1 Del

Qualitative Statement

Statement Positive Clear

Formula T1>1500

Result Text Positive

Quantitative Mapping Curve

Bias 0 Result Significant Digits: 5

Result Formula T1 Single

Concentration 0.00 Read 0.00 Add

Curve Interval Linear Log Reset

4PL Parameters

Working Range: Concentration 0.000000 - 0.000000

a 0.000000 b 0.000000 c 0.000000 d 0.000000

Save Cancel

Why dilute?

Various specimens may have different active concentrations with the same analyte.

It's a setting for users to set their dilution.

Dilution Menu(6 items)

↑Used by users to define the names of the specimens. (Up to 6 items)

Factor : 1.000

↑Used by users to define their dilution factor.

✘Certain “Dilution Statement” only corresponds to certain “Qualitative Statement”.

## Step. 4

Modify Lot

Product Code : Flu A@86

Lot No : 86 Expiration Date : 2022-09-30

Analyte: Sample Type :

Invalid Condition C <  AND T <

Background 0 (Range:0-255) Incubation Period 1

Dilution Statement  
Menu(Max. 6) 1 Factor: 1.000

Qualitative Statement  
Statement Positive   
Formula T1>1500  
Result Text Positive

Quantitative Mapping Curve  
Bias 0 Result Significant Digits: 5  
Result Formula T1 Single  
Concentration 0.00  0.00

Curve Interval Linear

4PL Parameters  
Working Range: Concentration 0.000000 - 0.000000  
a 0.000000 b 0.000000 c 0.000000 d 0.000000



Modify Lot

Product Code : Flu A@86

Lot No : 86 Expiration Date : 2022-09-30

Analyte: Sample Type :

Invalid Condition C <  AND T <

Background 0 (Range:0-255) Incubation Period 1

Dilution Statement  
Menu(Max. 6) 1 Factor: 1.000

Qualitative Statement  
Statement Empty   
Formula  
Result Text

Quantitative Mapping Curve  
Bias 0 Result Significant Digits: 5  
Result Formula T1 Single  
Concentration 0.00  0.00

Curve Interval Linear

4PL Parameters  
Working Range: Concentration 0.000000 - 0.000000  
a 0.000000 b 0.000000 c 0.000000 d 0.000000

When your application requires a quantitative value, you will need to clear all Judgement Statements in the “Result Statement Settings” area. Please select the statement selection and click “Clear” to clear all statements until it shows “Empty”.

## Step. 5

Modify Lot

Product Code : Profile\_W@1

Lot :  Expired Date : 20181231

Analyte : Test Type : DSA

Invalid Condition : C < 10 AND T < 10

BackGround Setting: 0 (Range:0-255)

Dilution Statement  
Dilution Menu(6 items)  Factor : 1.000

Qualitative Statement  
Statement Empty   
Formula   
Result Text

Quantitative Mapping Curve  
Bias 0 Result Significant Digits: 5  
Result Formula T1   
Concentration 0.00  0.00

Interval Linear

4PL Parameters  
Working Range : Concentration 0.000000 - 0.000000  
a 0.000000 b 0.000000 c 0.000000 d 0.000000



Modify Lot

Product Code : Flu A@86

Lot No : 86 Expiration Date : 2022-09-30

Analyte:  Sample Type :

Invalid Condition C <  AND T <

Background 0 (Range:0-255) Incubation Period 1

Dilution Statement  
Menu(Max. 6) 1 Factor: 1.000

Qualitative Statement  
Statement Positive   
Formula T1>1500  
Result Text Positive

Quantitative Mapping Curve  
Bias 0 Result Significant Digits: 5  
Result Formula T1/C1   
Concentration 0.00  0.00

Interval Linear

4PL Parameters  
Working Range: Concentration 0.000000 - 0.000000  
a 0.000000 b 0.000000 c 0.000000 d 0.000000

Input the result value calculation formula in the “Result Formula” field. And click “save” to save current settings. See the next page for details.

## Additional Instruction On How To Use Result Formula

The available KEYWORDS are

C1 - The measured value of the C area.

T1 - The measured value of the T area.

For a competition assay, the recommended formula is “T1/C1”.

For a direct colorimetric assay, the recommended formula is “T1” or “T1/C1” if desired.

The Result Formula can be input with a simple mathematical equation.

The available calculation symbols are,

- + Add,
- Subtract,
- \* Multiply, e.g.  $T1*100$
- / Divide,
- () Priority Calculation.

# Create A Standard Curve

Quantitative Mapping Curve

Bias: 0      Result Significant Digits: 5

Result Formula: T1/C1      Single

Concentration: 0.00      Read      0.00      Add

Curve: Interval Linear      Log      Reset

4PL Parameters

Working Range : Concentration 0.000000 - 0.000000

a 0.000000    b 0.000000    c 0.000000    d 0.000000

Save      Cancel

- For some applications you may need to create a standard curve to calculate the values of unknown samples to a specified unit. You can generate a standard curve by using the input functions shown above.
- These functions will use the signal values calculated by the “Result Formula” and plot a curve with their corresponding concentrations.
- Before you start this phase, we suggest you prepare the following test samples.
- Test samples of maximum/minimum concentrations for 3+ pcs (for quantitative measurement, at least 5 concentrations are recommended. Each concentration with at least three replicates.
- If you don't need this function, you can just skip this phase.

**\*Each profile can only set one standard curve only. If users need to build more than one curve, please create a group profile. Refer to [link](#).\***

# 1<sup>st</sup> & The Most Recommended Way To Establish A Standard Curve

RapidTestView(Demo Mode)

The screenshot displays the RapidTestView software interface. On the left is a data table with columns: No., Date, Time, Profile, DeviceSN, and SampleNo. The table contains 28 rows of test data. On the right are three configuration panels: Dilution Statement, Qualitative Statement, and Quantitative Mapping Curve. The Quantitative Mapping Curve panel is highlighted with red boxes and numbers 1, 2, and 3, indicating the steps for setting up a standard curve. The 'Result Formula' is set to 'T1', 'Concentration' is '0.00', and the unit is 'ng/ml'. The 'Add' button is also highlighted.

No.	Date	Time	Profile	DeviceSN	SampleNo
5	2021-01-14	13:11:54	20201127卡...	19158S50A0...	5
4	2021-01-14	10:54:13	20201127卡...	19158S50A0...	4
3	2021-01-14	10:46:33	20201127卡...	19158S50A0...	3
2	2021-01-14	10:44:01	20201127卡...	19158S50A0...	2
1	2021-01-14	10:34:16	Profile_UV@1	19158S50A0...	1
12	2021-01-08	15:56:40	Profile_UV@1	19158S50A0...	12
11	2021-01-08	15:17:40	Profile_UV@1	19158S50A0...	11
10	2021-01-08	14:54:15	Profile_UV@1	19158S50A0...	10
9	2021-01-08	14:51:59	Profile_UV@1	19158S50A0...	9
8	2021-01-08	14:27:41	Profile_UV@1	19158S50A0...	8
7	2021-01-08	13:31:04	Profile_UV@1	19158S50A0...	7
6	2021-01-08	13:28:11	Profile_UV@1	19158S50A0...	6
5	2021-01-08	11:51:07	Profile_UV@1	19158S50A0...	5
4	2021-01-08	11:50:46	Profile_UV@1	19158S50A0...	4
3	2021-01-08	11:24:16	Profile_UV@1	19158S50A0...	3
2	2021-01-08	11:00:33	Profile_UV@1	19158S50A0...	2
1	2021-01-08	10:30:42	Profile_UV@1	19158S50A0...	1
2	2020-12-24	14:29:56	Profile_W@1	2033BA58A0...	2
1	2020-12-24	14:26:26	Profile_W@1	2033BA58A0...	1
2	2020-12-24	11:10:34	Profile_W@1	2033BA58A0...	2
1	2020-12-24	11:08:28	Profile_W@1	2033BA58A0...	1
2	2020-12-24	09:47:24	Profile_W@1	2033BA58A0...	2
1	2020-12-24	09:47:01	Flu B	2033BA58A0...	1

1. Go into the Database, and export all the test data you need into a CSV profile.
2. Use Excel to open the profile, and then you can calculate for example the T/C value for each concentration.
3. Go to Modify Lot and ① fill in the value you calculated & ② the unit (ppb, ng/ml...etc.) for your result.
4. ③ Click on “Add”, and then finish all your concentration step by step like the description above.
5. Hereafter, you can choose any standard curve you’d like to establish.

※ The value of standard curve can be set for T1, T1/C1, T1-C1...etc.

# The Other Way To Establish A Standard Curve (5 steps)

## Step. 1 Set basic information

Quantitative Mapping Curve

Bias: 0      Result Significant Digits: 5

② Result Formula: T1/C1      Single

Concentration: 0.00      ③      Read      0.00      Add

Curve: Interval Linear      Log      ①      Reset

4PL Parameters

Working Range : Concentration      0.000000      -      0.000000

a: 0.000000      b: 0.000000      c: 0.000000      d: 0.000000

Save      Cancel

Make sure the Product Code and each Lot information field are correct.

- ① Click “Reset” button to remove old curve data before you perform a new curve creation.
- ② Enter the desired “Result Formula”.
- ③ Input the “unit” (for example, ppb or ng/ml....) of new values that will be calculated.

## Step. 2 Read the sample of the same concentration

The screenshot shows the 'ST VIEW PRO' software interface. On the left, the 'Quantitative Mapping Curve' dialog is open, with the 'Concentration' field set to 0.00 (marked with a red circle 1) and the 'Read' button highlighted (marked with a red circle 2). The 'Result Formula' is T1/C1. On the right, the 'Testing Result' window shows a 'Result' of 'Positive' (marked with a red circle 3) and a 'C-Value' of 1667. The 'Testing Result' window also displays an image of a test strip with a red line and a 'C' and 'T' marker.

Move the Modify Lot dialog to the left like the picture shown above.

- ① Input the concentration values. The concentration values should be corresponding to the samples you insert into Reader later.
- ② Insert the standard test sample of the same concentration to Reader and click “ Read” to read the value.
- ③ Check if the reading value and the resulting image are correct and confirm the Question Dialog.
- ④ Insert the next sample of the same concentration. Repeat the reading and check until all replicates are read and added to the plot.

## Step. 3 Read the Sample of the next concentration

The screenshot displays the ST VIEW PRO software interface, divided into two main panels. The left panel is the configuration screen, and the right panel is the testing result screen.

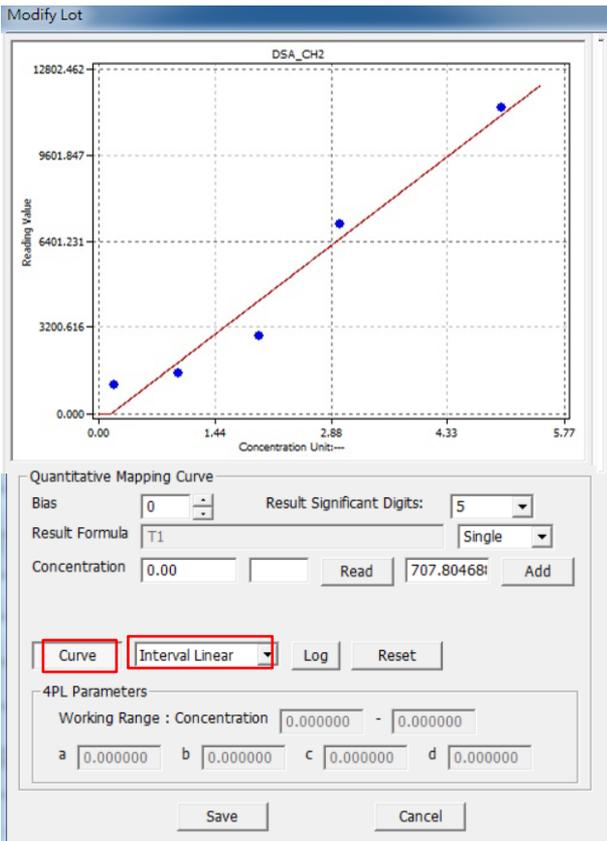
**Configuration Panel (Left):**

- Product Code: ALPS@0
- Lot No: 0001, Expiration Date: 2024-07-25
- Analyte: FLU, Sample Type: saliva
- Invalid Condition: C < [ ] AND T < [ ]
- Background: 0 (Range: 0-255), Incubation Period: 1
- Dilution Statement: Menu (Max. 6): menu, Factor: 1.000, Inc.1, Del
- Qualitative Statement: Statement: Negative, Formula: T1 < 1000, Result Text: Negative, Text 2: PASS
- Quantitative Mapping Curve: Bias: 0, Result Significant Digits: 1, Result Formula: T1/C1 (circled 1), Concentration: 0.00, Read (circled 2), 0.00, Add
- 4PL Parameters: Working Range: Concentration 0.000000 - 0.000000, a: 0.000000, b: 0.000000, c: 0.000000, d: 0.000000

**Testing Result Panel (Right):**

- Start to analyze..., Encode QR, New Group Profile
- Delay to analyze..., Modify Lot, Profile Wizard
- Testing Result: 20221003-2
- Result: Positive (circled 3)
- C-Value: 1667
- T1-Value: 2156
- Open the report folder..., Generate report
- Remarks: [ ]
- Load Image, Exit

- ① Input next concentration value
- ② Insert the test sample of the same concentration to Reader and click “Read” to read the value.
- ③ Check if the reading value and the result image are correct and confirm the Question Dialog.
- ④ Insert next sample of the same concentration. Repeat the reading until all replicates are read and added. Repeat all these steps until standard strips of all concentrations are read and added to the plot.



4PL(input)

Click on “Curve” to show the standard curve you just created. You can select different curve fitting functions. There are 4 curve fitting functions.

1. Interval Linear – Using interpolation function for curve fitting.
2. LinearReg. – Using linear regression function for curve fitting.
3. 4PL – Using 4 Parameter Logistic for curve fitting.
4. Quadratic—Quadratic curve

Save your settings by clicking “Save”

**\*\* You can apply the 4PL value calculated by other software. Select “4PL(input)” and then input the value in the above column to create a standard curve.**

## Step. 5 Check

Check if the standard curve setting is OK.

1. Select the Product Code with the profile you saved.
2. Click “Start to analyze...” button to perform an analysis.
3. Check if the result image and the Selection Area of C and T are highlighted at right areas.
4. Check if the “Result” is corresponding to the test with a known concentration.

# Example To Create A Standard Curve (Interval Linear)

Modify Lot

Product Code : Profile\_W@1

Lot :  Expired Date : 2020-12-25

Analyte : Test Type : DSA

Invalid Condition : C < 10 AND T < 10

BackGround Setting: 0 (Range:0-255)

Dilution Statement  
Dilution Menu(6 items)  Factor : 1.000

Qualitative Statement  
Statement Positive   
Formula T1\_RESULT>=100  
Result Text Positive

Quantitative Mapping Curve  
Bias 0 Result Significant Digits: 5  
Result Formula T1  
Concentration 5.00 mg/ml  0.00   
 Interval Linear

4PL Parameters  
Working Range : Concentration 0.000000 - 0.000000  
a 0.000000 b 0.000000 c 0.000000 d 0.000000

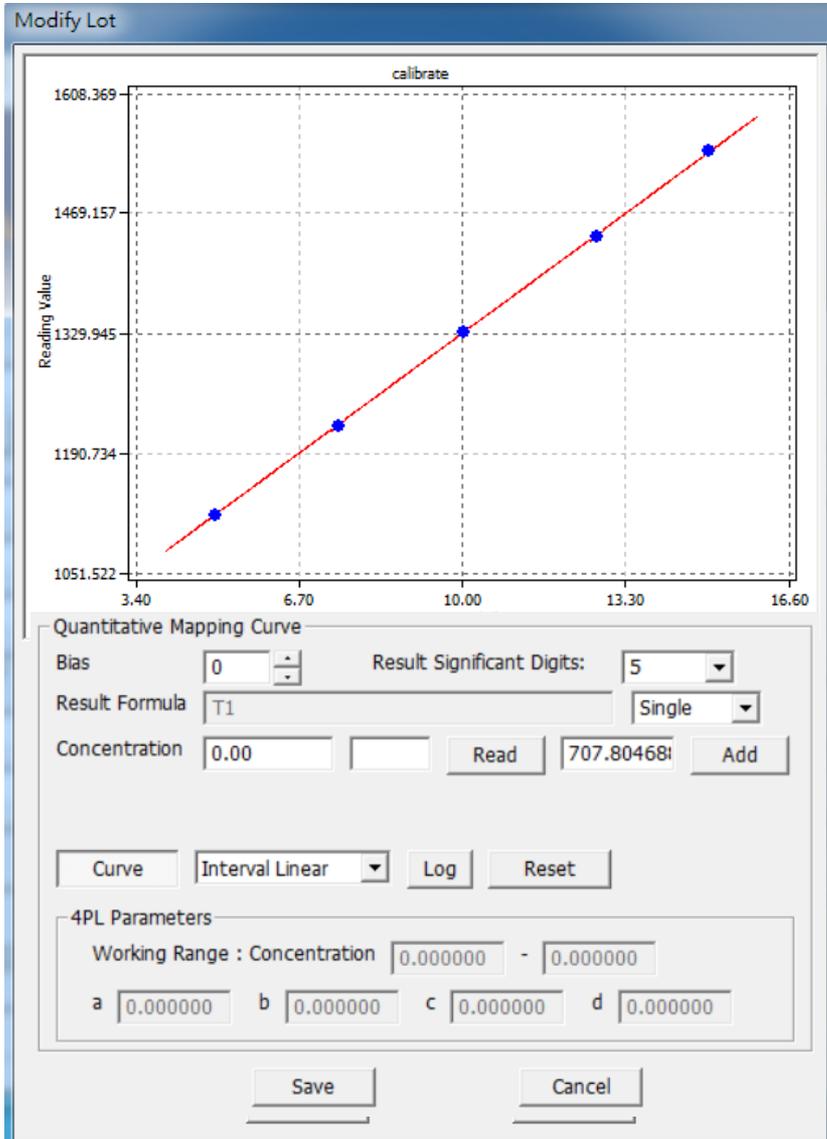
- ① In “Modify Lot”, input the concentration of standard product including its unit. In this example, we took 5.00 mg/ml sample.
- ② Press “Read” next to the concentration column. The value for 5.00 mg/ml is approximately 728.41796.
- ③ Then press “YES” to add the value to the plot.

Qualitative Statement  
Statement RapidTestView   
Formula  
Result Text

Quantitative Map  
Bias  
Result Formula T1  
Concentration 5.00 mg/ml  728.41796   
 Interval Linear

4PL Parameters  
Working Range : Concentration 0.000000 - 0.000000  
a 0.000000 b 0.000000 c 0.000000 d 0.000000

# Example To Create A Standard Curve (Interval Linear)



1. Add as many values as you can to establish calibration curve, you will get higher precise curve for quantification purpose. In this example, we took 5.00, 7.50, 10.00, 12.50 and 15.00 mg/ml as standard samples.
2. Here “Interval Linear” is selected and press “Curve” that comes with a useful plot on this UI.
3. You can save it for quantification purpose for the next sample capture.

# **Advanced Tutorial: Creating Your First Test Profile**

# Set Up Cut-off Ranges

Modify Lot

Product Code : Profile\_W@1

Lot :  Expired Date : 2020-12-25 Calendar...

Analyte : Test Type : DSA

Invalid Condition : C < 10 AND T < 10

BackGround Setting: 0 (Range:0-255)

Dilution Statement

Dilution Menu(6 items) Factor : 1.000 Inc. 1 Del

**Qualitative Statement**

Statement Positive Clear

Formula T1\_RESULT >= 0.6

Result Text Positive

Quantitative Mapping Curve

Bias 0 Result Significant Digits: 5

Result Formula T1 Single

Concentration 5.00 mg/ml Read 728.41796 Add

Curve Interval Linear Log Reset

4PL Parameters

Working Range : Concentration 0.000000 - 0.000000

a 0.000000 b 0.000000 c 0.000000 d 0.000000

Save Cancel

For qualitative and semi-quantitative measurements, you can use the “Result Statement Settings” to setup the cut-off range for each concentration threshold.

## Qualitative testing:

For Positive/Negative testing,

Formula: Value > 0.6, Result Test: “Positive”.

Formula: Value <= 0.6, Result Test: “Negative”.

## Semi-quantitative testing:

Formula: Value >0.6 -> Result Test: 0.6+”.

Formula: 0.5<Value<0.6 -> Result Test: ”0.5”.

Formula: 0.4<Value<0.5, -> Result Test: ”0.4”.

The available KEY WORD of formula is listed in below.

C1 – The C1 Reading Value

T1 – The T1 Reading Value

T1\_RESULT – The resulting value by “Result Formula”

T1\_CONCENTRATION –

The calculated T1 concentration value. [The value by interpolation against the standard curve]

Supported Operation Symbols

= Equal, e.g.  $T1=0.5$  means, if T1 equals 0.5 the statement return TRUE.

< Less, e.g.  $T1\_RESULT<0.1$  means, if T1\_RESULT less than 0.1 the statement is TRUE.

> Above, e.g.  $T1>0.5$  means, if T1 above 0.5 the statement return TRUE.

<= Equal or Less

>= Equal or Above

& AND, e.g.  $C1>500 \& T1>1000$

&& Same as ‘&’

| OR, e.g.  $T1>10 \mid T1=10$  [Same as  $T1 \geq 10$  ]

|| Same as ‘|’

Quantitative Mapping Curve

Bias: 0

Result Significant Digits: 5

Result Formula: T1

Concentration: 5.00 mg/ml

Read: 728.41796

Add

## A simple example

When we want

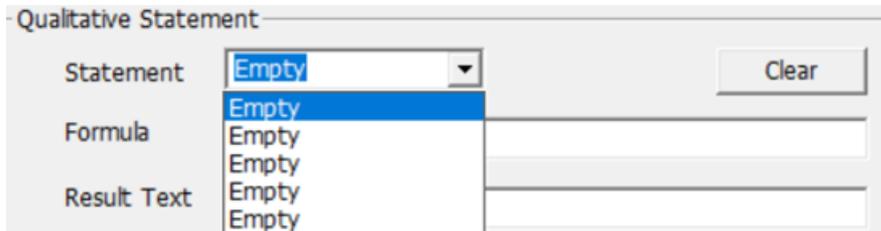
$T1 > 100$ , The result field shows “Positive”.

$T1 < 50$ , The result field shows “Negative”.

$T1$  between 100 and 50, The result field shows “Retest”.

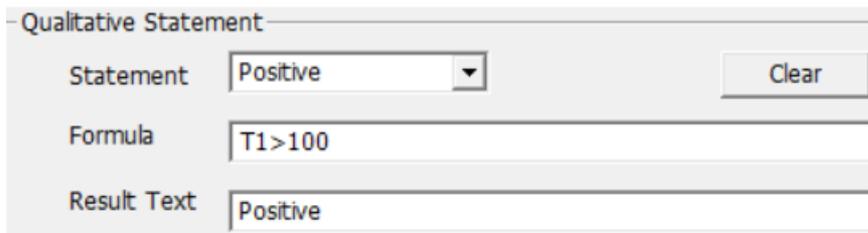
Please follow steps below to enter your statements.

1. Make sure all Statements are showing Empty like below.



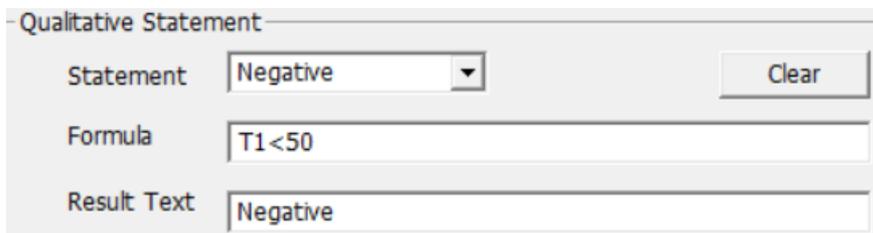
The screenshot shows a form titled "Qualitative Statement" with three rows: "Statement", "Formula", and "Result Text". Each row has a dropdown menu and a text input field. All dropdown menus are set to "Empty" and the text input fields are empty. A "Clear" button is located to the right of the Statement dropdown.

1. Choose first “Empty” statement, in Formula Field input “ $T1 > 100$ ”. And in Result Text Field input “Positive” like below. (The Text Statement will display exactly the same Text as the “Result Test”)



The screenshot shows the "Qualitative Statement" form with the following values: Statement dropdown is "Positive", Formula text field contains " $T1 > 100$ ", and Result Text text field contains "Positive". The "Clear" button is still present.

1. Choose next “Empty” Statement and complete the input like below.



The screenshot shows the "Qualitative Statement" form with the following values: Statement dropdown is "Negative", Formula text field contains " $T1 < 50$ ", and Result Text text field contains "Negative". The "Clear" button is still present.

4. Complete the last statement

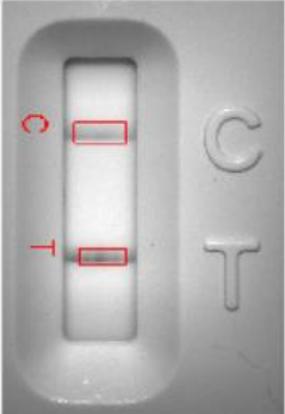
Result Statement Settings

Statement	Retest	Clear
Formula	T1<=100 & T1>=50	
Result Text	Retest	

5. Click “Save” to save the settings. And back to main screen. Click the “Start to Analyze”  
Make sure the Result Field shows the correct result.

Testing Result

20220930-6



Result : Positive

C-Value : 1667

T1-Value : 2156

Open the report folder...

Generate report

Remarks :

Load Image

Exit

# Application Note

- Please click [here](#) to download the application note.
- Scan the QR Code to see the application note on your mobile



# Important Things When Setting Up Cut-off Statements

Please set the cut-off ranges to cover all ranges the test values would be in.

Bad example 1:

Statement 1:  $T1 > 50$ , Positive

Statement 2:  $T1 < 50$ , Negative

Problem: When T1 value is 50 exact, program will return ERROR. It is because software cannot find a suitable range to report this value.

Correction,

Statement 1:  $T1 \geq 50$ , Positive

Statement 2:  $T1 < 50$ , Negative

The final cut-off ranges should be adjusted based on your further validation using more standard strips or actual sample strips before its release. Different lots of the same test might be manufactured slightly differently. It's always a good practice to generate new standard curve and set up new cut-off ranges for the new lots of a test.

## **Contact Information**

**For more information or any question, please contact :**

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## **RapidScan Rapid Test Reader**

### **Made in Taiwan**

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