Application Note

[NOTE] Restore Previous Test Images to Offline Analyzing
* Back Tracking the Un-expected Testing Result
* Optimize the Profile Setting

Application:

The parameter built in the reader affects its interpretation. With proper tuning can:

A. Reduce digital noise
B. Find the accurate C/T position
C. Increase the value difference between LoD and negative tests
→Improve sensitivity

Adjusting the parameter of the reader according to the analysis results can make the experiment less time-consuming and more accurate.

When the analysis was completed and the following conditions can be found:

A. The data of the sample is not good, because the optimal parameter of the reader has not been found yet.
B. The new version of the software has more suitable functions and algorithms. Updating the software will help improve the test results.
C. Raw data needs to be processed with third-party software.
→ You can read this description to avoid repeated experiments.

Product:

RapidScan Lateral Flow Readers Pro, Rapid Test View(RTV), and Rapid Test View_Ethernet Software (ERTV)
(Software version: RTV 1.15 Build 0436/ERTV 1.30 or newer)

Introduction:

1.   During the old debug data-saving process, only the debug data of the current sample is retained. When the next sample is analyzed, the previous debug data will be overwritten.
2.   During the new Debug data-saving process, 35 pieces of analysis data can be saved. After the reorganization of the debug data, the whole data can be reanalyzed and restored through the "Batch Test", and then the entire report data can be output through the function of the Database.
3.   Users can adjust the test profile and then analyze the original data to see if the problem is resolved.

Steps:

1. *Data backup:*

A. RTV/ERTV software:

After completing the analysis, go to C:\Users\chnmo\OneDrive\Documents\RTV_Ethernet (RTV→C:\Users\chnmo\OneDrive\Documents\ RapidTestView), then copy the three folders "debug" , "Engineer_debug " and "ini".
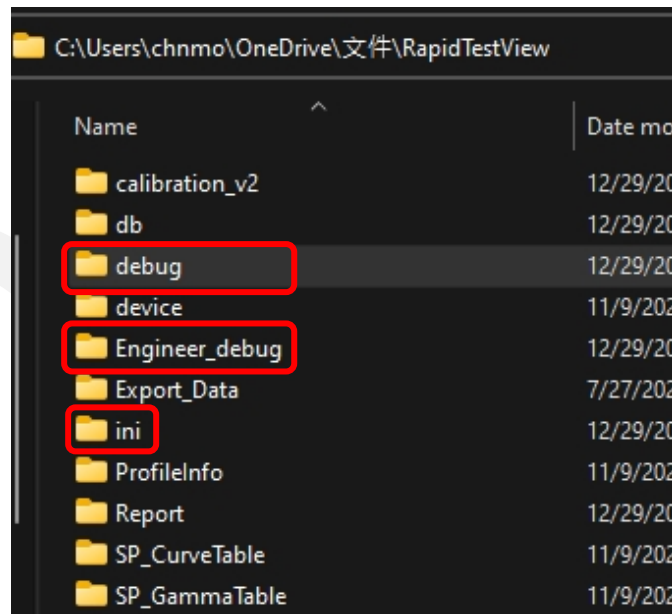

B.ST5 UI:

After completing the analysis, go to Setting→Advanced. Insert the pen drive (must create a folder and name it to debug beforehand) and then press "Export Debug" and "Export Image".

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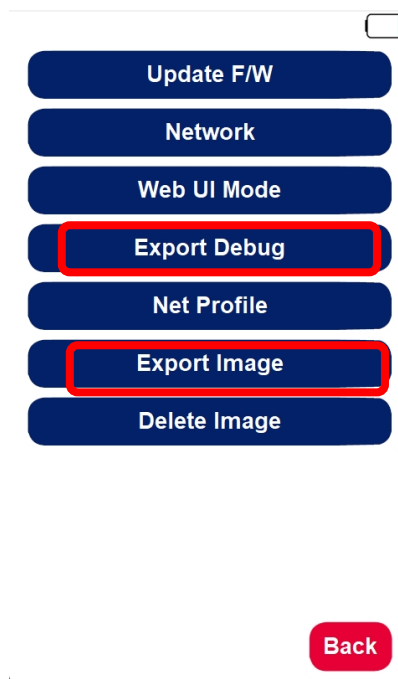
2. *Find the tests' data:*

A. Single data: Use can use the debug folder directly.

B. Multiple data: When the light source to be analyzed is **white light** (**Chromogenic detection**), debug_image/White folder ((if the light source is **UV light** (**Fluorescent detection**), debug_image/UV folder))should be dropped into the Debug folder, and the file name should be changed to source, as follows picture:
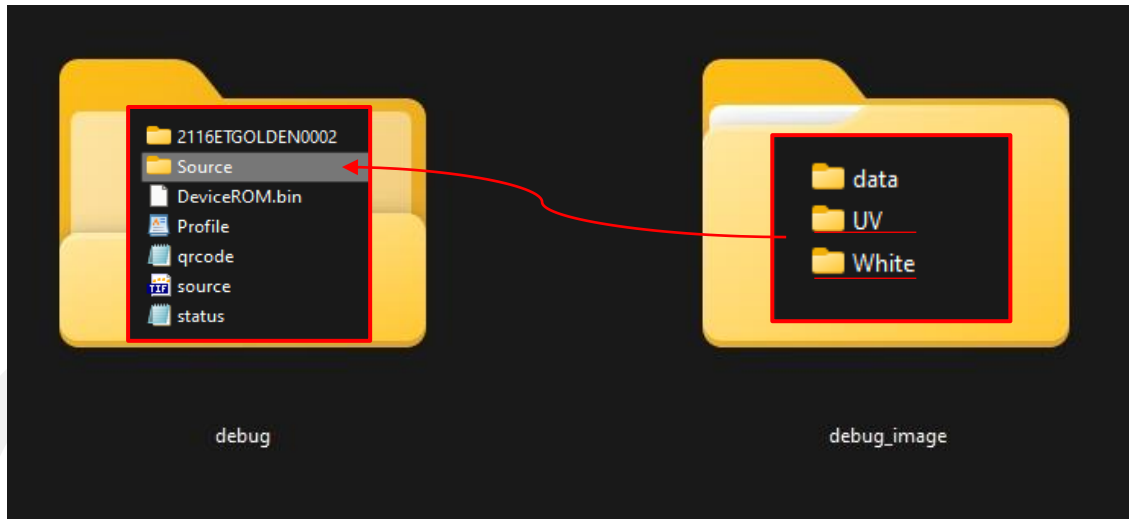
3. *Data reanalysis:*

Start the ERTV or RTV on **demo mode** (refer to Note 1), and then click "Batch Test". Select the debug file to do batch analysis

Move cursor to here and double click mouse left key

After selecting the Debug data that has just been reorganized, click OK.

4. *Confirm analysis results:*

After the analysis is completed, the BatchProcessImage.csv file will be generated in the original Debug folder, and you can see all the values of this analysis.
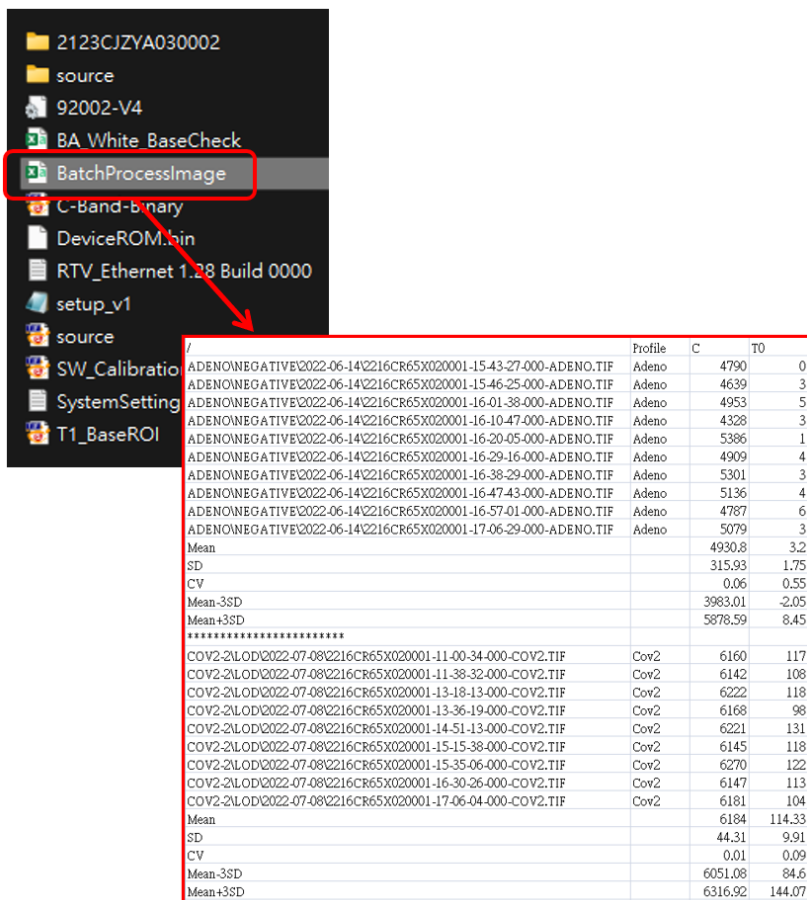

Example:

1. Experimental content:

control variable	
Test sample	FluB(T1)
concentration	$1000/4^n$ ng/ml (n=0~5)
manipulative variable	
Color Mode setting in Profile Wizard	ABC3-RGB ABC3-GGG
Strain variable	
T value changes with the Color Mode setting	

For the video of the whole experiment operation, refer to the following link:

https://drive.google.com/file/d/1kIm0RjUlN23LVSqzDkjPwl_qHry23VxN/view?usp=share_link
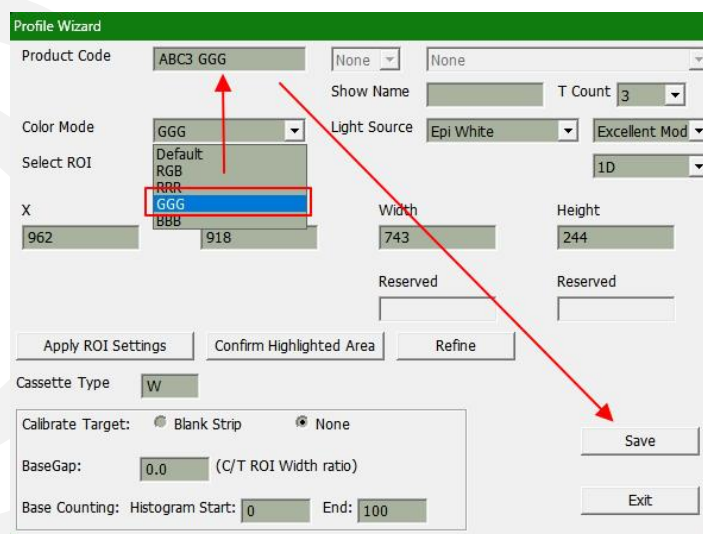
2. *Collect the test results data:*

Select profile "ABC3-RGB" analyzing samples with the concentration of "1000/4^n ng/ml (n=0~5)" one by one. After the analysis, go to the "Database" to export the test results data.
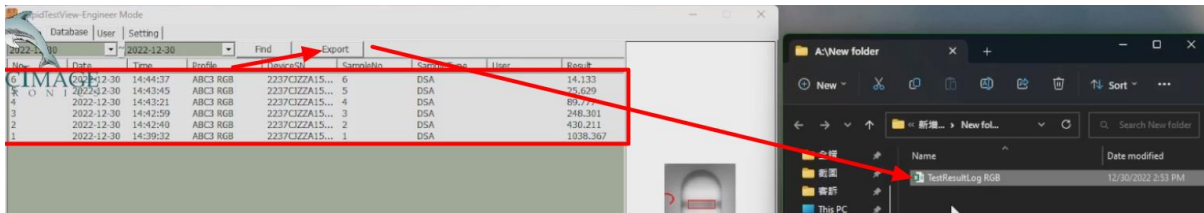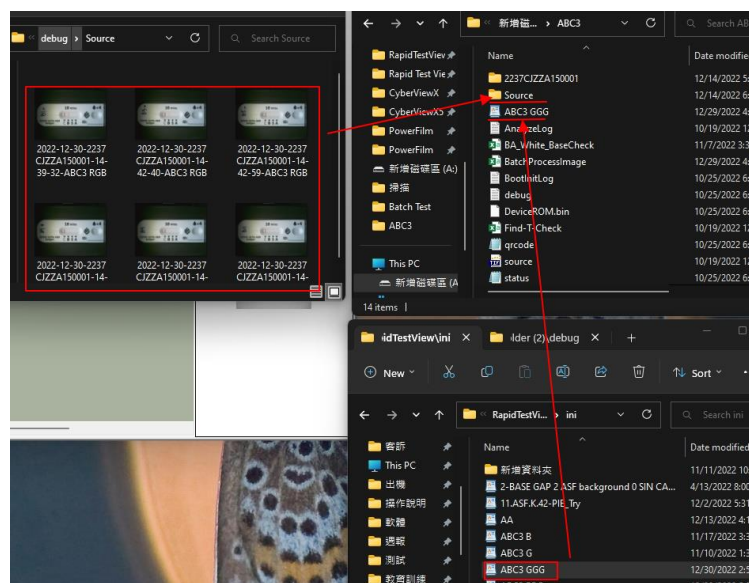

3. *Data reorganization*

A. Put the ERTV or RTV on demo mode. Modify the test profile "ABC3-RGB" by changing the color mode to GGG then save the profile as "ABC3-GGG".
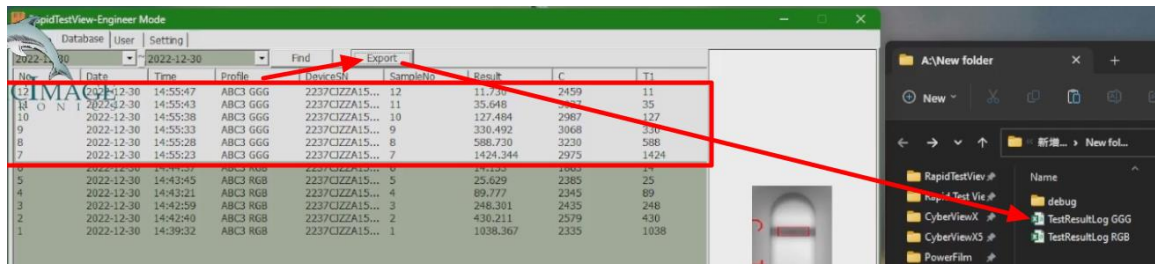

B. Follow the "**Steps**" on page 4 to reorganize the debug file data by replacing "ABC3-RGB" with "ABC3-GGG".

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3. *Data reanalysis:*

Use the "*Data Reanalysis*" process of "**Steps**", use RTV or ERTV to reanalyze the debug file of the previous step, and then export the "TestResultLog GGG" data.

4. *Comparison:*

After sorting the "TestResultLog" data of "ABC3-RGB" and "ABC3-GGG", the following table can be obtained:

FluB(T1)	ABC-RGB			ABC-GGG		
concentration (ng/ml)	C	T1	T1 value difference	C	T1	T1 value difference
1000	2335	1038		2975	1424	
250	2579	430	608	3230	588	836
62.5	2435	248	182	3068	330	258
*15.625	2345	89	159	2987	127	203
3.906	2385	25	64	3027	35	92
0.977	1863	14	11	2459	11	24

5. *Conclusion:*

"GGG" color mode used in this experiment, the value difference of T1 is bigger than "RGB".

Extended Application:

1. The new ERTV and RTV can also batch-test the debug files generated by the older version of the software to produce better data results.
--> The new version of the software has a better algorithm, and new functions will be added to improve the analysis results.
2. For the description of each parameter setting, please refer to the latest version of the user manual

*Note 1.
When ERTV is not connected to Reader, you can use *Demo Mode* (as shown below) to enter ERTV software to re-analyze old data.
-->Only *Demo Mode* can use the *Batch Test* function.

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