

Application Note

[NOTE] How to Use Auto-run to Speed Up Developing Lateral Flow Tests

[AN] RTV-2022-12-14-001

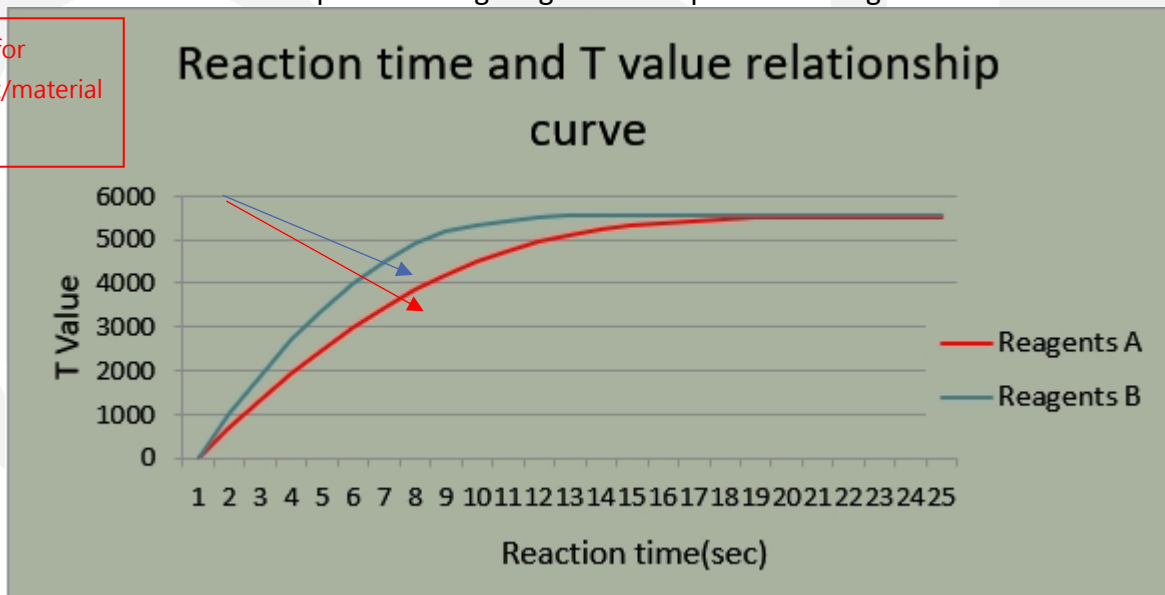


Application:

When the reagent is analyzing the sample, the relationship between time and reaction degree is an index that needs to be referred to, which helps the developer of rapid screening reagents to find the best reagent/material combination.

By using the Auto-run function of Rapid Test View(RTV) and RTV_Ethernet (ERTV) for Software, users can easily observe each lateral flow test using different materials' reaction time. Meet the needs of rapid screening reagent developers in this regard.

Reaction curves for different reagent/material combinations.



With the data/report output function of the software, it can greatly save time of visual interpretation and avoid errors.

Product: Rapid Test View(RTV) & RTV_Ethernet

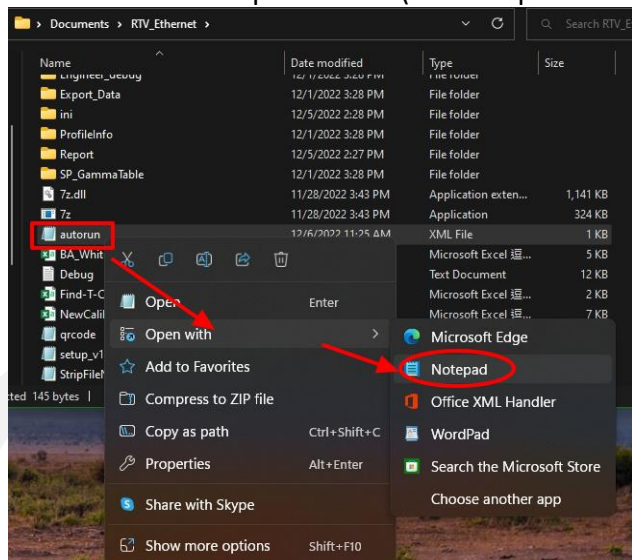
Introduction:

1. The "Auto Run" of RTV and ERTV software can enable the continuous analysis function of RapidScan, the purpose is to observe the results of Strip at different time points
2. The number (Count) and time interval of continuous analysis can be set according to the needs of the experiment.
3. This function requires the "autorun.xml" configuration file, the link is as follows:
https://drive.google.com/file/d/1FCsDb3L_YTzGt3tjQ0_VEpV0nEsuAWip/view?usp=share_link

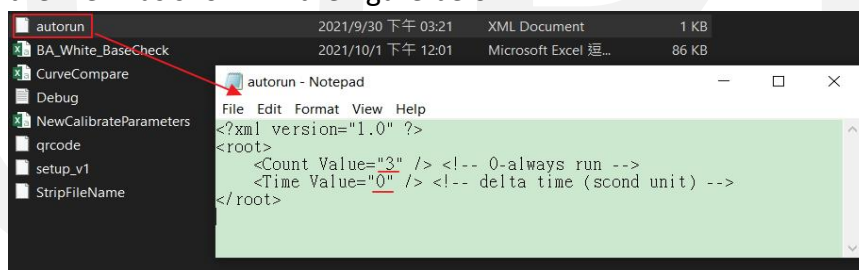
Steps:

1. Setting steps:

A. After putting the "**autorun.xml**" file under the RapidTestView folder, click "**autorun.xml**" to open the file(Please open it with **Notepad**.). As shown below:



B. Set the values of **Count Value** and **Time Value** according to your needs, then save the file , as shown in the figure below:



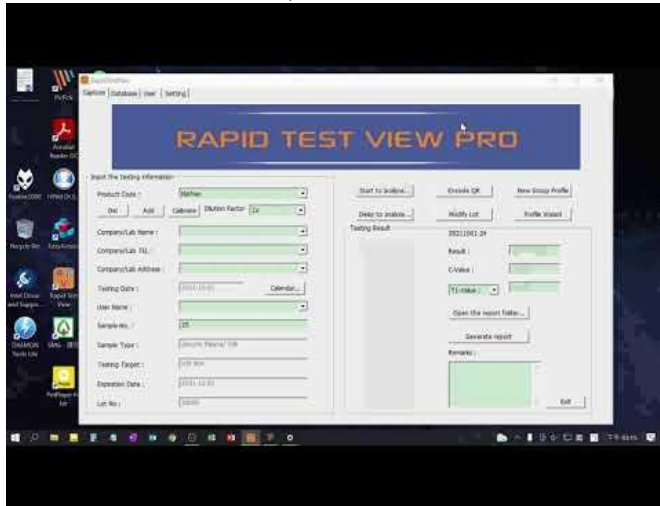
Count Value → Analysis Count

Time Value → Analysis time interval, the unit is Sec

2. Autorun function operation

Open the RapidTestView program and place the cassette to RapidScan, then click .

The video is as follow (**Count Value** → 3 times **TimeValue** → 3 sec):



Example:

1. Experimental content:

control variable	
Test sample	HcG
concentration	300ppm
manipulative variable	
Reader Analysis interval	17 Sec
Total analysis Count	34 times
Strain variable	
T-value changes over time	

2. Autorun parameter setting:

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autorun - 記事本
檔案 編輯 檢視

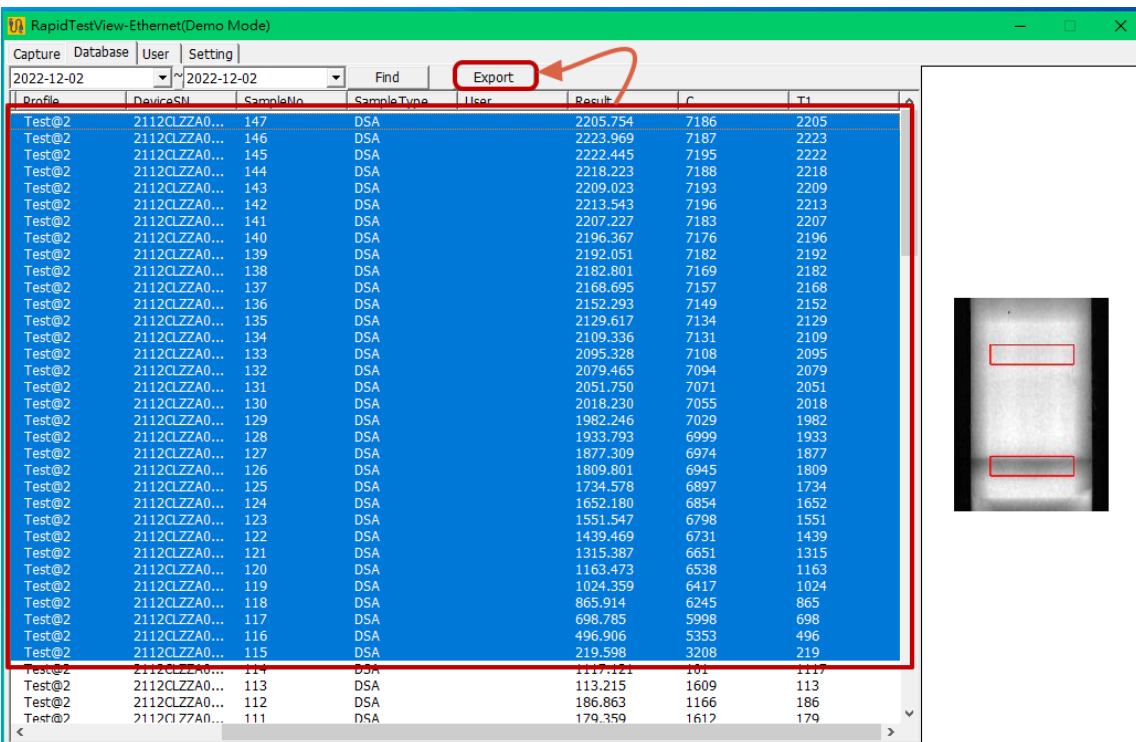
<?xml version="1.0" ?>
<root>
  <Count Value="34" /> <!-- 0-always run -->
  <Time Value="0" /> <!-- delta time (second unit) -->
</root>
  
```

It takes about 17 seconds for Reader to complete an analysis, so the Time Value needs to be adjusted taking into account the analysis time of Reader.

3. Start the RTV software, drop the Sample into the Sample Pad, put it into the Reader and click **Start to analyze...** .

4. After the analysis is completed, click the Database tab, select all 34 analysis data, and

press **Export** :



5. After that, the "TestResultLog" file will be output. Reorganize the data and draw a graph through Excel, as shown in the figure below.

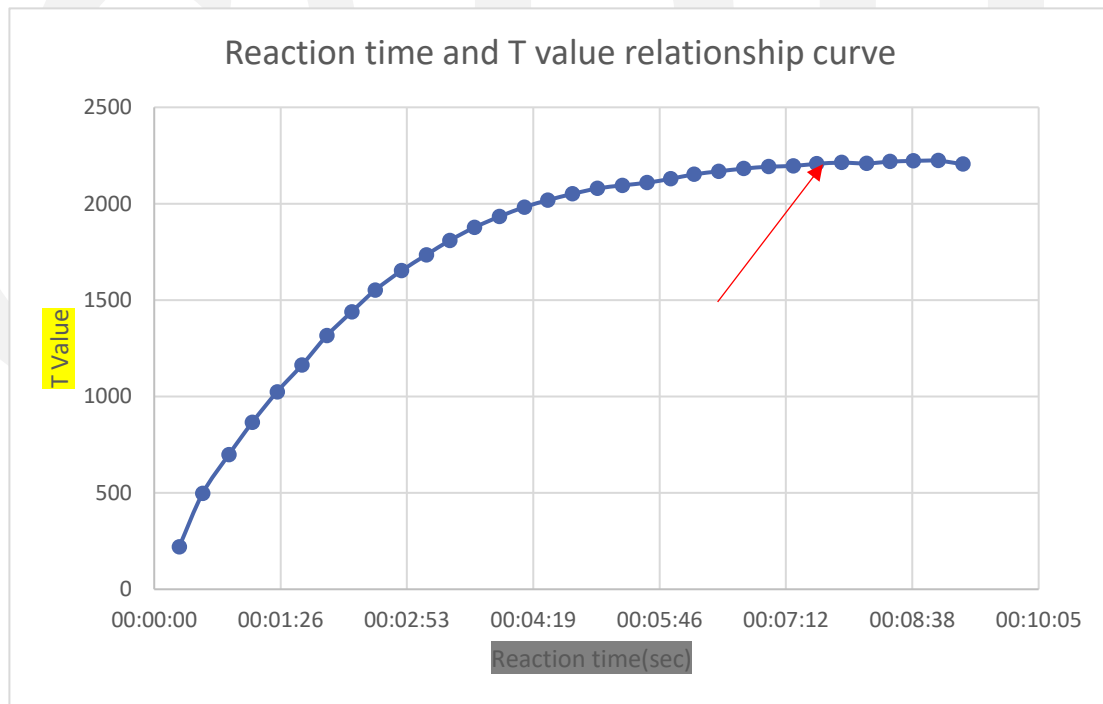
TestResultLog:

No	Date	Time	Profile	DeviceSN	SampleNo	SampleType	User	Result	C	T1	T2	T3	T4
115	12/2/2022	16:20:07	Test@2	2112CLZZA000002	115	DSA		219.598	3208	219			
116	12/2/2022	16:20:23	Test@2	2112CLZZA000002	116	DSA		496.906	5353	496			
117	12/2/2022	16:20:41	Test@2	2112CLZZA000002	117	DSA		698.785	5998	698			
118	12/2/2022	16:20:57	Test@2	2112CLZZA000002	118	DSA		865.914	6245	865			
119	12/2/2022	16:21:14	Test@2	2112CLZZA000002	119	DSA		1024.359	6417	1024			
120	12/2/2022	16:21:31	Test@2	2112CLZZA000002	120	DSA		1163.473	6538	1163			
121	12/2/2022	16:21:48	Test@2	2112CLZZA000002	121	DSA		1315.387	6651	1315			

Time record	time interval	Reaction time	C	T
16:20:07	00:00:17	00:00:17	3208	219
16:20:23	00:00:16	00:00:33	5353	496
16:20:41	00:00:18	00:00:51	5998	698
16:20:57	00:00:16	00:01:07	6245	865
16:21:14	00:00:17	00:01:24	6417	1024
16:21:31	00:00:17	00:01:41	6538	1163
16:21:48	00:00:17	00:01:58	6651	1315
16:22:05	00:00:17	00:02:15	6731	1439

16:22:21	00:00:16	00:02:31	6798	1551
16:22:39	00:00:18	00:02:49	6854	1652
16:22:56	00:00:17	00:03:06	6897	1734
16:23:12	00:00:16	00:03:22	6945	1809
16:23:29	00:00:17	00:03:39	6974	1877
16:23:46	00:00:17	00:03:56	6999	1933
16:24:03	00:00:17	00:04:13	7029	1982
16:24:19	00:00:16	00:04:29	7055	2018
16:24:36	00:00:17	00:04:46	7071	2051
16:24:53	00:00:17	00:05:03	7094	2079
16:25:10	00:00:17	00:05:20	7108	2095
16:25:27	00:00:17	00:05:37	7131	2109
16:25:43	00:00:16	00:05:53	7134	2129
16:25:59	00:00:16	00:06:09	7149	2152
16:26:16	00:00:17	00:06:26	7157	2168
16:26:33	00:00:17	00:06:43	7169	2182
16:26:50	00:00:17	00:07:00	7182	2192
16:27:07	00:00:17	00:07:17	7176	2196
16:27:23	00:00:16	00:07:33	7183	2207
16:27:40	00:00:17	00:07:50	7196	2213
16:27:57	00:00:17	00:08:07	7193	2209
16:28:13	00:00:16	00:08:23	7188	2218
16:28:29	00:00:16	00:08:39	7195	2222
16:28:46	00:00:17	00:08:56	7187	2223
16:29:03	00:00:17	00:09:13	7186	2205

The T value begins to stabilize.



Supplementary Note:

1. In the "TestResultLog" content, you can know the time point of the analysis through the "Time" column.

-->In this way, you can know the time interval of the analysis and the time spent on each analysis through the Excel function.

2. Combined with RTV & ERTV's "Restoration And Testing Of Customer Debug Data" function, the entire original data can be retained, so that you can fine-tune parameters in

the future, re-analyze, and observe the differences before and after.

-->This function can save most of the time because it does not need to re-experiment.

3. It can be seen from the figure that after about 7 to 8 minutes, the T value tends to be stable.

Extended Application:

1. Confirm the stability of the Reader --> After continuous analysis, confirm whether the C T value is stable without too much fluctuation.
2. How long does it take for the T value to start to drop (or rise) abnormally after the lateral flow test.(Strip Variation from Wet to Dry)
3. fluorescence quenching.

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