Application sample: Record Voltage / Current input by uPAC-7186EG every second for 1 to 10 minutes. Then send this record file by email.

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This sample shows one uPAC-7186EG + X-608-RoHs using its COM2:RS-485 to connect one i-7017R module and one i-7024 module to record voltage input values every second. The DCON utility setting should be as the following.

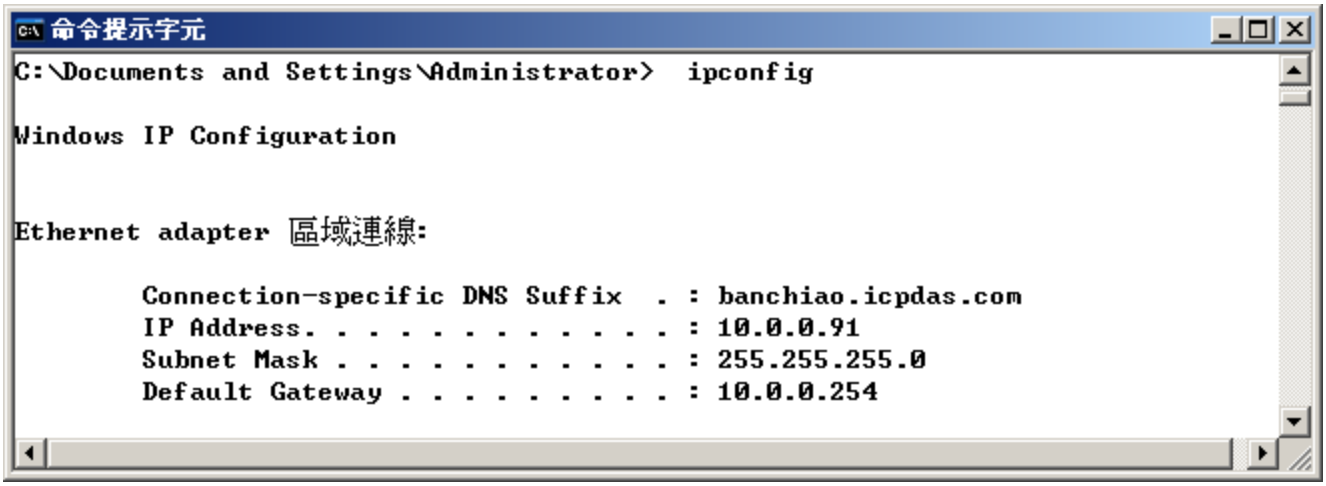
i-7017R : Addr = 1 , Baud = 9600 , No Checksum , Formate = 2's compliment, Type = +/- 10V
i-7024 : Addr = 2 , Baud = 9600 , No Checksum , Formate = Engineering, Type = +/- 10V

The i-7024 module in this sample will generate 4 voltage output curves to the i-7017R module. This sample will record i-7017R ‘s Ch.1 to Ch.4 voltage inputs into the X-608-RoHs: battery backup SRAM. It can record totally 1 to 10 minutes. When it is finished, this uPAC-7186EG will send the record file by Email. The ISaGRAF demo program name is “demo_74a.pia “, please visit www.icpdas.com > FAQ > Software > ISaGRAF > 077 to download it.

For more information about uPAC-7186EG sending email, please visit
www.icpdas.com > FAQ > Software > ISaGRAF > 076.

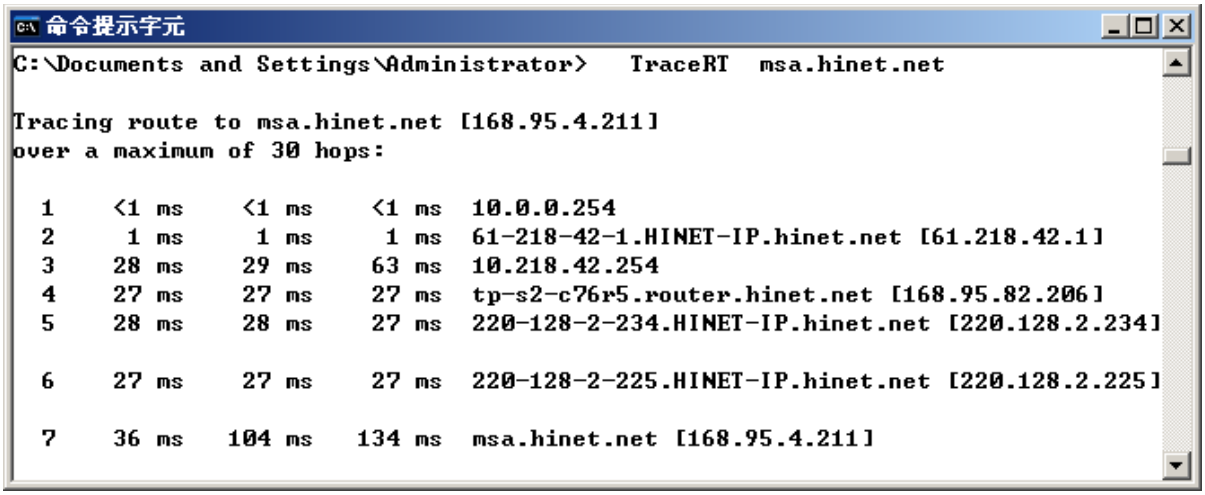
For more information about operating the X-608-RoHs: battery backup SRAM, please refer to the section 10.3 of the “User's Manual Of ISaGRAF Embedded controllers” . The file name is “user_manual_i_8xx7.pdf” and ”user_manual_i_8xx7_appendix.pdf” . It can be found in the uPAC-7186EG CD-ROM or at http://www.icpdas.com/products/PAC/i-8000/getting_started_manual.htm

To send email correctly, please set proper Gateway IP in the controller’s Ethernet port setting. Please type command “ipconfig” in a PC ‘s command prompt window at the same local network to get the Gateway IP setting as below. (Here is 10.0.0.254)



Then please fill-in this Gateway IP address to your uPAC-7186EG’s Ethernet port setting. Please run “7188xw.exe” in the PC and give command for ex, “gateway 10.0.0.254” if the gateway IP is 10.0.0.254. (Please refer to appendix B of the “User's Manual Of ISaGRAF Embedded controllers” for the detailed steps)

The PC ‘s command prompt windows can also request the Mail server ‘s IP address (We need it in the ISaGRAF program). For example, to request IP of msa.hinet.net , please type command TraceRT msa.hinet.net as below (Here is 168.95.4.211)



Email demo download from www.icpdas.com – FAQ – Software – ISaGRAF – 077 is “demo_74a.pia” .

Please modify at least the below setting in the demo program to your own setting .

```
TMP := MAIL_SET( 1 , 'chun@icpdas.com' ) ;        (* Receiver 1. please modify it *)
TMP := MAIL_SET( 100 , 'go_mao@hotmail.com' ) ;   (* Sender. please modify it *)
TMP := MAIL_SET( 101 , '168.95.4.211' ) ;       (* Mail server 1 ‘s IP, please modify it *)
```

Then re-compile it and then download it to the uPAC-7186EG+X-608-RoHs to run. The below windows will show up.

“Period1” is the recording period, unit is minute, value can be 1 to 10.

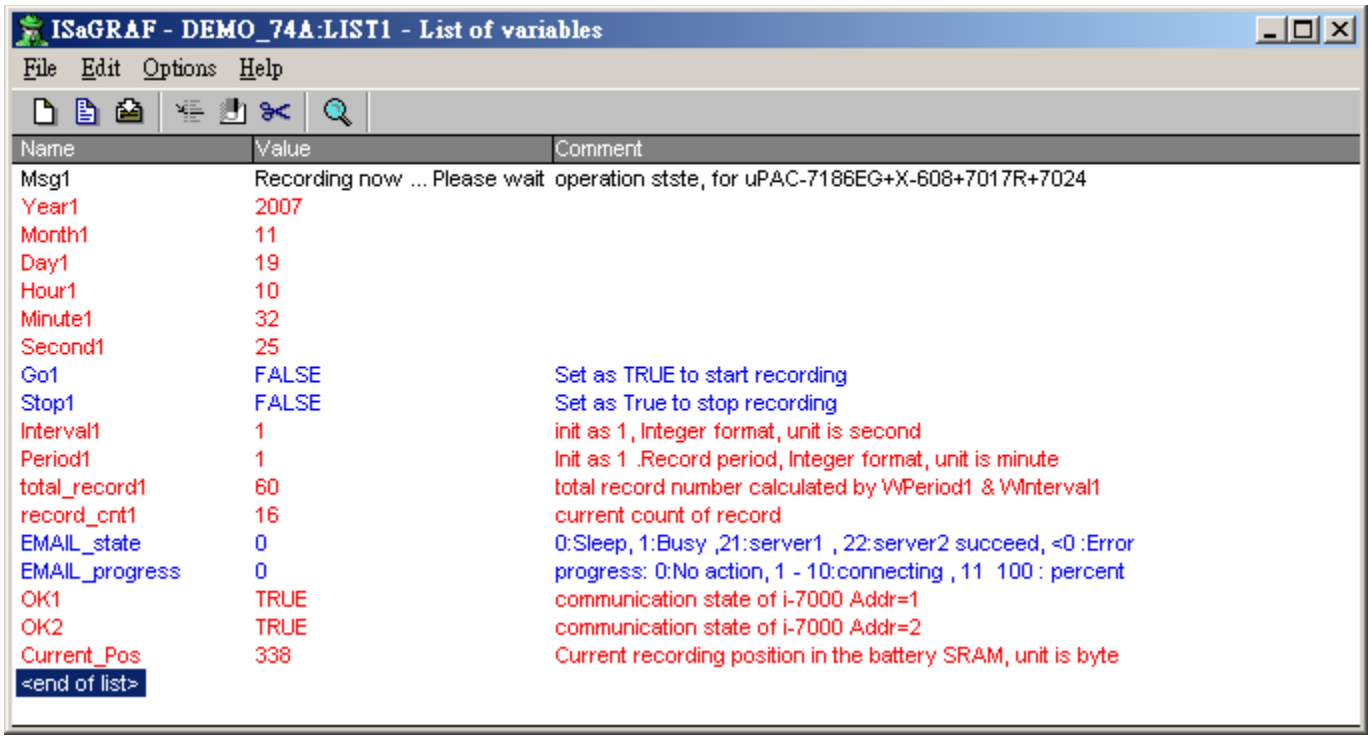
“Interval1” is the recording interval, unit is second, value can be 1 to 60.

“Total_record1” is the total record amount. It is calculated automatically by program.

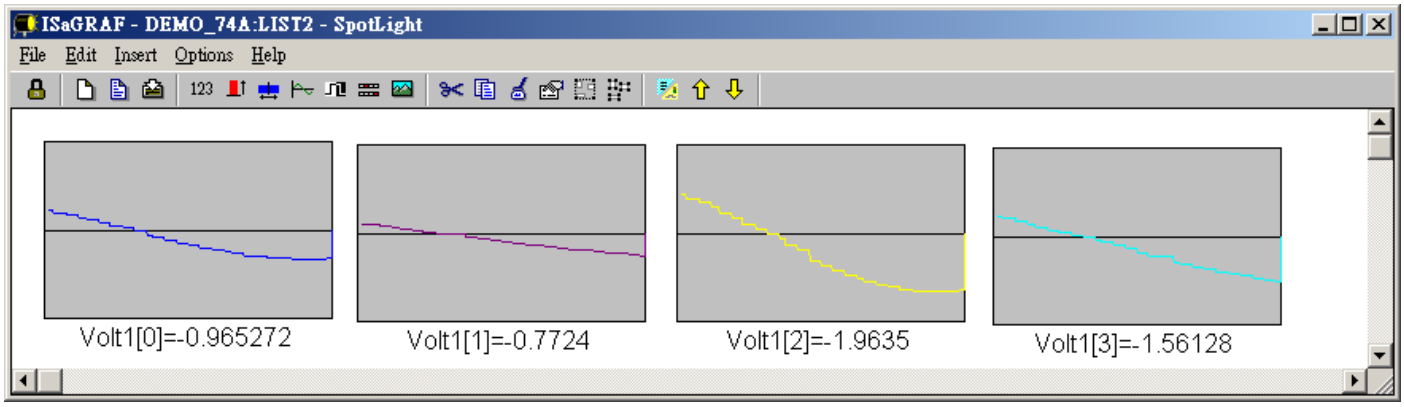
“Record_cnt1” is the current finished record amount.

“Current_Pos” is the next record's starting position in the battery backup SRAM.

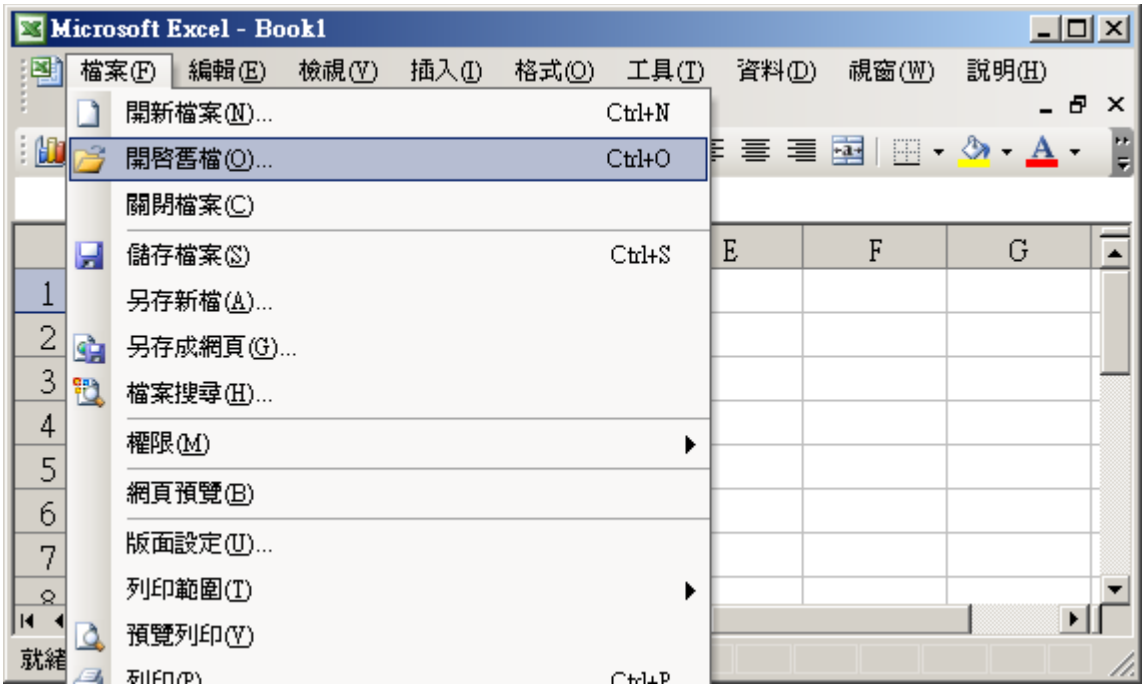
Please set “Go1” as TRUE to start recording. If all records are finished, value of “record_cnt1” should reach value of “total_record1”. Then it will start to send an email with this attached file. Few seconds later, value of “Email_state” will be 21 or 22 if succeed. However value of “Email_state” will be less than 0 if failed. When “Email_progress” reach value of 100, it means the email data is 100% sent.



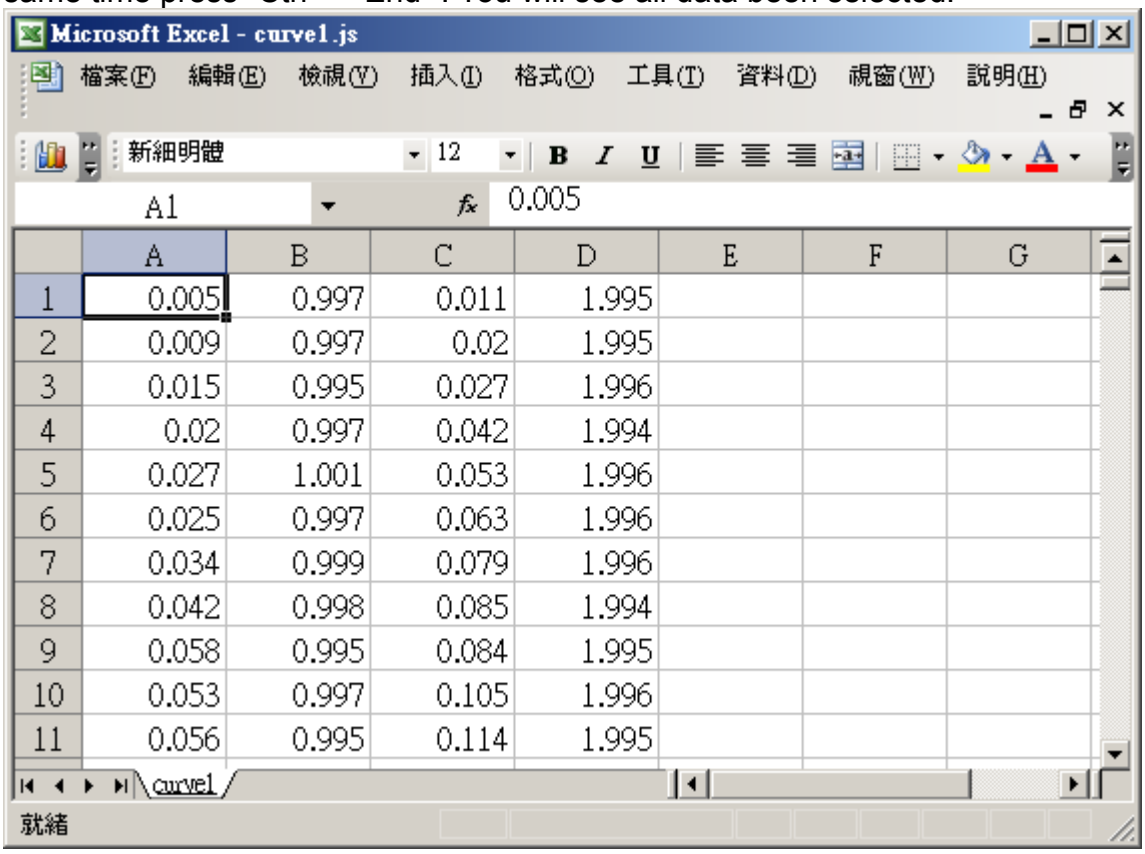
Name	Value	Comment
Msg1	Recording now ... Please wait	operation stste, for uPAC-7186EG+X-608+7017R+7024
Year1	2007	
Month1	11	
Day1	19	
Hour1	10	
Minute1	32	
Second1	25	
Go1	FALSE	Set as TRUE to start recording
Stop1	FALSE	Set as True to stop recording
Interval1	1	init as 1, Integer format, unit is second
Period1	1	Init as 1 .Record period, Integer format, unit is minute
total_record1	60	total record number calculated by WPeriod1 & WInterval1
record_cnt1	16	current count of record
EMAIL_state	0	0:Sleep, 1:Busy ,21:server1 , 22:server2 succeed, <0 :Error
EMAIL_progress	0	progress: 0:No action, 1 - 10:connecting , 11 100 : percent
OK1	TRUE	communication state of i-7000 Addr=1
OK2	TRUE	communication state of i-7000 Addr=2
Current_Pos	338	Current recording position in the battery SRAM, unit is byte
<end of list>		



Then please receive this email by your PC. Then open this record file by M.S. Excel.

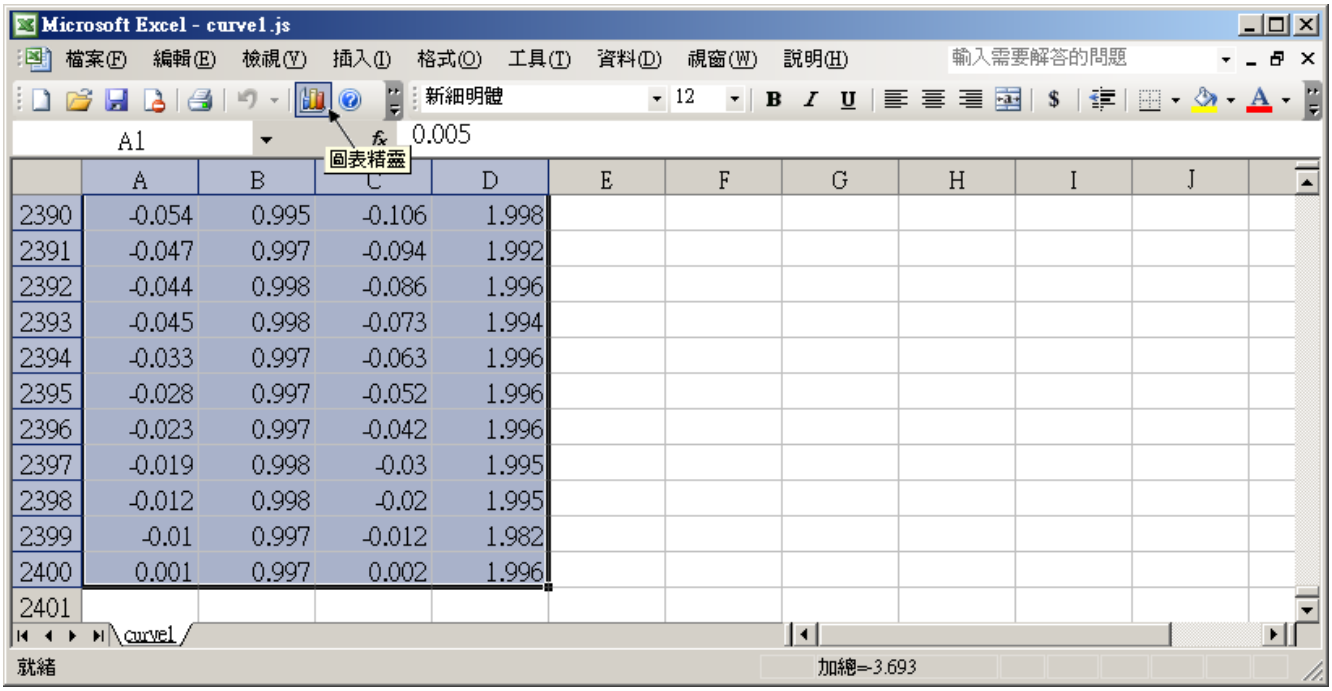


Please click on the first data at the left-top position. Then press and hold in “Shift” , and at the same time press “Ctrl” – “End” . You will see all data been selected.



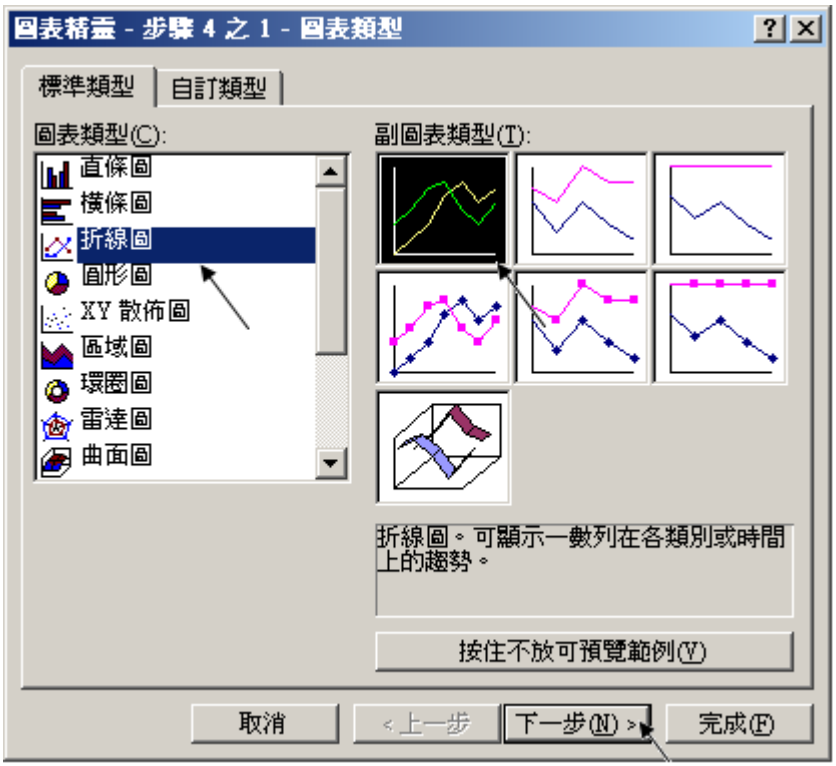
	A	B	C	D	E	F	G
1	0.005	0.997	0.011	1.995			
2	0.009	0.997	0.02	1.995			
3	0.015	0.995	0.027	1.996			
4	0.02	0.997	0.042	1.994			
5	0.027	1.001	0.053	1.996			
6	0.025	0.997	0.063	1.996			
7	0.034	0.999	0.079	1.996			
8	0.042	0.998	0.085	1.994			
9	0.058	0.995	0.084	1.995			
10	0.053	0.997	0.105	1.996			
11	0.056	0.995	0.114	1.995			

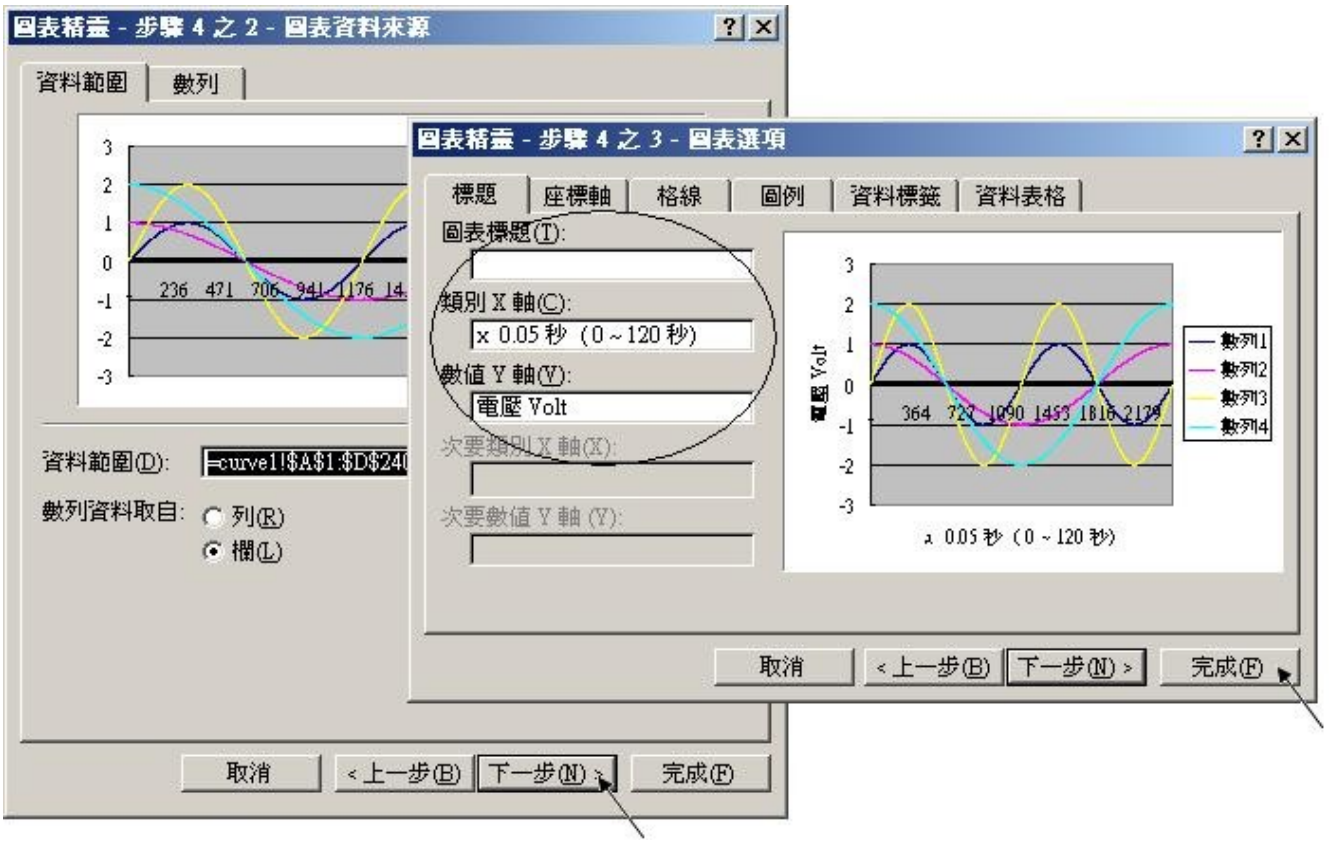
Then click on 



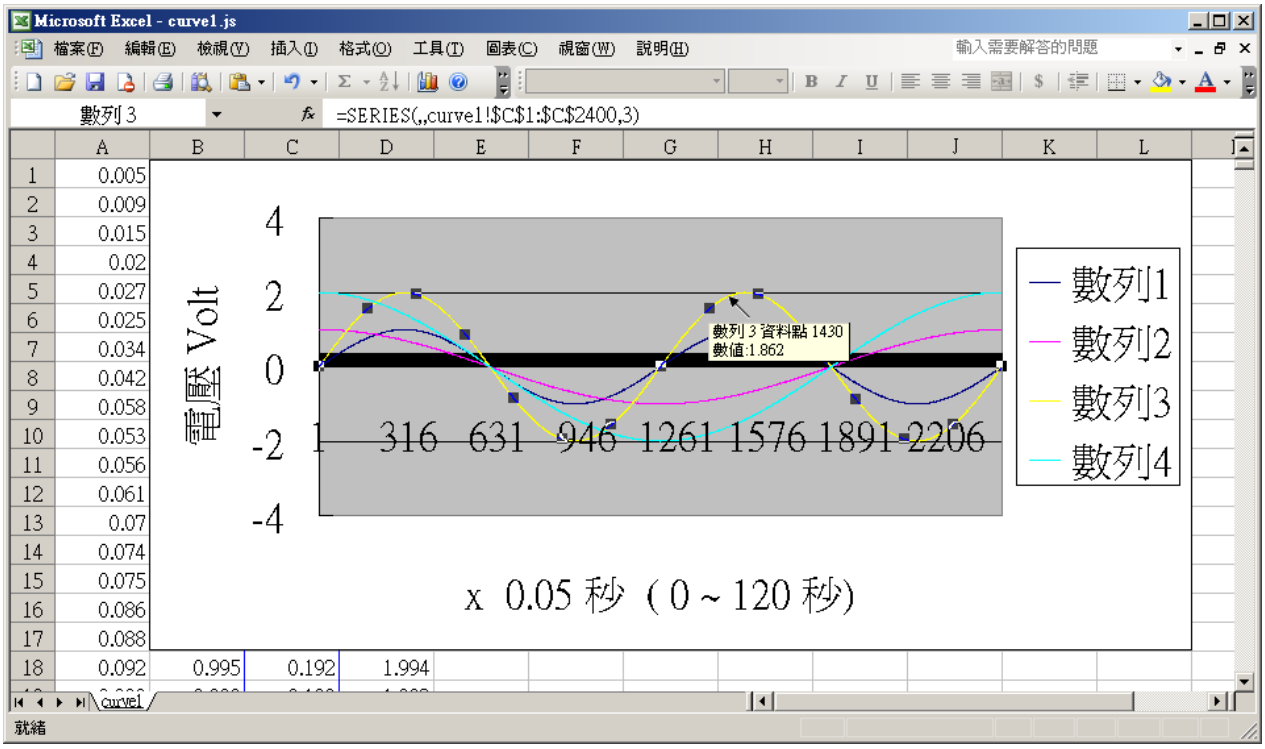
	A	B	C	D
2390	-0.054	0.995	-0.106	1.998
2391	-0.047	0.997	-0.094	1.992
2392	-0.044	0.998	-0.086	1.996
2393	-0.045	0.998	-0.073	1.994
2394	-0.033	0.997	-0.063	1.996
2395	-0.028	0.997	-0.052	1.996
2396	-0.023	0.997	-0.042	1.996
2397	-0.019	0.998	-0.03	1.995
2398	-0.012	0.998	-0.02	1.995
2399	-0.01	0.997	-0.012	1.982
2400	0.001	0.997	0.002	1.996
2401				

Please select the correct diagram on the left-hand side. And check the left-top type on the right-hand side. Then go Next .

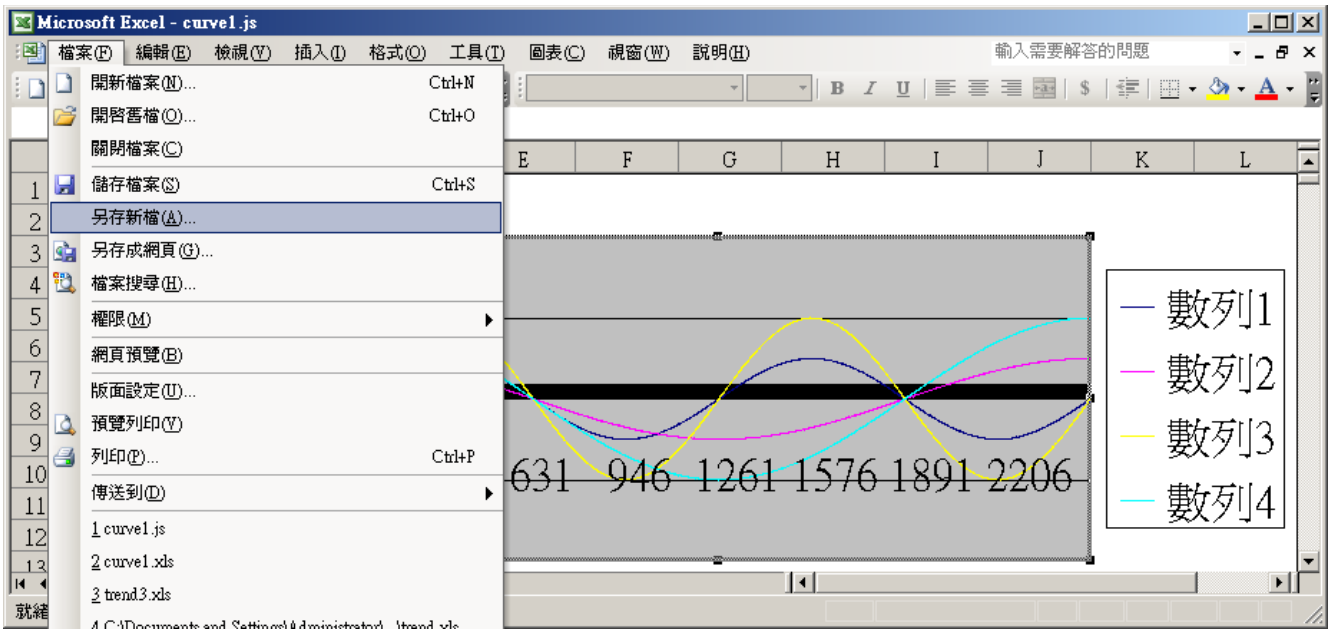


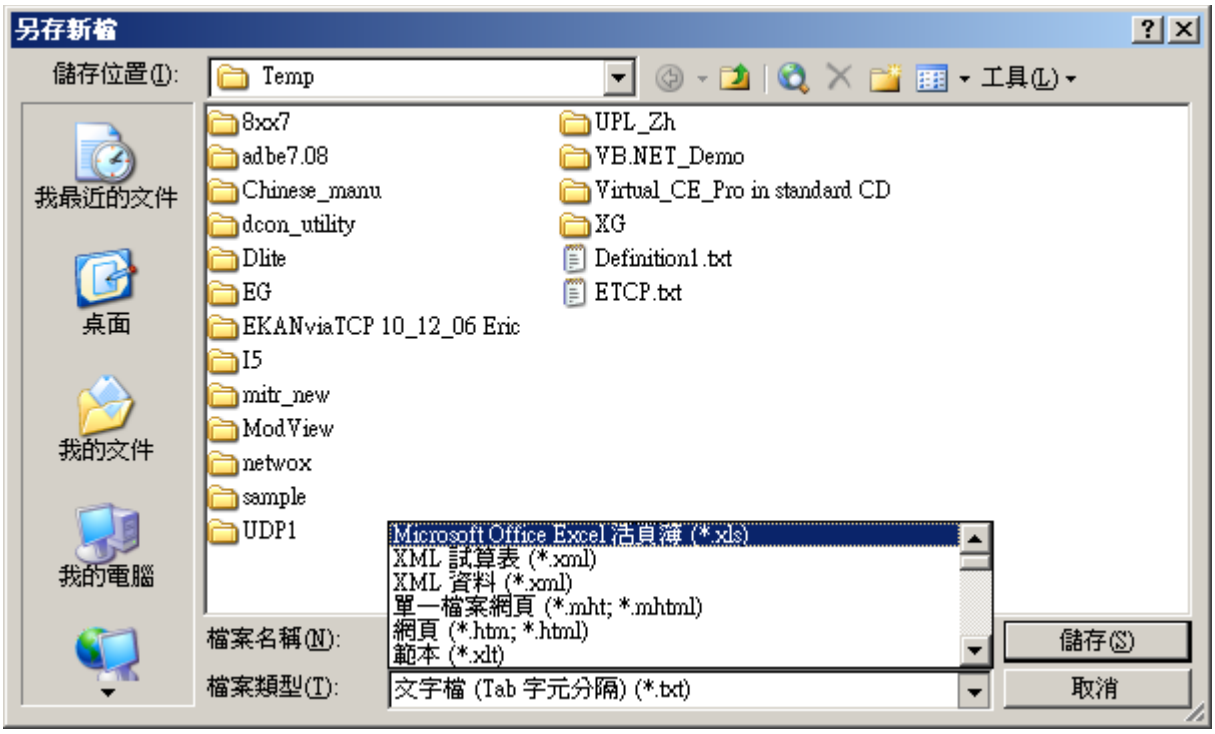


By the procedure, you will get the trend curve as the below window. You can modify its size, or check at any trend line. If you move your mouse to point at some position at the trend line, the related data is shown.



Please save this trend curve diagram as a “Microsoft Office Excel (*.xls)” format. Then at any later time, you can open it to display the trend curve directly.





One another way to get this record file is to use the “ICPDAS UDLoader” utility via the uPAC-7186EG's COM1:RS-232 or its Ethernet port as the following figures .