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

By chun@icpdas.com

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 <u>www.icpdas.com</u> > FAQ > Software > ISaGRAF > 077 to download it.

For more information about uPAC-7186EG sending email, please visit <u>www.icpdas.com</u> > 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 <u>http://www.icpdas.com/products/PAC/i-8000/getting_started_manual.htm</u>

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)

🗈 命令提示字元	
C:\Documents and Settings\Administrator> ipconfig	
Windows IP Configuration	
Ethernet adapter <u>區</u> 域連線:	
Connection-specific DNS Suffix . : banchiao.icpdas.com	
IP Address	
Subnet Mask	
Default Gateway 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)

```
🚾 命令提示字元
                                                                            _ D X
C:\Documents and Settings\Administrator>
                                           TraceRT
                                                   msa.hinet.net
                                                                                ٠
Tracing route to msa.hinet.net [168.95.4.211]
over a maximum of 30 hops:
      <1 ms
               <1 ms
                         <1 ms 10.0.0.254
 1
                         1 ms 61-218-42-1.HINET-IP.hinet.net [61.218.42.1]
 2
       1 ms
                1 ms
  3
      28 ms
                29 ms
                         63 ms 10.218.42.254
  4
      27 ms
                27 ms
                         27 ms tp-s2-c76r5.router.hinet.net [168.95.82.206]
  5
      28 ms
               28 ms
                         27 ms 220-128-2-234.HINET-IP.hinet.net [220.128.2.234]
  6
      27 ms
               27 ms
                        27 ms
                              220-128-2-225.HINET-IP.hinet.net [220.128.2.225]
  7
                        134 ms msa.hinet.net [168.95.4.211]
      36 ms
               104 ms
                                                                                •
```

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.

🚊 ISaGRAF ·	- DEMO_74A:LIST1 - List of va	riables	
<u>File E</u> dit <u>Or</u>	otions <u>H</u> elp		
🗅 🖹 🖴	¥= 🛃 😽 🔍		
Name	Value	Comment	
Msg1	Recording now Please wa	it 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_progres	is O	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 list="" of=""></end>			



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

M	іісто	soft Excel - Bo	ok1							IX
:2	檔3	案(F) 編輯(E)	檢視(型)	插入①	格式(0)	工具(<u>T</u>)	資料(D)	視窗(₩)	說明(H)	
-		開新檔案(N)				Ctrl+N			- 6	7 ×
1	2	開啓舊檔(○)				Ctrl+O	F 🗏 🗏	• a•	🔕 - <u>A</u> -	·
		關閉檔案(<u>C</u>)								
		儲存檔案(S)				Ctrl+S	E	F	G	
1		另存新檔(A)								_
2	s:	另存成網頁(G).								- 1
3	1	檔案搜尋(出)								
4		櫂限(M)				•				-
		網頁預覽(B)								-
		版面設定(1)								-
×		列印範圍(T)				•			_	╶
► ►I	4	預覽列印(Y)								
机箱	A	ÆILED (P)				Ctrl±P				//.

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.

💌 M	icrosoft Excel	l - curve1.js					_	
2	檔案(E) 編輯	₿Œ) 檢視(V]) 插入①	格式(2) 工具	具(I) 資料(I)) 視窗(₩)	說明(H)	
: : 16a	22 : #45/00 08/8##		10			= =	- -	
:	₩ 17409102	_	• 12 •	. B 1 <u>0</u>		■ 🔛 🛄 🔻	<u>∽</u> • <u>A</u>	• •
	A1	-	fx	0.005				
	A	В	С	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				
I4 4	► ► \ <u>curve1</u>							
就緒								





M	crosoft E	xcel - cu	arve1.js									
:2	檔案①	編輯(E)	檢視(♡)	插入①	格式(0) エ	.具(I) 資料(D) 視窗(₩)	説明(H)	輸入需	要解答的問題	-	-8×
1	💕 🛃 [2 🛃	19 - 🚺] 💿 🔋 🗄	新細明體		• 12 •	В <i>I</i> <u>U</u>		s 🚛	🔛 + 🦄 +	<u>A</u> - 📮
	A1		•	fx (0.005							
	A		В		D	E	F	G	Н	Ι	J	
239	0 -0	.054	0.995	-0.10	6 1.99	98						
239.	10	.047	0.997	-0.09	4 1.99	92						
2392	2 -0	.044	0.998	-0.08	6 1.99	96						
2393	3 -0	.045	0.998	-0.07	3 1.99	94						
2394	4 -0	.033	0.997	-0.06	3 1.99	96						
239	5 -0	.028	0.997	-0.05	2 1.99	96						
239	5 -0	.023	0.997	-0.043	2 1.99	96						
239	7 -0	.019	0.998	-0.0	3 1.99	95						
239	3 -0	.012	0.998	-0.0	2 1.99	95						
239	9 -	0.01	0.997	-0.013	2 1.98	32						
240	0 0	.001	0.997	0.00	2 1.99	96						
240.	1											
		<u>vel</u> /										
就緒								加總=	>3.693			

Please select the correct diagram on the left-hand side. And check the left-top type on the righthand 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 .

- ISa	aGR≜F	- DEMO_74A - I	годтать					
<u>F</u> ile	<u>M</u> ake <u>I</u>	Project <u>T</u> ools De	<u>b</u> ug <u>O</u> ptions	<u>H</u> elp				
	🔟 🕹) 🔝 🕴 Import f	rom library	💷 🕺	🛠 🛄 🐉			
Begin:		🛄 <u>E</u> xport t	o library	nd time				
		ICP DA:	s 🕨	Auto-scan	I/O			
		💌 Sim o	ut Simulate 70	iVIEW Ba	ckground Dow	nloader		
				ICPDAS U	Dloader			
								_
- 10 CO	ICPDA	S UDloader						<u><</u>
_	Upload	l						
Be	SRAM	MODULE : X608						
	File II) File Name	Begin	Head	Tail	End	Upload	
	1:	Record1.txt	1	1	1380	100000	Upload <u>1</u>	
	2:	Not Used	-1	-1	-1	-1	Upload 2	
	3:	Not Used	-1	-1	-1	-1	Upload 3	
	4:	Not Used	-1	-1	-1	-1	Upload <u>4</u>	
	5:	Not Used	-1	-1	-1	-1	Upload <u>5</u>	
	6:	Not Used	-1	-1	-1	-1	Upload <u>6</u>	
	7:	Not Used	-1	-1	-1	-1	Upload 7	
	8:	Not Used	-1	-1	-1	-1	Upload <u>8</u>	
							Upload <u>A</u> ll	
	Dest	ination Folder						
	D:\T	emp					(Browne	
	-Downk	bec						
	Eile M	lame:			Set	Load File	OK	
	гне м				D	numberd 1	<u>C</u> ancel	
					<u></u>		Help	