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21	J.J.O	the Image Library	a R Inn	lih σ R Dic I	 ih)		••••••	
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# Chapter 1 Create a Colorful HMI in the ISaGRAF WinCE PAC

The Soft-GRAF is an HMI (Human Machine Interface) software developed by ICP DAS which allows user to create his colorful HMI application running with the control logic in the same ISaGRAF WinCE series PAC. Users can edit the HMI page by using the graphical drag-and-drop operation in the Soft-GRAF Studio. And design the control logic by using PLC Languages (e.g., Ladder, ST, FBD, and so on) in the ISaGRAF.



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## 1.1 Installing the Soft-GRAF Studio

Users can install the Soft-GRAF Studio on a WinXP or WinVista or Win7 or any compatible PC that support .Net Framework V.3.5 or later version (You can download it at the Microsoft website: (<u>http://www.microsoft.com/zh-tw/download/details.aspx?id=22</u>)

#### File location:

The latest Soft-GRAF Studio version is **1.11** now. Users can get this document ("faq146.pdf"), this software and demo programs at the following location:

- 1. The shipment CD CD-ROM: \napdos\soft-graf\
- 2. ISaGRAF FAQ website:

www.icpdas.com > Support > FAQ > ISaGRAF Soft-Logic PAC > 146 http://www.icpdas.com/root/support/faq/isagraf.php > 146

#### Installation:

- 1. Unzip the downloaded file ("faq146\_demo.zip").
- 2. Copy the "Soft-GRAF Studio" folder into "D:\", this folder includes the following items:
  - a. The Soft-GRAF Studio execute program
- c. Built-in various HMI pictures
- b. ISaGRAF Libraries C function (sofgrafy.uia) and IO complex equipment (soft\_grf.xia)
- d. Soft-GRAF Studio demo programs
- e. ISaGRAF demo programs

Soft-GRAF	Soft-GRAF Studio exe Soft-GRAF Studio	PDF	faq146_chinese.pdf Adobe Acrobat Document 4,216 KB			<b>sofgrafy.uia</b> UIA 檔案 2 KB		<b>soft_grf.xia</b> XIA 檔案 2 KB
	Button	0	Led C	P	)	gif		More_Pic
D	Demo01		Demo02	P		Demo03	0	Demo04
	Demo05	P	Demo06	P		Demo07a	D	Demo07b
Ø	Demo08	0	LoginDemo			<b>demoO1.pia</b> PIA 檔案 18 KB		<b>demoO2.pia</b> PIA 檔案 7 KB
	<b>demo03.pia</b> PIA 檔案 6 KB		demo04.pia PIA 檔案 32 KB			<b>demo05.pia</b> PIA 檔案 22 KB		demo06.pia PIA 檔案
	<b>demo07a.pia</b> PIA 檔案 35 KB		<b>demoO7b.pia</b> PIA 檔案 35 KB			<b>demoO8.pia</b> . PIA 檔案 27 KB		
		IC	P DAS Co., Ltd. Tech	inical de	ocu	ment		

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## 1.2 Installing the Related Software - ISaGRAF

## 1.2.1 ISaGRAF PAC driver

The following ISaGRAF driver versions support the Soft-GRAF Studio V. 1.11:

PAC Model	ISaGRAF Driver Version
XP-8xx7-CE6	V. 1.46 or later
XP-8xx7-Atom-CE6	V. 1.03 or later
WP-8xx7	V. 1.66 or later
WP-5147	V. 1.12 or later
VP-2xW7/4xx7	V. 1.59 or later

#### Download the driver here:

If your ISaGRAF Driver version is an earlier one, go to the website to download the new driver. <u>ISaGRAF Web Page</u> > Download – <u>Driver</u> <u>http://www.icpdas.com/root/product/solutions/softplc\_based\_on\_pac/isagraf/isagraf.html</u>

## Update the driver:

The following steps describe how to update the driver, the user can view the PDF file for more details in the downloaded driver folder.

1. In the "ISaGRAF Driver" window, click the "End Driver" button to stop the running driver in the PAC.

WinPAC-8x47/8x46/8x37/8x36 ISaGRAF Driver	OK
Setting Web About	
Configuration Slave Number : 1 Modbus RTU Slave Port None Baud Rate 19200 , N, 8, 1 [Modify]	
Project Current Application demo04, ISA11=1384, ISA12=916 Delete Elapsed Time 0:0:12:36 End Driver	

- Unzip the downloaded file (e.g., "wp-8x47-1.xx.zip") on your PC, and copy all files in its "Version No." folder (e.g., "1.66"), and then paste these files to the correct path of the PAC (e.g., "\System\_Disk\ ISaGRAF\") by using the FTP or USB Disk.
- 3. Then, reboot your PAC to complete the update.

ISaGRAF PAC	Driver Path
XP-8xx7-CE6/8xx7-Atom-CE6	System Dick/ISaCDAT
WP-8xx7, VP-2xW7/4xx7	System_Disk (ISaGRAF)
WP-5147	\Micro_SD\ISaGRAF\

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## 1.2.2 Restore the ISaGRAF library

For supporting the Soft-GRAF function, your ISaGRAF Library must have the "softgrafy.uia" (C function) and the "soft\_grf.xia" (IO complex equipment) files. If these files exist in the ISaGRAF, you can ignore this section.

These files are located at the installation folder of the Soft-GRAF Studio (e.g., "D:\Soft-GRAF Studio", refer <u>Section 1.1</u> – Installation) and then follow the steps to restore files:

## <u>C functions:</u>

- 1. Click the menu bar "Tools  $\rightarrow$  Libraries" in the "ISaGRAF Project Management" window.
- Select the "C functions" item and then click the menu bar "Tools → Archive" in the "ISaGRAF Libraries" window.
- In the "Archive C functions" window, click the "Browse" button to assign the file location and then click the "sofgrafy", then click the "Restore" button to restore the "sofgrafy.uia" to the ISaGRAF Workbench.



## IO complex equipments:

As the previous steps, just change the step2 to select the "IO complex equipments" item and then restore the "soft\_grf.xia" to the ISaGRAF.

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# Chapter 2 Edit the HMI by the Soft-GRAF Studio Software

Run the "Soft-GRAFStudio.exe" application from the installation folder of the Soft-GRAF Studio (e.g., "D:\ Soft-GRAF Studio", refer <u>Section 1.1</u> – Installation).

## 2.1 Software Operating Environment

anders and an		Menu bar / Tool bar	
Label 048 Marsa Cash Marsa B 123 45.6	HMI object area		
MSG Point ■ Project0 ad Page 1 Page 2 C	HMI page area	Editing area	

## A. <sup>「</sup>Menu bar/ Tool bar」 (Refer <u>Section 4.1</u> and the <u>Section 4.2</u>)

"File" menu, Tool bar: Basic file operations.

"Project" menu: IP Setting, Resolution Setting, Password (HMI Authority), Download. "View" menu: "Old" / "Fashion" switching mode of HMI objects.

"Help" menu: Document, About, Revision History.

## B. 「HMI object area」 (Refer <u>Chapter 3</u>)

There are three types of HMI Objects in the Soft-GRAF Studio: "Value" objects, "Button" objects and "Graph" objects

All items in the HMI object area can be shown as the graphic mode (by default) or text mode. (Refer <u>Section 4.1.3</u>)

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## "Value" objects

	Project View Value Button Graph
1	← Label MSG123 ← 6 → 0 / 1 Stop / Run ← 7
3	• 123
4	● 45.6
5	● MSG

- **1.** <sup>r</sup>g\_Label \_ : Display a Label.
- 2. <sup>r</sup>g\_B\_Val\_J: Using a Text to show a <u>B</u>oolean value.
- 3.  $\lceil g | WD_Val / g_N_Val \rfloor$ :

Display a 16-bit or 32-bit Integer value. (Occupy 1 or 2 network address number)

- 4. <sup>r</sup>g\_F\_Val J: Display a 32-bit <u>F</u>loat value. (Occupy 2 network address number)
  5. <sup>r</sup>g M Val J: Display a Message value.
- **6.** <sup>r</sup>**g N Text** ] : Display a text according to a different integer value.
- 7. <sup>r</sup>g\_Alarm l : Display an alarm list to show the triggered alarm message, and provide the FTP upload function.

#### "Button" objects



- **1.**  $[\mathbf{g}_{B_{I}}]$  : Create a button to input a <u>B</u>oolean value.
- 2. <sup>r</sup>g\_WD\_Inp/g\_N\_Inp」:

Create a button to input a 16-bit or 32-bit Integer value. (Occupy 1 or 2 network address number)

3. <sup>Γ</sup>g\_F\_Inp」:

Create a button to input a 32-bit <u>F</u>loat value. (Occupy 2 network address number)

- **4.** <sup>r</sup>**g\_M\_Inp** : Create a button to input a <u>M</u>essage value.
- **5.** <sup>r</sup>**g\_ToPage j** : Create a switch-page button.
- **6.** <sup>r</sup>**g\_Login** ] : Create a Login button with a password.
- **7.** <sup>r</sup>**g\_Logout .** : Create a Logout button.
- **8.** <sup>r</sup> **g\_Logger1 \_\_** : Create a Data Logger button with FTP upload function.

(Enabling this function to upload the data file to a location with a specified IP)

9. <sup>r</sup>g\_B\_Inp\_Lib\_J : Create a button to input a <u>B</u>oolean value. (With image library)

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## "Graph" objects



- **1.** <sup>r</sup>**g\_B\_Led** ] : Display an LED to show a <u>B</u>oolean value.
- 2. <sup>r</sup>g\_B\_Pic」:

Display a specified picture to represent a <u>B</u>oolean value. (E.g., JPG, PNG, GIF, BMP, etc.)

3. <sup>r</sup>g\_N\_Pic」:

Display a specified picture to represent an Integer value. (E.g., JPG, PNG, GIF, BMP, etc.)

- **4.** <sup>r</sup>**g\_Bar :** <u>Bar</u>-meter (horizontal /vertical).
- **5.** <sup>r</sup>**g\_Rect** ] : Draw a <u>Rec</u>tangle frame.
- 6. <sup>r</sup>g\_Trend J: Trend Charts (i.e. Run charts), used to show the value of up to three items changes over time and also provide the historical record function.
- **7.** <sup>r</sup>**g\_Gauge** ]: Angular Meter, used to show a Long int, Short int or Real value.
- 8. <sup>r</sup>g\_Trace2 : Moving Trace Chart, can be set to 2-axes (x , y) or 1-axis (x: Horizontal or y: Vertical).
- 9. <sup>r</sup>g\_B\_Pic\_Lib\_ : Display a specified picture to represent a Boolean value. (With an image library)

## C. 「HMI page area」 (Refer <u>Section 4.3</u>)

The Soft-GRAF Studio allows max. 200 HMI pages (i.e., Page 1 to Page 200). It will show the first HMI page (and only one page) on the screen while the PAC is running.



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## 2.2 Edit a Simple Soft-GRAF HMI

The following is a completed HMI page (i.e., Demo01) shown on the PAC screen, and we will describe this demo program later.



## 2.2.1 ISaGRAF related settings

Before editing an HMI page, make sure the "soft\_grf" function and the needed variables has been added to the ISaGRAF project (e.g., "demo01.pia"). This demo program is located in the installation folder of the Soft-GRAF Studio. If you are not familiar with ISaGRAF programming, please go to the website for more information:

<u>ISaGRAF web page</u> > <u>Manual</u> > ISaGRAF User's Manual (Ch1.1, Ch1.2 and Ch2) or <u>ISaGRAF web page</u> > <u>Support - ISaGRAF Tutorial</u>

## A. The "I/O Connection" function:

Open the ISaGRAF project (e.g., "Demo01") and click the "I/O Connection" button.



Double-click on the "Slot 9" (or any slot number after "8") to add the "soft\_grf" function.

(Note: The slot 0 to slot 8 are reserved for

the real I/O modules in the PAC.)







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#### B. Create a new LD program:

Users can create a "Ladder" program to programing the control logic.

	New Program
	Name: test
	Comment: for faq146
Create new program	Language: Quick LD : Ladder Diagram
	Style: Begin : Main program 🗨
Image: Begin:         Image: Begin:         Image: Begin:         Image: Begin: Begin:         Image: Begin: Begin:         Image: Begin: Begin	©K Cancel

#### C. The ISaGRAF variables setting:

1. Open the ISaGRAF project (e.g., "Demo01") and click the "Dictionary" button.

File	<u>M</u> ake	Project	Tools	Deb	ug O	ptions	<u>H</u> elp	
		80	00		Þ	X 10	•	¥₫

2. In this example, add a boolean variable "LED\_01" and set its network address to "11" (i.e., Hex. B).

lame: LED_01		Network Address:	000B	Input a	a Hex. Number her
Comment: NetW addr. =	11			B <sub>(16)</sub> =	11 <sub>(10)</sub>
Attributes	Values False:	[	<u>S</u> tore		
C Input			<u>C</u> ancel		
C Output	True:		Maria		
C Constant	set to true at init		<u>iv</u> ext		
-	Betain	F3. F33. T-3	Ontinue Hele	-	
Dim:		Ene Four 10002		O NT	A B I V C
		-		<b>9</b> +=	* 11 8 1 4
		Booleans Integer	rs/Reals   Timers   Me	essages   F	B instances Defined wor
		Name	AUNO.	Addr.	U
		LED_01	[internal]	000B	NetVV addr. = 11
programming the	SaGRAE SoftLogi	vou must comp	ile and downly	ad the	ISaGRAE project to

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## 2.2.2 Create/Open a Soft-GRAF Studio project

#### A. Create a new project:

1. Click the menu bar "File"  $\rightarrow$  "New" or the "Create New Project" tool button.

8	🌠 Sof	it-GRAF Stu	dio
	File	Project Vi	iew Help
		New 🔪	
e		Open	
		Save	
		Save As	raph
		Exit	

2	🗟 Sof	t-GI	RAF	Studio				
	File	Pro	ject	View	Hel	p		
				8		Ê	6	R
[	i Crea	ate N	ew Pr	oject				_
	Valu	le	But	on Gr	aph			
	La	be		93				

2. Give a project name and select the proper PAC (or VGA) resolution.

	New File Setting	×
Project name	Project Name	
Project file location	Location D:Soft-GRAF Studio PAC Select	Select the PAC and the resolution. Users can change the resolution at
	XPAC   I024 * 768  Create Cancel	any time even though the project has been finished. (Refer Section 4.1.1)

## Supported resolution for each PAC:

	PAC	Supported VGA Resolution		
VDAC	XP-8xx7-Atom-CE6			
APAC	XP-8xx7-CE6	640*480,800*600,1024*768		
	WP-8x37	640*480, 800*600, 1024*768		
WinPAC	WP-8x47	640*480 800*600		
	WP-5147	640 480, 800 600		
	VP-4137	640*480, 800*600		
ViewPAC	VP-25W7	640*480		
	VP-23W7	320*240		

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#### B. Open the project:

Steps to open an existing file:

1. Click the menu bar "File"  $\rightarrow$  "Open" or the "Open Project" button.

🎏 So	ft-GRAF Studio	)
File	Project View	Help
	New	
	Open	
	Save	
	Save As	raph
	Exit	

🌮 So	oft-G	RAFS	tudio				
File	Pro	ject	View	Hel	p		
9			8		Ê	6	B
Pro	ject <mark>O</mark> I	en Pro	nject				_
Va	lue	Butto	m Gr	aph			
	ahe	0-4	9				

2. Click the file name in the project folder to open it (e.g., D:\Soft-GRAF Studio\Demo01\Demo1.sof).

罰啓				? 🛛
查詢()	🚞 Demo1		💽 🔇 🌶 📂 🖽 -	
1000 我最近的交件	Pic 📓 Demo 1. sof	۲		
<b></b> 身面				
<b>人</b> 我的電腦				
1 網路上的芳鄰	檔名(11):	Demo1.sof		開啓(0)
	檔案類型( <u>T</u> ):	SoftGraf files (*.sof)	✓	取消

## 2.2.3 Description of the Soft-GRAF Studio project

This section will describe how to design this Demo01 and then download it to the PAC.

Note: In this example, all the "Network Address" setting is "11", and it's defined in the ISaGRAF project. (Refer the Section 2.2.1 – C. The ISaGRAF variable setting, the network address of the "LED\_01" boolean variable is "11".)

: This icon represents the items you need to set up.

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## A. Create a "g\_Label" object:

1. Drag and drop the "g\_Label" object into the editing area.



2. Right-click this object and then select the "Setting"

".	
	Setting
Right-click here	Delete
	Cut
	Сору
	Paste
	1 0.315

3. Click the "Font size" button to set it as "9,Bold" (or whatever you want).

Fore Color 9,Bold Back Color	Location X 116 Y 115	
Using bool addr to hide Title Label	Font Style Font Siz Bold 9 Regular 8 Bold 10 Italic 11 Underline 11 13 14	e Accept Cancel

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4. Set up the O	bject Size as Wid Common NetWork Add Font size Fore Color Back Color	dth (W): 3 ress [ ( addr to hide	9,Bold	<ul> <li>60.</li> <li>Size</li> <li>Location</li> <li>Text Align</li> </ul>	W 300 H 60 X 116 Y 115 Center ✓		
Or press and h	Intle Lat	use butto	n and then dra	g it to adj	ust the object	size.	
Drag & o 5. Double-click the "Accept"	the "Title" text button to close	box to input	object size. Dut "Soft-GRAF low. Then, clic	Demo01 k the "OK"	" in the edit w " button to en	indow, and d the settin	d then click ngs.
g_Label Common NetWork Addr Font size Fore Color Back Color Using bool Title Lab 1 Doub	ess 9,Bold addr to hide	Size Locatio Text A	W 300 H 60 on X 56 Y 9 lign Cen g_Label	Edit Title RAF Demo01	"Soft-GRAF D	emo 01"	
			3	· · · ·			2 Accept
		ICP DAS	S Co., Ltd. Tech	inical doc	ument		

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#### B. Create a "g\_B\_Led" object:

- 1. Drag & drop the "g\_B\_Led" object to the wanted position in the editing area.
- 2. Right-click this object and then select the "Setting" (or just double-click this object) to open the setting window.



3. Set the "network address" to "11", the "Size" to <u>W</u>idth: 40, <u>H</u>eigh: 40, the "Font" to "9, Bold" and the "Shpe" to "Circle".

Led setting   NetWork Address 11 Message when false Off On Input T/F color Size W 40 H 40 Font 9,Bold Location X 59 Y 93 Using bool addr to hide Ok Cancel	Set to show different message when it's "False" or "True".
--	---

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## C. Create a "g\_B\_ Pic" object:

1. Drag & drop the "g\_B\_Pic" object into the editing area, right-click on it and select the "Setting".



2. Set the "True File", which means to display a picture when read a "True" state, and you can also set it to a dynamic image (i.e., ".GIF", it must match the specific format of the Soft-GRAF). These pictures are located at the "\Soft-GRAF Studio\gif\" path in the "faq146\_chinese\_demo" zip file.



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3. Set the "False Pic Setting NetWork Address	e File" to "Fan03-	·m-(040).g	if", and set the	e "netwo	ork address" to	"11".	
True File		Open				1	2 🛛
✓ False File	No_Pic	My F Docu	lecent aments	5	****		Filmstrip Thumbnails Tiles Icons List
g_B_Pic		Des	sktop Fan03-m-	(040) grf	Fan03-m-(041).gif	Fan03-s-(040).gif	Details
NetWork Addres           Using bool ad           True File	≋ 11 ldr to hide Fan03-m-(041).gif	My Do My Co	omputer Fan03-s-(	<b>8 6</b>	Fan04-m-(060).gif	FanD4-m-(061).git	
False File F	7an03-m-(040).gif	My N	File name: etwork Files of type:	FanO3-r All Ima	n-(040).gif ge Formats(*.bmp;*.jpg;*	yif;*.png)	Open Cancel
			Ok Cance	1			

## D. Create two "g\_B\_Inp" objects:

1. Drag & drop two "g\_B\_Inp" objects into the editing area by turns.



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2. Right-click this object and select the "Setting" to open the settings window. Then, set the "network address" to "11", the "Font size" to "9, Bold" and the "Input T/F color" to both the same color.

	g_B_Inp	×
ON / OFF ON Setting Goto F Delete Cut Copy Paste	common       Input Setting         P NetWork Address       11       Size       W 75       H 25         P Font size       9,Bold       Location       X 52       Y 178         True       False         P Input T/F color       Image: Color Color       Image: Color	

3. After clicking the "Input Setting" tab, enter the "ON / OFF" in the "Show as string" text box and then click the "Ok" button to finish this setting.

g_B_Inp	
common Input Setting	
Show as picture	Mode Select Normal
🖉 💿 Show as string ON / OFF	Level 0 🗸
🔘 Show as value	🔲 Ask before operation
Boolean False OFF	Identify Password
Boolean True ON	Using bool addr to hide
Title of Dialog	
	Ok Cancel

4. Next, set the 2nd "g\_B\_Inp" object, right-click on it and select "Setting" to open the settings window.

ON> 5 sec>OFF							
	Setting 💊						
	Delete 🔨						
	Cut						
	Сору						
	Paste						

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Set the "network address" to "11", the "Font size" to "9, Bold" and the "Input T/F color" to both the same color.

g_B_Inp	ng
<ul> <li>NetWork Address</li> <li>Font size</li> </ul>	11 Size W 75 H 25 9,Bold Location X 151 Y 178
🥜 Input T/F color	True False
	Ok Cancel

5. Click the "Input Setting" tab, and then enter "ON → 5 sec → OFF" in the "Show as string" text box. Select the "True → False" option at the "Mode Select" item and set the "Switching Time" to 5 seconds. Then, check the "Ask before operation" box and click the "Ok" button to finish this setting.

O Show as picture	Mode Select True>False
<ul> <li>Select from image lib</li> <li>Show as string ON&gt; 5 sec</li> </ul>	Level 0
🚫 Show as value	🗹 Ask before operation
Boolean False OFF	Identify Password
Boolean True ON	Using bool addr to hide
Title of Dialog	
	Ok Cancel

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#### E. Create a "g\_ToPage" object:

1. Drag & drop a "g\_ToPage" object into the editing area.



 Right-click this object and select the "Setting" to open the settings window. Then, set the "Size" to <u>W</u>idth: 100, <u>H</u>eigh: 25, the "Font size" to "9, Bold", the "Fore color" to the same color like the figure below, the "To Which Page" to "2" and set the "Title" to "Goto Page 2".

Goto Page 2	g_ToPage
Goto Page 2	ToPage Setting   Size   Normation   Size   W   Location   X   52   Y   238   Ask before operation   Location   X   52   Y   238   Ask message   Pont size   9,Bold   Deny message   Access Deny.   Fore Color   Pony   To Which Page   Now as picture   Pony   Title   Goto Page 2   Using bool address to hide     Ok

For easy to use, the Soft-GRAF Studio V.1.10 provides an image library function by adding a button object (i.e., "g\_B\_Inp\_Lib") and a graph object (i.e., "g\_B\_Pic\_Lib") in the "HMI object area" (refer <u>Section 3.4</u> for details). The following steps will describe how to create these two objects in this Demo01.

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## F. Create a "g\_B\_Inp\_Lib" object:

1. Drag & drop the "g\_B\_Inp Lib" object from the "Button" HMI object area to the editing area.



2. Double-click this object to open the "Image Library" window and then select an image (note: click the "0" or "1" button to preview the On/Off state for this image). Click the "Small size / Medium size / Normal size / Large size" option to change the image size. Moreover, click the top-right three color buttons to change the image background color. Then, click "Setting" button.



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3. In the "Input Setting" tab, set the "network address" to "11" and click the "Ok" button to back to the "Image Library" window and then click the "Accept" button to finish this setting.

Input Setting	1				
Title of Dialog	]				
Level 🛛 🗸					
Using bool addr to hide					
Mode Select Normal	 ▼				
Switching Time					
		Cancel		Background Color Sele	ct
	-image view			ON ON ON ON OFF	
	ON	offician offician			OFF
	UFF	ON OFF OFF	ON STOP	Run 約	0
	0 1 O Small size O Medium size	∲ ←	$\checkmark$	≪ ≫	OFF ON
	O Normal size O Large size				
	seimig		[	Accept	Cancel

#### G. Create a "g\_B\_Pic\_Lib" object:

1. Drag & drop the "g\_B\_Pic\_Lib" object from the "Graph" HMI object area to the editing area.



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Double-click this object to open the "Image Library" window, and then select an image and click the "Setting" button.



Set the "network address" to "11" and click the "ok" button to back to the "Image Library" window, then click the "Accept" button to finish this setting.

Pic Setting	
🔗 NetWork Address 🛛 11	
Using bool addr to hide	
	Ok 🔪 Cancel

In the HMI page area, right-click on the "Demo1.sof" and select "New Page" to create the second page. Then, the user can only click the "Create" button without any setting.



PageSetting	
Description	
Back Color	
	Create

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Click the "Page 2" to switch to the 2nd page, and then drag & drop the "g\_ToPage" object to the editing area that used to switch to the 1st page.



In the setting window, set the Size to W: "155", H: "25", the "Fore Color" to the color as the figure below, the "To Which Page" to "1" and the "Title" to "Go To Page 1", then click the "Ok" button to finish this setting.

g_ToPage	×
ToPage Setting	
🖋 Size W 155 H 25 🗌 Ask before operat	ion
Location X 23 Y 30 Ask message	
Font size 9,Bold Deny message	Å ve vrou suve '
Fore Color	Alle you sure
Show as picture	Go To Page 1
Using bool address to hide	
Ok	Cancel

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#### 2.2.4 Download the Soft-GRAF Studio project

#### **Download Setting:**

1. Click the menu bar "Project" → "IP Setting" and enter the IP address of the ISaGRAF PAC, then click the "Setting" button.

🌇 Soft-GRAF Studio - Demo01.sof ,					
File	Project	Help			
: 🥑 (	IP	Setting 🔪 🗍 🗐 🗄			
Proj	Pro	oject Setting			
,	Pa	sWord			

IP Setting	<b>X</b>
IP Address	192 168 1 165
	Setting

 Click the "Download" tool button (or the menu bar "Project" → "Download") and click "Yes" in the "Save" window to start the download process.



Save		
(i) Save Pro	oject?	
是①	否N	
	Yes	

3. After downloading, the first HMI page (i.e. Page 1) will show on the PAC screen (or an external VGA monitor).



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# **Chapter 3 Description of the HMI Object**

The Soft-GRAF Studio provides three types of objects in the HMI object area, they are "Value", "Button" and "Graph" objects. This chapter will describe all settings for each objects one by one.

## 3.1 Introduction of the HMI Object Area – Value



нмі	HMI Object Area - Value					
1	g_Label	Display a label.				
<u>2</u>	g_B_Val	Using a text to show a Boolean value (e.g., Run/Stop).				
<u>3</u>	g_ WD_Val g_N_Val	Display an Integer value (16-bit or 32-bit) or a Float value (32-bit long).				
<u>4</u>	g_F_Val					
<u>5</u>	g_M_Val	Display a Message value.				
<u>6</u>	g_N_Text	Display a Text according to a different Integer value (16-bit).				
<u>Z</u>	g_Alarm	Display an Alarm list to show the triggered alarm message and provide the FTP upload function.				

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<b>3.1.1 Value ob</b> Display a label.	oject - g_Label	F	lello Word				
	g_Label Common 1 NetWork A 2 Font size 3 Fore Color 4 Back Color 5 Using b 5 Title	ddress	7 12,Regul 8 0 0 0 0 0 0 0 0 0 0 0 0 0	Size	W 75 H 25 n X 42 Y 74 gn Center		
Setting items.							

(1) Network address: The defined network address of the ISaGRAF variable.

(Refer <u>Section 2.2.1</u>, useless for this g\_Label object)

- (2) Font size: Set the font style and size.
- (3) Fore color: Set the text color.
- (4) Back color: Set the background color of this object.
- (5) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False".

(E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this item to 10.

It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)

- (6) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (7) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)
- (8) Text align: Set the text alignment of this object (e.g., Left, Right or Center).
- (9) Title: Set the text shown on the label.

(Double-click this text box to open the editing window if you need to enter a lot of text.)

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3.1.2 Value o	biect-g B Val						
Using a text to s	show a Boolean va	lue (e.g.,	Run/Stop).				
	Description:	Va	alue = True	Valu	ie = False		
	Displayed Style:		Working		Stop		
	Common s NetWork A Font size Using b Fore Color Back Color	etting ddress ool address to	1 6 9,Regular 7 hide 7 False True 8	Size	W 75 H 2 n X 198 Y 3 ign Center	25 29 29	

#### Setting items:

 Network address: Enter the defined network address of the ISaGRAF "Boolean" variable. (Refer <u>Section 2.2.1</u>).

- (2) Font size: Set the font style and size.
- (3) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False". (E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this item to 10.

It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)

## (4) Fore color: Set the text color.

True: Display a text color when this ISaGRAF Boolean value is "True".

False: Display a text color when this ISaGRAF Boolean value is "False".

(5) Back color: Set the background color of this object.

True: Display a background color when this ISaGRAF Boolean value is "True".

False: Display a background color when this ISaGRAF Boolean value is "False".

- (6) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (7) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)
- (8) Text align: Set the text alignment of this object (e.g., Left, Right or Center).

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(9) Left text: Set a "Sta "Tru (10) Blink: Set to No Bl Blink Blink All Bli (11), (12): Set the	g_B_Yal Common 9 Left Text 10 Blink 11 Message 12 Message 12 Message 12 Message ink: Dis when true: Blink when false: Blink when false: Blink ink: Dis when true: Blink ink: Dis e displayed text	setting No B false Off true On how on the PAC screen g text or no play a text hk when th hak when th play a blin when this	link link e left side of th n will show "Sta ot blinking. without blinki nis Boolean valu his Boolean valu king text. Boolean value	is object itus: True ng. ue is "True is "True is "True	Dk Com value. For exa e" when this I ue". Ise". Ise". " or "False".	ample, set the	e text to ean value is

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<b>3.1.3 Value object - g_WD_val, g_N_val, g_F_val</b> Display an integer value (16-bit signed or 32-bit long) or a float value (32-bit floating point).										
	Soft-GRAF Studio: PAC:									
Description:	Set the fixed	text	Show as value	Sho	ow the text & v	value Sho	w the value			
Displayed Style:	Pressure: #	# Pa	- Val		Pressure: 5 Pa		5			
	Common S 1 NetWork A 2 Font size	etting-1 Se ddress	tting-2	> Size	₩ 75 H	25				

Location X 63

Text Align

Y 204

¥

Center

#### Setting items:

- (1) Network address: Enter the defined network address of the ISaGRAF "Integer/Real" variable. (Note: Using an ISaGRAF 32-bit Integer or a 32-bit Real variable must occupy two addresses, refer <u>Section 2.2.1</u> or <u>ISaGRAF Web Page</u> > <u>Manual</u> > the section 4.2 of the "ISaGRAF User's Manual")
- (2) Font size: Set the font style and size.
- (3) Fore color: Set the text color.
- (4) Back color: Set the background color of this object.

Fore Color

Back Color

Using bool addr to hide

Value Type word

(5) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False". (E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this item to 10. It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)

- (6) Value type: Select the value type for ISaGRAF variable (e.g., 16-bit word or 32-bit long).
  - (The "g\_F\_Val" without using this setting)
- (7) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (8) Location: Set the X, Y position of this object. (Refer Section 4.3.1 for the axis range)
- (9) Text align: Set the text alignment of this object (e.g., Left, Right or Center).

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	g_WD_Val Common 10 Conver Original Value afb 11	Setting-1 s ersion: Value ar 10	Setting-2	12 Dot 13 Fixed di 14 Left Text 15 Right Text	git amount 2	× mcel	
<ul> <li>(10) Conversion: (The "g_F_')</li> <li>(11) Original value Value after: (E.g., If the mean "1638</li> <li>(12) Dot: Set to s (E.g., If set</li> <li>(13) Fixed digit an (Only for th (E.g., If set</li> <li>(14) Left text: Set</li> <li>(15) Right text: Set</li> </ul>	Select this chec val" object allow e: Set the rang Set the rang "original value" as to convert the 84" will be convert how the numbe the "Dot" to "3" mount: Set a fix the "g_WD_Val" a it to "3", the val t a fixed text to s et a fixed text to s	K box to ente ye of the re ge of the co ' is set to ' e value rar erted to " er of decin ', the orig ed-length and "g_N_ lue "6" wi show on t o show on	nable th r a float eceived onverte '0 to 32 nging fro 500".) nal place inal valu numbe _Val" ob II be sho he left s the righ	ne value convers ing value) value (e.g., 0 to d value. 767" and the "V om 0 to 32767 in es of the conver ue "32767" will h r to show leadin jects). own as "006" an ide of this object at side of this object	32767 or 0 to alue after" is nto a range or ting (or no co be shown as ' og zeros. d the value " ct value. oject value.	o 65535 or o set to "0 to f 0 to 1000, t onverting) va '32.767") 62" will be s	ther). 1000", which hat is, the value lue. hown as "062".)

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Common Setting-1 Settin	g-2
16 Enable limit detection	C Up-Limit Message Up-Limit
17 Up-Limit 1000	Low-Limit Low-Limit
Low-Limit -1000	Fore Back
Blink No Blink	22 Up-Limit Color
19	Low-Limit Color
	$\smile$

- (16) Enable limit detection: Check this box to enable the detection of the limit value.
- (17) Up-limit: The upper range value.
- (18) Low-limit: The lower range value.
- (19) Blink: Set to display a blinking content or not blinking.
- (20) Up-limit message: Check the "Enable limit detection" box to allow this setting. Set to show the text when a value is over the "Up-limit" value.
- (21) Low-limit message: Check the "Enable limit detection" box to allow this setting. Set to show the text when a value is over the "Low-limit" value.
- (22) Up-limit color: Check the "Enable limit detection" box to allow this setting. Set to show the text color and background color when a value is over the "Up-limit" value.
- (23) Low-limit color: Check the "Enable limit detection" box to allow this setting. Set to show the text color and background color when a value is over the "Low-limit" value.

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<b>3.1.4 Value ob</b> Display a messag	j <b>ect - g_M_val</b> e value.						
		studi	io:	Р	AC:		
	Description	: Shov	w Message	;	Show Messag	le	
	Displayed Style	:: g_	_M_Val		Message		
g_M_val Message Settin 1 NetWork Add 2 Font size 3 Fore Color 4 Back Color 5	g dress 1 9,Regul	6 Size ar 7 Locat 8 Text 1 9 Lang	W 75 H 25 ion X 91 Y 34 Align Center uage encoding UTF UTF- big5 gb23 Othe	)7 )7 •• 8 •• 8 •• 12 ••	vut Encode		
Sotting itoms:		l				OK	Cancel

(1) Network address: Enter the defined network address of the ISaGRAF "Message" variable.

#### (Refer Section 2.2.1).

- (2) Font size: Set the font style and size.
- (3) Fore color: Set the text color.
- (4) Back color: Set the background color of this object.
- (5) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False".

(E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this item to 10.

- It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)
- (6) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (7) Location: Set the X, Y position of this object. (Refer Section 4.3.1 for the axis range)
- (8) Text align: Set the text alignment of this object (e.g., Left, Right or Center).
- (9) Language encoding: Select the text encoding.

(UTF-8: English ; big5: Traditional Chinese ; gb2312: Simplified Chinese ;

Other: Select this option to input other encoding in the "Input Encode" window.)

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3.1.5 Value ol	bject - g_N_Tex	t					
Display a text ac	cording to a diffe	rent integ	ger value (16-bi	t).			
Studio:			PAC:				
Description:			Value = 0		Value =1		Value = 2
Displayed Style:	g_N_Text		OK! Enjoy i	t ~	OKay! Have fu	n ~	I like it, too !!
	<ul> <li>common sett</li> <li>Net Work I</li> <li>Font size</li> <li>Size</li> <li>Location</li> </ul>	ing <u>Setting</u> Address 9 W 100 H X 312 Y	1 ForeCo BackC ,Regular Align 23 8 Left te 9 Right 280 Usi	olor color Cente: xt text ng bool add	5 6 4 7 1 ress to hide		

#### Setting items:

(1) Network address: Enter the defined network address of the ISaGRAF "Integer" variable.

(Refer <u>Section 2.2.1</u>)

- (2) Font size: Set the font style and size.
- (3) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (4) Location: Set the X, Y position of this object. (Refer Section 4.3.1 for the axis range)
- (5) Fore color: Set the text color.
- (6) Back color: Set the background color of this object.
- (7) Align: Set the text alignment of this object (e.g., Left, Right or Center).
- (8) Left text: Set a fixed text to show on the left side of this object value.
- (9) Right text: Set a fixed text to show on the right side of this object value.
- (10) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False". (E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this item to 10.

It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)

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	g_N_Text common se *	tting Setting Number	ForeColor	Bad	ckColor 12 13 Dele	× t te	
(11) New: Add	a text and its cor	responding	value.				
(12) Edit: Edit t	he selected item.	:+					
(13) Delete: De	iete the selected	item.					
New: Click the (a) Number: Assign When it will s (b) Fore color: S (c) Back color: S (d) Blink: Check (e) Text: Set the (f) Apply: Apply	"New" button to a value (up to 50 the Boolean valu show the corresp Set the text color. Set the backgrour this box to enab corresponding to the settings.	show this s numbers, e is equal t onding tex nd color. le blinking. ext.	setting window 0 to 49). to this value, t.	d. g_N_T a Num b ForeC c BackC	extNewItem ber 0 [ color e Color	Blink d	Apply
Edit Select the item the "Edit" butto window. Then, completing set	you want to edit on to open the ab click "Apply" afte tings.	, and click ove setting r	Common setting	(Setting Iber	ForeColor	BackColo	r New Edit Delete
Note: By defau	lt, the 1st item w	ill be select	ted automatica	lly if the	user only click	< the button.	
<b>Delete</b> Select the item click the "Delet	you want to dele e" button to dele	te, and te it.	common setting	(Setting	ForeColor	BackColo	r New

0

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\*

Edit

Delete
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## 3.1.6 Value object - g\_Alarm

Display an alarm list to show the triggered alarm message and provide the FTP upload function.



### Setting items:

- (1) Bool network address: Enter the defined network address of the ISaGRAF "Boolean" variable (refer <u>Section 2.2.1</u>). The ISaGRAF "MSGARY\_W(-9, msg)" function can be used to trigger the alarm message (refer <u>Section 5.4</u>).
- (2) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (3) Location: Set the X, Y position of this object. (Refer Section 4.3.1 for the axis range)
- (4) Fore color: Set the text color.
- (5) Back color: Set the background color of this object.
- (6) Title: Set the title of this alarm object (e.g., "Alarm History" in the Figure 1).
- (7) Confirmation when click ack button:

Check this box to show up a confirmation window after clicking the "Ack" button.

- (8) Ack text: Set a text shown on the "Acknowledge" button and status bar.
  - (E.g., "Ack" in the Figure 1).
- (9) Alert text: Set the title shown in the alarm confirmation window (e.g., "Alert" in the Figure 2).

(10) Export text: Set a text shown on the "Export" button (refer the Figure 1).

(11) Alarm amount text: Set a text to represent the number of alarms shown on the status bar.(E.g., "Alarm amount" in the Figure 1).

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(12) NoAck text:	12) NoAck text: Set a text to represent the number of unconfirmed alarms shown on the status bar.						
(	E.g., "No Ack" in	the above	e Figure 1).				
(13) Ack, more te	ext: Set a text sho	own on th	e button which	n used to	confirm all al	arms.	
(	E.g., the "Ack(M	ore)" butt	on in the above	e Figure 1	L).		
(14) Alarm alive:	Set the retention	n period fo	or alarms (rang	e: 1 to 12	2 months).		
						g_Ala	rm
[	Setting - 1 Setting	- 2 Setting	(-3 Setting-4	Setting	5		
(15	Close text Clos	e		larm beep	<b>b</b>	eeps	
16	Search text Sear	ch	22 Stop Be	ep Text S	top Beep		
17	Keyword text Ke	yword	(23) Expo	rt Warning	Message:		
18	Clear text Clea	r	Are y	rou sure to	export the alarm	1 hi:	
(19	Encoding UTF	-8 🔽	_				
(20	Date format 31	/12/2012		*			

Refer the next page (Figure 2) to view the "g\_Alarm" object shown on the PAC screen.

Users can use their local language to set the following content.

- (15) Close text: Set a text shown on the "Close" button.
- (16) Search text: Set a text shown on the "Search" button.
- (17) Keyword text: Set a text used to mean "Keyword" in the "Search" window.
- (18) Clear text: Set a text shown on the "Clear" button in the "Search" window.
- (19) Encoding:

The text encoding for an ISaGRAF project to show alarm messages.

(UTF-8: English ; big5: Traditional Chinese ; gb2312: Simplified Chinese ;

Other: Select this option to input other encoding in the "Input Encode" window.)

- (20) Date format: Set the date format shown on the "Alert" window.
- (21) Alarm beep: Set the number of the PAC beeps for an alarm happened. (Only for the VP-25W7/23W7)
- (22) Stop beep text: Set a text shown on the "Stop Beep" button.
- (23) Export Warning Message:

Set the warning text shown in the "Export" window

E.g., "Are you sure to export the alarm history to the USB pen drive (Overwrite the existing files)?"

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The operating PA	<u>C screen:</u>			23	Export?		
j i	Alarm History (27/1	1/2012 Tues	sday)		Are you sure to export (Overwrite the existing	the alarm history to (files) ??	the USB pen drive
2012-11-27	- Ack	00 🖌	00 🖌 Export		Sub-directory :	Station1	
O ALL O No Ack	Ack(more)	Ack (/	ALL) Search		Format :	csv (for excel)	~
<				2. 11. ( 2	<ul> <li>Today</li> <li>Last week</li> <li>All recent 1 more r</li> <li>Export</li> <li>No action.</li> </ul>	Yesterday ( This Month ( nonths	) This week Last Month Close
Alarm amount: 0 , Ack: 0 ,	No Ack: U				Alarm History	>> Search	
A] 2012-11-27 ALL No Ack *0001, 27/11/2012 Event5 ! Alarm amount: 1, Ack: 0,	1a *0001, 2 *0001, 27/11/2012 Event5 Stop Beep 22	Alert 27/11/2012 20 2 11:20:51, 1 Ack	11:20:51, nt5 !		2000/ 1/ 1 Keyword Search Panel Type : 倉頡 LargeKB	TO 2000 DI Clear 18	/ 1/ 1 Close 15 注音 鍵盤

※ Up to 3000 alarm messages can be recorded per day. (Do not record if over the limits of 3000).

※ If you want to delete the alarm records, it needs to stop the ISaGRAF PAC Driver (Refer Section 1.2.1) and delete the log files in the correct folder, then reboot the PAC.

WP-5147, WP-8xx7, VP-2xW7/4xx7: "\Micro\_SD\Soft-GRAF\g\_Alarm\"

 地址(D)
 \Micro\_SD\Soft-GRAF\g\_Alarm\2012\11

 姓名
 大小 类型

 回 g\_alarm\_2012\_11\_26.txt
 818 字节 文本文档

<u>XP-8xx7-CE6/8xx7-Atom-CE6</u>: "**\System\_Disk2**\Soft-GRAF\g\_Alarm\"

For instance, "\2012\11\g\_alarm\_2012\_11\_26.txt" (Auto created folder "\Year\Month\Log File"). Or, "**\Email\_ETH**\g\_Alarm\ g\_alarm\_2012\_11\_26.txt" (Temp file)

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	40 / 126
24 25 26 27 28 29	Setting - 1 Settin Enable Ftp Transmission Typ FTP Server IP 19 Port NO. 21 User name Password * FTP Directory	g - 2 Setti pe Ethern 92.168.1.16 raven_liu ***	ng - 3 Setting : 30 Fi et V H i1 H H H	- 4 Settin le format our to sen our1 our2 our3 hine2)	Ag - 5 .CSV ♥ d 31 10:00 ♥ 11:00 ♥ 12:00 ♥	g_AI	arm

### (24) Enable FTP:

Check this box to enable the FTP function to upload an alarm file from the PAC to the specified FTP Server.

(25) Transmission type:

"Ethernet" and "2G/3G Wireless" options are available. If using the "2G/3G Wireless" way to upload a file to an FTP Server, refer the <u>Soft-GRAF Web Page</u> > <u>FAQ</u> > FAQ-143 to set up the required software and hardware.

- (26) IP: The IP address of an FTP Server (e.g., 192.168.1.161).
- (27) Port no.: The communication port of an FTP Server, normally "21".
- (28) User name & Password: Enter the username and password to log in to the FTP Server. If the "User name" remains unchecked, users can log in by anonymous without the username and password.
- (29) FTP directory: Upload a file to the specified folder on the FTP Server (defaults to the root: "\"). (E.g., if you want to upload a file to the "dir2" folder, set the path as "\dir2")
- (30) File format: Select the file format (i.e., ".CSV" or ".TXT").

(31) Hour to send:

Set a daily time for file uploading. It allows to select three "n" o'clock sharp and the file will be sent after 3 minutes. (E.g., set it to "00:00" means that the file will be sent at 00:03)

(※ "Hour1": It will upload the data that be recorded from the previous day to the setting time. "Hour2" or "Hour3":

It will upload the data that be recorded from today's 00:00 to the setting time.)

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	41 / 126
32 33 34 35 36	Setting - 1 Setting - 2 Settin	ng - 2 Set 2 192.168.11 user	ting - 3 Setting	4 Setti	ing - 5	g_A	larm
<ul> <li>(32) Enable FTP 2 Check this</li> <li>(33) FTP Server II IP address</li> <li>(34) Port no.: The communication</li> <li>(35) User name &amp; Enter the ui</li> <li>(36) FTP director</li> <li>Upload a fi</li> </ul>	2: box to allow to u P: of an FTP Server unication port of & Password: Isername and pa y: le to the specifie	upload the (e.g., 192 f an FTP Se essword to ed folder (e	e alarm file to th .168.11.1). erver, normally b log in to the F e.g., default pa	ne secon "21". TP Serve th: "\") c	d FTP Server. r. on the FTP Ser	ver.	

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	42 / 126
37 38 39 40 41 42	Setting - 1 Setting - 2 Settin	ng - 2 Set ual FTP 0 0 0 0	tting - 3 Setting	- 4 Set	ting - 5 Iddress O		g_Alarm
<ul> <li>37) Enable man Check this specified d</li> <li><b>Refer th</b> <u>http://</u></li> <li>38) Year address Enter the d</li> <li>39) Month addr Enter the d</li> <li>40) Day address Enter the d</li> <li>41) Command a Enter the d</li> <li>42) Result address Enter the d</li> <li>43) Progress add Enter the d</li> </ul>	ual FTP setting: box to enable th late to the FTP Se <b>ne Demo8:</b> <u>Section</u> www.icpdas.com s: defined network ress: defined network address: defined network ess: defined network con; 1: The syste o upload file to F dress: defined network	e FTP han erver. on 5.5-4. n/root/sup address o address o address o address o em is seno TP Server; address o	nd-operation up FTP Loader or pport/faq/isagr of the ISaGRAF ' of the ISaGRAF ' of the ISaGRAF ' of the ISaGRAF ' ding file; 21: 5 ; 103: The Sol of the ISaGRAF '	FAQ-15 FAQ-15 af.php > 'Integer' 'Integer' 'Integer' 'Integer' Send O.K t-GRAF 'Integer'	, it allows to <b>8: Section 1.</b> <b>FAQ-158</b> <sup>7</sup> variable to <sup>7</sup> variable to <sup>7</sup> variable to <sup>7</sup> variable to <sup>6</sup> c, 101: File doesn't enab <sup>7</sup> variable to	upload the f 4 for more d access the "' access the "I access the "I start the file get the state doesn't exis le the FTP) get the prog	ile with a etails. Year" data. Month" data. Date" data. uploading. e of uploading t;
upioading.	(0 100)						

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# 3.2 Introduction of the HMI Object Area – Button



нмі	Object Area - B	utton
1	g_B_Inp	Create a button to input/show a Boolean value.
		Create a button to input/show a 16-bit Integer value.
2	g_vvD_mp	(Occupy one network address number)
<u></u>	a Ni Inn	Create a button to input/show a 32-bit Integer value.
	g_iv_irip	(Occupy two network address number)
2	g E Inn	Create a button to input/show a 32-bit Float value.
2	g_i_iiip	(Occupy two network address number)
<u>4</u>	g_M_Inp	Create a button to input/show a Message value.
<u>5</u>	g_ToPage	Create a switch-page button.
<u>6</u>	g_Login	Create a Login button with a password.
<u>Z</u>	g_Logout	Create a Logout button.
8	g logger1	Create a Data Logger button, and enable the FTP function to upload
<u> </u>	5_508611	the data file to the FTP Server with a specified IP.
q	g B Inp	Create a button to input/show a Boolean value.
<u>→</u>	0_0b	(With image library, Refer <u>Section 3.4</u> )

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	44 / 126
<b>3.2.1 Button object - g_B_Inp</b> Create a button to input/show a boolean value (e.g., On/Off).							
	Description	Show a	s string Show	v as value	Show as pi	cture	
	Displayed Style	56	et ON	True	🔎 Star	t	
	g_B_Inp common Ir 1 NetWork & 2 Font size 3 Input T/F c	nput Setting ddress 1 9 Tr olor	Regular Locatio	₩ 75 I ) on X 102	H 25 Y 306		
				Oł	Cance	1	
Setting items: (1) Network addr	ess: Enter the de	efined net	work address o	f the ISa	GRAF "Boolea	n" variable.	

(Refer <u>Section 2.2.1</u>).

(2) Font size: Set the font style and size.

(3) Input T/F color: Set to show the text color when this ISaGRAF Boolean value is "True" or "False".

(4) Size: Set the object size. "W" stands for Width and "H" stands for Height.

(5) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)

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	<ul> <li>g_B_Inp</li> <li>common In</li> <li>6 Show as</li> <li>7 Select fr</li> <li>8 Show as</li> <li>9 Show as</li> <li>9 Boolean Fa</li> <li>Boolean Tr</li> <li>10 Title of Dia</li> </ul>	put Setting picture om image lib string Bool value lse Off ue On log	11 Mode Switcl Inp Level As Idu Us	Select N hing Time 0 sk before op entify Passw sing bool add	formal sec 12 13 eration 14 ord 15 dr to hide 16 Cance		
<ul><li>(6) Show as pictu</li><li>Picture form</li><li>(7) Select from ir</li></ul>	ure: Select a pictu mat: JPG, GIF, PN mage lib:	re to shov G, BMP (r	w this button. note: the ".bmp	o" file wil	l consume a la	arge amount	of memory)
Select a pic	cture in the "image	ge library"	window (refer	Section	<u>3.4</u> ) to show t	this button o	bject.
(8) Show as strin	g: Set the text sh	own on th	ne button.				
(9) Show as value	e: Show the curre	ent Boolea	n value on this	button.			
Boolean false: Set the text to represent the "False" value.							

Boolean true: Set the text to represent the "True" value.

(10) Title of dialog: Set the title and the message text (True/False) for this dialog box.

PAC	side:

On/Off Setup ON OFF Exit	9 ON OFF EXIT
Title of Dialog On/Off Setup label4	
Tum OFF message OFF Apply	
ICP DAS Co., Ltd	l. Technical document

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(11) Mode select	: There are five r	nodes on	this button:						
(a) Normal:	Switch to "TRU	E" or "FAL	SE".						
(b) Only False: Click this button to set it to "FALSE".									
(c) Only True: Click this button to set it to "TRUE".									
(d) True $ ightarrow$	False:								
Click th	nis button to set	it to "TRU	E" and switch t	to "FALSE	" after a spe	cified time.			
(e) False $ ightarrow$	True:								
Click th	nis button to set	it to "FALS	SE" and switch	to "TRUE	" after a spee	cified time.			
The (f) and (	g) options will ap	pear only	ı if the "(6) Sho	w as pict	ure" item is s	elected.			
(f) ON (pressed), OFF (released): Press and hold this button to "ON" and release it to "OFF".									
(g) OFF (pressed), ON (released): Press and hold this button to "OFF" and release it to "ON".									
(12) Switching tin	ne:								
If you selec	t the "(d) True 🖯	False" o	r "(e) False $ ightarrow$ 1	「rue" opt	ion in the "(1	1) Mode Se	elect" setting,		
it needs to	set the switching	g time. (U	nit: second; Ra	nge: 1 to	10 seconds)				
(13) Level:									
Set the acco	ess permissions	for this ob	oject (refer <u>Sect</u>	tion 4.1.2	, HMI Access	Permissior	ns).		
(14) Ask before o	peration:								
Pop up a co	onfirmation wind	low before	e executing.						
(15) Identify pass	word:								
Enter the lo	ogin password ag	gain before	e executing.						
(Refer <u>Secti</u>	<u>on 4.1.2</u> , HMI A	ccess Pern	nissions)						
(16) Using bool a	ddress to hide:				· · · · <del>-</del> -				
Check this i	box and enter th	e address	of the ISaGRAI	- Boolear	n variable. Th	IS ODJECT WI	III become		
	ine poolean Valu	eis irue	; it will appear	notwork	oliean value l	S Faise .	om to 10		
(E.g., triere	the object if the	"Lido" io	nue with the		auuress as Il	J. Set this it	em to 10.		
it win mue		inde 13					JC .J		

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	47 / 126		
<ul> <li>3.2.2 Button object - g_WD_Inp, g_N_Inp, g_F_Inp</li> <li>Create a button to input an integer value (16-bit signed or 32-bit long) or real value (32-bit floating point).</li> <li>Description : Show as string Show as value Show as picture</li> </ul>									
Displayed Style : Set WD_val 2									
1 NetWork Address   1 NetWork Address   2 Font size   9,Regular   3   Fore Color   4   Size   7   4   Size   7   4   Size   7   4   5   Value Type   6									
Setting items: (1) Network addr (Note: Usin <u>Section 2.2</u> (2) Font size: Set (3) Fore color: Set (4) Size: Set the co (5) Location: Set (6) Value type: Set (The "g_F_" (7) Show as pictur Picture form (8) Show as title: (9) Show as value (10) Fixed digit and (Only for the (E.g., If set	ress: Enter the d og an ISaGRAF 32 .1 or <u>ISaGRAF W</u> the font style ar t the text color. object size. "W" the X, Y position elect the value ty Val" without usin the Select a pictor mat: JPG, GIF, PN Set the text sho e: Show the curr mount: Set a fixe he "g_WD_Inp" a it to "3", the val	efined net 2-bit Integ <u>/eb Page</u> > nd size. stands for of this of ype for ISa ng this set ure to sho NG, BMP ( own on the ent Boole ed-length and "g_N_ ue "6" wil	twork address of er or a 32-bit R <u>Manual</u> > the Width and "H' bject. (Refer <u>Sec</u> aGRAF variable ting) w this button. note: the ".bmp button. an value on this number to show _Inp" objects). I be shown as "	of the ISa eal varia section ' stands <u>ction 4.3</u> (e.g., 16 o" file wi s button w leadin 006" an	aGRAF "Integ able must occ 4.2 of the "ISa for Height. <u>1</u> for the axis i-bit word or 3 ill consume a ng zeros. d the value "(	er/Real" varia upy two addi aGRAF User's s range) 32-bit long). large amoun 52" will be sh	able. resses, refer Manual") t of memory) own as "062".)		

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	48 / 126
	g_WD_Inp common	Setting ing: ~ 32767 ing t val too alog	14 Lev 15 16 17 10 17	el 0 🗸 Ask before o Identify Pass Using bool a	pperation sword ddress to hide k Canc	el	
(11) Limit setting (12) Alarm string Low-limit: S Up-limit: S (13) Title of dialo Input the t (14) Level: Set the acc (Refer <u>Sect</u> (15) Ask before o Pop up a co	g: Set the input r g: If the input val Set the warning et the warning t og: itle of this dialog cess permissions ion 4.1.2, HMI A operation: onfirmation win	range for t lue is over text to re ext to rep g. (E.g., "In for this o access Per dow agair	his button. the limited value present the curre resent the curre nput Range") bject. missions)	ue, show rent valu ent value 99	e is less than t e is greater that is greater that input Range (- 101 7 12 10 12 1 2 0	ext in a dialog the lower lim n the upper $20 \sim 100)$ $\times$ 9 big 6 3	g. nit value. limit value. + < - CLR Exit Enter
<ul> <li>(16) Identify pase (Refer Sect (17) Using bool a Check this invisible if (E.g., there It will hide</li> </ul>	)Set as 99 ? 是(Y) 否(N) sword: Enter the ion 4.1.2, HMI A iddress to hide: box and enter the box and enter the the boolean values is one ISaGRAF the object if the	e login pas Access Per he address ue is "True variable " e "Hide" is	ssword again aft missions) s of the ISaGRA e"; it will appear 'Hide" with the s "True", and sho	er clickir F Booleau r if the bo network ow the ol	ng this object. n variable. Thi polean value is address as 10 bject if the "H	s object will s "False". . Set this iter ide" is "False	become m to 10. :".)

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	49 / 126				
<b>3.2.3 Button o</b> Create a button t	<b>3.2.3 Button object - g_M_Inp</b> Create a button to input/show a message value.										
Description:     Show as value     Show as title     Show as picture       Displayed Style:     Message     String Input     String Input											
g_M_Inp g_M_Inp Setting 1 NetWork Address 2 Font size 3 Fore Color 4 Size W 75 Location X 11: 5 Title of dialog	s 1 0 12,Regul 0 H 25 3 Y 283 La Le	Show as pictur Show as title Show as Value Using bool add nguage encodin vel	re y 9 dr to hide uTF-8 big5 gb2312 Other k Cancel	7 8 10 11 E	p <mark>ut Encode</mark> ncode	OK	Cancel				

### Setting items:

- (1) Network address: Enter the defined network address of the ISaGRAF "Message" variable. (Refer <u>Section 2.2.1</u>).
- (2) Font size: Set the font style and size.
- (3) Fore color: Set the text color.
- (4) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (5) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)
- (6) Title of dialog: Set the title shown in the input window.
- (7) Show as picture: Select a picture to show this button.

Picture format: JPG, GIF, PNG, BMP (note: the ".bmp" file will consume a large amount of memory) (8) Show as title: Set the text shown on the button.

- (9) Show as value: Show the current Boolean value on this button.
- (10) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False".

(E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this item to 10.

It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)

(11) Language encoding: Select the text encoding.

(UTF-8: English ; big5: Traditional Chinese ; gb2312: Simplified Chinese ;

Other: Select this option to input other encoding in the "Input Encode" window.)

(12) Level: Set the access permissions for this object (refer Section 4.1.2, HMI Access Permissions).

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	50 / 126			
<b>3.2.4 Button</b> Create a switch	n object - g_ToPa n-page button.	ge								
	Description	Description: Show as title Show as pict								
	Displayed Sty	Displayed Style: Goto Page2 Back								
	g_ToPage ToPage Setti 1 Size 2 Location 3 Font size 4 Fore Color 5 Level 5 Show a 0 Using 1 7	ing W 75 X 133 C S picture D C	H 25 Y 303 Ask Regular Der To To Title	Ask before , message , y message Which Pag e	operation 8 Access Den 0 To Page	y 9 10 11				

#### Setting items:

- (1) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (2) Location: Set the X, Y position of this object. (Refer Section 4.3.1 for the axis range)
- (3) Font size: Set the font style and size.
- (4) Fore color: Set the text color.
- (5) Level: Set the access permissions for this object. (Refer Section 4.1.2, HMI Access Permissions)
- (6) Show as picture: Select a picture to show this button.

Picture format: JPG, GIF, PNG, BMP (note: the ".bmp" file will consume a large amount of memory) (7) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False".

- (8) Ask before operation: Pop up a confirmation window before switching the HMI page. Ask message: Set the confirmation message.
- (9) Deny message:

Display the warning message when using a wrong permission level. (Default: "Access Denied ! ") (10) To which page: Set the switching page no. (i.e., "1" to "200", "-1" and "201").

**<u>Notice</u>**: Enter "-1" means to return to the previous page.

Enter **"201**" means to open the ISaGRAF Schedule-Control page (Refer <u>Section 4.3.4</u>) (11) Title: Set the text shown on the button.

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## 3.2.5 Button object - g\_Login

Create a login button with a password. This object can only be located on the 1st page (i.e., Page 1) and only one g\_Login is allowed to use. When user input the password, it will go to the specified page and allow the operation for objects depends on different permission level.

(Refer Section 4.1.2, HMI Access Permissions)

	Displaye	ed Style:	Login	
g_Login				
Loging Set Font size Fore Colo Size Location	r W 75 X 123	9,Regular H 25 Y 309	Title Switch page Deny Message Wait Time	Login 5 2 6 Access denied 7 5 sec. 8
			01	Cancel

### Setting items:

- (1) Font size: Set the font style and size.
- (2) Fore color: Set the text color.
- (3) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (4) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)
- (5) Title: Set the text shown on the button (Default: "Login").
- (6) Switch page: Switch to the specified page after logging in.
- (7) Deny message: Show the message when failed to log in.
- (8) Wait time: The period of time for auto-logout. The unit is second and the value can be 0 to 3600.
  - E.g., set to "0" means without using the auto-logout function (simply press the "g\_Logout" button to log out). Set to "60" means that the Soft-GRAF will auto-logout and return to the Page1 if there is no operation for 60 seconds after logging in.

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3.2.6 Button d	object - g_Logou	ut					
Logout button. A	After logout, it wi	ll go to the	e 1st page (i.e.,	Page 1).			
(Refer <u>Section 4.</u>	<u>1.2</u> , HMI Access I	Permissio	ns)				
	Disp	olayed Styl	le: Logo	out	]		
	g_Logout Loging Set Fort size Fore Color Size W Location X	9,Re 75 H 193 Y	egular Title 25 224	Log	out 5		

### Setting items:

- (1) Font size: Set the font style and size.
- (2) Fore color: Set the text color.
- (3) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (4) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)
- (5) Title: Set the text shown on the button (Default: "Logout").

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## 3.2.7 Button object - g\_Logger1

- Create a data logger button to enable the FTP function to upload a data file to the specified IP address. (Refer <u>Section 5.5</u> Demo08).
- ☆ The "g\_Logger1" supports to record up to 50 tags since the Soft-GRAF Studio V. 1.07.
- % One PAC supports only one "g\_Logger1" object.



### Setting items:

- (1) Font size: Set the font style and size.
- (2) Fore color: Set the text color.
- (3) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (4) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)
- (5) Button title: Set the text shown on the button.
- (6) Level: Set the access permissions for this object. (Refer Section 4.1.2, HMI Access Permissions)
- (7) Sample rate: Set the object sampling time, which means the time interval to read data.

The "Sample rate" setting will affect the retaining days of data files. For example, The data file can be stored for 10 days if set the "Sample rate" as 1 or 2 or 3 seconds. The data file can be stored for 30 days if set the "Sample rate" as 5 to 30 seconds. The data file can be stored for 3 months if set the "Sample rate" as 1 or 2 minutes. The data file can be stored for 6 months if set the "Sample rate" as 3 or 5 minutes. The data file can be stored for 12 months if set the "Sample rate" as 10 minutes or above.

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	54 / 126		
	Setting - 1 S 8 File format 9 File setting 10 Encoding	etting - 2 S .CSV V UTF-8 V	Setting - 3 Setting -	4 Settins	χ- 5	g_Log	ger1		
(8) File format: S (9) File setting: S (10) Encoding: Se big5: Tradit	elect the file for et the presentin elect the text en tional Chinese;	mat to say g data in t coding of gb2312:	ve; It can be ".C the file. (See the data that define Simplified Chine	SV" or ". e figure k ed in the ese; ot	txt" file. pelow, "File se ISaGRAF prog her: click it to	etting-1"/"Fil gram (e.g., U input other	e setting-2"). TF-8: English; encoding.		
	a File setting-1 b File title b Time format c Title of the 1st d Date format	File setting 2 Dat Show Date, column Dat 31-12-201	ta Logger demo Hour, Min. ate 2		g_Logger1 - (9	) File Setting	3		
File setting-1: (a) File title: (b) Time format: (c) Title of 1st co (d) Date format:	Enter a ti Select the lumn: Enter a ti Select the	tle for this date/tim tle for the date for	s data file. (See ne format. (E.g., e date/time colu mat. (E.g., Moth	the figur NOV-13 ımn. (E.g n-Day-Ye	e below) -2012 17:15:0 ., "Date Time' ar)	96). ")			
a 1 c 2 3 4 5 6	g_Loger1 Dem Date Time NOV-13-2012 NOV-13-2012 NOV-13-2012 NOV-13-2012	A o (NOV- 17:15:06 17:15:10 17:15:15 17:15:20 d	13-2012 Tues	day)	B C Irve1 Curve2 6 5 10 1 15 20 1	D 2 Curve3 4 27.3 8 36.4 0 49.3 5 62.3			
		ICP DAS	Co., Ltd. Techr	nical docu	ument				

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## File setting-2:

	Column title	Data Address	Value Type	Dot	
•	Data1	1	Float	0	Insert f
	Data2	3	Float	0	Edit g
	Data3	5	Float	0	Delete
*					
	-				

(e) New: Add an item to record data. The options:

Column title: The identity name for the record data. (E.g., Curve1). Data Address: The defined network address of ISaGRAF variable for data logging.

Value type:The data type. (It can be "Boolean", "Word", "Long" and "Float")Dot:Convert the original value to the value with specified decimal places.

- (E.g., if set "Dot" as 3, the original value "32767" will show as "32**.767**") (f) Insert: Add an item above the selected item.
- (g) Edit: Edit the selected item.
- (h) Delete: Delete the selected item.

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	56 / 126
(11) Enable FTP:	Setting - 1 S 11 P Enable H 12 Transmissio 13 FTP Server 14 Port NO. 14 User nar Password 16 FTP Directo	Setting - 2 5 Fp n Type Ett IP 192.168.1 21 ne:	Setting - 3 Se nemet •	tting - 4 Settin, Hour to send Hour1 Hour2 Hour3	g - 5 17 18:00 • none • none •	g_Log	ger1
Check this Server. (12) Transmissio It can be se the FTP Se and hardw (13) FTP Server I Enter the I (14) Port no.: The comm	box to enable th n type: et to "Ethernet" rver, visit the we vare. P: P address of the unication port o	or "2G/3G eb page <u>So</u> FTP Serve f the FTP S	G Wireless". Mireless". Mit-GRAF Storer. Mar. (E.g., 192 Server, nori	load the data If using the udio > <u>FAQ</u> > 2.168.1.180) mally "21".	"2G/3G Wirel FAQ-143 to i	e PAC to the	e specified FTP o upload file to elated software
<ul> <li>(15) User name &amp; Enter the uname" box</li> <li>(16) FTP director (E.g., if you</li> <li>(17) Hour to sense Set up the time plus 3 For examp (% The units of the time plus)</li> </ul>	& Password: username and pa t that means to le ty: Upload a file t u want to upload d: daily uploading time of ploading time of	assword to og in anor to the spe a file to t time, optic 00", the da f the "Hou	o log in to th nymously (i cified folde he"dir2" fo onal three l nta file will i n1" is from	he FTP Serve .e., without t r on the FTP lder, set the hour time, an upload to the the previou:	r. If the user of the username Server (defau path as "\dir2 nd the data fil e FTP Server a s day to the se	unchecked t and passw ults to the ro 2") le will be se at "00:03". etting time.	the "User ord). oot: "\"). nt at the setup
The u	ploading time of	the "Hou	r2" and "Ho	our3" is from	n today's "00:(	00" to the s	etting time. )

Classification	ISaGRAF FAQ-146 : Soft-GRAF Studio Manual Author Eva Li						
Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	57 / 126
	Setting - 1 S 18 Enable I 19 FTP Server 20 Port NO. 21 Possword 22 FTP Director	Setting - 2 S Tp 2 IP 192.168.1 21 ne user ny \	Setting - 3 Setting	- 4 Settins	χ-5	g_Logge	r1
(18) Enable FTP 2 Checked "R (19) FTP Server I Enter the I (20) Port no.: The comm (21) User name 8 Enter the v (22) FTP director Upload the	2: Enable FTP 2" bo P: P address of the unication port o & Password: valid username a ry: e data file to the	ox to enabl FTP Serve f the FTP S and passwo specified f	e uploading da r. (E.g., 192.16 Server, normall ord to log in to folder on the F	ta file to 8.11.1). y "21". the FTP S TP Server	the 2nd FTP s	Server (PC).	')

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	58 / 126
	Setting - 1 S 23 24 Year Addres 25 Month Addres 25 Command A 27 Result Addres 28	fetting - 2 S fanual FTP s 0 ress 0 s 0 address 0 ess 0	Setting - 3 Setting	- 4 Settin rogress Ad	dress O	g_Logg	er1
(23) Enable man Check this specified d	ual FTP setting: box to enable th ate to the FTP Se	e FTP han erver.	id-operation up	oloading	, it allows to u	upload the fi	le with a
× Refer th	e Demo8: <u>Sectio</u>	on 5.5- 4.	FTP Loader or	FAQ-15	8: Section 1.4	for more d	etails.
http://v (24) Year address Enter the c (25) Month addr Enter the c (26) Day address Enter the c (27) Command a Enter the c (28) Result addre Enter the c (0: No action 102: Fail to (29) Progress add Enter the c uploading.	www.icpdas.com s: defined network ress: defined network defined network ddress: defined network ess: defined network o upload file to F <sup>*</sup> dress: defined network (0 ~ 100)	n/root/sup address fo address o address o address o em is seno TP Server; address o	oport/faq/isagi or ISaGRAF "Inf f the ISaGRAF f the ISaGRAF f the ISaGRAF ding file; 21: 9 103: The So f the ISaGRAF	raf.php > teger" va "Integer "Integer "Integer Send O.H ft-GRAF "Integer	<ul> <li>FAQ-158</li> <li>ariable to accordination</li> <li>variable to a</li> </ul>	ess the "Year access the "N access the "E start the file get the state doesn't exis le the FTP) get the progr	r" data. Month" data. Date" data. uploading. of uploading. t;

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# 3.3 Introduction of the HMI Object Area – Graph



нмі	Object Area - G	iraph
<u>1</u>	g_B_Led	Display an LED to show a Boolean value.
2		Display a specified picture to represent a Boolean value.
<u></u>	g_b_ric	(E.g., JPG, PNG, GIF, BMP, etc.)
2	a N Dic	Display a specified picture to represent an Integer value.
3	g_N_PIC	(E.g., JPG, PNG, GIF, BMP, etc.)
<u>4</u>	g_Bar	Bar-meter (horizontal /vertical).
<u>5</u>	g_Rect	Draw a Rectangle frame.
C	g Trond	Trend Charts, used to show the value of up to three items changes
<u>0</u>	g_rienu	over time and also provide the historical record function.
<u>Z</u>	g_Gauge	Angular Meter, used to show a Long, Word or Real value.
0	g Traca?	Moving Trace Chart, can be set to 2-axes (x , y) or
<u>°</u>	g_nacez	1-axis (x: Horizontal or y: Vertical).
0	a R Dic Lib	Display a specified picture to represent a Boolean value.
2		(Support the image library, refer <u>Section 3.4</u> )

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<b>3.3.1 Graph ob</b> Display an LED to	<b>bject - g_B_Led</b> show a boolean	value.		Off							
	g_B_Led										
	Led setting Net Work A Input T/F co Size Location	Address 1 True plor W 70 X 102	False Mess False Mess Shap H 70 Font Y 304	age when fa age when T e Jsing bool a	lse Off rue On Rectangle V 7 12,Bold E Idress to hide						

### Setting items:

- Network address: Enter the defined network address of the ISaGRAF "Boolean" variable. (Refer <u>Section 2.2.1</u>)
- (2) Input T/F color: Set the displayed text color when the ISaGAR Boolean value is "True" or "False".
- (3) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (4) Location: Set the X, Y position of this object. (Refer Section 4.3.1 for the axis range)
- (5) Message when False: Set the displayed text when the ISaGAR Boolean value is "False".
- (6) Message when True: Set the displayed text when the ISaGAR Boolean value is "True".
- (7) Shape: Select the LED style. ("Rectangle" or "Circle" selectable)
- (8) Font size: Set the font style and size.
- (9) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False".

(E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this option to 10. It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)

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## 3.3.2 Graph object - g\_B\_Pic

Display a specified picture to represent a boolean value.

<u>Supported formats</u>: JPG, PNG, GIF and BMP. Recommend not to use ".bmp" to reduce the memory size.



g_B_Pic	X
Pic Setting	
1 NetWork Address 0	
2 Using bool addr to hide	
3 True File No_Pic	
4 False File No_Pic	
	Ok Cancel

### Setting items:

(1) Network address:

Enter the defined network address of the ISaGRAF "Boolean" variable. (Refer <u>Section 2.2.1</u>) (2) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False".

(E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this item to 10.

It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)

## (3) True File:

Display a specified picture when this ISaGRAF Boolean value is "True".

(Refer Appendix B if you want to display a dynamic picture)

### (4) False File:

Display a specified picture when this ISaGRAF Boolean value is "False". (Refer <u>Appendix B</u> if you want to display a dynamic picture)

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litor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	62 / 126
<b>.3.3 Graph c</b> isplay a specifi upported form	<b>object - g_N_pic</b> ed picture to repi <u>ats</u> : JPG, PNG, GII	resent a 1 <sup>-</sup> and BMI	6-bit integer va P. Recommend	ilue. not to u	se ".bmp" to	reduce the r	nemory si
	Studio:		PAC:				
Descript	ion:		Va	alue = 0	Value = 1	Value = 2	
Displayed	Style: g	_N_Pic		0			
	g_N_Pic common SA 1 NetWork A 2 Size 3 Location 4 Using b	etting ddress W 70 X 244 ool address to	1 H 70 Y 274 D hide	0	k Can	cel	
Setting items: (1) Network add	lress:					_	

Enter the defined network address of the ISaGRAF "Integer" variable. (Refer Section 2.2.1)

- (2) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (3) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)
- (4) Using bool address to hide:

Check this box and enter the address of the ISaGRAF Boolean variable. This object will become invisible if the boolean value is "True"; it will appear if the boolean value is "False".

(E.g., there is one ISaGRAF variable "Hide" with the network address as 10. Set this item to 10. It will hide the object if the "Hide" is "True", and show the object if the "Hide" is "False".)

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	g_N_Pic	Setting Number	Picture		Nev Edi Dele	z5 t 6 te 7	
<ul> <li>(5) New: Add a</li> <li>(6) Edit: Edit th</li> <li>(7) Delete: Delete: Delete</li> <li>* How to use?</li> <li>New: Click the</li> <li>(a) Number: As</li> <li>Th</li> <li>re</li> <li>(b) Picture: Se</li> <li>(c) Add: Add: Add</li> </ul>	picture and its of e selected item. ete the selected "New" button to ssign a value (fro ne corresponding eading a matched et the correspond dd this new setti	orrespondir item. o show this s m 0 to 49). g picture wil l variable va ding picture ng.	ng value. (N setting wind I show up v lue.	lax. 50) low. vhen	g_N_Pic NewIt Number 0 Picture 0	lem a Add	
Edit Select the item the "Edit" butto setting window completing set <u>Note:</u> By defau	you want to edi on to open the a 7. Then, click "Ad tings. It, the 1st item v	t, and click bove d" after vill be select	common set	tically if the	ForeColor	BackCole	or New Edit Delete
<b>Delete</b> Select the wan <sup>-</sup> "Delete" buttor	ted item, and clinn to delete it.	ck the	Nu * 0	umber	Picture Led02-s-0.gif		New Edit Delete

Author

Eva Li

Classification

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ICP DAS Co., Ltd. Technical document

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## 3.3.4 Graph object - g Bar



"-1000" to "1000", the start value of this bar-meter is "0".)

- (10) Data type: Set the data type as "long", "word" or "real".
- (11) Show scale: Check this box to show the scale and bar range.
- (12) Show value: Check this box to show the current value.



- 1000

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	65 / 126
	g_Bar Bar Setting 13 Conv 14 Bar Rang 0 15 Dot 16 Using	ersion       ge     1000       0     0       bool address tr	ug-2 Up-A Up-A Low Low hide	sing Alarm larm value larm Color Alarm Alarm Color n blink 22 0	17 600 1 300 21 No Blink k Canc	8 9 9 el	
<ul> <li>(13) Conversion (E.g., ch "C</li> <li>(14) Bar range</li> <li>(15) Dot: Disp</li> <li>(15) Dot: Disp</li> <li>(16) Using box</li> <li>Check th invisible</li> <li>(E.g., the It will hi</li> <li>(17) Using alar</li> <li>(18) Up-alarm</li> <li>(19) Up-alarm</li> <li>Display for the Construction (21) Low-alarm</li> </ul>	on: Ratio conversion ecked the "Conversion or 1000". When the sect the range of lay the number of ol address to hide his box and enter the if the boolean value ere is one ISaGRAI de the object if the rm: Check the box value: Set the up color: the specific color is m: Set the lower-lis m color:	on, convert rsion" box ne received the conver decimals. the address ue is "True variable ' e "Hide" is to enable per-limit va f the value mit value.	the received v and set its rang d value is "1638 rted value. (Range: 0 ~ 6) s of the ISaGRA e"; it will appea 'Hide" with the "True", and sh the alarm func alue. (E.g., 600) s is over the upp (E.g., 300)	alue to the seas "0 ~ 53", the b 53", the b F Boolean r if the book ow the ol tion.	ne "Bar Range 32767", and t ar-meter will h variable. Thi colean value is address as 10 bject if the "H	" value in pro hen set "Bar show "500".) 550.1 5	pportion. Range" as become m to 10. ".) y in red.)
Display f (22) Alarm blin (a) No B (b) Up-A (c) Low- (d) All B	the specific color i nk: Set the alarm l link: Display th larm: Blink if lar Alarm: Blink if sm link: Display th	f the value olinking fur e alarm va ger than tl naller than e blinking	is over the low nction. There an lue without blin ne Up-Alarm va the Low-Alarm alarm value.	ver-limit. re four og nking. lue. value. value.	(E.g., "0 ~ 300 otions:	)", display in	yellow.)

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<b>3.3.5 Graph</b> Draw a rectar	<b>object - g_Rect</b> ngle frame.	Displayed St	:yle:				
	g_Rect Common 1 Size 2 Location 3 Edge W 4 Rect Co	W 50 H 50 . X 77 Y fidth 3	115		Dk Ca	ncel	
Setting items: (1) Size: Set the (2) Location: Set the X (3) Edge width: Set the b (4) Rect color: Set the b	e object size. "W' , Y position of thi order width. (Rai order color.	′ stands for is object. (F nge: 1 ∼ 10	Width and Refer <u>Sectio</u>	l "H" stands <u>n 4.3.1</u> for t	for Height. he axis range	e)	

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## 3.3.6 Graph object - g\_Trend

Trend Charts (i.e. Run charts), used to show the value of up to three items changes over time and also provide the historical record function.

(Related information: Section 5.3: Demo06)



Address: Enter the defined network address of the ISaGRAF "Real" variable. (Refer <u>Section 2.2.1</u>).

Title: The identity name of the curve.

Color: The color of the curve.

(2) Fore color: Set the color of the scale and the text.

(3) Back color: Set the background color.

(4) Grid color: Set the border color.

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Editor	Janice Hong	Version	1.20	Date	Jan. 2015	Page	68 / 126
	Trend Settin,         5       Size       W         6       Location       X         7       Sample Tim         8       X-span Tim         9       Data Typte         10       ✓	g-1 Trend W 709 I 9 I 2 I 2 I 5 I 5 I 7 I 15 I 7 I 15 I 15 I 15 I 15 I 15 I 15 I 15 I 15	Setting-2 Tren H 247 Y 11 Sec. min. Mon Mon	d Setting-3 Low Limit Up Limit Convers Original Va O Value after 50	0 500 ion lue 100 450	11 12 13	
<ul> <li>(5) Size: Set the o</li> <li>(6) Location: Set</li> <li>(7) Sample time: Sampling ti (E.g., select</li> <li>(8) X-span time: S</li> <li><u>The limitat</u></li> <li>"Sample times times the select the o</li> <li>(9) Data type: Select the o</li> </ul>	bbject size. "W" is the X, Y position ime of the trend t "2" means to re Set the displayed <b>Set the displayed</b> me" $* 60 \leq "2$ "Sample time" is defined data typ	stands fo n of this o l. (Unit: se ead data d range o X-span tin s 1 second e of the I	r Width and bject. (Refe econd, only and show th f the time-a me" $\leq$ "S d, the "X-sp SaGRAF var	I "H" stands r <u>Section 4.3</u> support valu ne curve even in time time an time car	for Height. 3.1 for the axis ues within the ery two secon rend chart (U " * 1000 n be 1 ~ 16 mi be "long", "w	s range) e drop-dowr ds.) Init: minute) inutes (60 ~ vord" or "rea	1000 seconds).
(10) Enable histo <u>The limitat</u> If the "Sam If the "Sam If the "Sam If the "Sam <u>Note:</u> Enablin used ir memo <u>The memory of</u> ■ If the "Sau retaining ■ If the "Sau	rical trend : che iple time" is set to ple time" is set to ple time" is set to ple time" is set to ple time" is set to the XP-8xx7-CE ry consumption is a mple time" is set 1 day, about 15 mple time" is set 1 day, about 4 N	to 1 seco to 2 seco to 3 seco to 3 seco to more t nction of 6 PAC) m , if it is nc approxim t to 1 sec MB for 1 t to 1 sec	ox to enable nd, the data nds, the dat nds, the dat han 4 secor g_Trend will emory capa ot really nec ately estima ond, and er month, and ond, and er nonth, and	e the record can be reta a can be ret a can be ret a can be ret ads, the data l consume a hoity. Please essary to ret ted as below able <b>1</b> curve about max	ined max. 3 n ained max. 3 n ained max. 6 a can be retain a can be retain lot of Micro_ set a smaller cain. <u>w:</u> e, it consumes . 45 MB for 3 es, it consume 135 MB for 3	then set the nonths. months. ned max. 12 _SD (or the C retained tim s about 0.48 months. es about 1.4 months.	months. Compact Flash the to reduce the MB for 4 MB for

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<ul> <li>If the "Sample time" is set to 2 seconds, and enable 1 curve, it consumes about 0.24 MB for retaining 1 day, about 7.5 MB for 1 month, and about max. 45 MB for 6 months.</li> <li>If the "Sample time" is set to 2 seconds, and enable 3 curves, it consumes about 0.72 MB for retaining 1 day, about 22.5 MB for 1 month, and about max. 135 MB for 6 months.</li> <li>If the "Sample time" is set to 3 seconds, and enable 1 curve, it consumes about 0.16 MB for retaining 1 day, about 5 MB for 1 month, and about max. 45 MB for 9 months.</li> </ul>										
■ If the "Sample time" is set to 3 seconds, and enable 3 curves, it consumes about 0.48 MB for retaining 1 day, about 15 MB for 1 month, and about max. 135 MB for 9 months.										
The rest is the same. If the user enable 10 "g_Trend" record functions, use three curves for each object, set the "Sample time" as 1 second and the retain time as 3 months, then the max. of the memory consumption is about 135 MB x 10 = 1.35 GB.										
<ul> <li>(11) Low limit: Set the minimum value of the Y-axis in the trend map.</li> <li>(12) Up limit: Set the maximum value of the Y-axis in the trend map.</li> <li>(13) Conversion: Select this check box to enable the value conversion.</li> <li>Original value: Set the range of the received value. (E.g., "0 ~ 32767", "0 ~ 65535", etc.)</li> <li>Value after: Set the range of the converted value.</li> <li>(E.g., if the "Original value" is set to "0 to 32767" and the "Value after" is set to "0 to 1000", then the original value "16384" will be converted to "500")</li> </ul>										
14       Unit         15       Title										
(14) Unit: Enter the unit for the y-axis value. (E.g., "mA", " ℃ ") (15) Title: Enter the title of this trend chart. (Default: "Trend Curve")										
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# 3.3.7 Graph object - g\_Gauge

Gauge meter, it allows to show a Long integer, Short integer or Real value.

(Related information: Section 5.3: Demo06)



- (4) Fore color: Set the color of the scale and the text.
- (5) Back color: Set the background color.
- (6) Pointer color: Set the pointer color of the gauge.
- (7) Data type:

Set the data type as "Long", "Word" or "Real".

- (8) Title: The title of the object. (Default: "Angular Meter")
- (9) Unit Text: Enter the unit for values. (E.g., "mA", "  $^\circ C$  ")
- (10) Dot: Specify the number of decimal places for the converted value.

**Note:** If the data type is "long" or "word", the user must enable "Conversion" function (like item 19) for displaying decimal places.

For example, if the "Dot" is set to "2", the converted value will display as two decimal places, such as 1.23 and 345.67. In addition, if the "Data type" is set to "real" and the "Dot" is set to "1", the value will show as one decimal place, such as 48.5 and 223.6.



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	g_Guage Gauge Set 11 3 section 12 Min Va 13 Mid Va 14 Max Va 15 Section 16	tting-1 Gaug ns v due 0 due 1 30 due 2 60 alue 100 . Color	e Setting-2	Min Angle Max Angle Conversio Original Valu Value after	5 17 175 18 mi e 32767 1000 k Cance	) ) )	
(11) Sections: Cł th	noose the secti le sectional colo	on numbe or (refer th	rs for this ne item 12	gauge meter (r ~ 16).	ange: 1 ~ 3), a	and then set	the values an
<mark>Note: (N</mark> (E.g., If If	<b>flax Value - Miı</b> "Max Value" = "Max Value" =	<b>h Value) m</b> 100, "Min 95, "Min_Y	<b>ust be div</b> Value" = 0 Value" = 0,	<b>isible by 10.</b> ) , it is ok. , it is not ok. )			
<ul> <li>(12) Min value: S</li> <li>(13) Mid value 1</li> <li>(14) Mid value 2</li> <li>(15) Max value: S</li> <li>(16) Section colo</li> <li>(17) Min angle: S</li> <li>(18) Max angle: S</li> </ul>	Set the minimum Set 1st middle Set 2nd middl Set the maximu Set the maximu Set the start ang Set the end ang	m value of e value. (If im value o style of the gle of the a gle of the a	the gauge the gauge the gauge f the gaug e sectional arc. (Range arc. (Range	e range. meter display e meter display e range. color. e: 5 ~ 135 degr e: 45 ~ 175 deg	as "2 sections as "3 section ees) rees)	s" or "3 sections") <u>start</u> 5	ons") <u>end</u> 175
By defaul 5 degrees	t, the "Min Ang s, 90 degrees ai	gle" is "5" a nd 175 deg	and the "N grees mean	/lax Angle" is ": n the 9-o'clock	175" that will , 12-o'clock ar	form a semic nd 3-o'clock (	circular arc. directions.
(19) Conversion: Original v Value afte	Select this che value: Set the er: Set the	ck box to e range of th range of th	enable the ne received ne converte	value conversi d value. (E.g., " ed value.	ion. 0 ~ 32767", "(	) ~ 65535", e	tc.)
(E.g., if th the	e "Original valu n the original v	ue" is set t alue "1638	o "0 to 32 34" will be	767"and the "\ converted to '	/alue after" is '500")	set to "0 to 1	1000",

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## 3.3.8 Graph object - g\_Trace2

Moving Trace Chart, can be set to 2-axes (x, y) or 1-axis (x: Horizontal or y: Vertical).

(Related information: Section 5.1: Demo04)



After dragging and dropping the "g\_Trace2" object into the editing area, the "Axis" dialog will show up, it provides three ways to show the data (1. Only x-axis 2. Only y-axis 3. x and y axis).


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(3) Action address: Enter the defined network address of the ISaGRAF 16-bit "Integer" variable. If the network address is between 1 and 8191, it's Type 1, otherwise, it's Type 2. If the variable value is

0: Stop drawing (Type 0); 1: Draw the current trace curve and point. (Type 1).

2: Draw only the current trace point without a curve. (Type 2).

- (4) Clear address: Enter the defined network address (range: 1 ~ 8191) of the ISaGRAF "Boolean" variable. When this Boolean value is "True", the trace curve will be cleared and then its value will automatically reset to "False".
- (5) Size: Set the object size. "W" stands for Width and "H" stands for Height.
- (6) Location: Set the X, Y position of this object. (Refer <u>Section 4.3.1</u> for the axis range)
- (7) Left limit: Set the limit value of the X-axis on the left.
- (8) Right limit: Set the limit value of the X-axis on the right.
- (9) Lower limit: Set the limit value of the Y-axis on the bottom.
- (10) Upper limit: Set the limit value of the Y-axis on the top.

ſ	Trace2 Setting-1	Trace2 Setting-2		
11	Show Scale		Trace Color	14
	X Division	1	Scale Color	15
	Y Division	1	Point Color	
(12	Font	12,Bold		
(13	Back Color			
				Ok Cancel

(11) Show scale: Check this box to show the XY coordinate values and the dynamic values.

X division: To do division before showing dynamic values (i.e., X-coordinate value  $\div$  set value).

Y division: To do division before showing dynamic values (i.e., Y-coordinate value  $\div$  set value).

- (12) Font: Set the font size (range: 6  $^{\sim}$  10) and style.
- (13) Back color: Set the background color.
- (14) Trace color: Set the color of the trace curve.
- (15) Board color: Set the color of the mesh and the border.
- (16) Point color: Set the color of the current trace point.



(Type 2)

125000

62500

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# 3.4 Using the Image Library (g\_B\_Inp\_Lib, g\_B\_Pic\_Lib)

Since the Soft-GRAF Studio v1.10 provides an image library. User can create this object by using the new icon in the "HMI Object Area". Then, select an image that has two status (On/Off) and four sizes selectable. The user can see the changing of selected image in the preview window. The usages for this object and image library are described as follows.



# Create the image object:

For the purpose of easy-to-use, the Soft-GRAF Studio adds two objects that are "g\_B\_Inp\_Lib" (button) and "g\_B\_Pic\_Lib" (graph) in the "HMI Object Area". Users can simply choose the designed images in the image library and the setting page is more simpler.



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#### How to use:

1. Mouse drag and drop the "g\_B\_Inp\_Lib" object (or "Graph – g\_B\_Pic\_Lib") into the editing area.



2. Mouse double-click this object to open the "Image Library" window and select the wanted image, background color and image size.



 Click the "Setting" button to set the "network address" or other related items (refer <u>Section 3.2.1</u> "g\_B\_Inp" or <u>Section 3.3.2</u> "g\_B\_Pic"), and then click "Accept" to finish.

The following content describes the details of setting items.

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I					2 Backgro	ound Color Select	
3						ON OFF	
		ol ( <b>100</b> ON	•••••••				OFF.
		ON OFF		ັ້ງ 🐻	op 💼		<b></b>
0 1 4	Medium size	1	ا الله الله	6 =	> 候	>>	
Normal size     Se	Large size				Accept		mcel
Setting items: (1) Image library:	:					7)	

The Soft-GRAF Studio features the image library for users to choose any designed images.

(2) Background Color Select:

The background color of the image button. It can be black, white and the system color.

The user can change it to match the background color of the HMI page.

(3) Image View:

Preview the selected image and size. (The default status is ON)

(4) Switching status:

Click the "1" or "0" button to see the change of the "ON" or "OFF" status of the selected image.

(5) Image Size:

Four image sizes selectable, it can be small, medium, normal and large.

(6) Setting:

Click this button to set the "network address" and other related items.

(Refer <u>Section 3.2.1</u> "g\_B\_Inp" or <u>Section 3.3.2</u> "g\_B\_Pic")

(7) Accept/Cancel:

Click the "Accept" button to apply all settings or click the "Cancel" without saving any settings.

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# **Chapter 4 The Related Functions**

# 4.1 "Menu Bar" Operations

# 4.1.1 How to change the project resolution?

The user can modify the resolution setting in the project anytime if changed the used PAC.

After opening the project, click "Project", click "Resolution Setting" to change the resolution.

800\*600 640\*480 320\*240

	-			
	Project	View	Help	
	IP	Setting		
	Re	solution	Setting	
	Pas	sword		
	Do	wnload		
esolution	Setting			
Resolut	ion		1024*	769

There are four resolution options now. Please choose a proper one for your PAC.

	РАС	Supported VGA Resolutions	
VDAC	XP-8xx7-Atom-CE6	640*490 900*600 1024*769	
APAC	XP-8xx7-CE6	040*480,800*000,1024*788	
	WP-8x37	640*480, 800*600, 1024*768	
WinPAC	WP-8x47		
	WP-5147	040 · 480, 800 · 000	
	VP-4137	640*480, 800*600	
ViewPAC	VP-25W7	640*480	
	VP-23W7	320*240	

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# 4.1.2 How to set up the access permission of HMI?

The Soft-GRAF Studio provides an HMI password security that can be accomplished by using the "Login" and the "Logout" button object (refer <u>Section 3.2.5</u>, <u>3.2.6</u>). The user can log in to an HMI page with the different level password to manage the access permission of objects. Refer the following description or open this demo project - "LoginDemo" in the Soft-GRAF Studio installation folder. (If you are not considering the HMI password security, go to the next section.)

# Follow these steps:

(1) After opening the project, click "Project", click "Password" to open the "Password setting" window.



Select a "Level" number, simply enter a new password to replace the old one, and then click the "Create" button to complete this change. Moreover, to remove the password, just click "Delete".

Password setting	
Please set the passw	vord as a number from 0 to 9.
Level	1 💌
Password	123456
	Create Delete

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(5) In the HMI object area, drag the g\_Login object into the editing area (Page 1).
 <u>Note:</u> The "g\_Login" object can only add to the 1st HMI page (i.e., Page 1).



(6) Mouse right-click on this object and then click "Setting" to open the "g\_Login" setting window. In the "Switch page" field, enter a page number (e.g., Page 2) that you want to switch to after a successful logon.

Login Setting Delete Cut Copy Paste	g_Login         Loging Set         Font size       9,Regular         Title       Login         Fore Color       Switch page       2         Size       W 75       H       25       Deny Message       Access denied         Location       X       48       Y       65       Wait Time       5       sec.
	Ok Cancel
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(7) Then, select the "Page 2" (i.e., the page number you set in the step 6), and drag the "g\_Logout" object into the editing area. For now, this page is protected by the password security.



(8) Download this project to the PAC (refer <u>Section 2.2.4</u>).

<u>Test</u>:

In the PAC, click the "Login" button and enter its password to log in to the HMI page (i.e., Page 2), and then click the "Logout" button to exit this HMI page.



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# 4.1.3 How to switch to the Fashion or Old Style mode?

The Soft-GRAF Studio provides two display modes in the HMI object area (as the figure below).



# Switching mode:

On the "View" menu, select "Fashion" (Graphics) or "Old style" (Text) to change the mode.

File Projec	t Vi	ew	Help
9 🚔 🗔		F	ashion (
		C	)ld style

# 4.1.4 How to open the user manual in the Soft-GRAF Studio?

The Soft-GRAF Studio provides two ways to open the user manual.

- 1. Mouse right-click on the editing area, and then select "Help".
- 2. On the "Help" menu, select "Document".





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# 4.2.2 How to edit large amounts of text in the HMI object?

The user can copy and paste large amounts of text in any HMI object which provides a text input box.

# <u>How-to:</u>

In the "g\_Label" setting window, select or delete the default text (i.e., Label) in the "Title" text box, and then right-click on this text box and click "Paste" (or press "Ctrl+V" on your keyboard) to paste all the copied text.

g_Label	
Common	
NetWork Address	Size W 75 H 25
Font size 12,Regul	Location X 365 Y 281
Back Color	Text Align Center 🗸
Using bool addr to hide	
Title Right-click	
Cut	
Paste	Callel

Or, double-click the "Title" text box and then paste all the copied text in the editing window.

g_Label Edit Title	×
Soft-GRAF Demo01	
	Accept
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# 4.2.3 How to multiple select and move HMI objects?

These functions are supported by the Soft-GRAF Studio version 1.03 (or later).

1. Using the following ways to select multiple HMI objects:

# (a) Range selection:

Click and drag out a rectangular selection to select multiple HMI objects.



# (b) Individual selection:

While holding down the Ctrl key we can left click to select multiple objects.



- 2. Refer <u>Section 4.2.1</u> to know how to "Cut", "Copy" and "Paste" multiple HMI objects.

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# 4.2.4 How to adjust the layer of the HMI object?

The Soft-GRAF Studio provides a layer selection for the HMI object.

🔁 🔁 🔁 (From left to right)

- a. Send To Front
- b. Send To Back
- c. Forward One
- d. Backward One

The first created object in the Soft-GRAF Studio default has the highest level Layer. When the objects overlap, the higher layer object will cover the lower layer object. So, the user can use the above tool buttons to change the Layer level. In addition, when you click on an object, its layer level (a higher number means a higher level) and position will show on the left-up corner of the HMI editing area.



# For example:

There are two overlapped objects – "g\_Label" and "g\_B\_Inp". The object g\_Label has the higher Layer than the g\_B\_Inp and covered on it.



To see the "g\_B\_Inp", simply click "g\_Label" and click the "Sent to Back" toolbar button.

٦.	<b>-</b>
	Sent to Back = $100$ , Layer = $3$ , <u>g</u> Label] Page 1
	Label



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# 4.3 "HMI Page Area" Operations

# 4.3.1 The origin of the axes position in the editing area

In the Soft-GRAF Studio, the origin of the axes position (i.e., "0, 0") is in the upper-left corner of the editing area.



The horizontal axis in the monitor called "X axis", and the vertical axis called "Y axis". The original position of (X, Y) is (0, 0) which resides at the most top-left corner of the monitor. The value of X coordinate is increasing from left to right direction. The value of Y coordinate is increasing from top to bottom direction. The unit of the (X, Y) coordinate is "Pixel". For example, the default resolution setting of the WP-8847 is 800 x 600, so its X coordinate ranges from 0 to 799, while ranges from 0 to 599 for Y coordinate; The default resolution setting of the VP-25W7 is 640 x 480, so its X coordinate ranges from 0 to 639, while ranges from 0 to 479 for Y coordinate.



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<b>4.3.2 How do</b> The user can use	I make a backg the "g_B_Pic" o	<b>round pi</b> bject to a	<b>cture?</b> dd a backgroun	ıd pictur	e in the HMI	page.	
lote: Consideri picture at	ng the object lay t the final step.	er issue (i	refer <u>Section 4</u> .	<u>2.4</u> ), we	recommend	adding the	background
1. First, mouse	drags the "g_B_	Pic" objec	ct into the editi	ng area.			
	Value Button	Graph	Page 1				
2. Right-click o choose a pic	n this object and ture.	select "Se	etting" to open	the set	ing window,	and then cli	ck "False File" 1
	Setting Delete Cut Copy	g_B_P Pic S Ne	ic Setting tWork Address Using bool addr to 1	) hide			

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101 07.0	00., 200.	reenneur	abcament

No\_Pic

No\_Pic

Cancel

Ok

True File

False File

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3. After selecting and opening the wanted picture, click "ok".

	Open					? 🛛
	Look in:	🚞 test		· 0	1 PI	<b></b> +
	My Recent Documents	house png	)			
Pic Setting	Desktop					
NetWork A	ddress 0 ool addr to hide	]				
True File	No Pic					
False File	house.png					
					~	Open 📐
				;*.p	ng) 🔽	Cancel
		3				
		L	Ok Cance	1		

If the background picture overlaps the other objects, simply click this picture and click "Sent to Back" toolbar button to put it on the lowest layer.



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# 4.3.3 How to show two-line or multi-line text on the button object?

The user can type some text to show on the "button" object, and the field name of the text box may be "Show as title/ string" (for g\_B\_Inp , g\_N\_Inp , g\_F\_Inp and g\_M\_Inp) or "Title" (for g\_ToPage , g\_Login and g\_Logout) in the setting window. Normally, if you enter a series of characters that exceeds the length of an object, you will be unable to see the entire text. For now, you can add a space character (" ") to start a new line and show as two-line text.

#### <u>How-to</u>:

Using the "g\_B\_Inp" object as an example. If you enter "按下此鍵設定為 on" in the "Show as string" field in the setting window and click "Ok", you can see this text is too long to show on the object.

g_B_Inp	
common       Input Setting         Show as picture       Mode Select       Normal         Select from image lib       Switching Time       sec.         Show as string       Lt鍵設定為on       Level       0         Show as value       Ask before operation         Boolean False       Off       Identify Password         Boolean True       On       Using bool addr to hide         Title of Dialog	按下此鍵 It means "press the button".

If we change this text to "按下此鍵 設定為 on" (add a space) and click "Ok", it will show as two-line.

g_B_Inp		
common       Input setting         Show as picture       Select from image lib         Show as string       比鍵設定為on         Show as string       比鍵設定為on         Show as value       Boolean False         Boolean False       Off         Boolean True       On         Title of Dialog	Mode Select Normal  Switching Time sec. Level  Ask before operation Identify Password Using bool addr to hide	按下此鍵 設定為on It means "press the buttor√ to set it as on".
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# 4.3.4 How to use "g\_Topage" to return the previous page or to enable the Schedule-Control Utility?

The Soft-GRAF provides these functions since the version 1.26. The user can refer ISaGRAF FAQ-166 for more about the schedule-control utility.

http://www.icpdas.com/root/support/fag/isagraf.php > FAQ-166

#### **Back to the Previous Page:**

In the "g\_ToPage" setting window, enter "-1" in the "To Which Page" field to complete the setting.

ToPage Setting	
Size W 75 H 25	Ask before operation
Location X 96 Y 54	Ask message
Font size 12,Regul	Deny message Access Deny.
Level 0 🗸	To Which Page -1
Show as picture	Title To Page
Using bool addr to hide	

# Enable the ISaGARF Scheduling Function:

Enter "201" in the "To Which Page" field to enable the Schedule-Control Utility.



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# 4.3.5 How to import or export an HMI page as a "Template"?

This "Template" function is supported by the Soft-GRAF Studio version 1.10 (or later). The user can save any designed HMI page as a template, and then use all its HMI objects in the new project afterwards.

# Export an HMI Page (Save as Template):

1. In the HMI page area, mouse right-click on any page number(e.g., Page 2) and then click "Save as Template".



2. Enter a template name and assign a location, and then click the "Save" button.

Save TemplateFrm	
Template Name	
Home-Device_Control	
Location	
D:\Soft-GRAF Studio	
	Save Cancel

3. Then, it will create a new folder with the specific name and includes an .xml file and an image folder.



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# Import an HMI Page (Import Template):

1. In the HMI page area, mouse right-click on the project name (e.g., Project0.sof) and then click "Import Template".



- 2. Select and open the wanted template file (.xml), and then enter a page number to add it.
  - Note: Don't enter an existing page number, or you will be unable to import this template.



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# Chapter 5 Description of Soft-GRAF Studio Demo Projects

In the installation folder (e.g., D:\ Soft-GRAF Studio, refer Section 1.1), the user can find out all the related demo projects that described in this chapter.

# 5.1 Demo04: Showing HMI Objects and Operations

The demo04 will show all HMI objects and some basic operations. First, restore the "demo04.pia" file to the PC/ISaGRAF, and then download it to the ISaGRAF PAC.

# **Restore the ISaGRAF Project (Demo04):**



# Download the Demo04 to the PAC:

-6	📲 ISaGRAF - DEMO04 - Programs									
<u>F</u> ile	<u>File Make Project Tools Debug Options H</u> elp									
	🖬 🗧	8 🔟	D 🗈		苓 🏅	¢	<b>∭ №</b>	2 🛄	\$	
Begin	Begin: ILD1 Generate a pulse M1 and get Time									
			🖺 ST1							

# In the PAC:

isaWP5xx7	Setting       Web       About         Configuration       Slave Number :       1         Slave Number :       1       1         Modbus RTU Slave Port       None       8         Baud Rate       19200       , N, 8, 1       Modify         Project       Current Application       demo04, ISA11=1420, ISA12=880       Delete         Elapsed Time       0:0:02:11       End Driver

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 Use the Soft-GRAF Studio to open the "Demo04.sof" project as the figure below. (Refer <u>Section 2.2.2</u> B. Open a Soft-GRAF Studio Project)



2. In the "Project" menu, click "IP Setting" to set up the download IP (i.e., PAC's IP), and then click the "Download" toolbar button to download this HMI project.

File Project Help 9 2 R View Project View Download	Soft-GRAF Studio - Demo File Project Help IP Setting Project Setting PassWord Val Download	O4.sof IP Setting IP Address 192 . 168 . 1 . 165 Setting
		File Project Help

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3. The following are HMI pages that show on the PAC's screen.

This Demo04 contains three HMI pages: Page1 displays all objects, and Page2 & Page3 display the security function and the using ways.

# Page1:



# The description of HMI pages and testing:

- As the figure above, we use a Boolean variable to test "g\_B\_val", "g\_B\_Led", "g\_B\_Pic" and "g\_B\_Inp" objects. And, the "g\_B\_Inp" button can be set to different switching modes (refer <u>Section</u> <u>3.2.1</u>) so that you can click it to to switch the status (e.g., click the "ON → 5 sec → OFF" button to switch to "ON", and it will automatically switch to "OFF" after 5 seconds).
- (2) Click this button to switch to Page2.
- (3) Trend chart, it used to draw a trace curve depends on the reading values. Moreover, the user can set "Action Address" to decide how to draw, and set "Clear Address" to remove the trace curve manually. (E.g., click the "Clear" button like the figure above to remove the trace curve.)
- (4) Display a Bar-meter.
- (5) The "g\_N\_Text" object, it allows to show the specified text depends on the reading values.
- (6) Here, we use three "Value" objects and three "Button" objects to show the Word, Integer or Float value that depends on the reading values.
- (7) The login button (e.g., click it to switch to the Page2).



- (1) Click this "Goto Page1" button to switch to the Page1.
- (2) Click this "Logout" button to logout and back to the page1. (It must work with a "Login" button.)
- (3) It's a "g\_F\_Inp" button with the permission setting (refer <u>Section 4.1.2</u>, Access Permission). First, click the "Login" button on the "Page1" (the 1st page) and then enter your Level-2 password (e.g., "012345", or higher level) to log in to this "Page2" and allow to operate this "g\_F\_Inp" button.
- (4) The same as the item (3). Before using this button, you must log in as a Level-1 user (or Level-2) by clicking "Login" button on the "Page1".
- (5) Before using this button to switch to the Page3, you must log in with your Level-2 password.

# Page3:



(1) Click this button to switch to the Page2.

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# 5.2 Demo05: "My Sweet Home" Demo Project

This Demo05 will describe how to design an interactive, dynamical HMI page. First, restore the "demo05.pia" file to the PC/ISaGRAF, and then download it to the ISaGRAF PAC.

# Restore the ISaGRAF Project (Demo05):

🔯 ISaGRAF - Project Management	Archive - Projects	×
File       Edit       Project       Tools       Options       Help         Image: Sofgr_08       Image: Sofgr_09       Import IL program       Import IL program       or to www.icpdas.com         Image: Sofgr_01       Import IL program       Import IL program       or to www.icpdas.com	Workbench       Archive         creation       demo01         demo02       demo04         demo03       demo05         eL03       eL03         eL04       eL05         m94_05       sofg_01         sofg_01       sofg_02         Archive location       D:\SOFT\	Backup <u>R</u> estore <u>C</u> lose <u>H</u> elp ✓ Compress

# Download the Demo05 to PAC:

🚓 ISaGRAF - DEMO05 - Programs
<u>File Make Project Tools Debug Options H</u> elp
🕒 🖬 🕾 🕮 🗅 🖻 💼 🐺 👗 💀 🛤 🕺 🌊 💻
Begin: ILD1 Generate a pulse M1 and get Time

#### In the PAC:

isaWP5xx7	WinPAC-5xx7/5xx6 ISaCiRAF Driver         Setting       Web         About         Configuration         Slave Number :       1         Modbus RTU Slave Port       None         Baud Rate       19200       , N, 8, 1         Project
	ICP DAS Co., Ltd. Technical document

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In this Demo05 project, we add an "i\_8056" virtual I/O board in the ISaGRAF - "IO connection" window to test the status of DO tags (without using a real I/O module).



If you need to use a physical I/O module, simply install it into the PAC's Slot 1, change the setting to "Real" I/O board in the ISaGRAF - "IO connection" window, and then compile and download this project to the PAC.



- 1. Use the Soft-GRAF Studio to open the "Demo05.sof" project. (Refer Section 2.2.2)
- 2. Click the "Project" menu to set the download IP, and click "Download" toolbar button to download this project to the PAC. (Refer <u>Section 5.1</u>)



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3. This Demo05 contains 10 HMI pages, and the following will describe how to operate these HMI pages on the PAC screen.







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# 5.3 Demo06: Trend Chart (g\_Trend) and Angular Meter (g\_Guage)

This Demo06 provides a brief overview of a trend chart and an angular meter. First, restore this file (i.e., "demo06.pia") to the PC/ISaGRAF, and then download it to the ISaGRAF PAC.

# Restore the ISaGRAF Project (Demo06):



# ISaGRAF - DEMO06 - Programs File Make Project Tools Dehug Options Help Image: Strain S

# In the PAC:

isaWP5xx7	WinPAC-5xx7/5xx6 ISaGRAF Driver       OK         Setting       Web       About         Configuration       Image: Configuration of the set of the
	ICP DAS Co., Ltd. Technical document

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- 1. Use the Soft-GRAF Studio to open the "Demo06.sof" project. (Refer Section 2.2.2)
- 2. Click the "Project" menu to set the download IP, and click "Download" toolbar button to download this project to the PAC. (Refer <u>Section 5.1</u>)



3. This Demo06 includes one HMI page, and it looks like the figure below on the PAC's monitor. The user can click the "History" button on the trend chart to query historical records, and the following are three angular meters.



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# 5.4 Demo07: Using Alarm Message and Alarm Records

This Demo07 provides an overview of how to use the "g\_Alarm" function. And, the Demo07b is the traditional Chinese version. First, restore the "demo07b.pia" file to the PC/ISaGRAF, and then download it to the ISaGRAF PAC.

Note: The "Demo07" is used to show alarm messages ("07a" is the English version and "07b" is the Traditional Chinese version). If the PAC's OS language is another, the user need to change the "Encoding" setting of the "g\_Alarm" object in the Soft-GRAF Studio, refer Section 3.1.6 – (19), and then change the text of the "Messages" variable in the ISaGRAF project. (E.g., if the PAC's OS language is Simplified Chinese, you must change the "Encoding" setting as "gb2312" and modify the content of ISaGRAF "Messages" variables ("msg1" to "msg8") as Simplified Chinese characters.

Archive - Projects

alarmd02

alarmd03

alarmts1

creation

demo\_01 demo01

demo02

demo03

demo04

demo0329

Workbench

Archive

2.

demo01

demo02

demo03

demo04

demo05

demo06

demo07

demo07b

۰

×

Restore 3.

Close

<u>H</u>elp

# Further Reading:

**FAQ-160** (<u>http://www.icpdas.com/root/support/faq/isagraf.php</u> > 160 Alarm Lists). Except for displaying alarm messages, it can also send a text message to multi-user.

# Restore the ISaGRAF Project (Demo07a):

🞇 ISaGRAF - Project Management							
<u>F</u> ile <u>E</u> dit	<u>P</u> roject	<u>T</u> ools	<u>O</u> ptions	<u>H</u> elp			
🖹 🖽	D 🗈	<u>A</u> rc	hive	Þ	<u>P</u> rojects		
📺 sofgr_08		<u>L</u> ibraries			<u>C</u> ommon data		
🖩 sofgr_09 📼 sofar N1		Import IL program			er to www.icpdas.com		



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#### Advanced Help - How to trigger the alarm message:

In the ISaGRAF program, the user can use the "MSGARY\_W" function to trigger and record the alarm message from the "g\_alarm" object. If you are not familiar with ISaGRAF operations, visit the <u>ISaGRAF</u> <u>website</u> to look up the "ISaGRAF User's Manual.

Note: This ISaGRAF program uses the MSGARY\_W(-9, msg), MSGARY\_W(-8, msg), MSGARY\_W(-7, msg) or MSGARY\_W(-6, msg) function to send an alarm message to the Soft-GRAF "g\_Alarm" object. And, the alarm message cannot contain a CR (Carriage Return, ASCII code 13) or a LF character (Line Feed, ASCII code 10), these two characters will automatically convert to a whitespace (Space, ASCII code 32).

# The way to trigger the alarm message ("LD1" program):

(1) If the user set the "ADDR\_" as "-9" and assign a Message variable (E.g., "msg1") to the "Msg\_" in the "MSGARY\_W" function. That is, to show an alarm message and its pop-up confirmation dialog on the "g\_Alarm" main window when the alarm occurs.

#### In this example:

When "K1" is triggered (K1 = True), the "g\_Alarm" object will show the content of the "msg1" variable and pop up an "Alarm" dialog. After that, reset "K1" to "False" to avoid doing this operation repeatedly.



# **HMI screen**: When "K1" is set to "TRUE", the "g\_Alarm" object will display as the figure below.



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(2) If the user set the "ADDR\_" as "-8" and assign a Message variable (E.g., "msg2") to the "Msg\_" in the "MSGARY\_W" function. That is, only show an alarm message on the "g\_Alarm" main window when the alarm occurs. (No confirmation dialog)

#### "LD1" sample program:

When "K2" is triggered (K2 = True), the "g\_Alarm" object will show the content of the "msg2" variable. After that, reset "K2" to "False" to avoid doing this operation repeatedly.



#### Test:

After downloading this ISaGRAF project, simply set the "K2" as "True" in the "Spy lists" (click "Tools" and "Spy lists" in the "Debugger" window) or in the "Dictionary" window (click this **11** tool button in this "demo07a" project) or in the "LD1" program, to view the alarm results on the PAC's HMI screen.

#### HMI screen:

When "K2" is set to "TRUE", the "g\_Alarm" object will display as the figure below.



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(3) If the user set the "ADDR\_" as "-7" and assign a Message variable (E.g., "msg3") to the "Msg\_" in the "MSGARY\_W" function. That is, to show an alarm message and a confirmation dialog, which listed with all unconfirmed messages, on the "g\_Alarm" main window when the alarm occurs.

#### "LD1" sample program:



#### Test:

After downloading this ISaGRAF project, the user can set the "K3" as "True" in the "Spy lists" (open this by clicking "Tools" and "Spy lists" in the "Debugger" window) to view the alarm results on the PAC's HMI screen.

#### HMI screen:

When "K3" is set to "TRUE", the "g\_Alarm" object will display as the figure below.

Alarm History (26/1	2/2014 Friday)
12/26/2014 - Ack Goto	00 - 03 - Export
ALL      No Ack     Ack(more)	Ack (ALL) Search
*0003 <u>26/12/2</u> 014 11:59:57, Alarm1	
*0002. 26/12/2014 11:58:26.	Alert
*0 The content of the "msg3". K1 is triggered !	*0003, 26/12/2014 11:59:57, Alarm1
Alarm amount: 3 , Ack: 0 , No Ack: 3	*0003, 26/12/2014 11:59:57, Alarm1 *0002, 26/12/2014 11:58:26, Alert without pop-up *0001, 26/12/2014 11:55:51, K1 is triggered ! List all unconfirmed messages when the alarm occurs.
	<
	Stop Beep Ack Ack (ALL) Close
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How to export a (1) Click the "E	How to export alarm records? (1) Click the "Export" button in the Alarm main window.										
	12/26/2014	•	Ack Goto	00 👱	07 👱 🛛 Ехр	ort					
		Ack	Ack(more)	Ack (A	ALL) Sear	rch					
<ul> <li>*0007, 26/12/2014 12:10:23, K1 is triggered I *0006, 26/12/2014 12:09:04, OUT2 is triggered ON - &gt; OFF *0005, 26/12/2014 12:06:59, OUT4 is triggered ON - &gt; OFF 3 sec *0004, 26/12/2014 12:05:04, OUT3 is triggered OFF - &gt; ON 3 sec *0003, 26/12/2014 11:59:57, Alarm1</li> <li>(2) In the Export window, set the folder name, file format, and date interval, and then click the "Export" button to send data to the USB Disk. (Make sure the USB Disk has been plugged into your PAC before doing this operation.)</li> </ul>											
Sub-	directory : St	ation1	es) (/	Assign	an export fol	der name.	]				
Form	nat:	v (for excel)		Choos	e an export fo	ormat (csv, tx	<b>_</b> (t ).				
<ul> <li>T</li> <li>La</li> <li>Al</li> <li>Export</li> </ul>	oday OY4 st week OTH I recent 1 more mo Export	esterday his Month onths (g_alarm_20	Close		Choose a date	interval to e	export.				
		ICP DAS	Co., Ltd. Techr	nical doc	ument						

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### 5.5 Demo08: Data Logger (g\_Logger1) and FTP Uploader

The Demo08 will describe how to use the "g\_Logger1" function. First, restore the "demo08.pia" file to the PC/ISaGRAF, and then download it to the ISaGRAF PAC. (Refer <u>Section 5.4</u>)



The user can download "ISaGRAF User's Manual" (about 11 MB) to view further instructions on how to install the ISaGRAF software and use the ISaGRAF project (see Section 1.1, 1.2, and 2.1). <u>http://www.icpdas.com/root/product/solutions/softplc\_based\_on\_pac/isagraf/download.html</u>

### HMI screen:

**<u>Note:</u>** One PAC can use only One "g\_Logger1" object.



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### Project Structures:

This ISaGRAF project contains one Ladder and one ST programs as the figure below.

- IS	aGRA	F - FAQ	158 - P	годтал	IS				IJN
File	<u>M</u> ake	<u>P</u> roject	<u>T</u> ools	De <u>b</u> ug	<u>O</u> ptio	ns <u>H</u>	elp		
		Þ 🗓	D 🗈		y X	¢		₿	🐥 (
Begin		(HI	ED1 ST1						
Clie	ck to s	see all o	declare	ed var	iables	5.			_

### **ISaGRAF Global Variables:**

Name	Туре	Attribute	Description
INIT	Boolean	Internal	Set initial value as TRUE.
Year1	Integer	Internal	Get the Year from the PAC's date, e.g., 2012.
Month1	Integer	Internal	Get the Month from the PAC's date, e.g., 11 (November).
Day1	Integer	Internal	Get the Day from the PAC's date, e.g., 13.
Week1	Integer	Internal	Get the Weekday from the PAC's date, e.g., 2 (Tuesday).
Hour1	Integer	Internal	Get the Hour from the PAC's time, e.g., 15.
Minute1	Integer	Internal	Get the Minute from the PAC's time, e.g., 46.
Second1	Integer	Internal	Get the Second from the PAC's time, e.g., 18.
V1	Real	Internal	The first data to record, set the NetWork Addr. as 1.
V2	Real	Internal	The 2nd data to record, set the NetWork Addr. as 3.
V3	Real	Internal	The 3rd data to record, set the NetWork Addr. as 5.
CNT1	Integer	Internal	To simulate Sin and Cos curve value.
Cycle1	Integer	Internal	To simulate Sin and Cos curve value.
e1	Real	Internal	To simulate Sin and Cos curve value.

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LD1 Program:	en SYSDAT	Г_R YYyear1 MMmont DDday1 WW -week	en SYSTIM	_R eno HHhour MMminu SSseco	nd1 These	I functions us AC's date and	sed to get d time.
(* To simulate v1 := REAL if INIT INIT := CNT1 T1 := T Interva cycle1 e1 := F tStart( T1_Ne end_if; if T1 >= if T1 T1 := end_if T1_Ne	the value of V1 (second1) ; then False ; = 0 ; f#0s; al1 := T#250ms ; = 480 ; REAL( 2.0 * 3.14 (T1); ext := T1 +Interva >= T#6h then = T#0s ; ext := T1 +Interva	and simul ; 15926 / RI al1 ; n	ate Sin and Cos	;	r V2 and V3 v	ariables *)	
CNT1 if CN CNT end_if v2 := 5 v3 := 5 end_if ;	:= CNT1 + 1 ; IT1 >= cycle1 1 T1 := 0 ; ; 50.0 * sin( REAL( 50.0 * cos( REAL	then [CNT1)*e1 (CNT1)*e2	. ) + 50.0 ; 1 ) +50.0 ;				

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#### File format of the "g\_Logger1" data:

The g\_Logger1 records data in a file every day. If choosing CSV format, for example, the file name is "g\_Logger1\_2012\_11\_13.csv" on the date of Nov. 13th, 2012.

Data files are saved in the following directory if it is November 2012.

WP-8xx7, VP-2xW7/4xx7, WP-5xx7:

 $\label{eq:micro_SD} OFt-GRAF\g_Logger1\2012\11\$ 

XP-8xx7-CE6, XP-8xx7-Atom-CE6:

\System\_Disk2\Soft-GRAF\g\_Logger1\2012\11\

The first row lists the "File Title" (e.g., "g\_Logger1 Demo"). The second row lists some "Column Title". The max. amount of the "Column title" is 51. The first "Column title" is Date-Time. The 2nd to 51th are the title of all the 1st to 50th data (e.g., Curve1, Curve 2, and so on). The other rows starting from the 3rd row are the data of each sampling. All titles can be displayed as your local language.



If open the above data file by the Excel, it may show as the following figure.:

	A	В	С	D	Е
1	g_Loger1 Demo (NOV-13-2012 Tuesday)				
2	Date Time	Curve1	Curve2	Curve3	
3	NOV-13-2012 17:15:06	6	5.4	27.3	
4	NOV-13-2012 17:15:10	10	1.8	36.4	
5	NOV-13-2012 17:15:15	15	0	49.3	
6	NOV-13-2012 17:15:20	20	1.5	62.3	

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### "g\_Logger1" object settings:

If users don't want the "File Title", set it as blank (then the first row will become "Column Title"). **Note:** The "Sample rate" setting of the "g\_Logger1" affects the retaining days of data files.

Sample rate	Retaining days
1, 2, 3 (sec.)	10
5, 10, 15, 20, 30 (sec.)	30
1, 2 (min.)	90
3, 5 (min.)	180
10, 15, 20, 30 (min.), 1, 2, 3, 6 (hr.)	365



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### Enable the FTP Client to send data file of the "g\_Logger1" to the FTP Server:

The user can check the "Enable Ftp" item and set related parameters to send daily data file of the "g\_Logger1" to the PC/FTP Server automatically. And, check the "Enable Ftp2" to send the data file to the second FTP server.

### **Note:** 1. The "Enable Ftp2" doesn't work if the first "Enable Ftp" is not checked.

Be aware of the setting of "FTP Directory", use the "\" symbol, DONOT use the "/" symbol.
 (E.g., "\Machine2" or "\" are correct. However "/Machine2" and "/" are incorrect.)

Make the following settings:

g_Logger 1		
Setting - 1 Setting - 2 Setting - 3 Setting Transmission Type Ethernet FTP Server IP 192.168.1.170 Port NO. 21 User name Chun Password ****** FTP Directory Wachine2 (ex : was	ng - 4 Setting - 5 Hour to send Hour1 01:00 Hour2 none Hour3 none machine2)	Setting - 1 Setting - 2 Setting - 3 Setting - 4 Setting - 5 FTP Server IP 192.168.1.171 Port NO. 21 User name User Password ****
		rir Directory (test (ex:\machine2)

#### Note:

- 1. The data file of the "g\_Logger1" will be sent to FTP Server at about 05 minutes after the selected hour. (E.g., if setting the Hour1 as "08:00", the data file will be sent at about "08:05".)
- 2. If sending the file to FTP Server fails, the "g\_Logger1" will re-try once at about 4-hours later. It will continuously re-try once every 4-hours later until it succeeds or expire 7-days.
- 3. The "FTP Server IP" means the IP address of the PC which will receive the data file. If the PC is not in the same IP domain as the PAC, set a proper "Default Gateway" setting for the LAN port of the PAC. (As the figure below)

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➡ 命令提示字元									
C:\Documents Windows IP Co	e Gateway-	IP-address							
Ethernet adap Conne IP Ad	ter 區域連線: ction-specific I dress	b tł 1.88 Sa	y key-in the "in ne PC which is ame IP domair	pconfig" concernent connected in of the PAC	mmand on in the				
Subnet Mask         : 255 255 255 0           Default Gateway         : 192.168.1.1									
Image: Programs     Or          ☆ Favorites         ↓           ☆ Favorites         ↓	On the PAC:       File       Edit       View       Advanced       X (a)       Image: Constraint of the pace of th								
🐓 Settings 🛛 🚱	• <u>C</u> ontrol Panel Network and Dialu	Cor <mark>1</mark> ,	AN1 Fast Etherne	t Adapter	r' Settings		ок) 🔀		
Help <u>Network and Dial-up Conner</u> IP Address <u>Name Servers</u> Run Taskbar and Start Menu An IP address can be automatically assigned to computer. If your netword does not automatically as IP addresses, ask your n administrator for an add and then type it in the sp provided.					O Obtain an I Specify an I IP <u>A</u> ddress: Subnet Mask: Default Gatew	P address via [ IP address] [192.16 [255.25 ay: [192.16]	ЭНСР 8.1.181 5.255.0 8.1.1		

To send the data file to a remote PC/FTP Server by 2G/3G dial-up wireless connection, set the "Transmission Type" as "2G/3G Wireless". And this PAC requires a 2G/3G I/O module and a SIM card. (E.g., I-8212W-3GWA: <u>http://m2m.icpdas.com/i-8212w-3GWA.html</u>). Then follow steps listed in the section 1.1 and section 1.2 of the following web site to set up the 2G/3G I/O module. (<u>http://www.icpdas.com/root/support/fag/isagraf.php</u> > FAQ-143 ).

Setting - 1 Set	ting - 2 Setting	- 3 Setting - 4 Se	tting - 5
🔽 Enable Ftp		<ul> <li>Hour to s</li> </ul>	end
Transmission I	Type 2G/3G Wi	irele: 🗸 Houri	01:00 💌
FTP Server IP	192.1 Ethernet	How2	none 💌
Port NO. 2	1	Hour3	none 🔽
🔽 User name	chun		
Password	***		
FTP Directory	Wachine2	(ex : \machine2)	

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#### Using the "FTP\_Loader" to upload the data file of a specified date:

The "faq158\_demo.zip" (refer <u>ISaGRAF FAQ-158</u>) includes a utility "FTP\_Loader.exe" that can run in a Windows PC. Its purpose is to command the g\_Logger1 to send the data file of a specified date to the PC/FTP Server. To use this function, first add six integer variables with six continuous network-address numbers, e.g., 21 ~ 26 <sub>(10)</sub> or 15 ~ 1A <sub>(16)</sub>, in the ISaGRAF program similar as the following picture.

🏷 ISaGRAF - FAQ1	58 - Global int	egers/rea	ls 📃	×			
<u>File Edit T</u> ools <u>Op</u>	tions <u>H</u> elp						
	🖴 🔵 💽 🌜	) 📲 🖁	× 車 🖌 📉 🖴				
Destante Interest Reals There Managers ITD instances [Destinged counts]							
Booleans Integers/Rea	ais   Umers   Mes	sages   FB Index	Instances   Defined words				
minuto1	Aurio. Iinternel integer]	Adar. 0000	Comment				
	[internal,integer] [internal integer]	0000					
seconal	[initernal,initeger]	0000	"				
	r:-+	0004	// Mahar ad Oursea di anti-additi - di				
VI	[internal,real]	0001	Value of Curve 1, set addr. = 1				
v2	[internal,real]	0003	Value of Curve 2, set addr. = 3				
<b>v</b> 3	[internal,real]	0005	Value of Curve 3, set addr. = 5				
			//				
CNT1	[internal,integer]	0000	for simulating Sin and Cos curve				
cycle1	[internal,integer]	0000	for simulating Sin and Cos curve				
el	[internal,real]	0000	for simulating Sin and Cos curve				
			//				
ftp vear	[internal,integer]	0015	addr.=21				
ftp month	[internal,integer]	0016	addr.=22				
ftp_dav	[internal,integer]	0017	addr.=23				
ftp_command	[internal,integer]	0018	Set 1 to let Soft-GRAF to send a file (then auto reset as				
ftn result	[internal,integer]	0019	1:busy,21:succeed,101:no file,102:ftp fail,103:ftp disak				
ftn progress	[internal.integer]	001A	0 ~ 100 means progressis 0 ~ 100				
http://www.			//	Ţ			
	I	I	[ <sup>*</sup>				
				. <u></u>			

Then, set up the "g\_Logger1" object in the Soft-GRAF Studio. (Address =  $21 \sim 26$ )

Month Address 22 Day Address 23 Command Address 24 Result Address 25	Vear Address     21       Month Address     22       Day Address     23       Command Address     24       Result Address     25

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Fhen run the "F FIP I This U Soft-G ISaGF Pleas the "L 2012	TP_Loader.exe" i Loader Utility is for loading the RAF g_Alarm or g_L RAF PAC to the ftp se e select the data file oad " button. Month 11	in a PC to o e data file of t ogger from t rver. date to load : Da	do the "Addres	s Setting Assign th date to u	ne file upload.	natch the P	AC settings.
Status Enter the address a PAC's IP a	defined and the address.	Form2 Ftp-Year addres Ftp-Month add	ess Setting ess 21 ress 22 rs 23	_	Ftp command add Ftp result address Ftp progress addr	tress 24 25 ess 26	×
After completing	g above settings, 2/11/27) to the	PAC Net-ID PAC IP Address click the PC/FTP Se	1 <sup>192</sup> . "Load" button t rver.	168 to comn	1 181	to upload t	etting Back he specified c
	Th So IS	TP Loader iis Utility is fo oft-GRAF g_/ aGRAF PAC	or loading the data Alarm or g_Logger > to the ftp server.	file of the from the			

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## Appendix A Graphics File Management in Soft-GRAF

### Graphic files in the PAC:

After downloading all images that used in the project, they will be stored in the below path:

<u>WP-8xx7, VP-2xW7/4xx7, WP-5xx7:</u> \Micro\_SD\Soft-GRAF\**user** 

<u>XP-8xx7-CE6, XP-8xx7-Atom-CE6</u>: \System Disk\ISaGRAF\sofgrafy\**user** 

If there are too many images in this folder, the user can delete unwanted images, but DO NOT remove this "**user**" folder, and then re-download the project in the Soft-GRAF Studio.

A <u>d</u> dress	Wicro_SD\Soft-GRAF\user		с \	or XP-8xx7-CE6, XP-8xx7-Atom-CE6: \System_Disk\ISaGRAF\sofgrafy\user\				
Name		S						
🛋 07.jpg		14.1	КΒ	JPEG Image				
🖻 08.jpg		13	КΒ	JPEG Image				
🖻 air-(021)	).gif	9.75	KВ	GIF Image				
🖻 air-1.jpg		8.29	KВ	JPEG Image				
🖻 back.jpg	,	4.14	KВ	JPEG Image				
🖻 back-b.jj	pg	4.16	КΒ	JPEG Image				

For improving the download efficiency. The Soft-GRAF will check all the used image file name and size while downloading the project, and then to judge whether to overwrite them into the PAC. If the image size is the same as the existing one, it will not be downloaded to the PAC. Therefore, when the user notice that the HMI screen does not refresh the image, simply delete the old image in the "user" folder described above and then re-download the project in the Soft-GRAF Studio.

### Graphic files in the PC (Soft-GRAF Studio):

Normally, the Soft-GRAF Studio will backup all used images in the PC (D:\Soft-GRAF Studio\**Project Name>\Pic\**) for users to edit them. And, it's necessary to close the Soft-GRAF Studio because these images are locked if the software is open.



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## Appendix C How to Switch the HMI Page by the ISaGRAF Program?

The user can define the following two ISaGRAF integer variables for switching the Soft-GRAF HMI page and reading the current page number. (<u>Note</u>: Only the Soft-GRAF driver version 1.06 and later version supports this function.)

The ISaGRAF integer variable which specified a network address as "8191" (Hex is 1FFF) can be used to switch the Soft-GRAF HMI page, like the "To\_Page" variable listed below (its initial value must be "65535). If this "To\_Page" is set to "1", the Soft-GRAF HMI will switch to the Page 1 and then reset to "65535" automatically. If it is set to "2", the Soft-GRAF HMI will switch to the Page 2 and then reset to "65535" automatically. If this "To\_Page" is set to a non-existing page number, the Soft-GRAF HMI will not switch to any page.

The ISaGRAF integer variable which specified the network address as 8190 (hex is 1FFE) can be used to read the current Soft-GRAF HMI page number. The value can be 1, 2, 3, and so on.

Name	Туре	Attribute	Network Addr.	Description
To_Page	Integer	Internal	8191 (Hex = 1FFF)	The initial value must be "65535". For switching the Soft-GRAF HMI page.
Current_Page	Integer	Internal	8190 (Hex = 1FFE)	For reading the current page number.

Integer/Real Variable Name: To_Page Comment: set initial value Unit:	Network Address: 1FFF e to 65535, NetWork addr. is 8191 (Hex=1FFF) Conversion: (none)
Attributes Internal Input C Dutput C Const <u>ant</u> Dim:	Format Store   Integer (standard)   Real Cancel   Next   Initial value: 65535   Retain     Extended
ICP	PDAS Co., Ltd. Technical document

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The Soft-GRAF supports to show the HMI page on top of all other windows by using the function key (i.e., "F1" to "F6") on the VP-25W7/23W7 PAC panel. (<u>Note:</u> Since the VP-2xW7 PAC driver version 1.21.)

### Follow these steps:

1. Declare the following Boolean/Internal variables (i.e., "F1\_btn" ~ "F6\_btn") in the ISaGRAF project to read the status of function keys (i.e., "F1" to "F6") on the VP-2xW7.

F1_btn	[internal]	0000
F2_btn	[internal]	0000
F3 btn	[internal]	0000
F4 btn	[internal]	0000
F5_btn	[internal]	0000
F6 btn	[internal]	0000
_		1

 Declare two ISaGRAF Integer/Internal variables and assign them to the following network addresses. To\_Page: Set the NetWork address as "8191" (Hexadecimal: 1FFF).

Current\_Page: Set the NetWork address as "8190" (Hexadecimal: 1FFE).

To_Page	(internal,integer)	1FFF
Current_Page	(internal,integer)	1FFE
Current_Page	[internal,integer]	1FFE

- 3. Then, add the following ST code to the ISaGRAF project. If the user cannot view the Soft-GRAF HMI page on the VP-2xW7 PAC screen (e.g., the Windows Explorer is displayed on top of this HMI page), then press the "F6" function key to show the HMI page on top of all other windows.
  - Note: The variable "Current\_Page" can be changed to the others integer value to switch the HMI page to another page number, such as "To\_Page := 2 ;".

```
F1_btn := EEP_B_R(16#A00F1);
F2_btn := EEP_B_R(16#A00F2);
F3_btn := EEP_B_R(16#A00F3);
F4_btn := EEP_B_R(16#A00F4);
F5_btn := EEP_B_R(16#A00F5);
F6_btn := EEP_B_R(16#A00F6);
if F6_btn = TRUE then (* F6 button is pressed *)
    To_Page := Current_Page ;
(* Switch Soft-GRAF Page to the "current page. This will make the Soft-GRAF to show on the Top *)
end_if;
```

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# Appendix D How to Check the Soft-GRAF Driver Version?

### To See the Current Version:

On the PAC screen (or an external monitor), click the top-left corner of the HMI page1 to see the Soft-GRAF driver version.

This is Page 1	
Welcome to the Soft-GRAF D visit www.icpdas.com > FAC ISaGRAF > FAQ-	emo 01. Please ) > Software > 131
	ОК 🗵
ON / OFF ON> 5 sec	Soft-GRAF driver version 1.01, Sep.21,2010
Goto Page 2	

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ppendix E	How to Sh	ow the S	Soft-GRA	F HMI P	age in Ful	l Screen?	)
fter completing	the software c	levelopme	nt and testin	g, we reco	ommended to	show the S	oft-GRAF HM
age in full scree	n mode to avo	id the on-s	ite operator	change th	e PAC system	settings.	
oing these step	os in the PAC:						
🖻 Progra	ms 🕨						
👷 F <u>a</u> vorit	ies 🕨			Т	askbar and St	art Menu	ок 🔀
🕒 Docum	nents 🔸			G	ieneral Advanc	ed	
👺 <u>S</u> ettini	gs 🛛 🚱 <u>C</u> ontro	I Panel			Always on	top	
🧼 Help	🛸 <u>N</u> etwo	ork and Dial-u	p Connections		Auto hide		
2 <u>R</u> un	🛃 <u>T</u> askba	ar and Start I	Menu		Clock	,	
😽 Taskb	ar and Start Menu	ı <b>X</b>				`	
	<i></i>						
	2	ViewPAC	C Utility [2.1.)	0.3]			
Internet	t ViewPAC	File He	l <u>p Configurati</u>	<u>on  </u>			
		Save an	nd Reboot 🥿	Etherne	et Settings Networl	< Settings System	n Inforr
isaVie	. ViewP	Reboot	Without Save	Th	is tool will help you	to set up the View	(PAC m
		Restore	: Default Setting	js 📕	Display Resolution :	640 * 480	✓
		E <u>x</u> it					
			/iewPAC	Products			
		DAS	Data Acquisition	System		Settings	

### How to Turn Off Full Scree?

After enabling Taskbar Auto-Hide feature, the user cannot make changes to the PAC system settings in full screen mode.

There are two possible ways to solve this problem.

1. (The recommended way):

Run the ISaGRAF on a PC and connect to the PAC, and then stop running the ISaGRAF project by clicking the "Stop application" button.

🧟 ISa(	🔍 ISaGR▲F - SOFGR_02 - Debugger 📃									
<u>File</u> <u>Control</u> <u>Tools</u> <u>Options</u> <u>H</u> elp										
	(@))) ≫ > > > > & > & > 0 @ # P									
RUN	all	owed=1	0	current=3	maximum=120	) overflow=0				
14 Sto	14 Stop application plication stopped									

### 2. (Not recommended):

Turn off the PAC and adjust the PAC's rotary-switch to "1" (i.e., Safe mode), and then turn on the PAC.