What is PHPoC Debugger?

PHPoC Debugger

PHPoC Debugger is a software used for development and management of PHPoC Products. It is requried to install this program before using PHPoC.
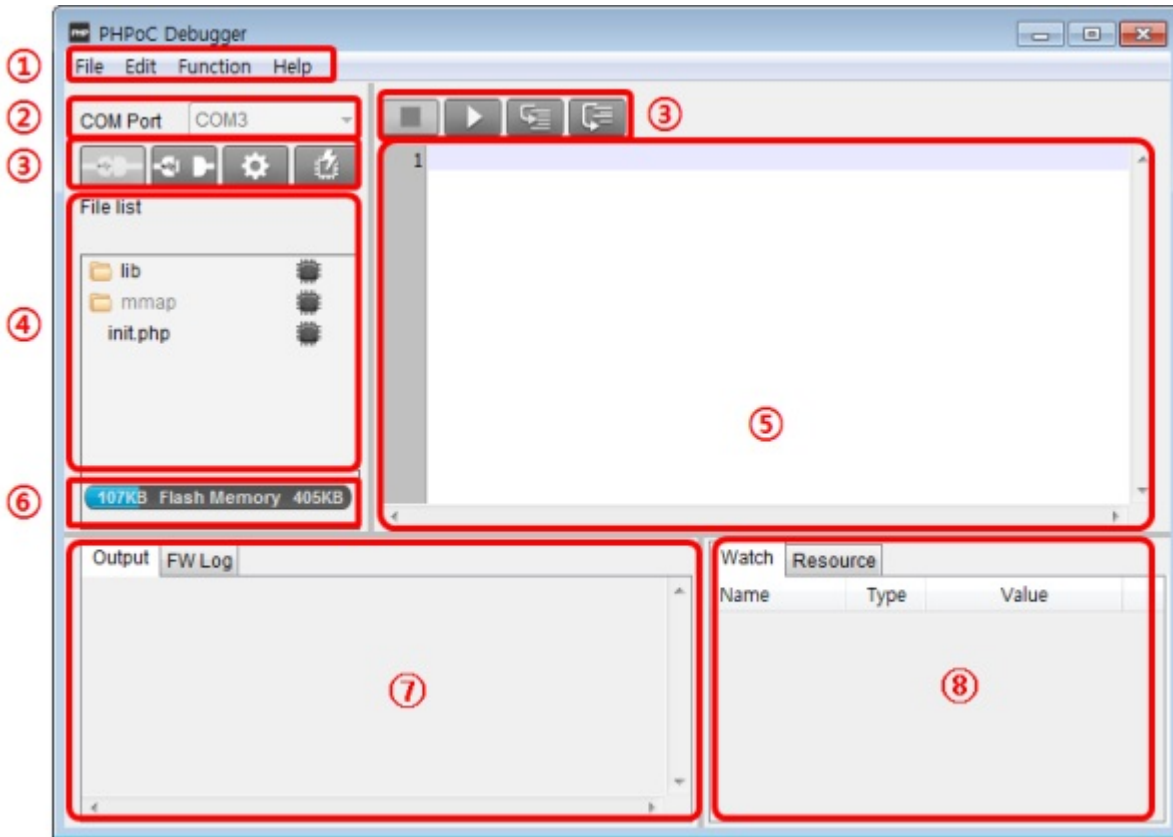
- Go to Download PHPoC Debugger

Features of PHPoC Debugger

- Upload files from local PC to PHPoC
- Save files which are in PHPoC to local PC
- Edit files stored in PHPoC
- Debug PHPoC scripts
- Monitor PHPoC's resources
- Configure PHPoC's parameters
- Upgrade Firmware of PHPoC
- Support Platform: MS Windows

User Interface

User Interface

1. Menu bar

Menu	Sub menu	Description
File	New	Create a new php file
	Upload a poc file	Upload a poc format file
	Save selected file(s)	Save selected files in file list to local PC
	Save a poc file	Save all files in file list to local PC (.poc)
Edit	Undo	Undo the latest job
	Redo	Redo the latest job undone
	Cut	Cut the selected text and copy it to the clipboard
	Copy	Copy the selected text to the clipboard
	Paste	Paste text from the clipboard
	Select all	Select all texts
	Find	Find the specified text
	Find Next	Find the next text by down direction
	Find Previous	Find the next text by up direction
	Change	Replace the specified text with given text
	Preferences	Program preference
Function	Product / Firmware information	Information of current firmware and product
	Network information	Current network information
	Flash files information	Information about flash files
	Smart expansion board information	Information about smart expansion boards
	View PHP error log	View firmware log messages in error
	View firmware error log	View firmware messages in error
	Reboot a product	Reboot a product
	Firmware Debug mode	Enable/disable Firmware debugging mode
	PHP Debug mode	Enable/disable PHP debugging mode
	Font	Change font
	Language	Change language
	PHPoC Debugger information	Information about PHPoC Debugger
help	Debugger manual(online)	Go to PHPoC debugger manual page
	PHPoC manual(online)	Go to manual page of phpoc.com
	Forum	Go to PHPoC forum

- Preferences

| Menu	Sub menu	Description
View	View margin	Show/hide margin
	View line number	Show/hide line number on margin
	View current line	Enable/disable current line emphasis
	Auto scroll	Enable/disable auto scroll
	Line ratio	Set line space: 100, 120, 150, 200, 300
	Tab size	Set tab size: 1, 2, 4, 8, 16
Action of file add	Internal editor	Use the internal editor
	External editor	Use an external editor
	Ask	Show select option every time
Backup path		Path of backup files
Initialization	Enter initialization mode	Set product to initialization mode

2. COM PORT

Part for choosing a virtual USB COM port

3. Buttons

Button	Description
	Connect to PHPoC product
	Disconnect from PHPoC product
	Configure environmental values of PHPoC product
	Upload files on [File list] to PHPoC product
	Stop running PHPoC codes
	Run/pause PHPoC codes
	Run line by line
	Run procedure by procedure

4. File list

List of files saved PHPoC product or to be uploaded.

Icon	Description
	Synchronized files
	Files on PHPoC product before synchronization
	Files on local PC before synchronization
	Synchronized files on local PC for external editors

The following menus will be popped up when right clicking on file list area.

Menu	Description
Run	Run the script selected immediately
New	Create a new php file
Change the filename	Modify file name
Add	Add files from local PC
Delete	Delete file on the list
Change firmware	Upload the firmware selected to PHPoC

5. Editor

Showing and editing contents of selected file on the file list. The following menus will be popped up when right clicking on editor area.

Menu	Description	Shortcut
Toggle Breakpoint	Set / Unset break point on current line	F9
Remove All Breakpoints	Unset all break points on current file	Shift+F9
Step Into	Run line by line	F11
Step Over	Run procedure by procedure	F10
Run to the current line	Run and pause before executing the current line	-
Cut	Cut the selected codes and copy it to the clipboard	Ctrl+X
Copy	Copy the selected codes to the clipboard	Ctrl+C
Paste	Paste codes from the clipboard	Ctrl+V
Select all	Select all codes	Ctrl+A

6. Flash memory size

This shows currently available or in-use space on flash memory of PHPoC product.

7. Output / FW Log

This window is for displaying standard output and F/W log messages. The following menus will be popped up when right clicking on the windows.

Menu	Description
Delete all logs	Clear screen buffer
Copy	Copy the selected log to the clipboard
Auto scroll	Set / Unset auto scroll

8. Watch / Resource

This window is for checking run time variable information and system resources. The following menus will be popped up when right clicking on the watch window.

Menu	Description
Add	Add a variable
Modify	Modify a name of the selected variable
Delete	Delete the selected variables
Delete all	Delete all variables
Detail	Create a new window for detailed information
Refresh	Refresh variables

Installation

1. Downloading PHPoC Debugger

Download PHPoC Debugger on the link below.
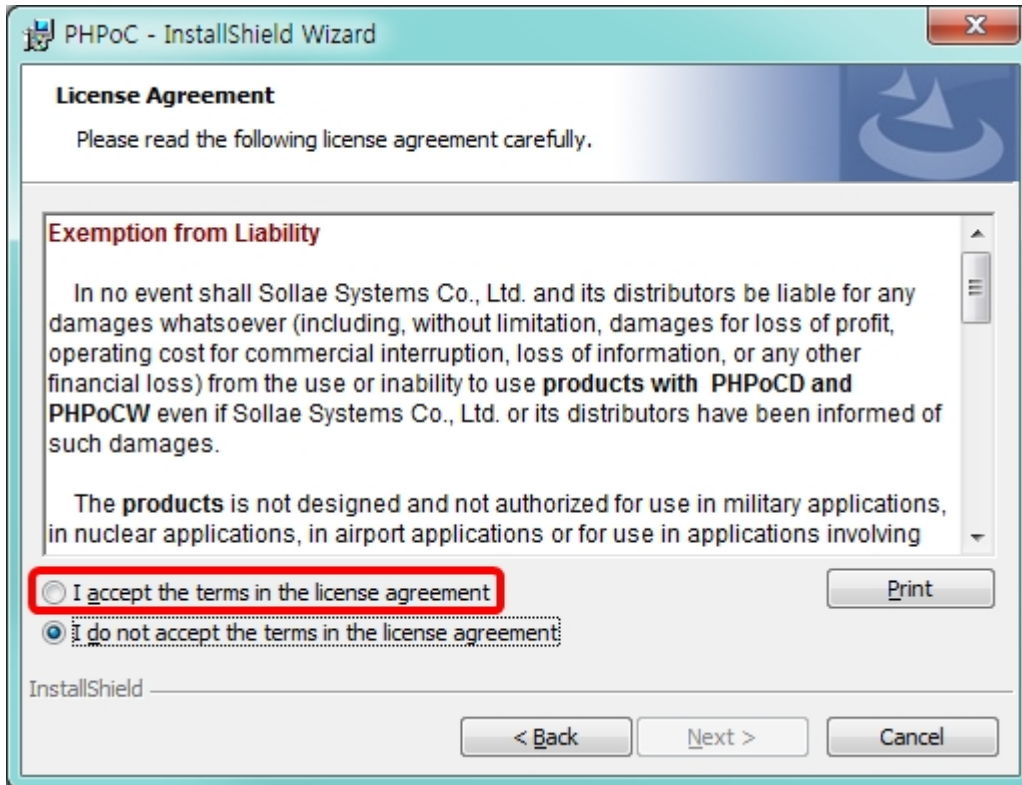
- Go to the Download Page

2. Running the Installation File

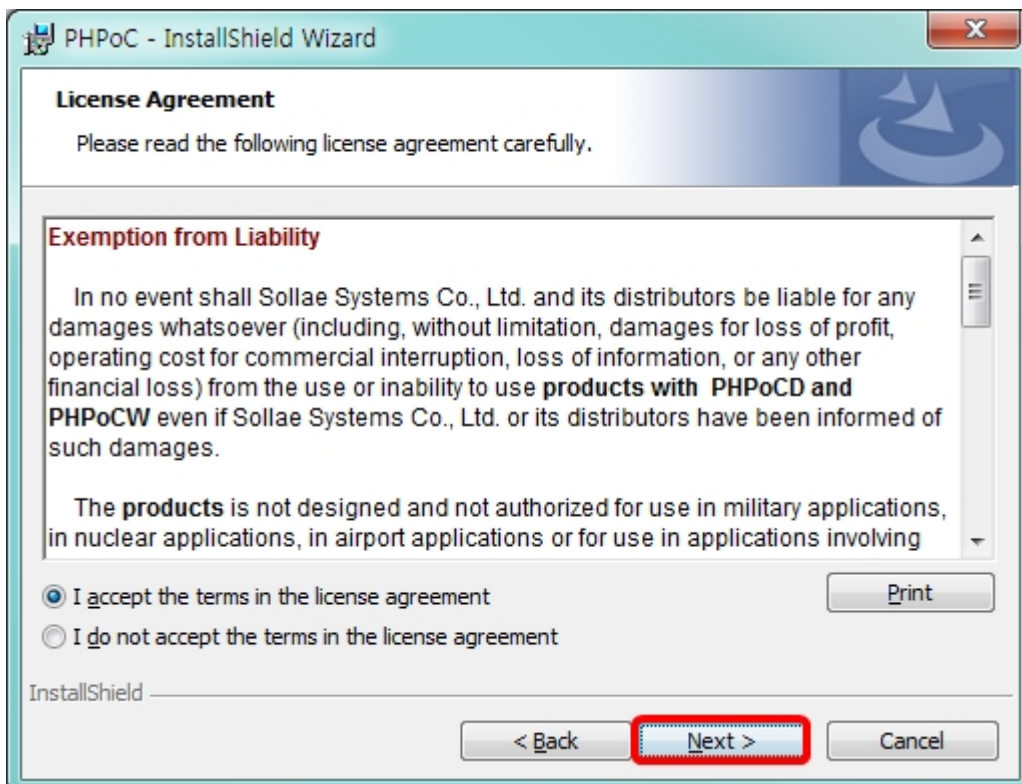Unzip and run the installation file.
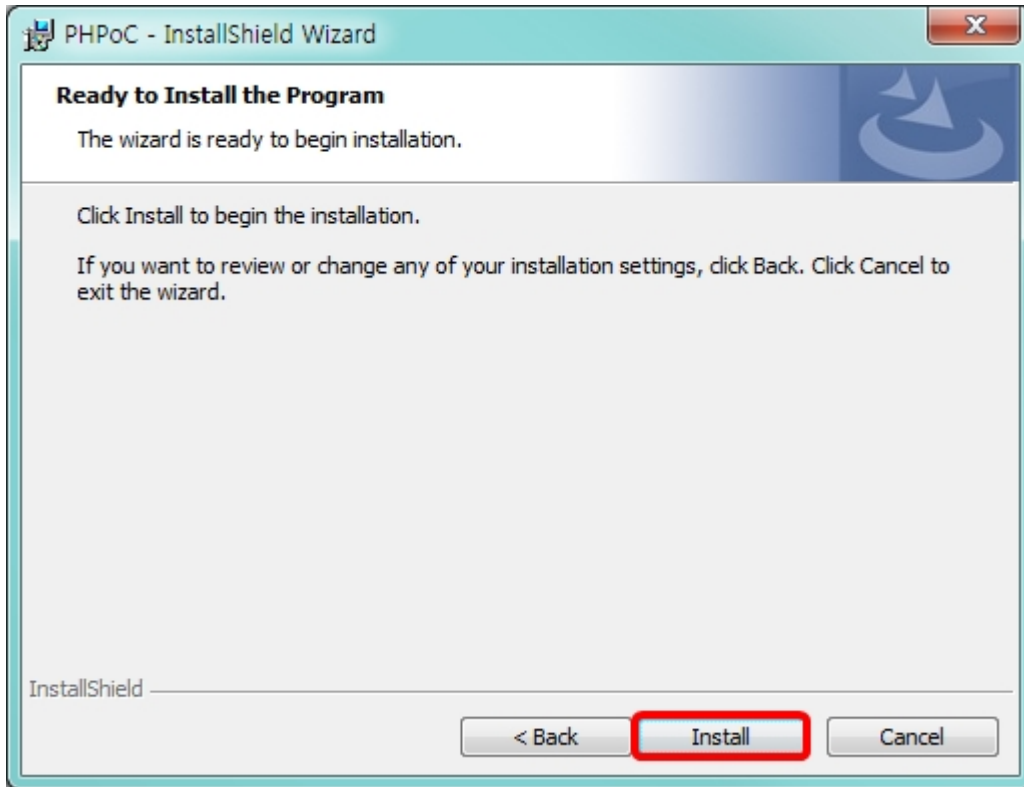
3. Press the "Next" button.
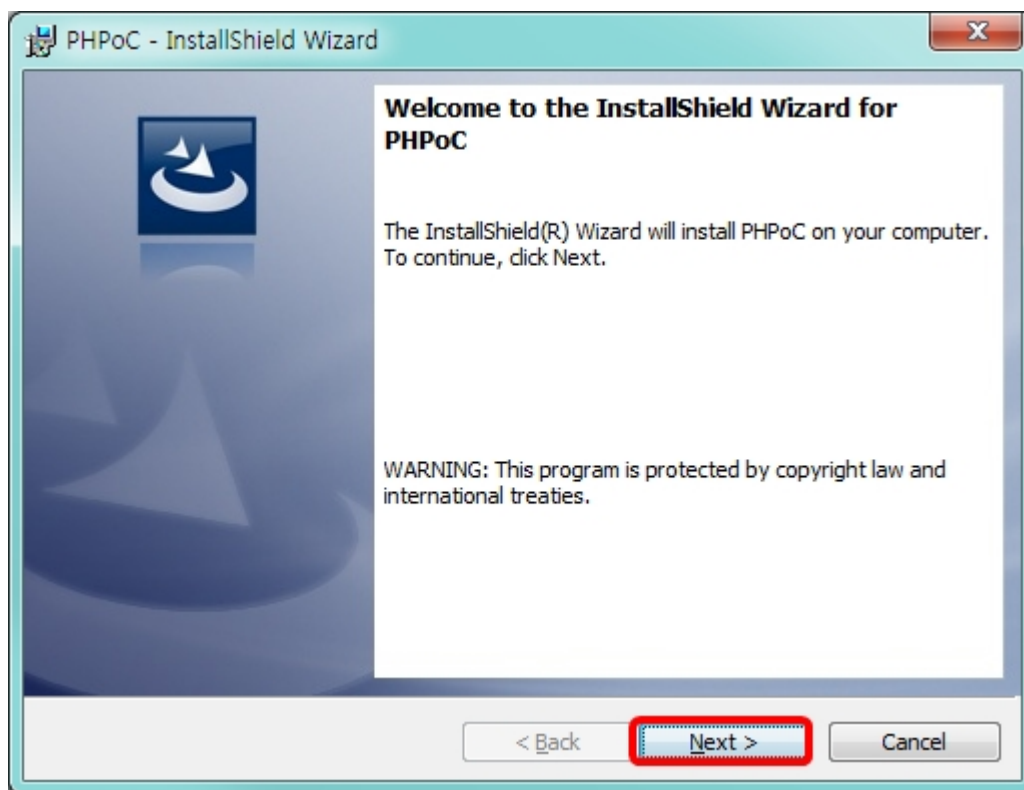
4. Select the "I accept the terms in the license agreement" option.

5. Press the "Next" button.
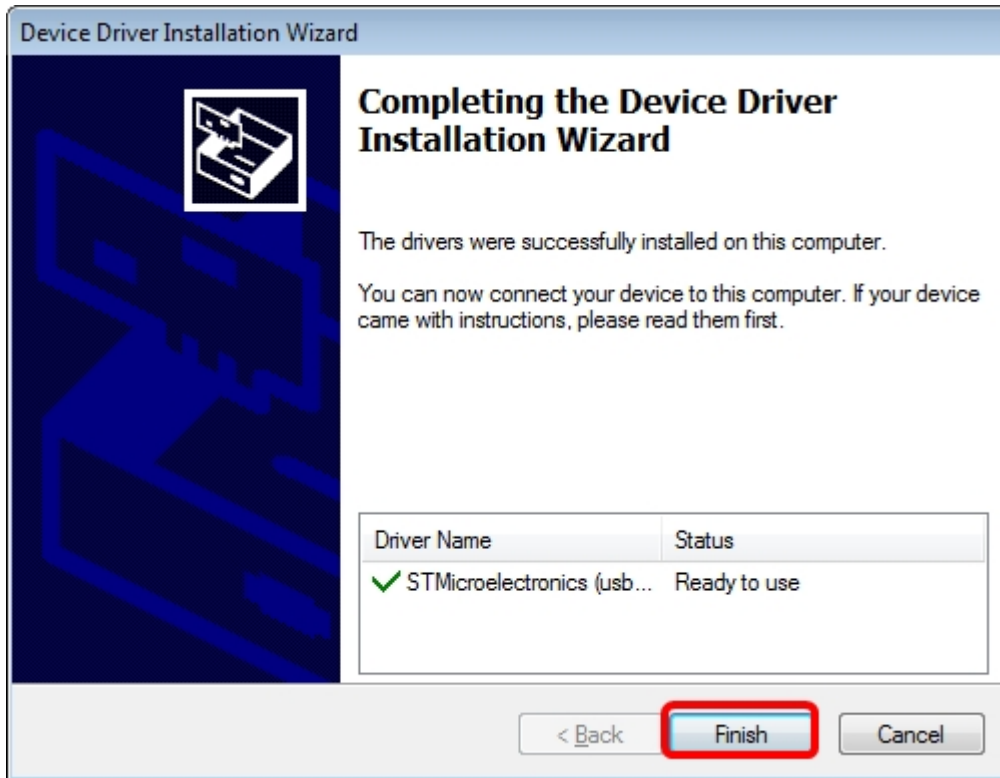
6. Press the "Install" button.
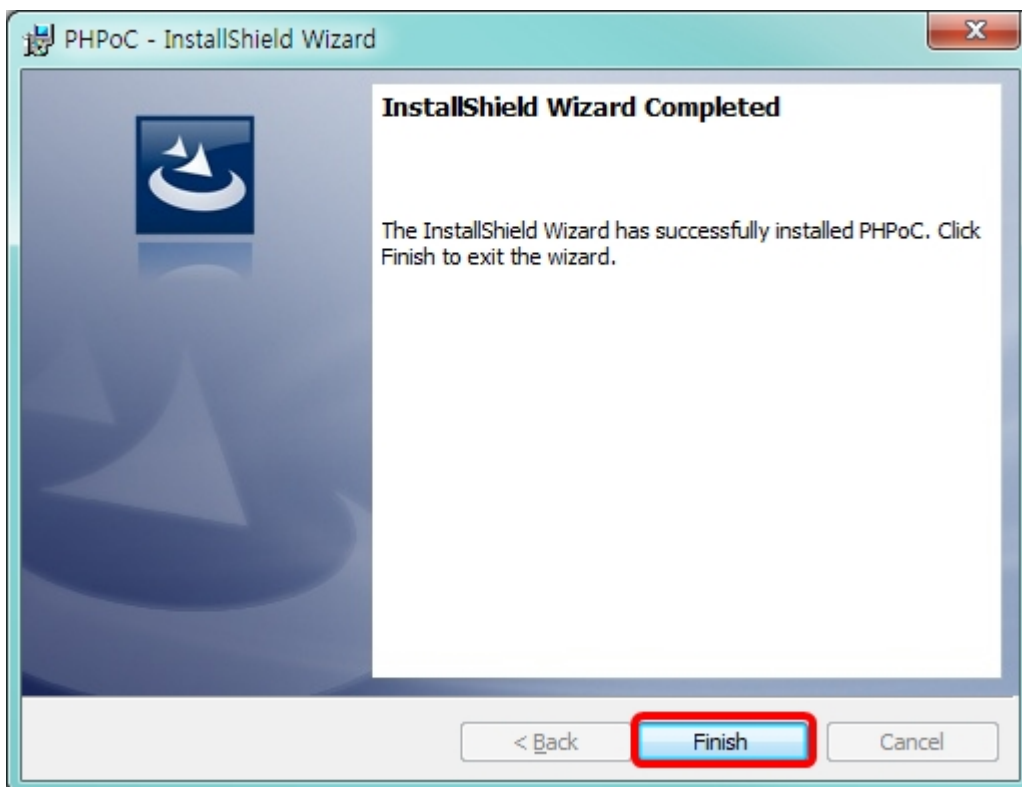

7. Press the "Next" button.

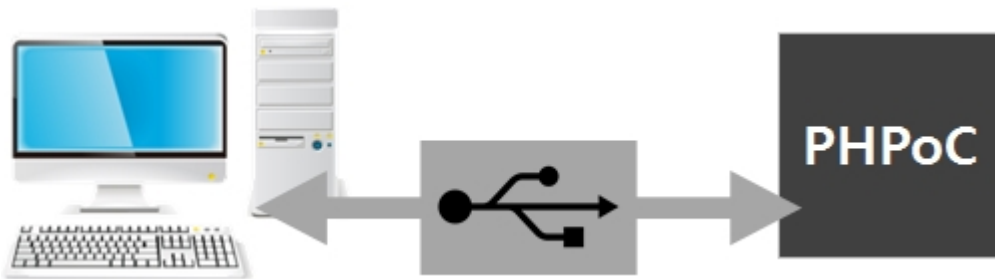8. Press the "Finish" button.

9. Press the "Finish" button.

Preparation

1. Install the PHPoC Debugger

Download and install PHPoC Debugger referring to the Installation chapter.

2. Connect the PHPoC to PC

Connect the device port of PHPoC to your PC via a USB cable.

3. Run the PHPoC Debugger

Select connected COM PORT and press connect ( ) button. If USB is successfully connected, connect button will be inactivated and disconnect button ( ) will be activated
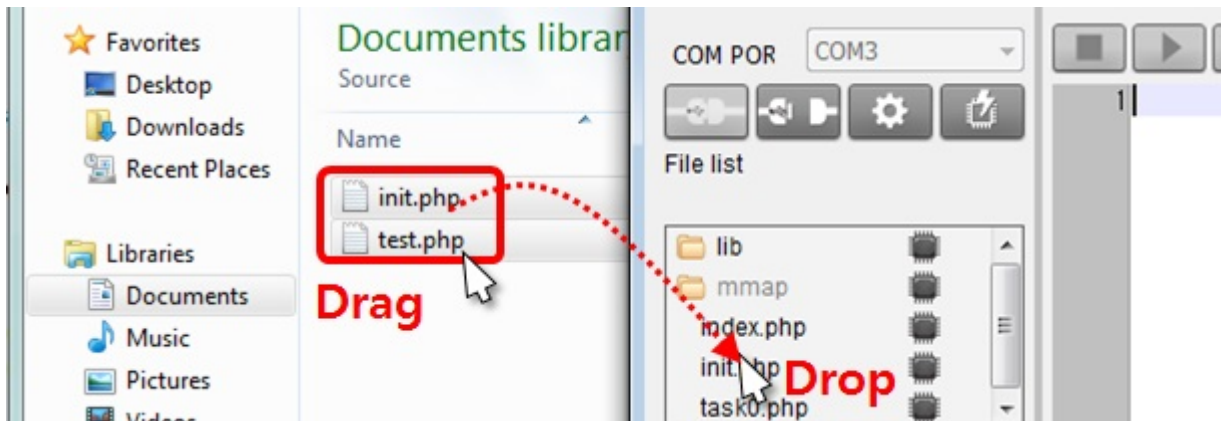
Uploading Files to PHPoC

Php files in local PC can be uploaded to PHPoC.

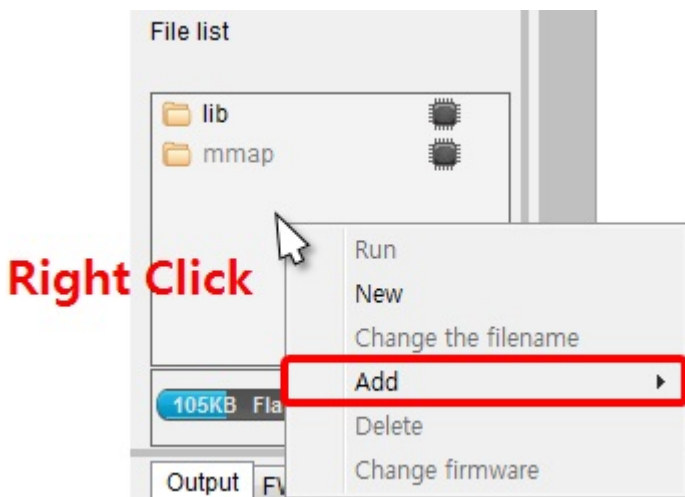## How to Add Files to File list

- Drag & Drop

Select and drag files on Window explorer to file list box and drop them.


- Add menu

If you click [Add] after right-clicking in the file list box, a window for selecting files will be created. Selected files on the windows will be added to the file list
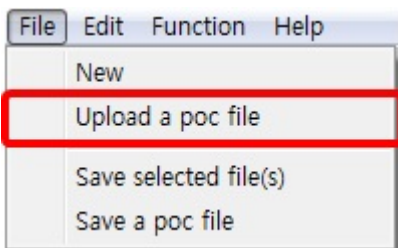

Upload files

Files in the file list will be uploaded to P4S-341 by clicking upload (   ) button. If the uploading is completed, both files on the file list and in P4S-341 are synchronized and the icons are changed to (   ).
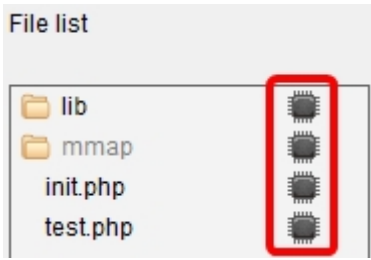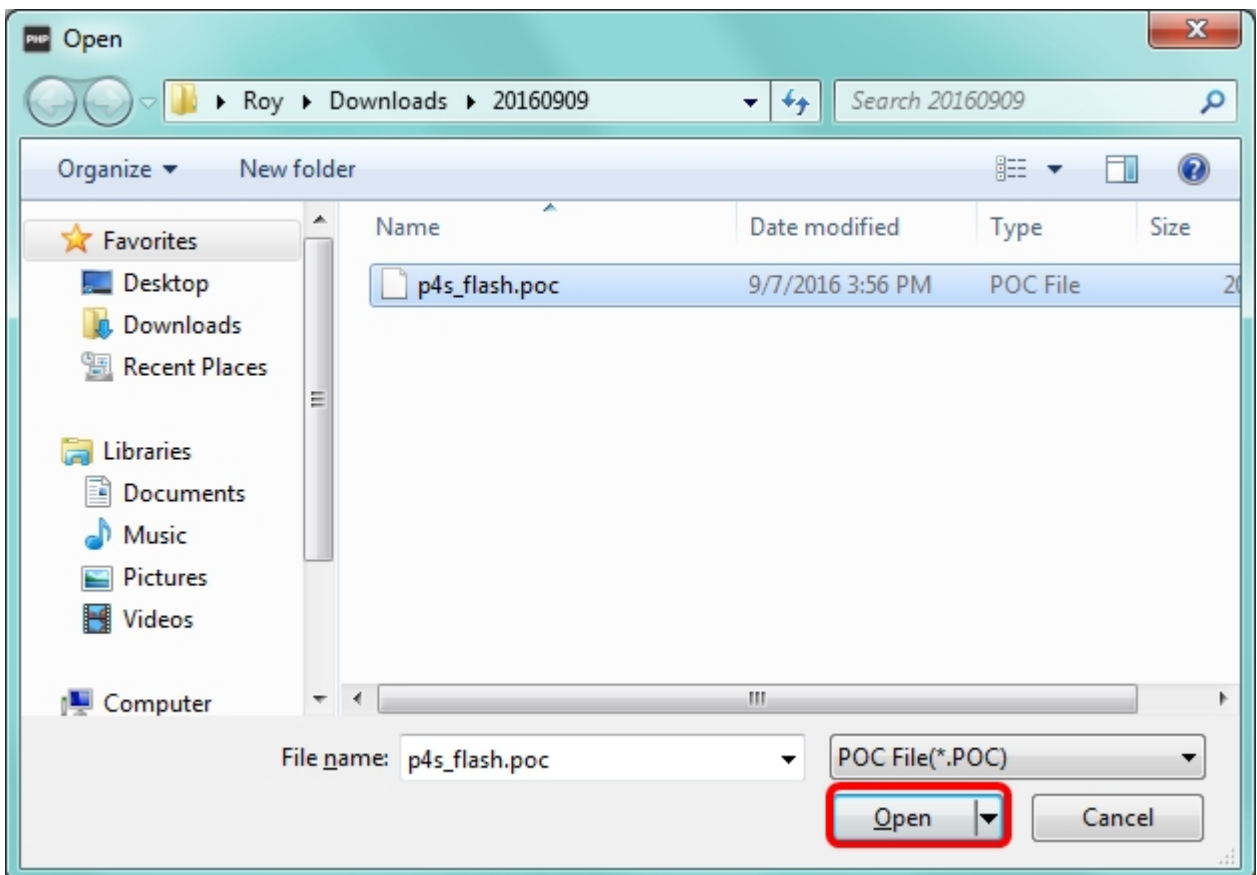
Upload an Integrated File(.poc)

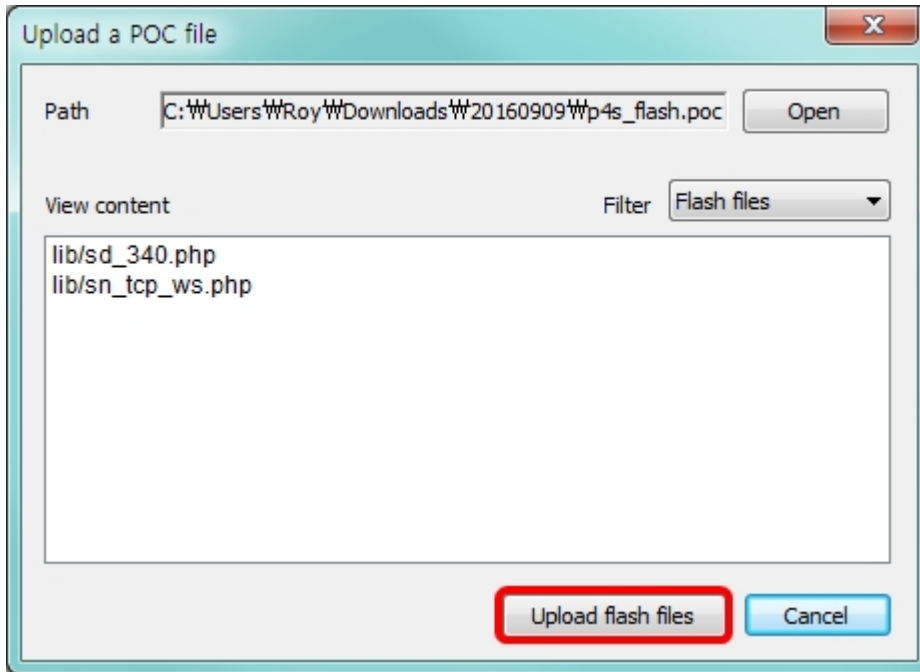You can upload an integrated file (.poc) with procedures below.

1. Click [File] > [Upload a poc file] menu.

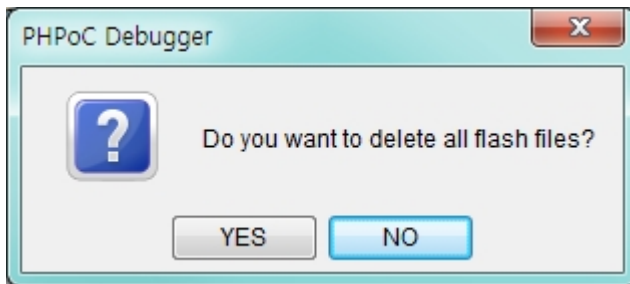2. Click [Open] after selecting a poc file.

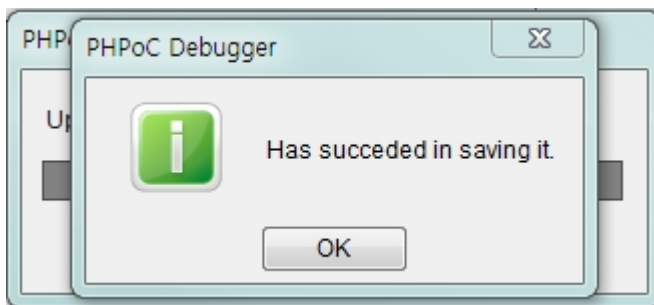3. Click [Upload flash files] button.

4. Choose yes or no about deleting existing flash files.

   ※ Caution: If you choose [Yes], all flash files stored in PHPoC are deleted.
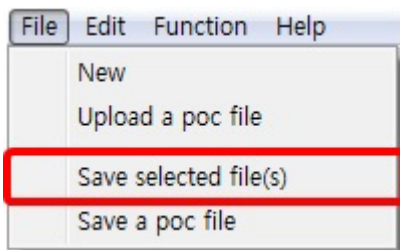

5. Click [OK] to finish upload a poc file

Downloading Files to PC

Downloading Files to PC

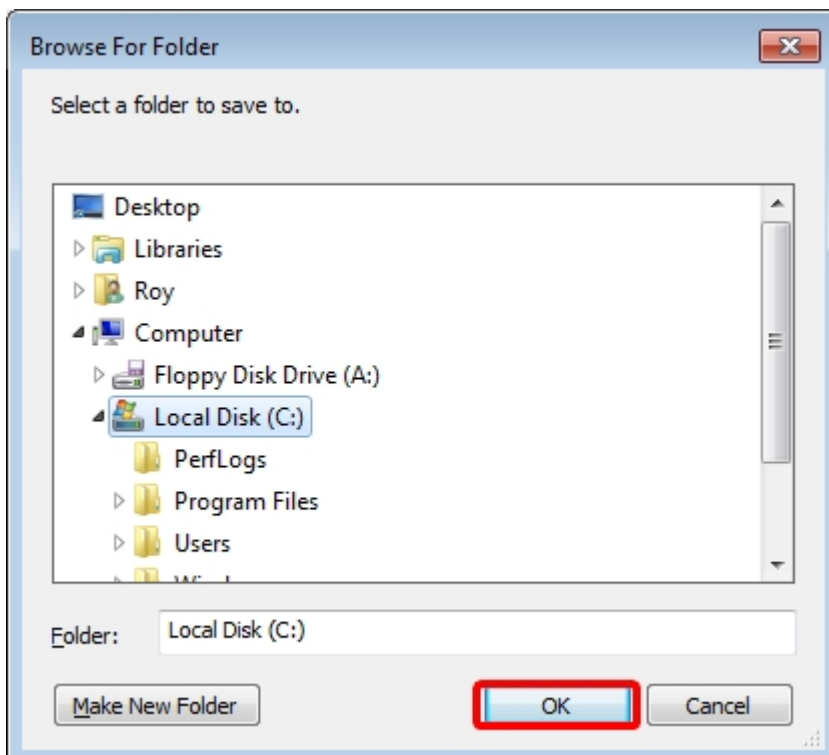1. Select files in file list

2. Click [File] > [Save selected file(s)]menu on menu bar
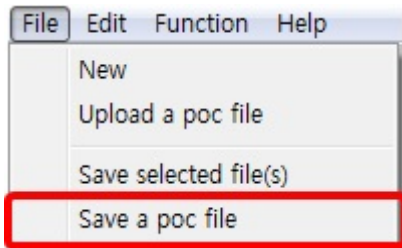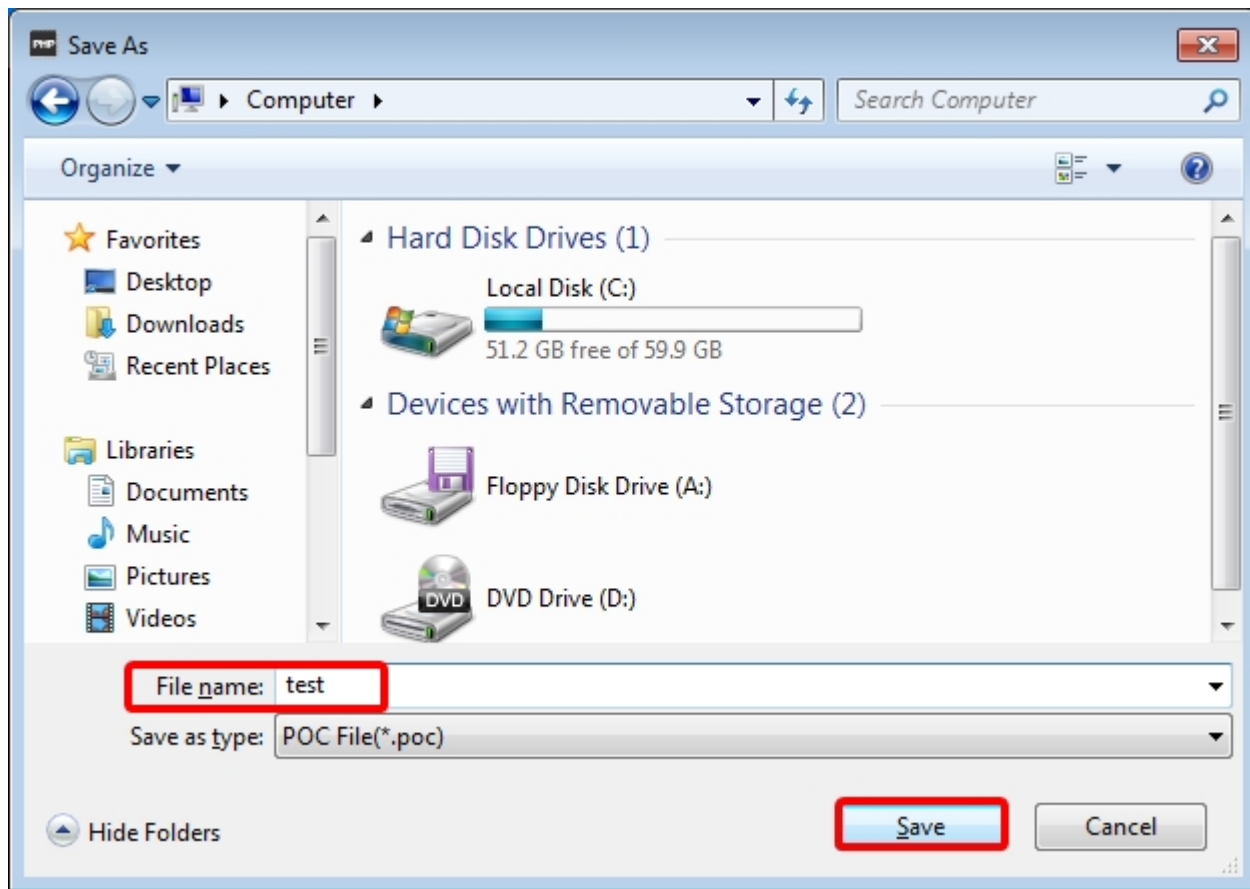

3. Choose a path and click [OK] button.

Save as a Integrated (.poc) file

When you want to save all files on the file list as a single file, use [Save a poc file] menu.

".poc" is filename extension. Input filename and click [Save] button.

Practice

Create init.php

> Notice : Operation of PHPoC
>
> PHPoC searches init.php file after booting. If PHPoC fails to find a file named init.php, it does not run any code. Therefore, you need to make or upload init.php to the file system of PHPoC.
> You can write main scrip to init.php but PHPoC runs the file only once. If you wants to run their code more than once, write the main script in another file and load the file by using "php" command of system function. A file loaded by system function is repeatedly run even execution is ended.

- Click file list with the right button of your mouse and select [New] menu.
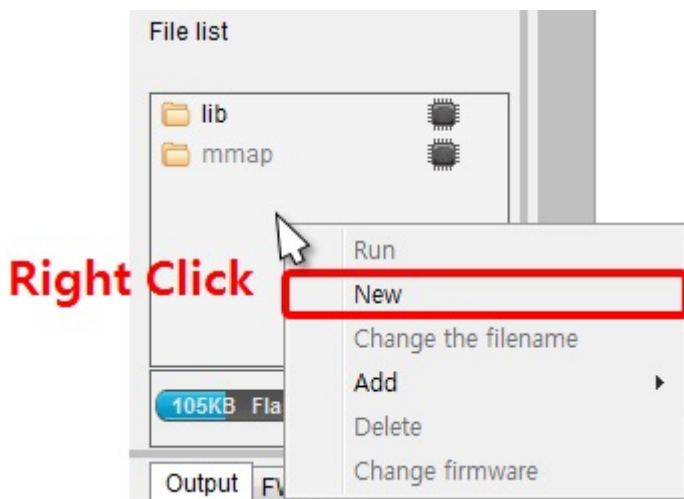
- Input "init" into the file name box.
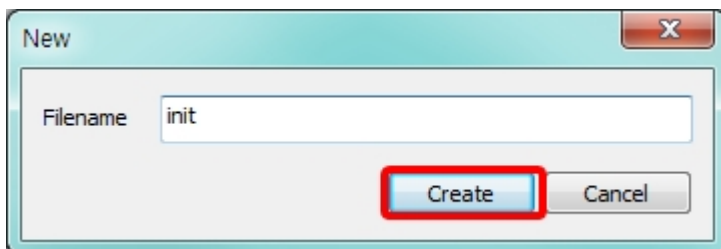
- Select init.php file in the file list.
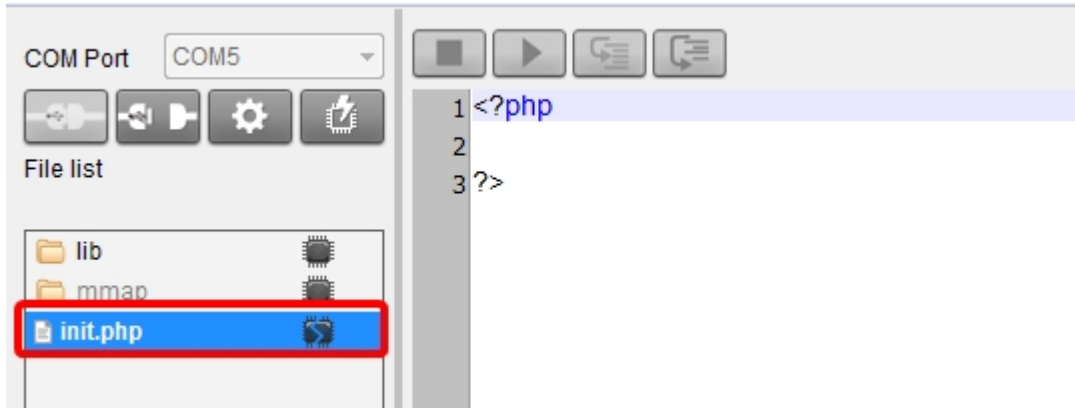
- Input the following command lines into the editor.

- Click upload button( ).

- After PHPoC finishes uploading files, icon will be changed. (→)

Excecute Scripts

PHPoC automatically runs a script when it boots up or uploads file system. You can find the result in the Output window of PHPoC Debugger.
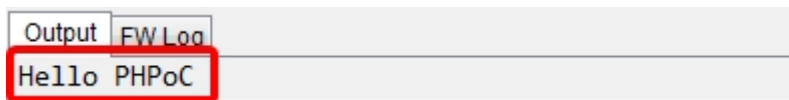
※ If [PHP debug mode] option of PHPoC Debugger is enabled, PHPoC does not execute a script automatically. You can manually run the script by clicking the Run button. ( )

Using PSP Examples

PHPoC Support Package (PSP) contains libraries and example codes. This package is provided to help you use PHPoC conveniently. Before starting test run, download it in your local PC.

- Go to the Download Page

Choosing an Example

PSP contains many examples using various sensors. Choose an example you are interested in and upload the files to PHPoC. There are three categories.

- basic task examples

  These examples require uploading both "init.php" and "task0.php".

- web task examples

  These examples require uploading "index.php" and a set of image files if there are any.

- both basic and web task examples

  These examples require uploading "init.php", "task0.php" and "index.php" including a set of image files if there are any.

Using Examples

- Find and upload 00.hello example in the p4s/01.php_task folder.

- You can find a result message right after uploading the files.
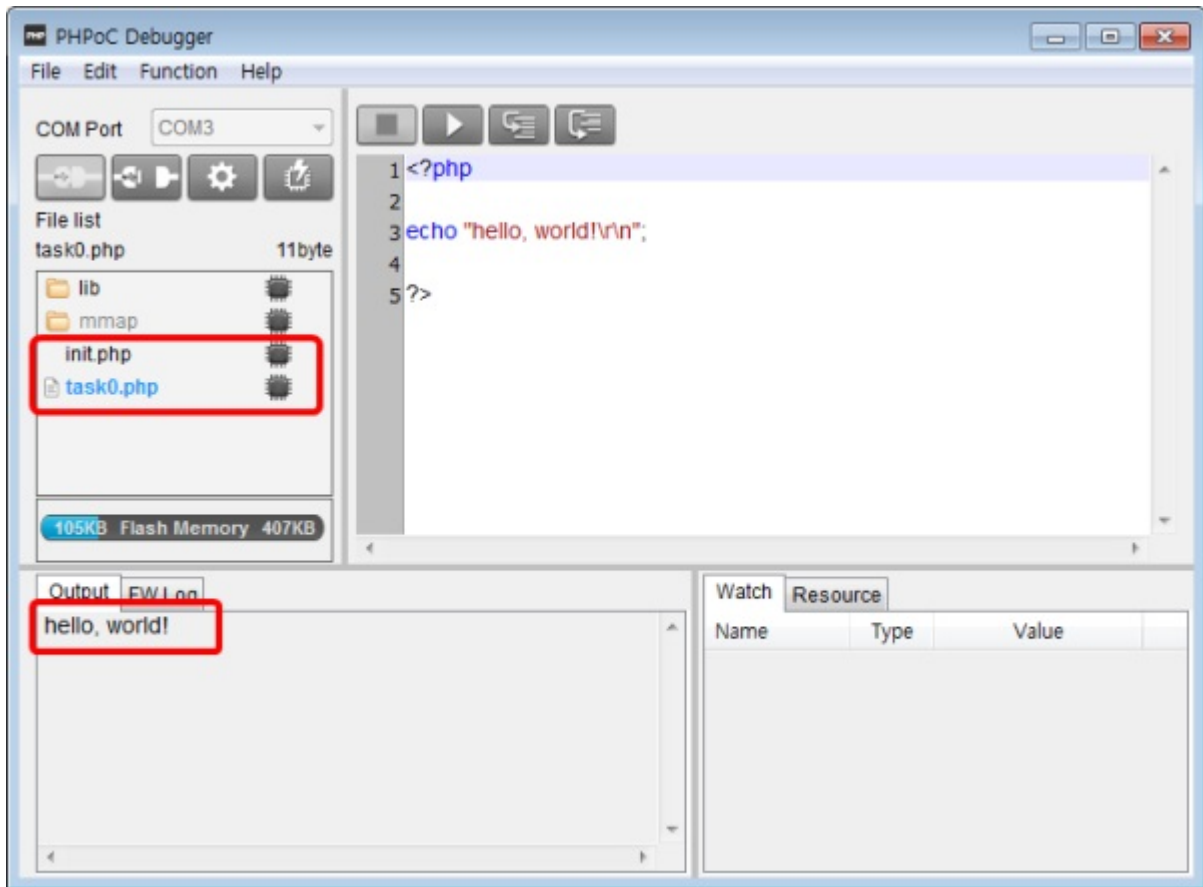
Using an External Editor

In case that you do not want to use PHPoC Debugger's internal editor but external editor, just set [External editor] option of [action of file add] item on preferences window.
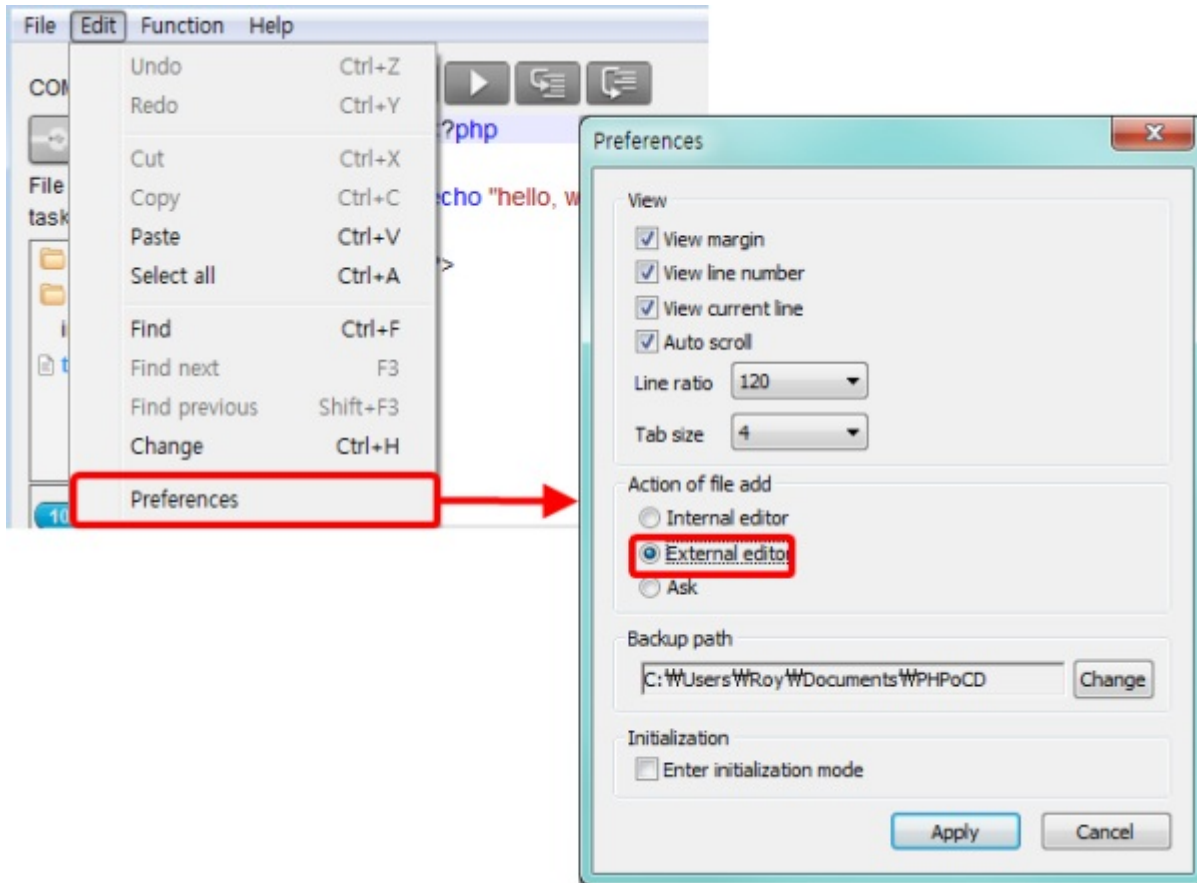
When you upload php files with this option, the lock icons below will be shown on the synchronized files. Files with this icon cannot be modified by internal editor of PHPoC Debugger but external editors.
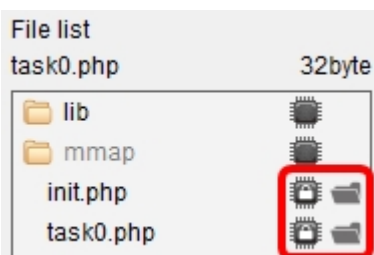
Debugging PHP

PHPoC provides run-time debugging function. Buttons for debugging are enabled when you check the PHP debug mode option in PHPoC Debugger. In this mode, you can set break points or check values of variables at every code line.
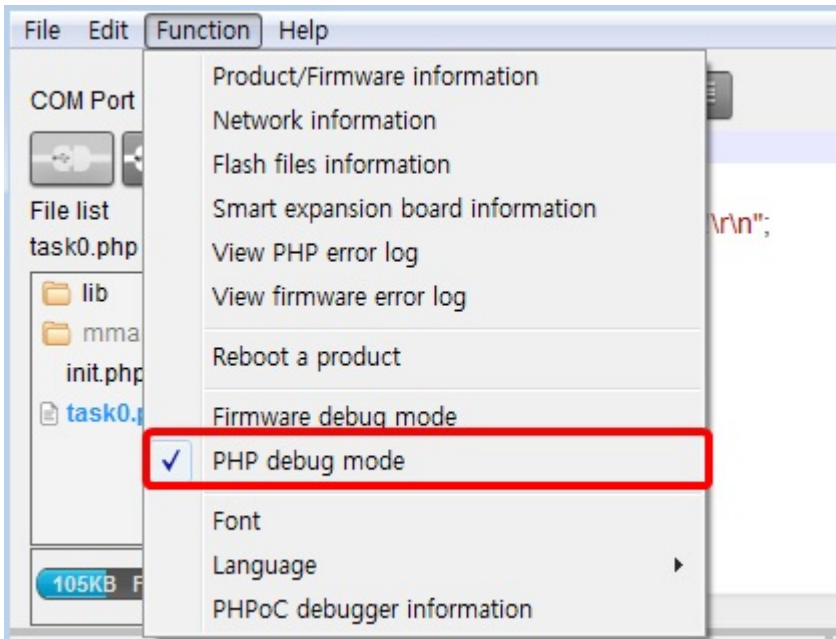
Once the PHP Debug Mode is activated, debugging buttons are available. You can debug your script with this buttons through the [Watch] window.

Simple Tutorial

1. Activate the PHP Debug Mode.

2. Write the following code on init.php and upload it.

   ```php
   <?php
   $var_int = 1;
   $var_str = "abc";
   $var_arr = array(1, 2);
   ?>
   ```

3. Clicking the right button on your mouse and select [Add] menu.

4. Enter "var_int" in the textbox as a name of variable and click [Add] button.

5. Add the following variables in the same way.
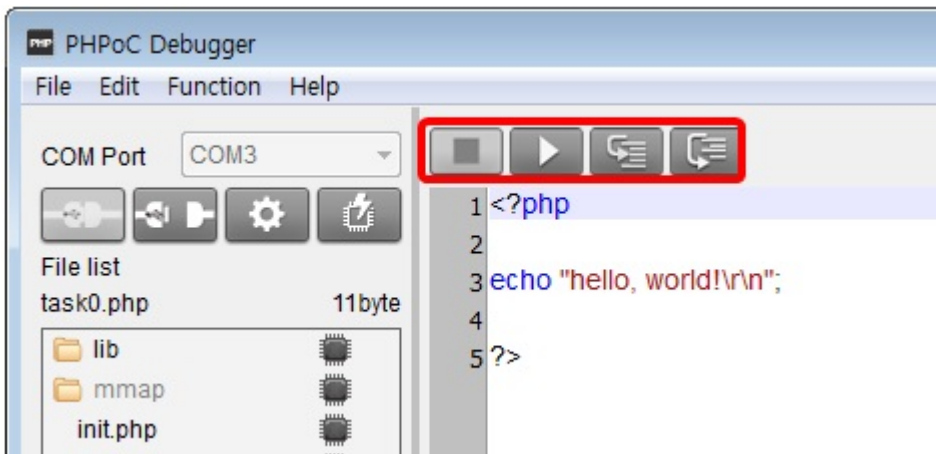
   - var_str
   - var_arr
   - var_arr[0]
   - var_arr[1]

6. Check values of variables in the [Watch] window while running the script line-by-line using Step-In(F11) button.

Watch	Resource	
Name	Type	Value
$var_int	INT	1
$var_str	STR[3]	abc
$var_arr	?	?
$var_arr[0]	INT	1
$var_arr[1]	INT	2

※ Caution: In the case of a variable which is an array, key has to be specified with name of array to watch the value

Settings

All parameters including an IP address can be configured through PHPoC Debugger.

Setting Steps

1. Connect PHPoC product to PC.

2. Run PHPoC Debugger and click connect ( ) button after choosing the right COM port.

3. After then, click configuration ( ) button.
4. Configure parameters

Setting Parameters

Tab	Category	Parameter
Network	IPv4	IP address
		Subnet mask
		Gateway IP address
		DNS server IP address
		IP address type - Use static IP address
		IP address type - Obtain an IP automatically (DHCP)
		IP address type - Obtain DNS server address automatically
	IPv6	IPv6 - Enable / Disable IPv6
		IP address type - Obtain an IP automatically
		IP address type - Use static IP address
		EUI - MAC Address / Random
		IPv6 address and Prefix
		Gateway IPv6 address
		Obtain DNS server address automatically
		DNS server address
Wireless LAN	Basic Settings	WLAN - Enable / Disable WLAN
		WLAN Topology - Ad-hoc / Infrastructure / Soft AP
		Search AP / Search channel
		Channel
		SSID
		Internal Antenna / External Antenna
		Advanced Settings
	Security	Shared Key
		802.1X: EAP-TLS / EAP-TTLS / PEAP
Buttons	Time	Set RTC time
	Password	Password (ID: Admin)
	Certificate	Write self-signed certificate
		Write signed certificate from certification authorities
		Read the certificate form a device

※ Caution: PHPoC does not support restoration when you forget your password. In that case, you can delete the password by using Factory Reset but all settings and files are also deleted.

Upgrading Firmware

New firmware can be released when adding functions or fixing bugs. If you are using old firmware, you can upgrade it to new one. Firmware can be automatically or manually uploaded through the PHPoC Debugger.
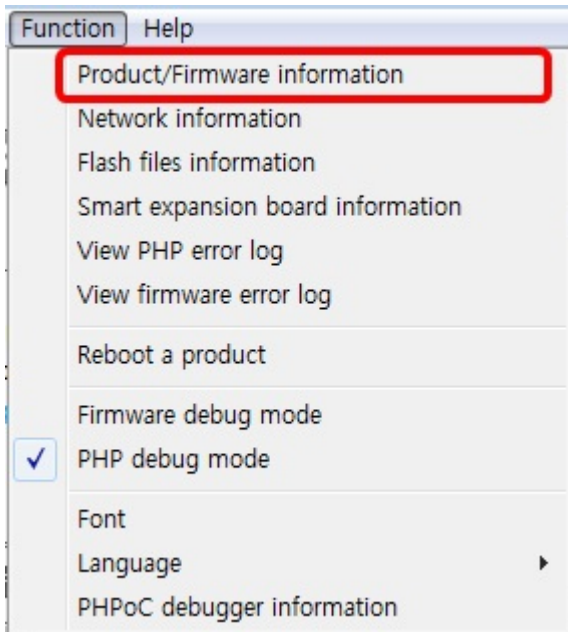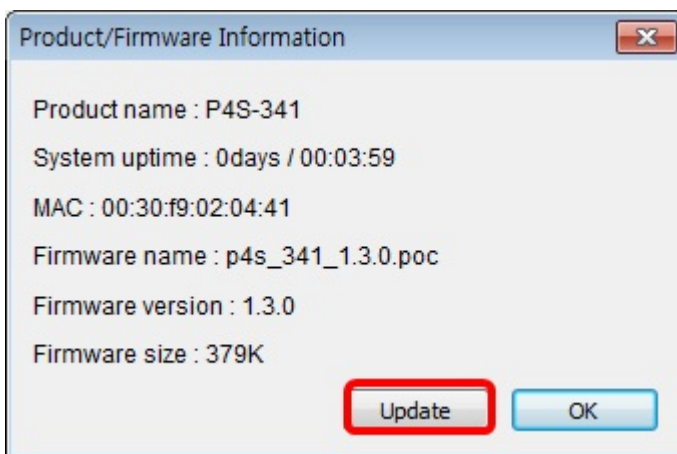
Auto Upgrade

You can automatically upgrade firmware if your PC is connected to Internet.

Procedure

1. Connect PHPoC product to your PC.

2. Run PHPoC Debugger and click connect ( ) button after choosing the right COM port.

3. Click the [Function] > [Product/Firmware Information] menu.

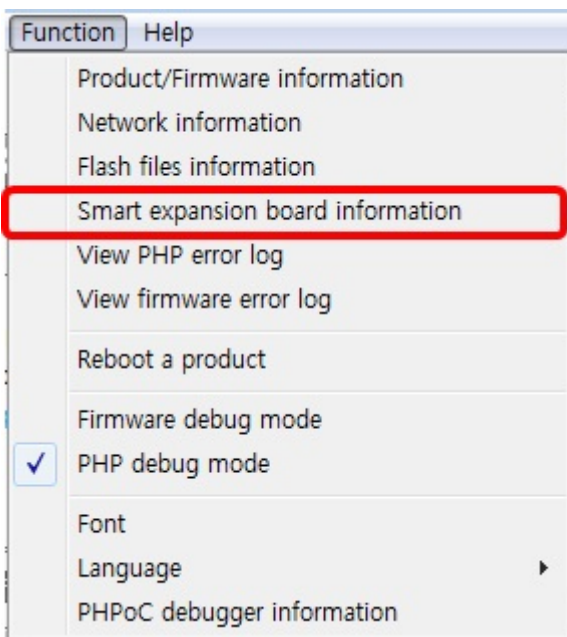4. Click the [Update] button on the Product/Firmware Information window.

5. Click [OK] after uploading F/W is finished.

# Upgrading F/W of Smart Expansion Boards

You can upgrade firmware of smart expansion boards if they are connected to your PHPoC board.

1. Connect PHPoC board with smart expansion boards to your PC.

2. Run PHPoC Debugger and click connect (⌗) button after choosing the right COM port.

3. Click the [Function] > [Smart expansion board Information] menu.

4. Click the [Update] button on the Product/Firmware Information window.
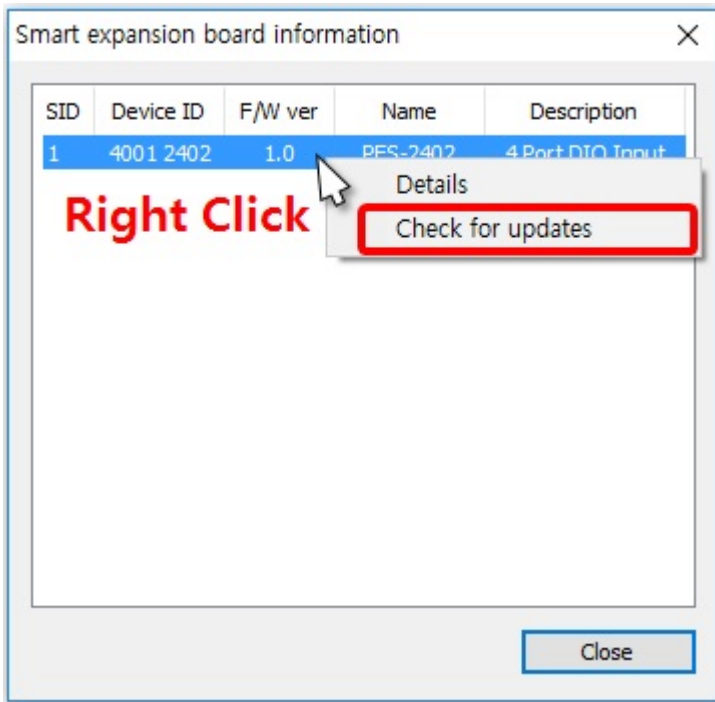
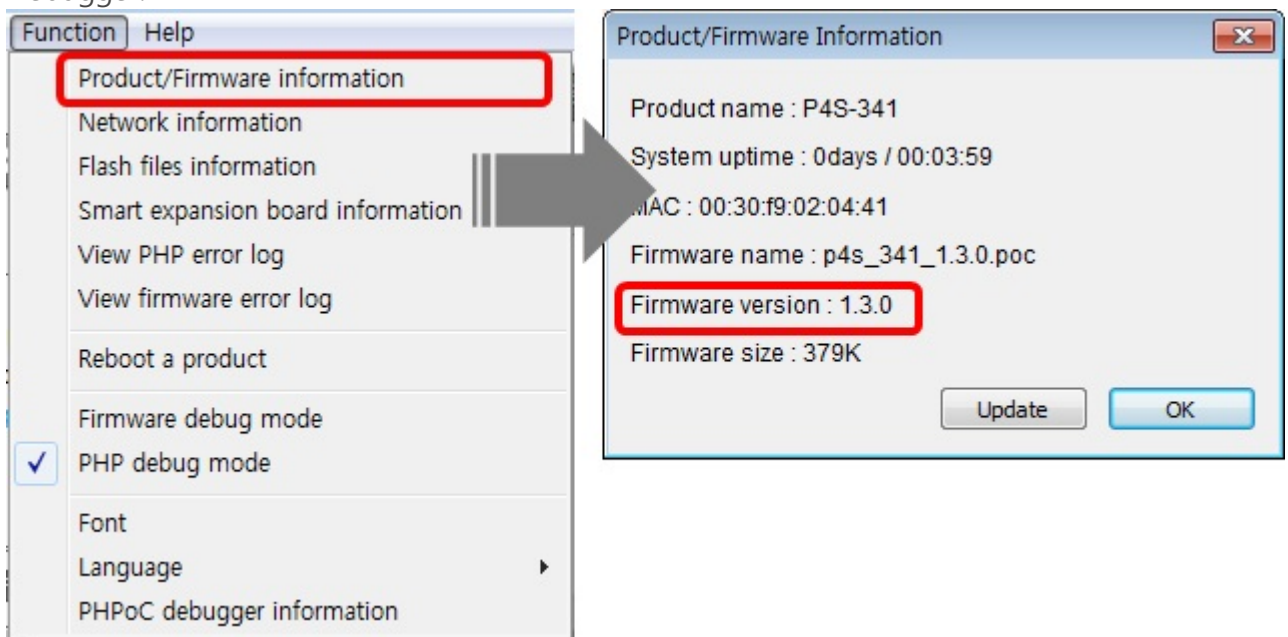5. Click [OK] after uploading F/W is finished.
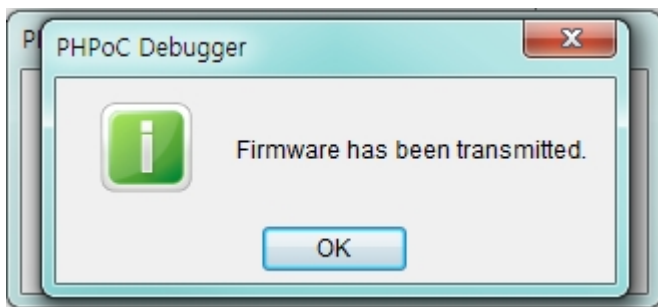
Manual Upgrade

Checking the Version of F/W

Check the currnet version of F/W before upgrade it.

- Checking the current version of F/W

  You can check it on the [Function] > [Product/Firmware Information] menu in the PHPoC Debugger.
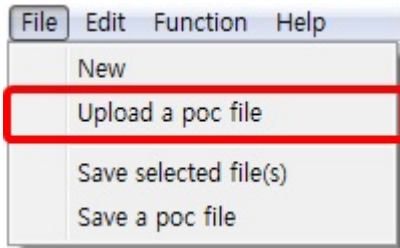
- Checking the latest version of F/W

  You can check the latest version of F/W on download page on phpoc.com.
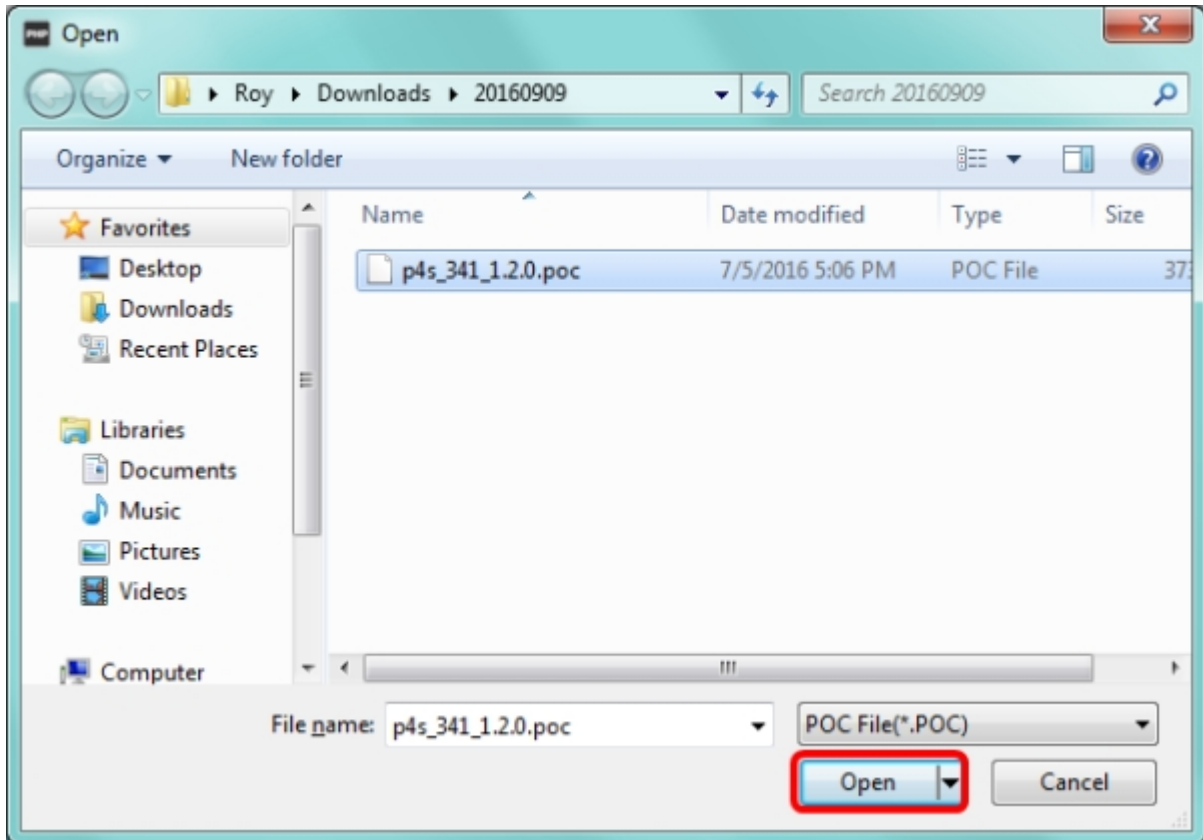
Procedure

1. Download the latest F/W file.
2. Connect PHPoC product to your PC.
3. Run PHPoC Debugger and click connect (　　) button after choosing the right COM port.

4. Click the [File] > [Upload a poc file] menu.

5. Select the F/W file and click the [Open] button.

6. Click the [Upload fiwmare] button.

Upload a POC file

Path   C:₩Users₩Roy₩Downloads₩2...₩p4s_341_1.2.0.poc   Open

View content   Filter Firmware ▼

p4s_341_1.2.0.poc

Upload firmware   Cancel

7. Click [OK] after uploading F/W is finished.

PHPoC Debugger

Firmware has been transmitted.

OK
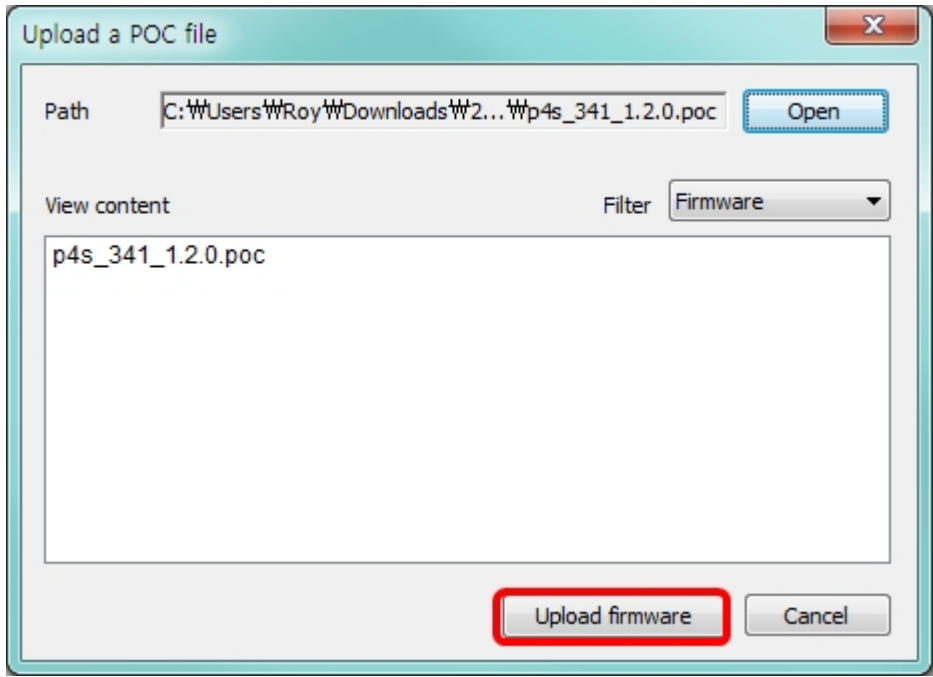
Factory Reset

Factory Reset makes all settings of your PHPoC products to factory default including a password. Futhermore, all files stored in flash memory are deleted as well as certificate. Because of this, you have to backup your files before doing Factory Reset.

- Factory Reset Procedure

Step	Action	Product State	STS LED
1	Run PHPoC Debugger	-	-
2	Set PHPoC to initialization mode(Use [Edit]>[Preferences] menu on PHPoC Debugger)	Enter Initialization mode after reboot	Blink rapidly
3	Keep pressing the function button over 10 seconds	Preparing initialization	Blink very rapidly
4	Check STS LED after 10 seconds	Initialization ready	Off
5	Release the function button right after the STS is OFF.(※ If you don't release the button within 2 seconds, the state go back to the step 3)	Progressing initialization	On
6	Rebooting automatically	Initial state	Off