

Power Meter Utility Quick Start Guide

[Version 1.0]



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1 System Description

This document is intended to provide guidelines for ICP DAS Power Meter Utility software tool that applies to ICP DAS Power Meter (e.g., PM-2133, PM-2134). This software tool has to be installed on PC and it enables to retrieve and display the power measurement values that measured by power meter via COM Port. The users will be able to read the power measurement values and to perform parameter settings of the meter. Due to the meter provides RS-485 communication protocol interface only, it require to convert RS-232 or USB on PC to RS-485 communication interface, converter modules (such as ICP DAS I-7561, I-7520) might be required.

Features :

- By Modbus RTU protocol, it enables to connect with ICP DAS Power Meter and data retrieving.
- Real time monitor power measurement values of the meter.
- Real time setting up parameters of the meter.
- Restore the parameters of the meter to default factory settings.
- When the connection parameters are unknown, the system will automatically try out different connection parameters to connect to the meter.

2 Before Installation

Before installing ICP DAS Power Meter Utility, please finishing installation of the ICP DAS Power Meter hardware, and make sure all wiring connections are accurate (e.g., please refer to PM-2133/PM-2134 user manual for PM-2133/PM-2134). The Power Meter Utility requires the .NET framework version 2.0 to be installed on the target computer. Please follow the link below to get the framework package directly from Microsoft, if required.

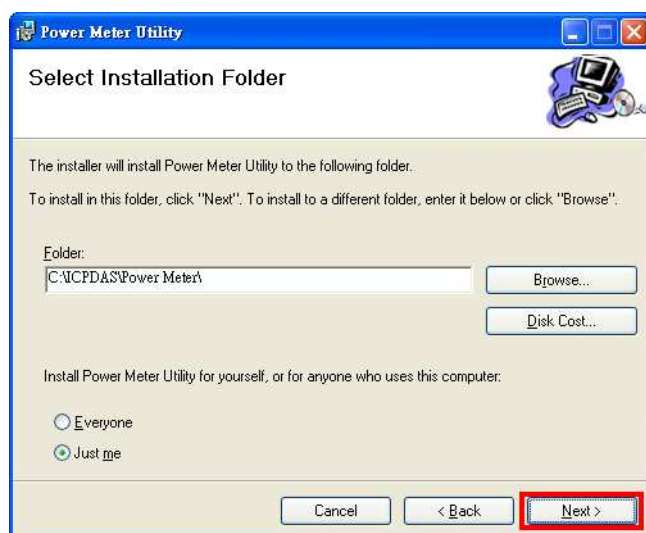
- ◆ Download Microsoft .Net Framework Version 2.0 :
<http://www.microsoft.com/downloads/details.aspx?FamilyID=0856eacb-4362-4b0d-8edd-aab15c5e04f5&DisplayLang=en>
- ◆ Download Microsoft .Net Framework Version 3.5 :
<http://www.microsoft.com/downloads/details.aspx?familyid=333325FD-AE52-4E35-B531-508D977D32A6&displaylang=en>

3 Software Installation

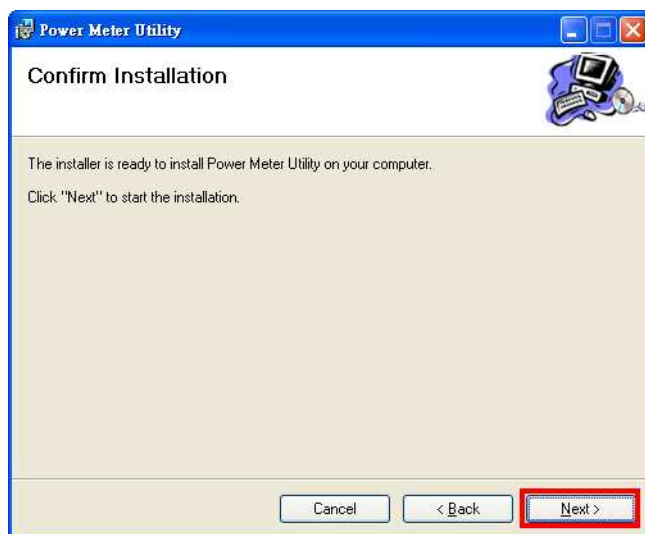
Please contact ICP DAS service to obtain the latest version of the ICP DAS Power Meter Utility installer. Double click the ICP DAS Power Meter Utility installer to run the installation. Click [Next] to continue.



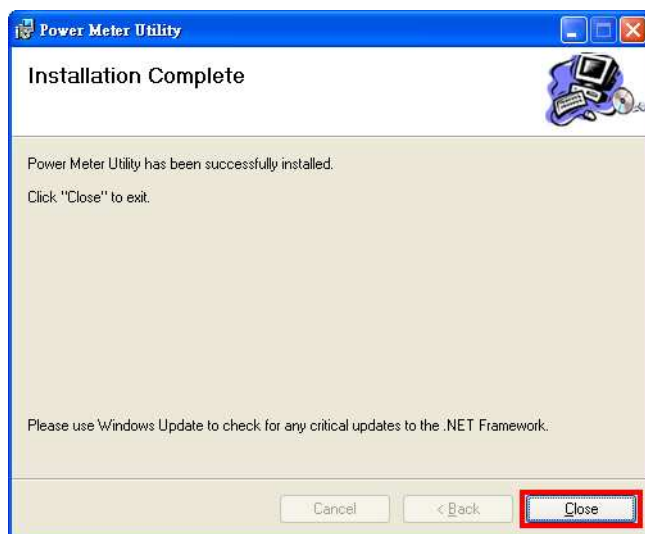
On [Select Installation Folder] page, input path or browse through file dialog box to select the destination folder and select the software user option, click [Next] to continue.




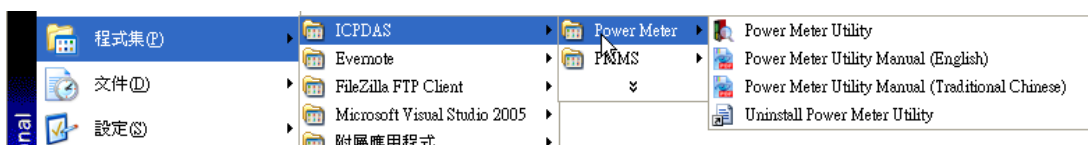
Make sure the settings are accurate. Click [Next] to start installation.



When the installation process is completed, click [Close] to finish installing program.



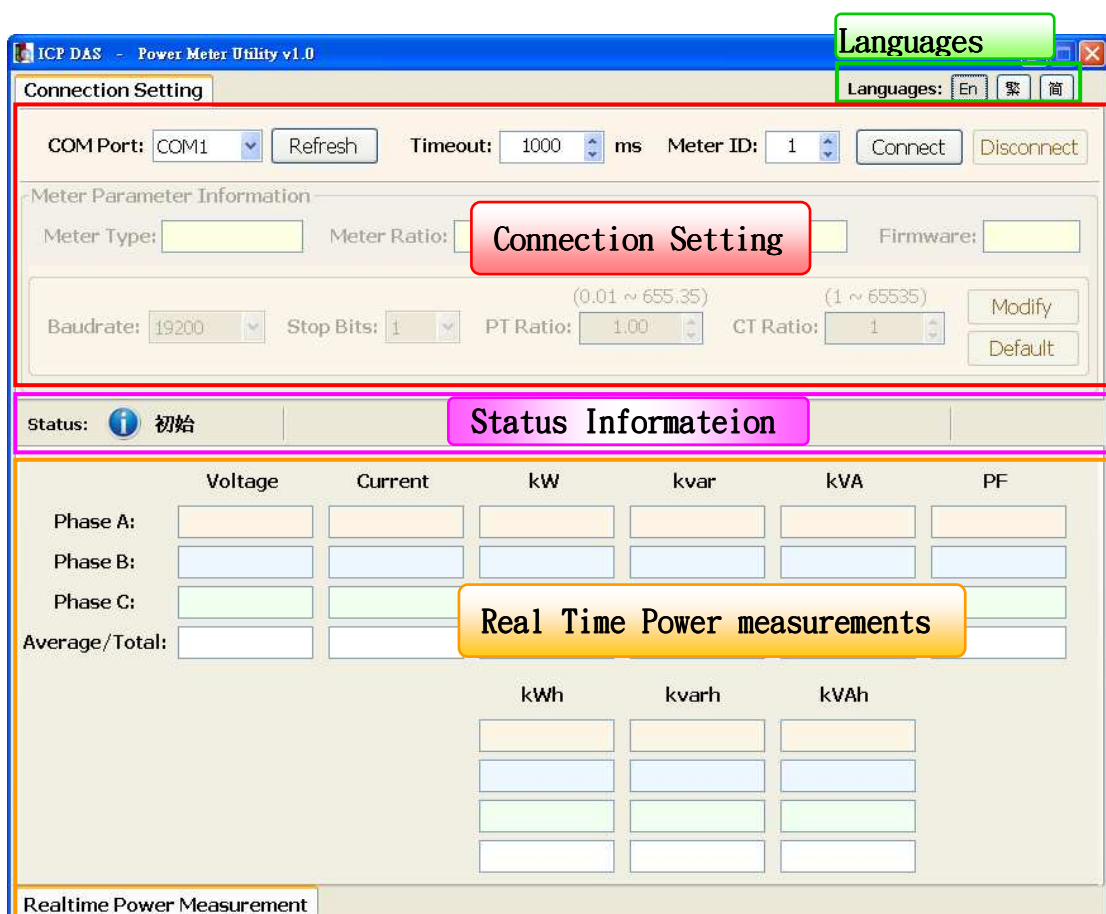
After the installation is completed, you will find the Power Meter Utility Shortcut on the desktop and in the program menu: [Start]→ [All Programs]→[ICPDAS] →[Power Meter] (icon )



4 User Interface Introduction

Power Meter Utility software tool Interface is shown as follow :

- Languages: Select your preferred language for the software interface. (English, Traditional Chinese, Simplified Chinese).
- Connection Setting: Set up related connection parameter settings for connecting with the power meter.
- Real Time Power measurements: display power meter measurement values in real time.
- Status information: display power meter status information.



5 Utility Operation Procedure

Power Meter Utility makes it easy to retrieve power measurements and modify parameters for systems in real time when connecting with meters.

Power Meter Utility enables:

- Change Language interface for UI
- Establish connection or perform disconnection of the power meter
- Modify connection parameters of the power meter
- Restore the parameters of the meter to default factory settings

5.1 Change language

The preferred language can be set by the following steps:

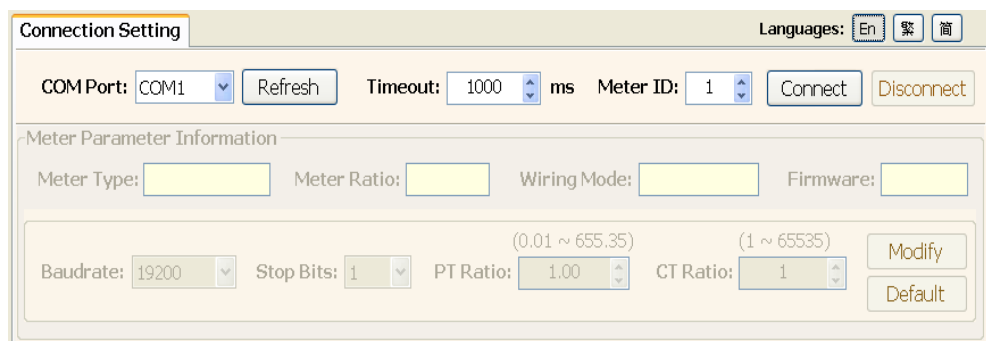
- Execute Power Meter Utility, the language change option will appear on the right upper area of the window.



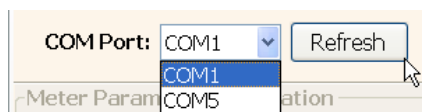
- Click on the preferred language, currently there are 3 language options: English, Traditional Chinese, and Simplified Chinese.

5.2 Establish connection or perform disconnection with the meter

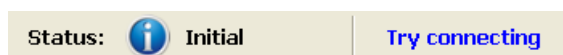
- Establish Connection:
 - Under the Connection Setting section, select the Com Port that is going to connect with the power meter, input the Timeout interval (unit : ms) and input the Meter ID number. The default Timeout interval will be 1000 ms; this value can be modified according to the quality of the signal in the field.



- ii. If the COM Port does not include the newly connected ports (for example: the setting for USB to COM), **click on “Refresh” to renew the Com Port option list.**



- iii. Make sure the parameters you input are all accurate, click on “Connect” button.
- iv. When the system is trying to connect with the power meter, the status information will show message: “Try connection”. It will try to connect with the power meter by default factory parameter settings such as: Baud Rate:19200 and Stop Bits: 1.



- v. If the system fails to establish the connection with the power meter by default factory parameter settings. The system will try other combination of the Baud Rate and Stop Bits. The status information will show the Baud Rate and Stop Bits information.



- vi. After the utility connecting with the meter, the Meter Parameter Information will be renewed (as shown below). And the real time power measurements will be displayed under the section of Power Measurements (as shown below).

Meter Parameter Information

Meter Type: Meter Ratio: Wiring Mode: Firmware:

Baudrate: Stop Bits: PT Ratio: CT Ratio:

(0.01 ~ 655.35) (1 ~ 65535)

	Voltage	Current	kW	kvar	kVA	PF
Phase A:	105.87760	0.11815	0.00783	-0.00976	0.01251	-0.62586
Phase B:	0	0	0	0	0	0
Phase C:	0	0	0	0	0	0
Average/Total:	105.87760	0.11815	0.00783	-0.00976	0.01251	-0.62586
			kWh	kvarh	kVAh	
			20849.30000	-25364.06000	32844.49000	
			0.00000	0.00000	0.00000	
			0.00000	0.00000	0.00000	
			20849.30000	-25364.06000	32844.49000	

Realtime Power Measurement

vii. After the connection has been established and the power measurements have been read into the system, the status information will show the time interval the system requires to read all power measurements. This value can be used as a reference for network speed and connection quality evaluation.

Status: ● Connected | Connection Setting [Baudrate: 19200], [StopBits: 1] | Read: 145 ms

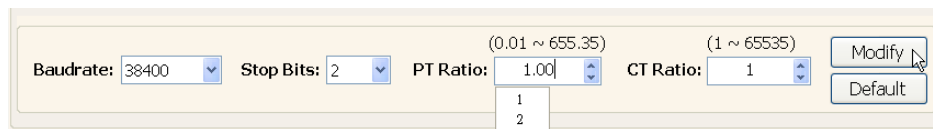
- Perform Disconnection
 - i. To disconnect with the power meter, click on the “Disconnect” button to stop reading power measurements and interrupt the connection.

5.3 Modify connection parameters of the power meter

After successfully connecting with the meter via Power Meter Utility, the user can modify the connection parameters of the meter. The new settings will take effect next time when the system trying to establish a connection with the meter.

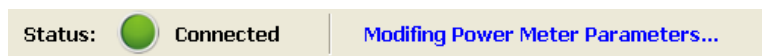
To modify the connection parameters, please follow the steps below:

- i. After successfully connecting with the meter, some connection parameters input panel such as Baud Rate, Stop Bits, PT Ratio and CT Ratio will appear to be available to input.



The screenshot shows a user interface for modifying connection parameters. It includes four input fields: Baudrate (38400), Stop Bits (2), PT Ratio (1.00), and CT Ratio (1). The PT Ratio field has a range of (0.01 ~ 655.35) and a dropdown menu showing options 1 and 2. The CT Ratio field has a range of (1 ~ 65535). There are 'Modify' and 'Default' buttons.

- Select appropriate values from the dropdown list of the Baud Rate and Stop Bits.
 - For PT Ratio and CT Ratio, the user can select appropriate values from the dropdown list or **input the value into the panel directly.**
- ii. After the user finishing setting up the connection parameters of the meter, click on the “Modify” button to modify the values. The new parameter settings will take effect in real time. The status information will show “Modifying Power Meter Parameters...” when performing parameter modification.



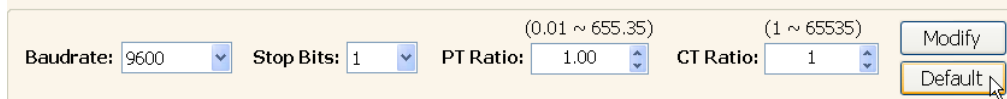
- iii. **After finishing the modification of the parameters, the system will temporarily interrupt the connection with the meter and will reconnect with the meter again by the new parameter settings. If the connection is established, the system will real time retrieve and display all power measurement values. If the system fails to connect with the meter, it will continue to try to establish the connection by other Baud Rate and Stop Bits combination.**

5.4 Restore the parameters of the meter to default factory settings

After successfully connecting with the meter via Power Meter Utility, the user can restore the parameters of the meter to default factory settings. **The default factory settings of the power meter parameters will be: Baud Rate:19200, Stop Bits:1, PT Ratio:1 and CT Ratio:1.** The default factory settings will take effect next time when the system trying to establish a connection with the meter.

Follow steps below to restore the parameters to default factory settings:

- i. After successfully connecting with the meter, click on the “Default” button to restore the parameters of the meter to default factory settings. After the reset take effect, the parameters input panel such as Baud Rate, Stop Bits, PT Ratio and CT Ratio will appear to be default factory settings.




Baudrate: 9600 Stop Bits: 1 PT Ratio: 1.00 CT Ratio: 1

(0.01 ~ 655.35) (1 ~ 65535)

Modify Default

- ii. The status information will show “Return to Default values” when the system is trying to restore the parameters of the meter to default factory settings.



Status: ● Connected [Return to Default Values...](#)

- iii. **After finishing to restore the parameters of the meter to default factory settings, the system will temporarily interrupt the connection with the meter and will reconnect with the meter again by the default factory settings. If the connection is established, the system will real time retrieve and display all power measurement values. If the system fails to connect with the meter, it will continue to try to establish the connection by other Baud Rate and Stop Bits combination.**