EXTECH PQ3350 Power and Harmonics Analyzer User Manual

Contents

EXTECH

EXTECH PQ3350 Power and Harmonics Analyzer

Software Information

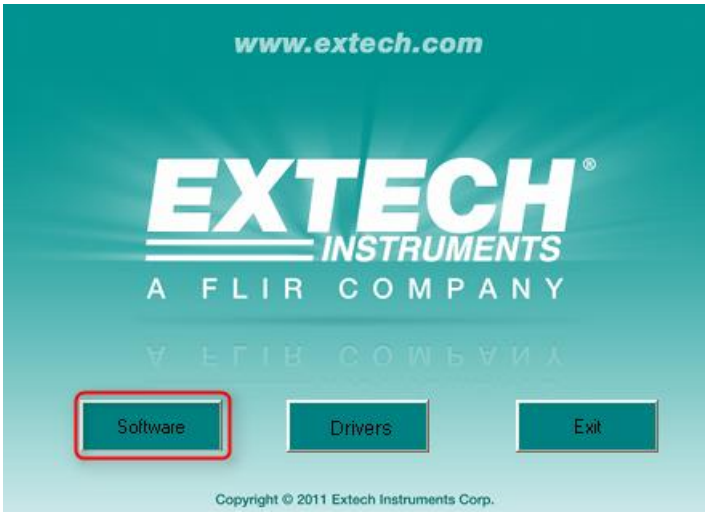
This software allows the user to start and record a Real-Time data recording, download recorded data from the power analyzer, and plot graphs and print data lists of recorded data.

System Requirements
Operating System: Windows 7, Windows 8.1, and Windows 10

Minimum hardware requirements
PC with 1GHz or faster 32-bit (x86) or 64-bit (x64) processor 1GB RAM for (32-bit) OS or 2GB RAM for (64-bit) OS
At least 100 MB hard disk space for the supplied software DirectX 9 graphics device with WDDM 1.0 or higher driver 800 x 600 display resolution

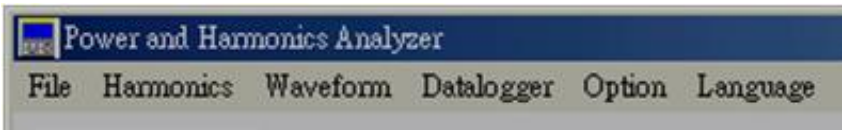
Software Installation

Download the PQ3350 software from the **Extech.com/software** web page.
Run ExtechInstaller.exe
Select Software button to begin the installation of the device software. Proceed through the software installation wizard using the default settings.



Click on the Drivers button to begin installing the USB driver. Proceed through the installation wizard using the default settings.

Main Menu



FILE

- Create Data File Create a file for Real-time datalogging
- Start Recording Start recording Real-time data
- End Recording Stop a Real-time recording
- View File View a saved data file Plot Power Data Graphically plot Power data
- Plot Harmonics Graphically plot Harmonics data
- Plot Waveform Graphically plot a waveform
- Plot Hardcopy Display a hardcopy image
- Exit Exit the program

HARMONICS % (0-50 orders or 0-99 orders) Set view to %

- Phase (0-50 orders or 0-99 orders) Set view to Phase Close
- Close window

WAVEFORM

- Open Open a waveform file for view
- Close Close the open waveform window

DATALOGGER

- Download recorded data from the Power Analyzer memory

OPTIONS

- Sample Rate Set data sample rate
- Com port # Select COM port number
- Baud Rate Set Baud rate for USB interface

LANGUAGE
Select the program language to English or Chinese

Operation

Turn on the Power analyzer.
Connect the Power analyzer to the PC using the provided USB cable. Set the PQ3350 to the desired measurement mode.
Start the PQ3350 software

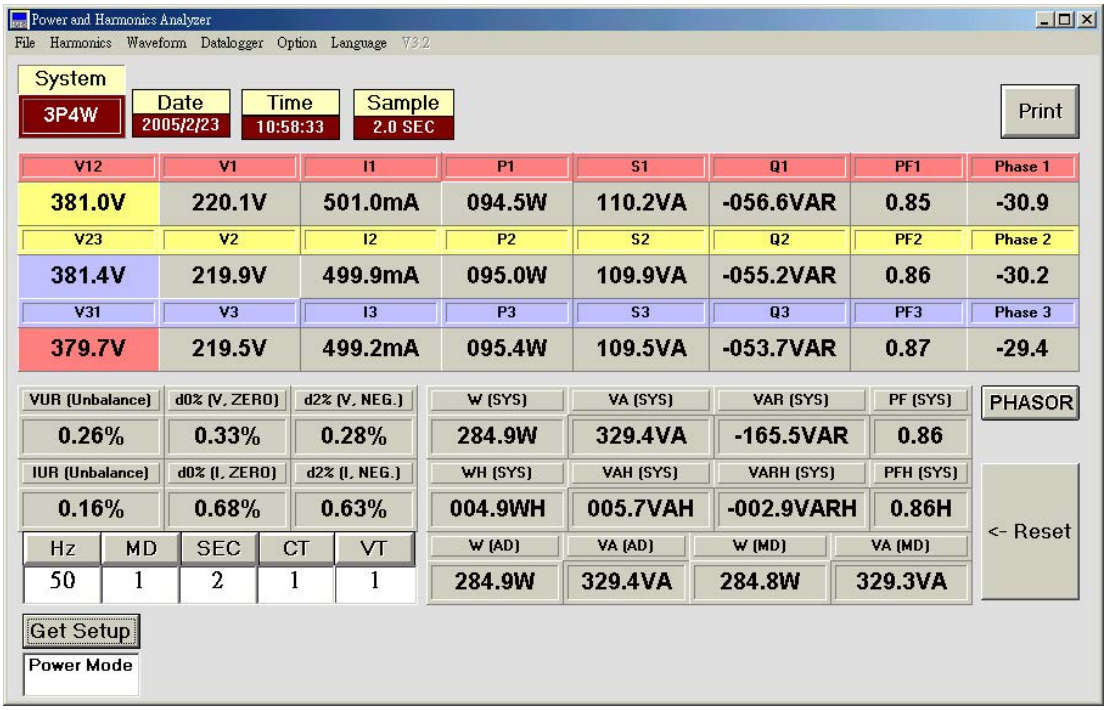
Under the Options menu, select the COM PORT that the meter is connected to. Note: you may need to view the Windows Device manager to view the COM port #

Note: The PC's COM PORT number may have to be changed between COM2 to COM16
Note: When communication is established, click the Update Now button to view the Measurement mode data that the meter is set to.

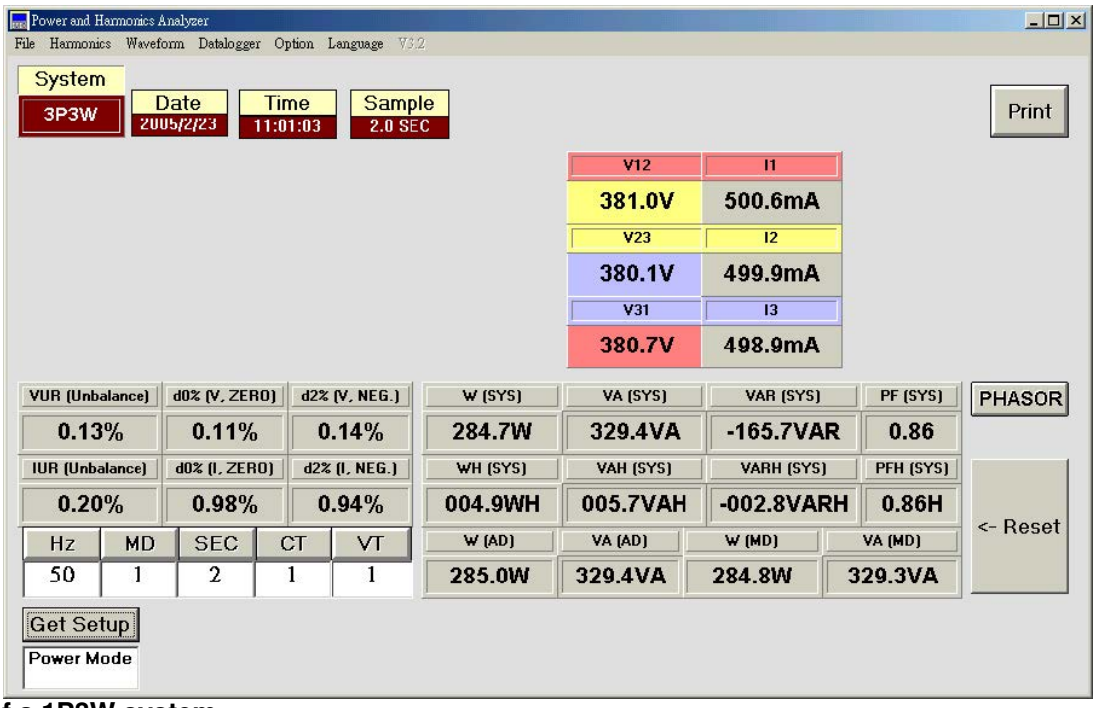
Power Mode

Press the POWER button on the meter to set the Power Analyzer to Power mode.

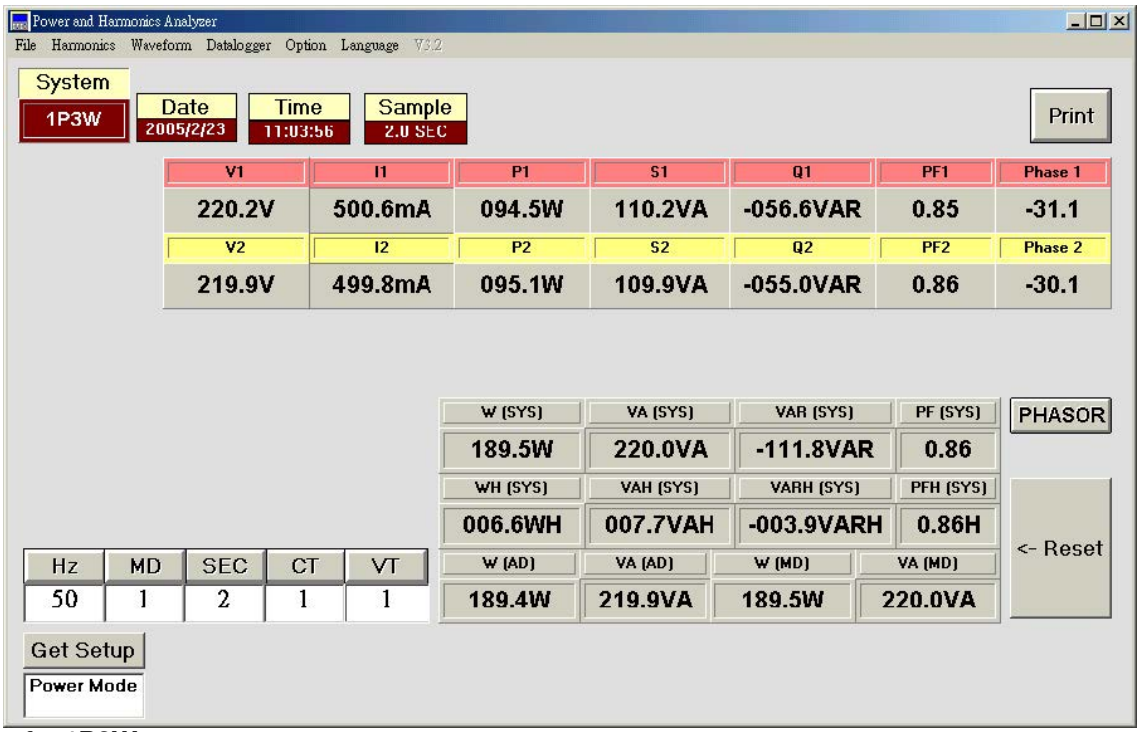
Example of a 3P4W system



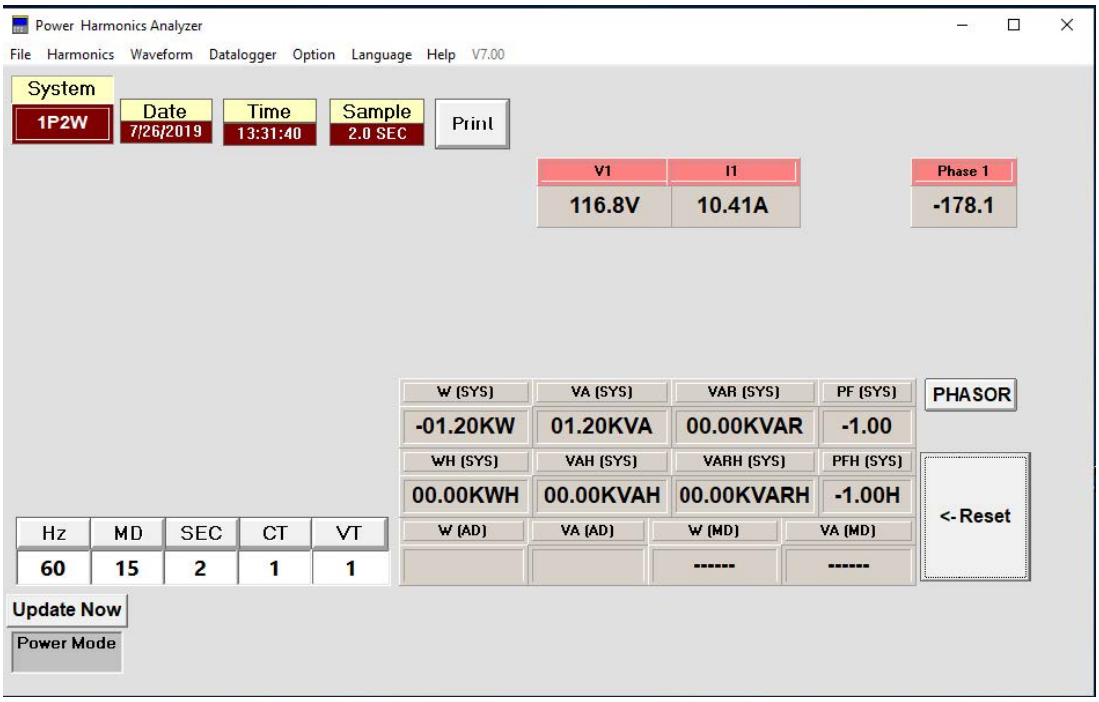
Example of a 3P3W system



Example of a 1P3W system



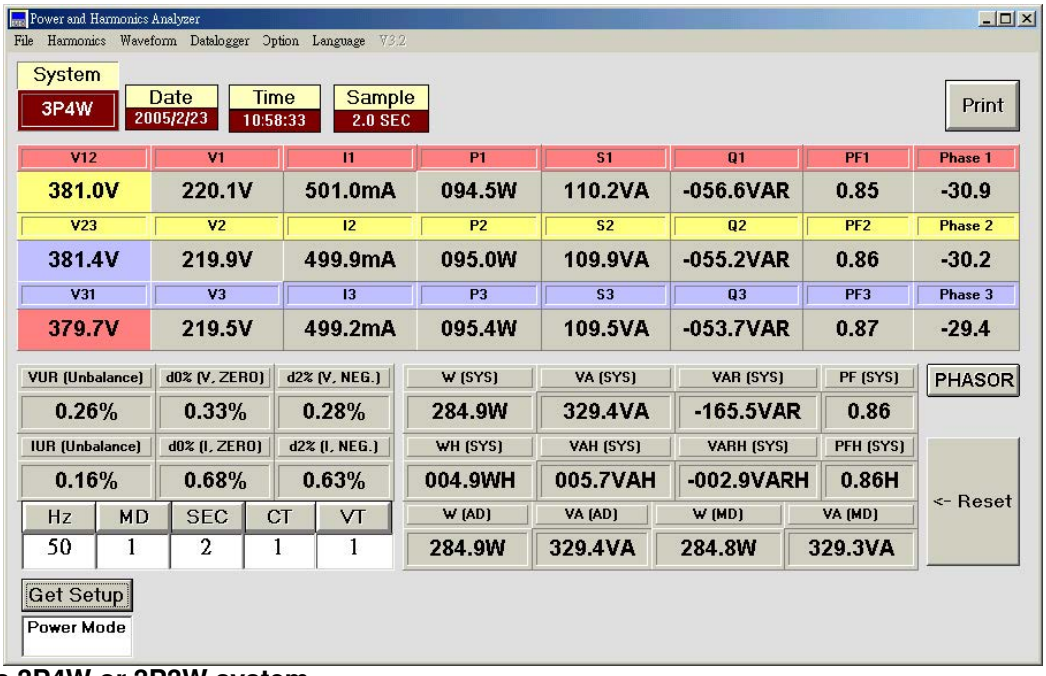
Example of a 1P2W system



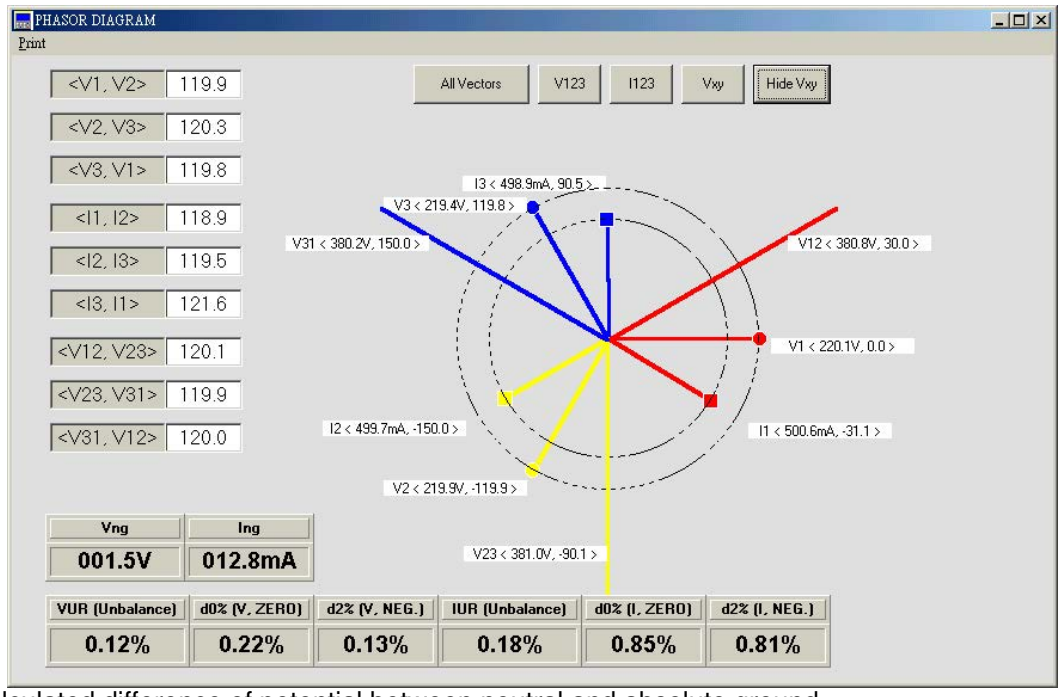
NOTE: If the power system is changed after the program is run or the data displayed is off by a factor of X10, press the Update Now button to obtain the updated setup from the meter.

Phasor Diagram

With the Power Analyzer is set to Power mode,
Press the PHASE button on the meter to display a phase diagram:

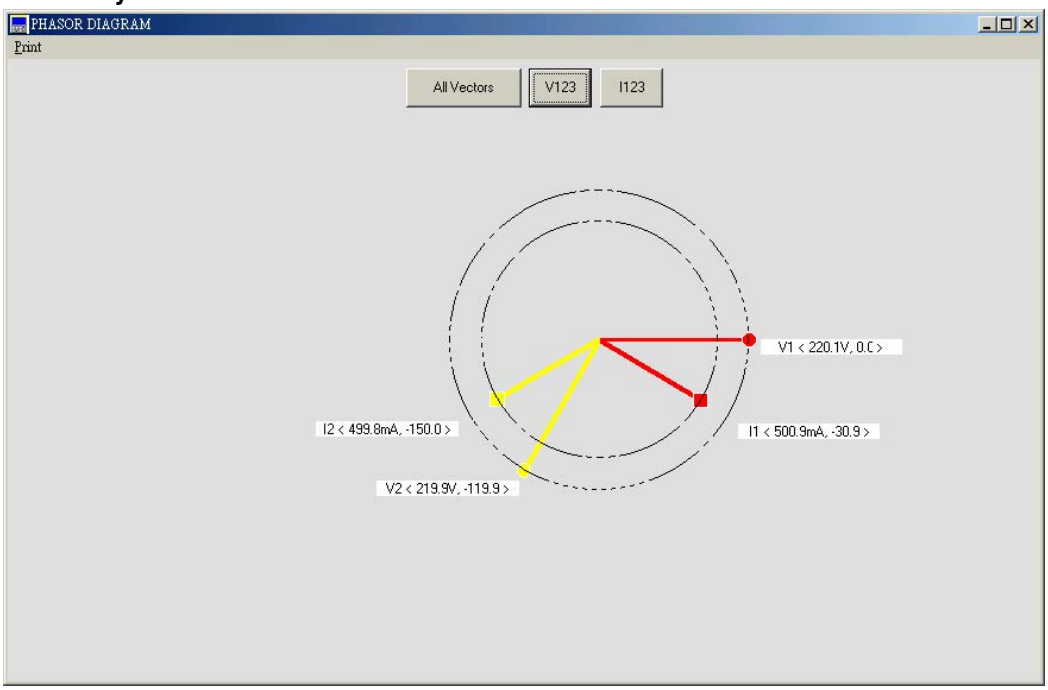


Example of a 3P4W or 3P3W system

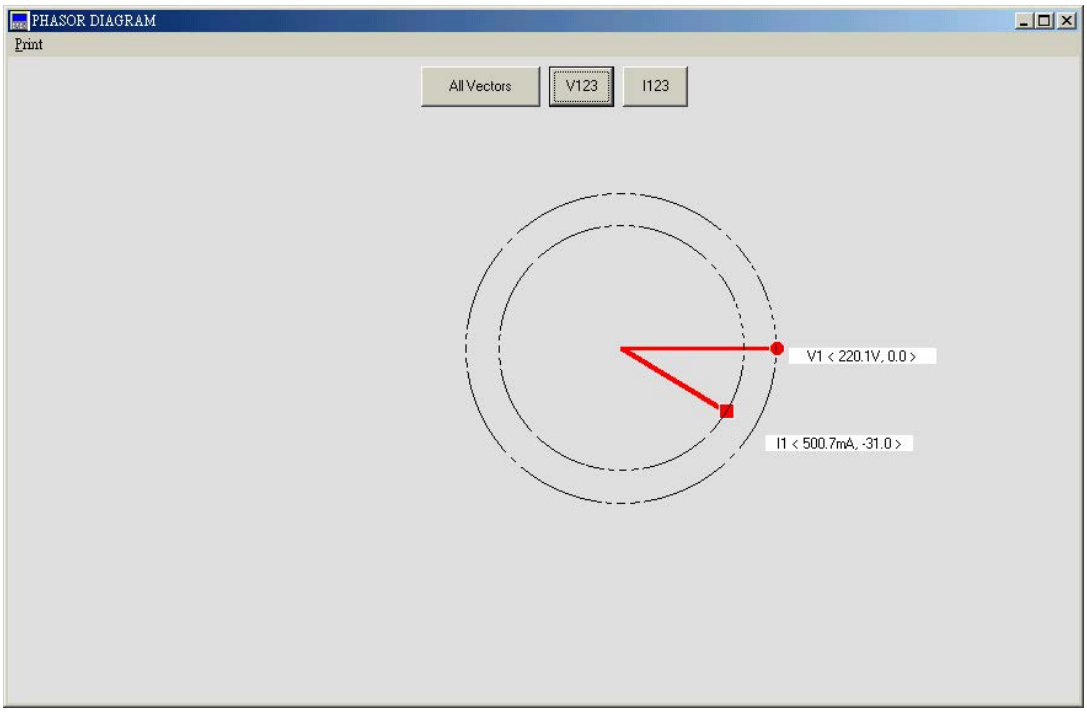


Vng: The calculated difference of potential between neutral and absolute ground.
In: The calculated difference of the current to neutral.

Example of a 1P3W system



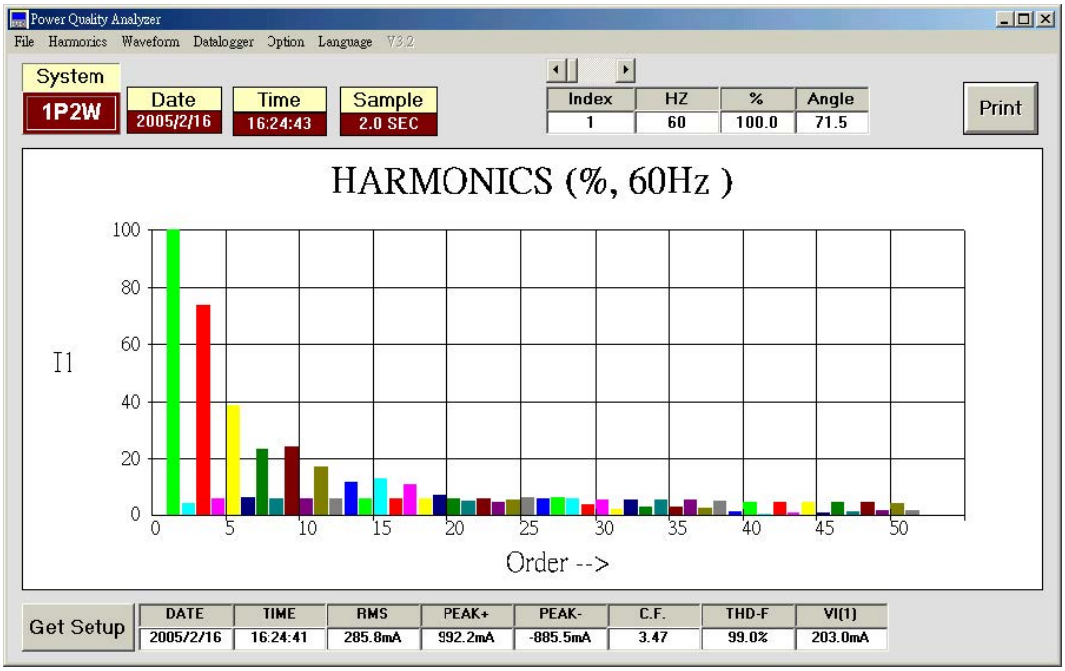
Example of a 1P2W system



Harmonics Mode

Press the Harmonics button on the meter to view Harmonics data.

When the Power Analyzer is in the Harmonics mode, the following window will be shown:



Use the horizontal scroll bar to select the desired Order of harmonics.

Index: Selected order

Hz: Frequency of selected order

%: Percentage of selected order with respect to 1st harmonic

Angle: Phase angle of selected order of harmonics

Date: Current date Time: Current time

RMS: the true RMS value of selected input

PEAK+: positive peak value of selected input

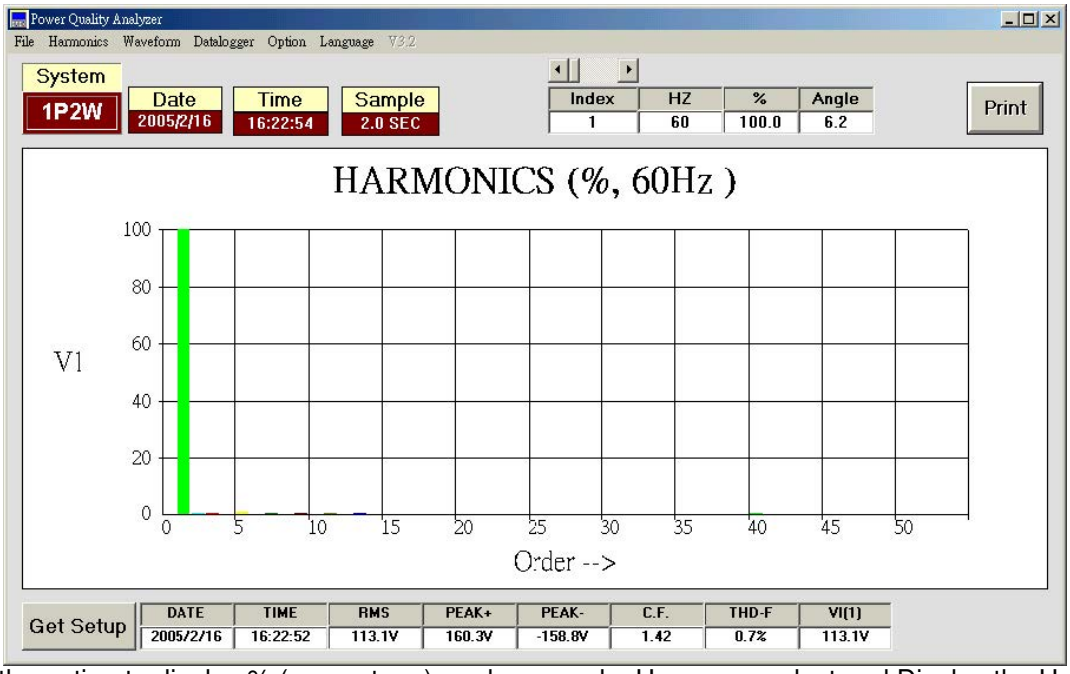
PEAK-: negative peak value of selected input.

C.F.: Crest Factor

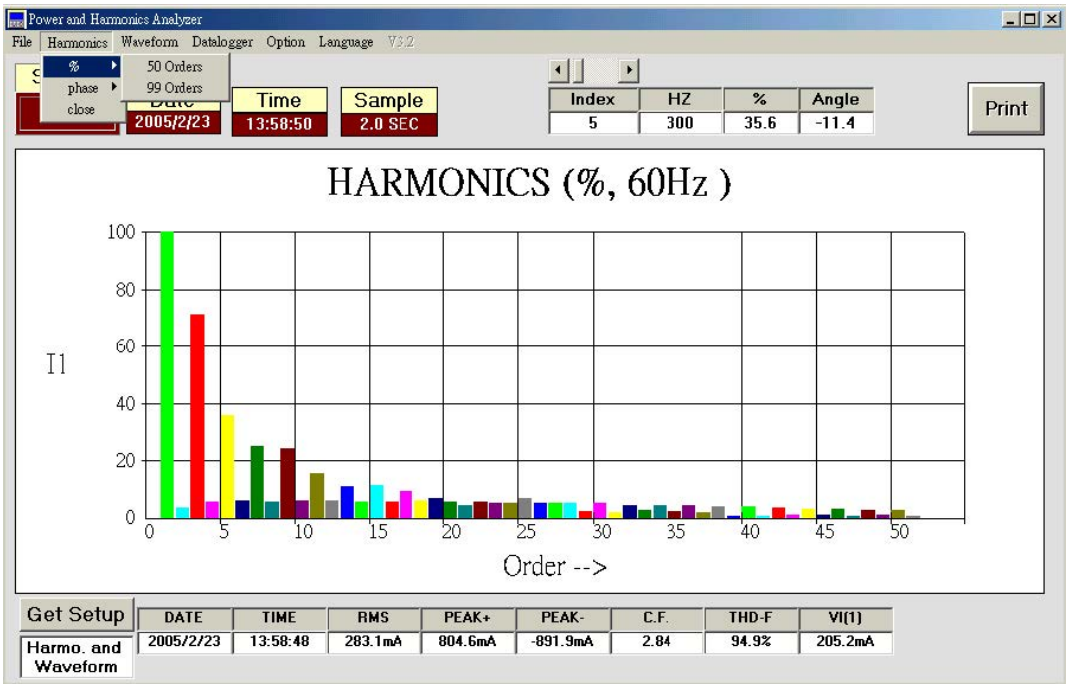
THD-F: Total Harmonic Distortion

VI(1): True RMS value of first harmonics of selected input.

NOTE: To select the desired input (V1, V2, V3, I1, I2, I3), use the button on the Analyzer.

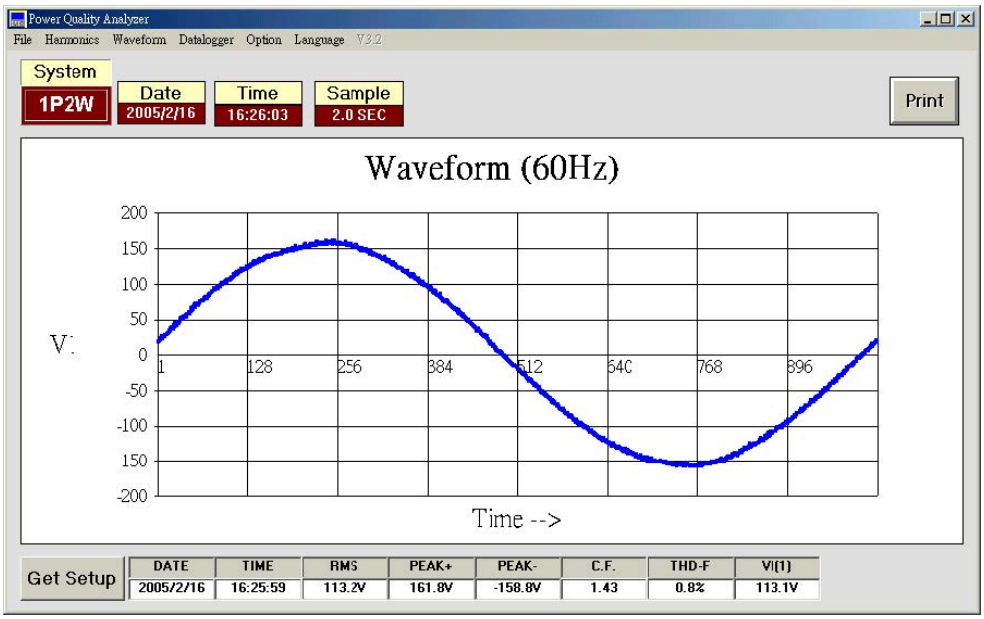


Users have the option to display % (percentage) or phase angle. Users can select and Display the Harmonics order from 0 – 50 or 0- 99.



Waveform Mode

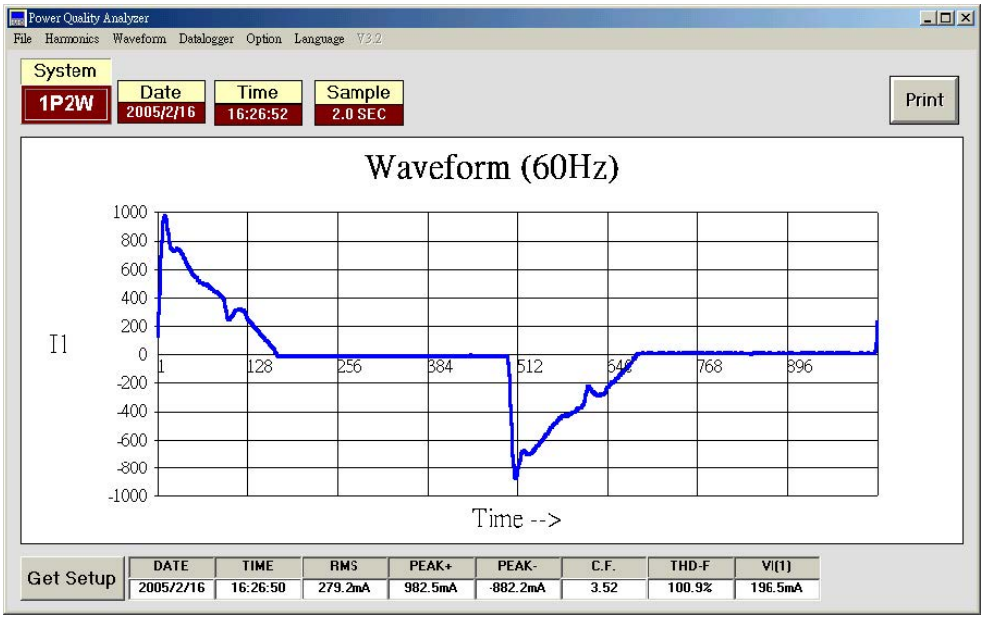
Set the Power Analyzer to Harmonics mode.
Open Waveform menu and select open. When the meter is connected to a live circuit, a waveform will appear.
Open the Waveform menu and select Close to close this window.
To view a saved Waveform, Open the main FILE menu and select Plot Waveform. Choose a saved Waveform file to open and view. Click File menu and exit to close the waveform window.
Example of V1 input



Date: Current date
Time: Current time
RMS: the true RMS value of selected input
PEAK+: positive peak value of selected input
PEAK-: negative peak value of selected input.
C.F.: Crest Factor
THD-F: Total Harmonic Distortion
VI(1): True RMS value of first harmonics of selected input.

NOTE: To select the desired input (V1, V2, V3, I1, I2, I3), use the button on the Analyzer.

Example of I1 input



Download Recorded Data

The analyzer can store up to 85 files. Each file can contain a combination of Power data, Harmonic data, or Hardcopies of a meter display window.

First – Select the Desired Data File from the Meter
Set the Meter to POWER mode.
Press Setup button on the Power Analyzer meter.
The Down Load File parameter will indicate what data file is being viewed in the display. Use the Right or Left

Arrows on the meter to select what data file you want to download.

The first letter indicates the Data file type.

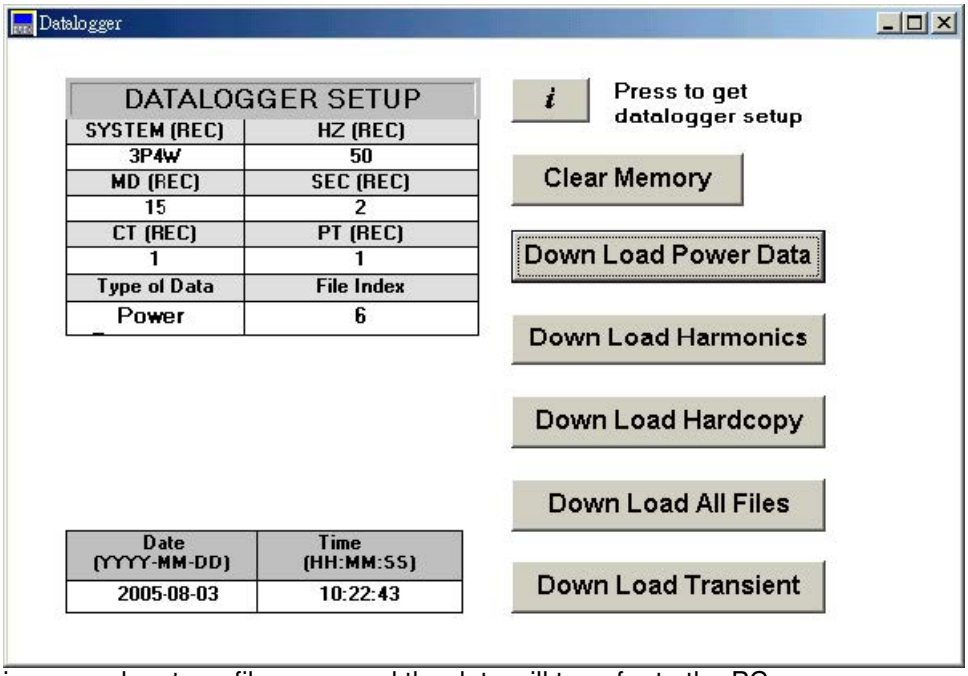
- P = Power Data
- H = Harmonics data
- H = Hard copy (Power Analyzer screen copy)

  The numbers indicate the File number and Total number of files of that type.

Example **P 2:4** (Power Data, file #2 is being viewed and there are a total of 4 Power files)

Once the file is selected, Press the EXIT button, otherwise you will not be able to transfer the data.

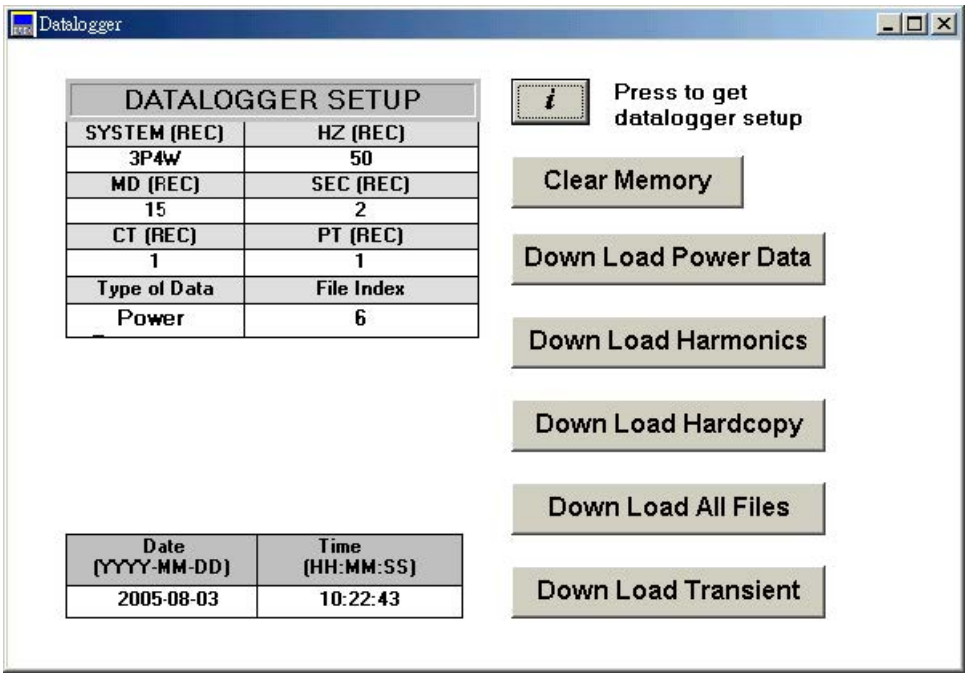
Down Load Power Data
If the data file stored is power data, press the Down Load Power Data button.



Once the button is pressed, enter a file name and the data will transfer to the PC.

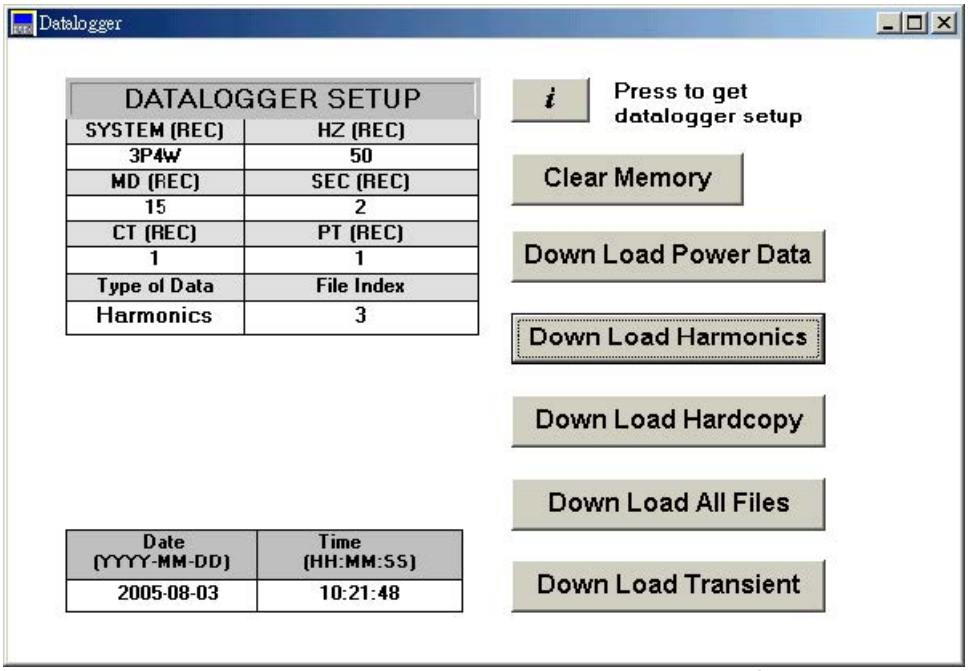
In the Software, Open the Datalogger menu and click on the button. The Type of Data should be Power, click Down Load Power Data

Example of Power Data Stored



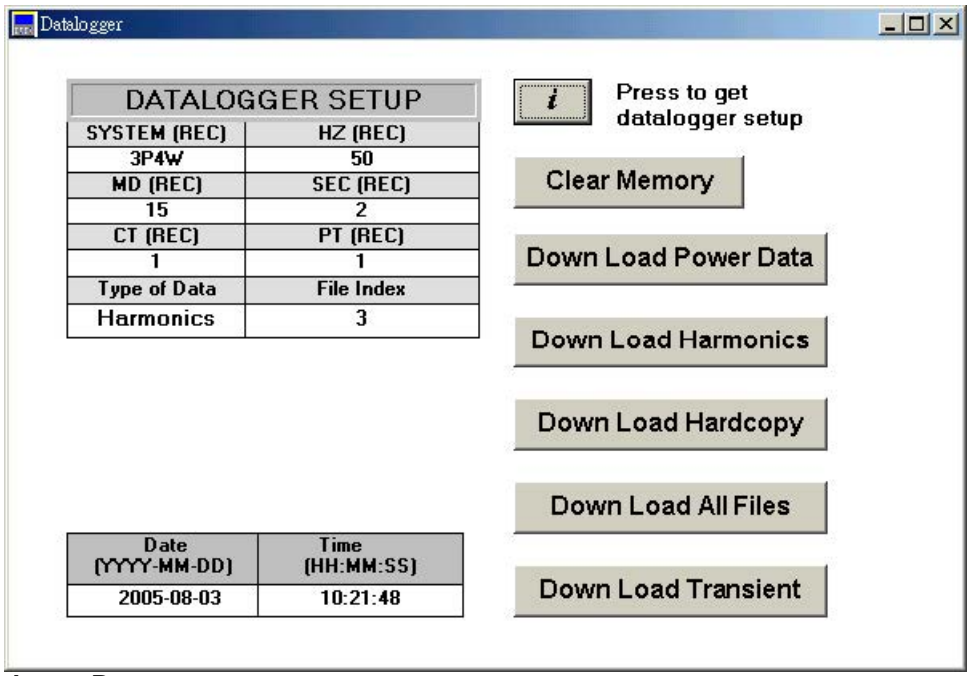
Down Load Harmonics Data

If the data stored is Harmonics data, press the Down Load Harmonics button.



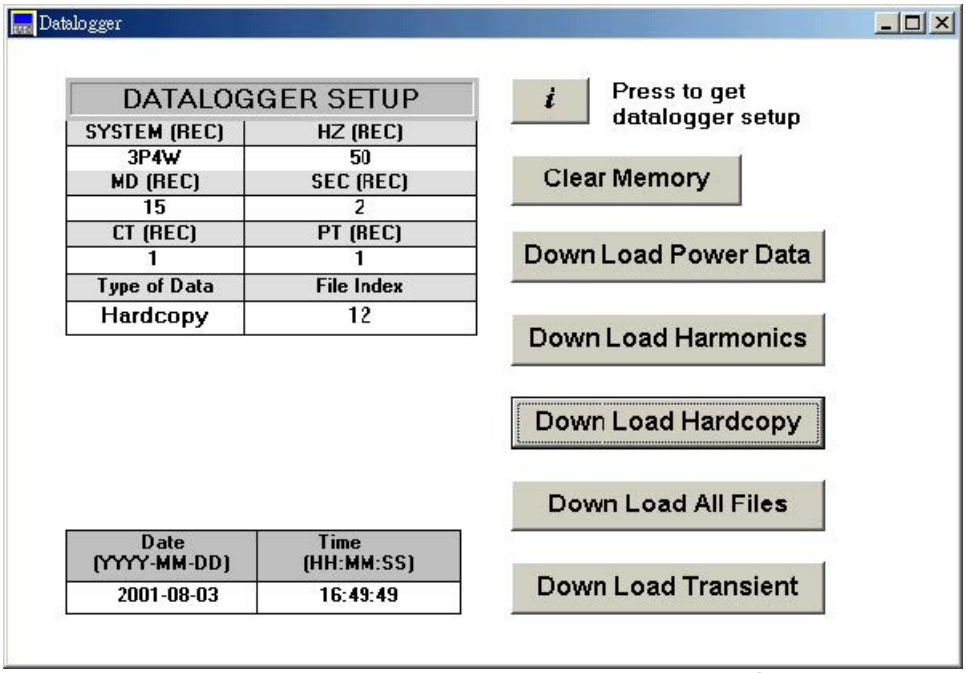
Once the button is pressed, enter a file name and the data will transfer to the PC.

Example of Harmonics Data Stored



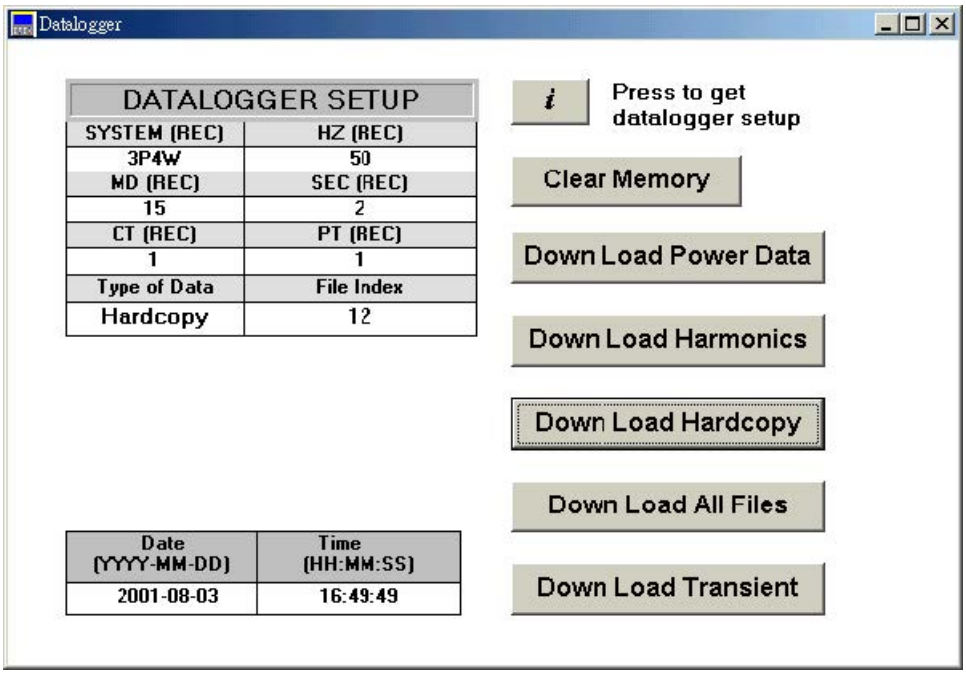
Down Load Hardcopy Data

If the data stored is Hardcopy data, press the Down Load Hardcopy button.



Once the button is pressed, enter a file name and the data will transfer to the PC.

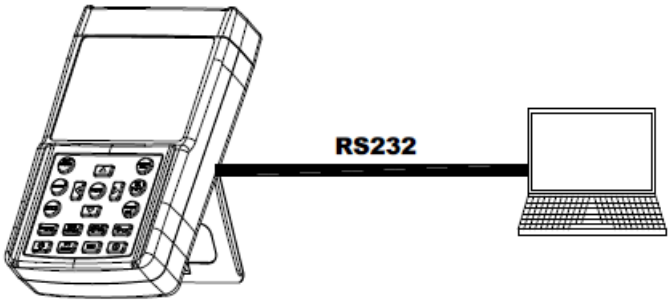
Example of Hardcopy Data Stored



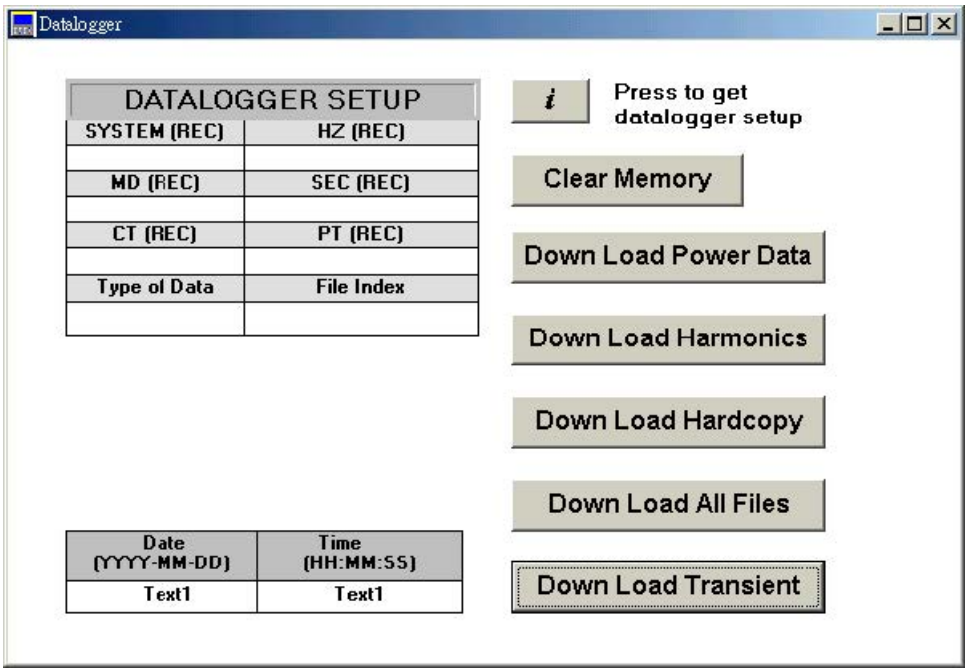
Down Load Transient Data

The Power Analyzer can send Transient data in Real-time but only through the PC interface when the TRANSIENT button is pressed.

NOTE: It cannot record Transient data to the meter memory.



1. Connect the RS-232 cable between the Power Analyzer and the PC.
2. Run the PQ3350 software and select the Datalogger menu.
3. Press the Down Load Transient button. The User will be prompted to enter a file name to store the transient data. The program will wait for the data to transfer for up to 10 seconds.
4. Press the TRANSIENT button on the meter front panel.
   The transient data will start streaming to the PC.
5. Press the EXIT button on the meter to Stop capturing Transient data.



Clear All Data from Meter Memory

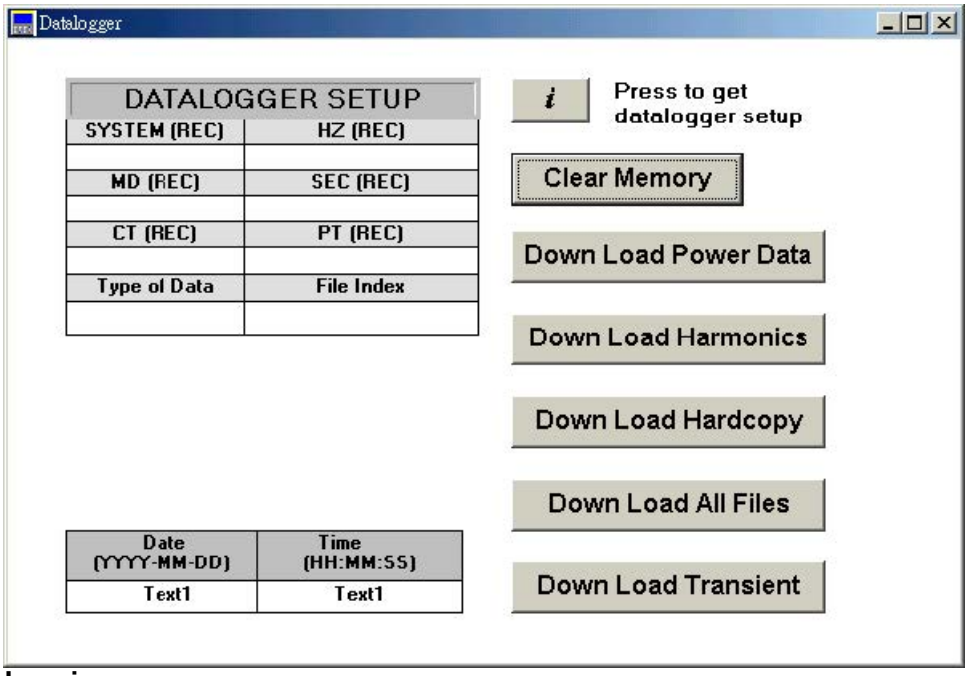
In order to clear meter memory of all data, you must connect the meter to the software.

NOTE: you cannot clear meter memory with the meter only.

To clear all data stored in the Power analyzer, Connect the meter to the PC and run the PQ3350 software. Select the Datalogger menu.

Click on “i” to view datalogger setup

Press the Clear Memory button. A beep will sound as all of the data in the meter memory is cleared.



Real-Time Data Logging

1. Enter Sampling Rate

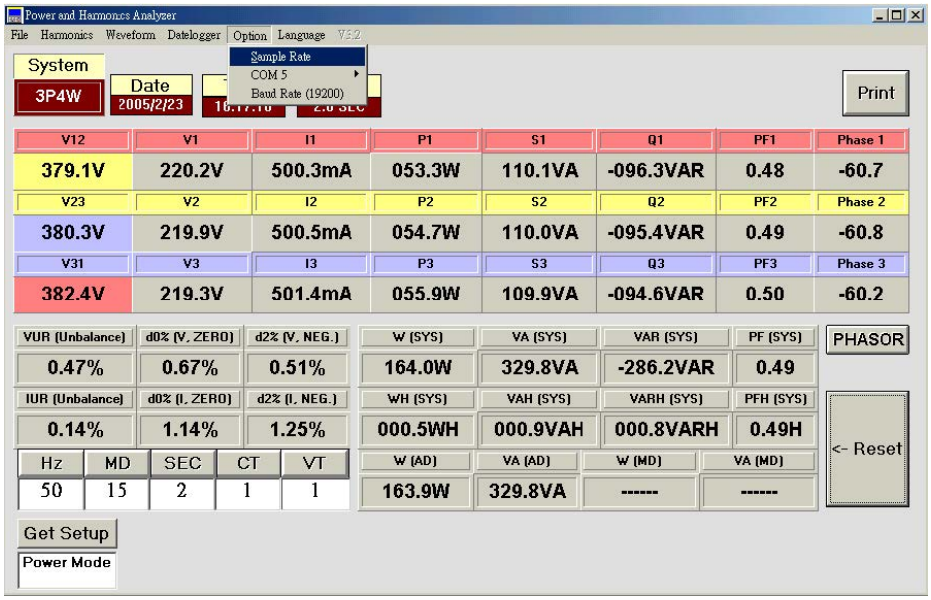
   Open the OPTION menu; Select Sample Rate to enter sampling time in seconds. The minimum sampling time is 2 seconds for Power and Harmonics data. The minimum sampling time is 4 seconds for Waveform data.

   Set the measurement Mode: (Power, Harmonics, or Waveform)

   NOTE: If Power data is displayed, then Power data is stored in the file.

   If the Harmonic bar graph is displayed, then Harmonic data is stored in the file.

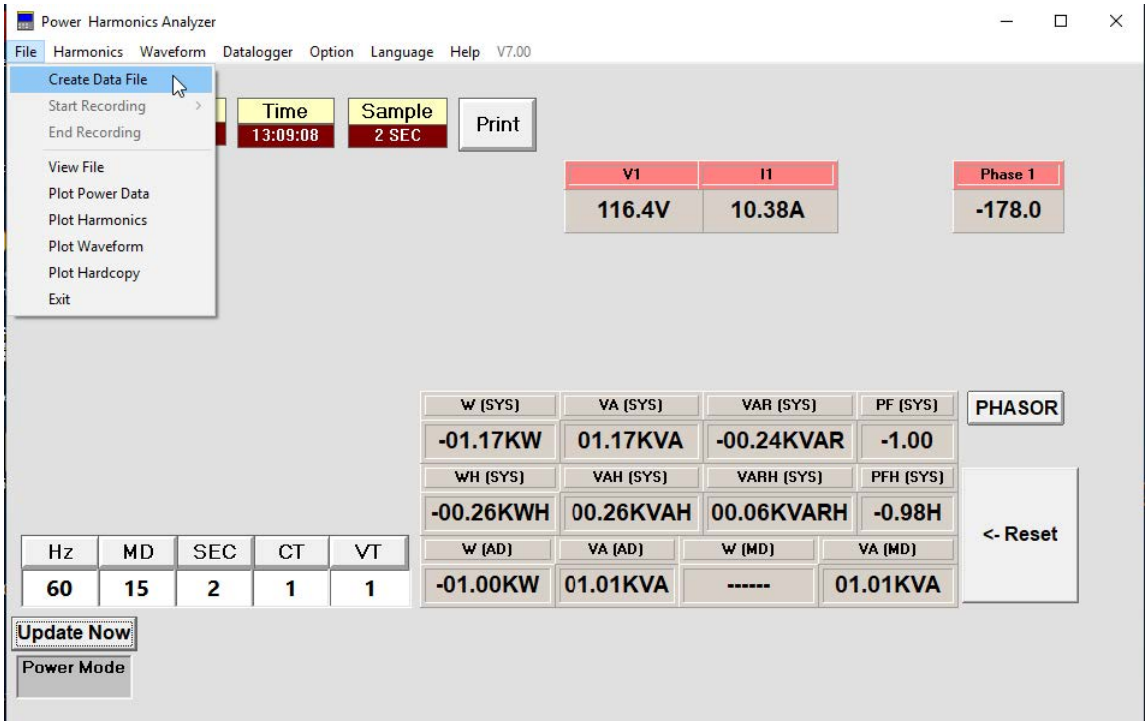
   If a Waveform is displayed, Waveform data is stored in the file



2. **Create a Data File.**

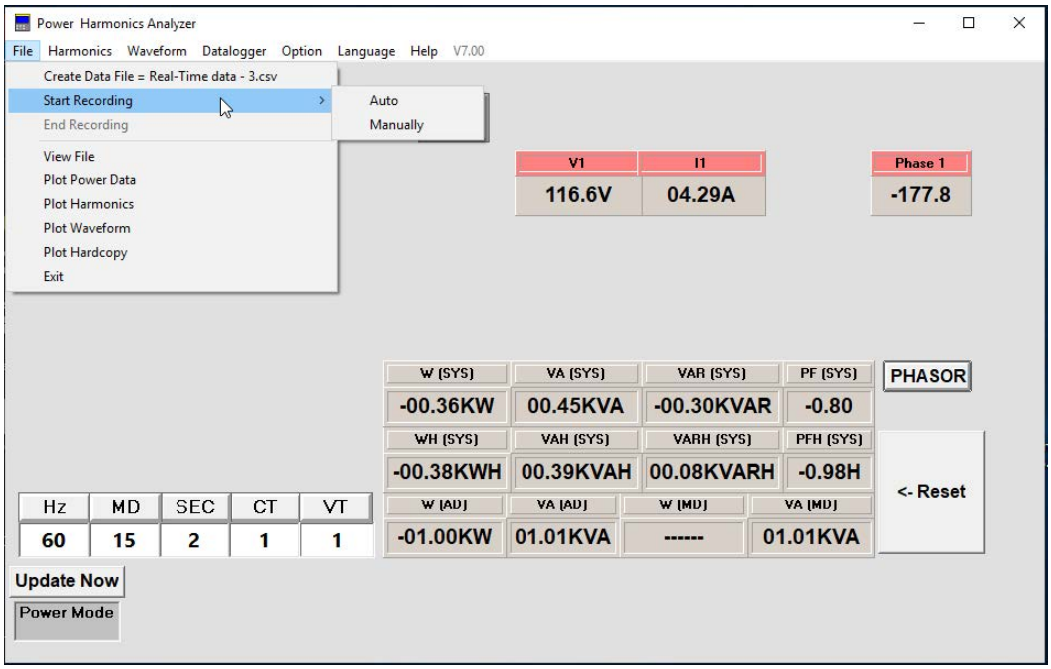
   Open the FILE menu and Select Create Data File.

   Enter a file name.

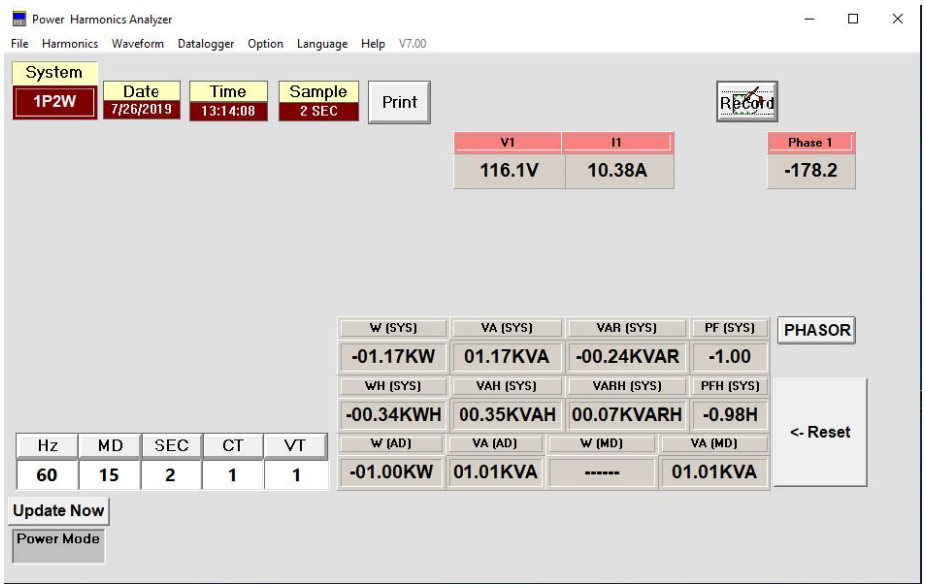


3. **Start Recording**

   From the FILE menu, Select Start Recording. When Auto is selected, data will be recorded at the programmed Sampling rate

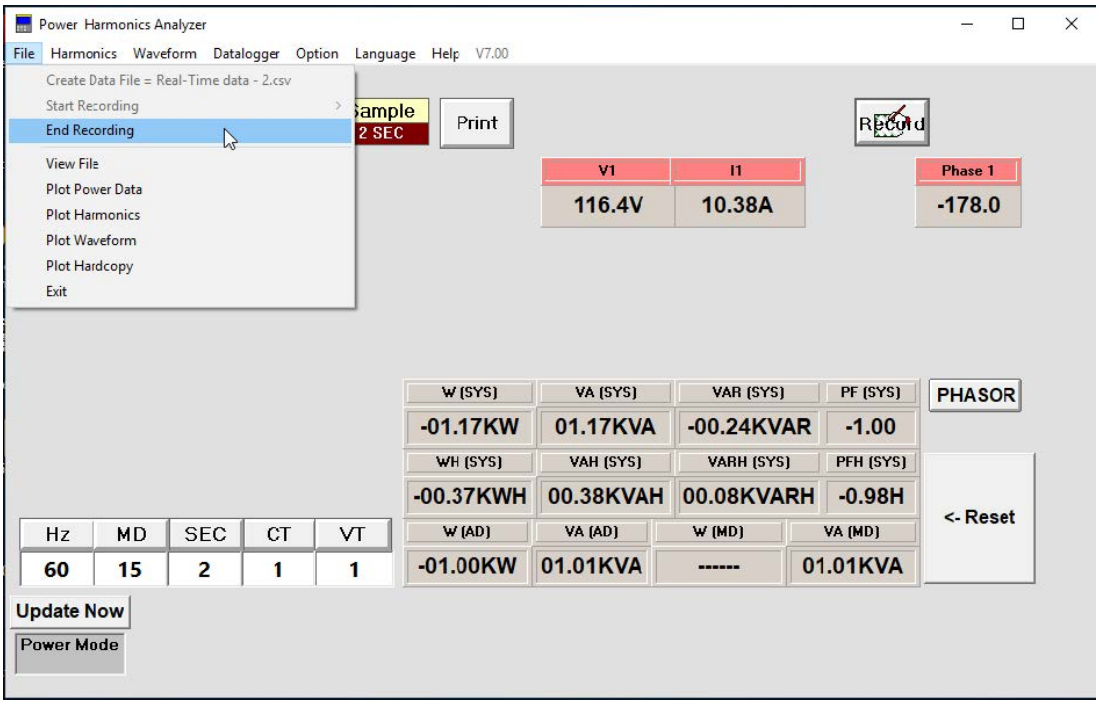


When Manual is selected, a Record button will appear in the window. One data point will be recorded with each press of the Record button.



4. **End Recording**

   From the FILE menu, Select End Recording. The data file will be closed and will now contain the recorded Real-time data

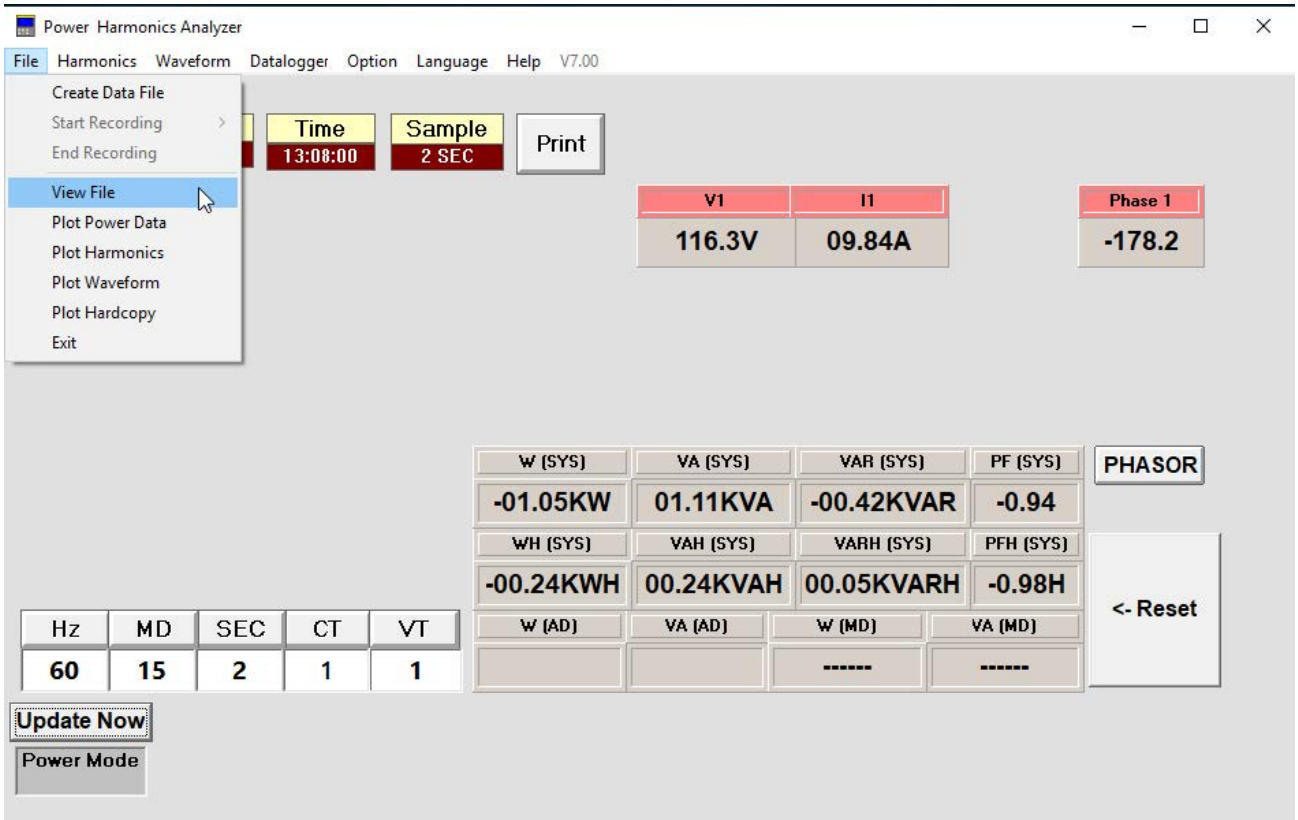


View File

The Data points are stored in a comma delimited file format (.csv)

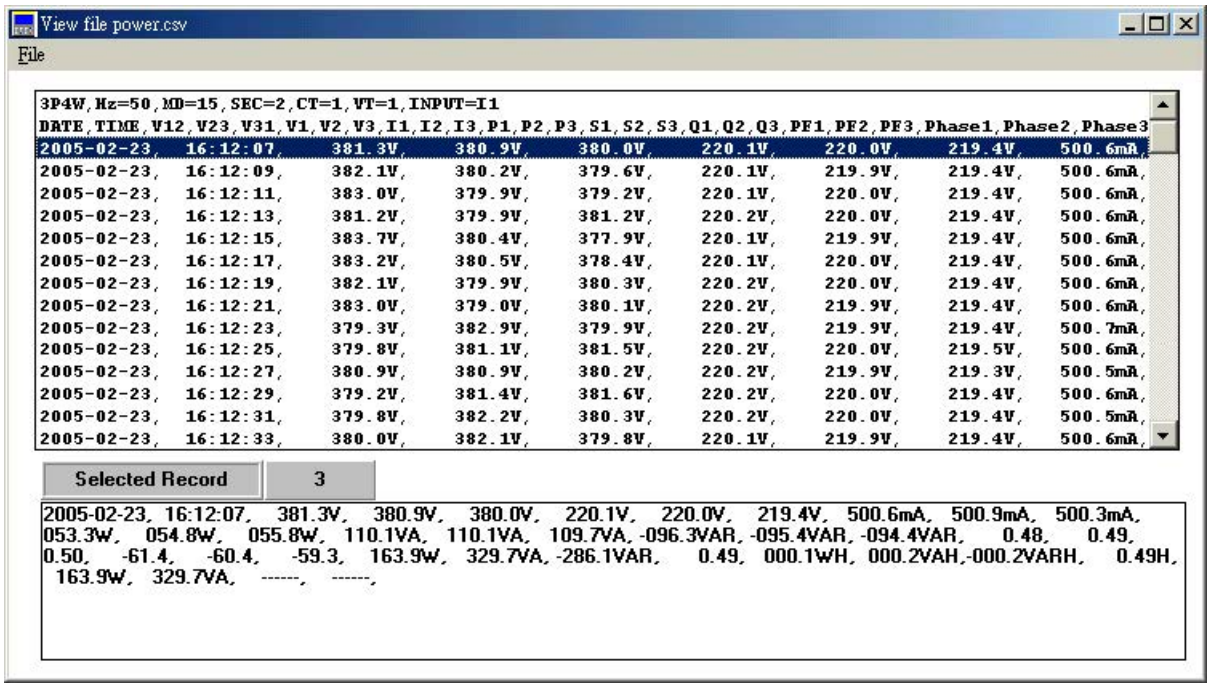
Open the data file by selecting View File from the FILE menu.

Note: Any text editor can open the data file.



Enter a file name from the File menu.

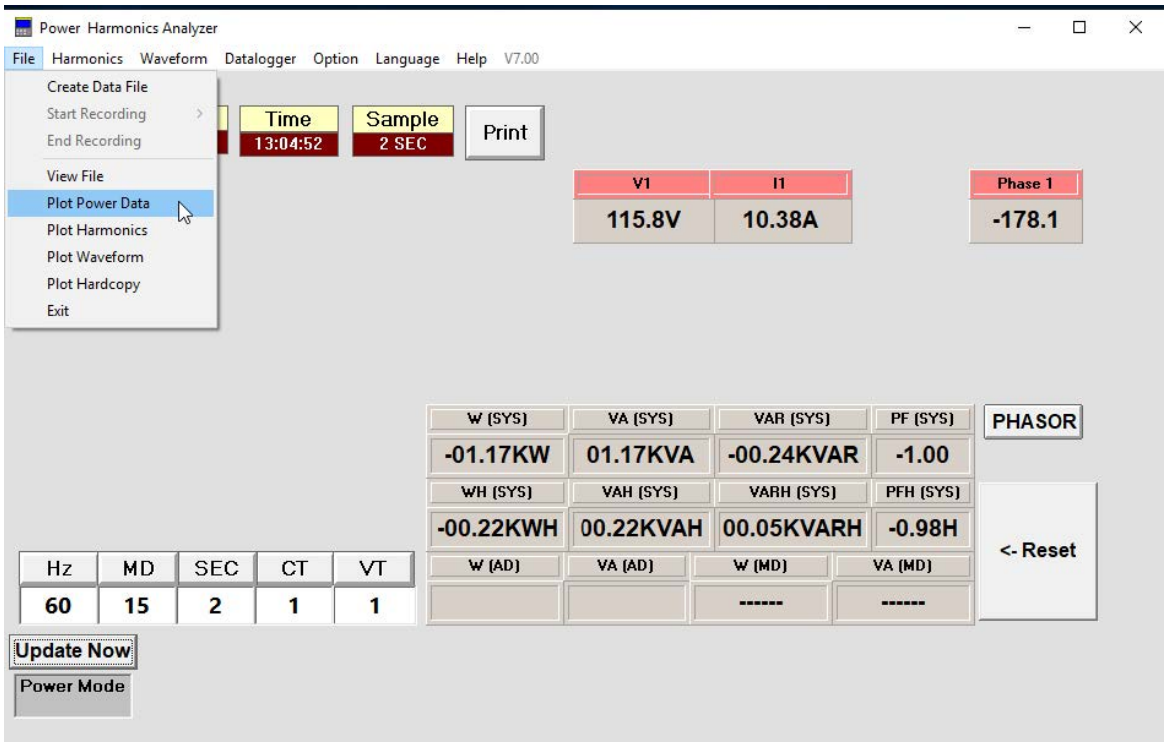
Data will appear as shown in the window below:



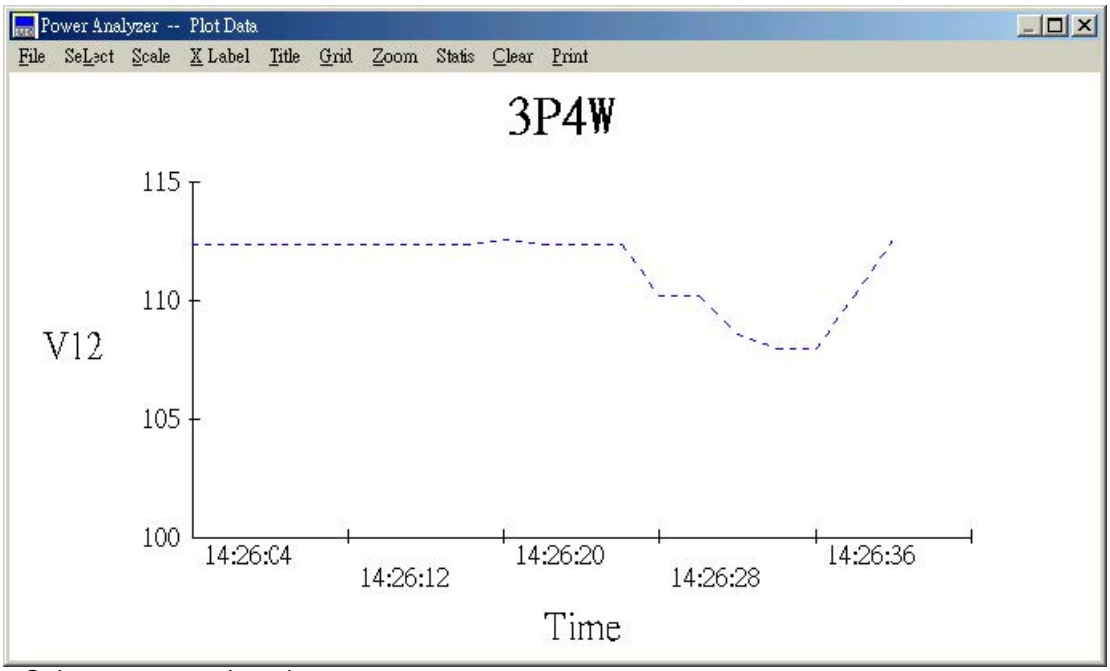
Plot Power Data

Select a Power Data file to Graph

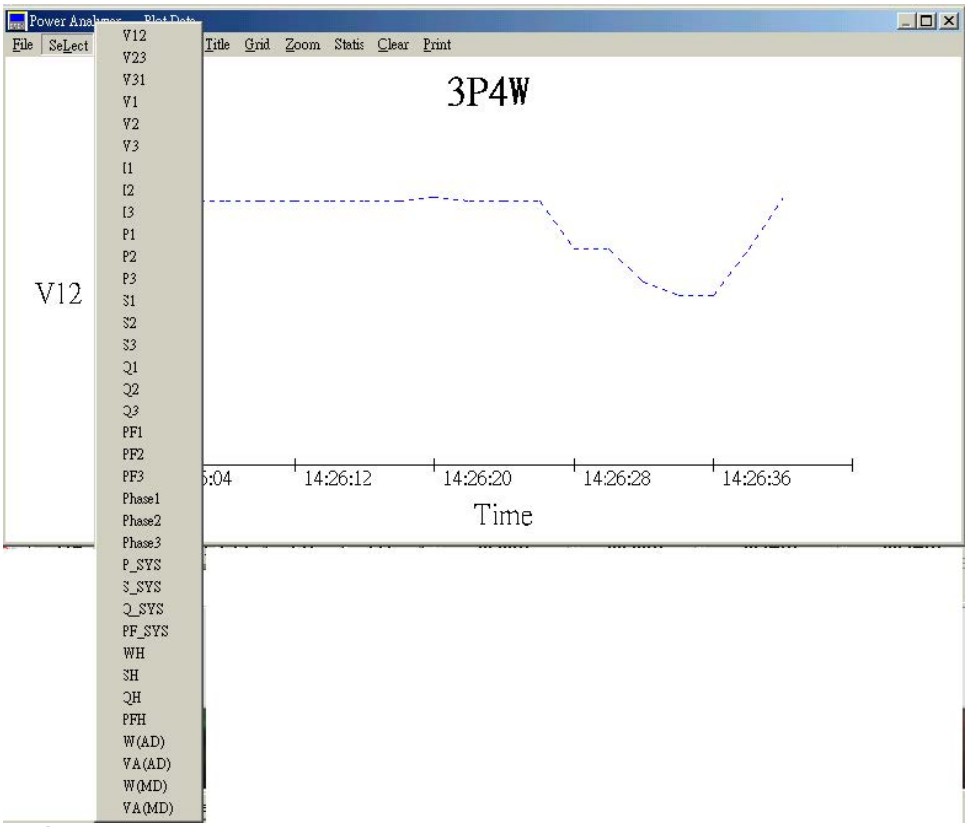
The Power data stored by the PC in Real-time or Down loaded from the analyzer can be viewed in a graph format by selecting Plot Power Data item from the File menu



V12 data is shown below:

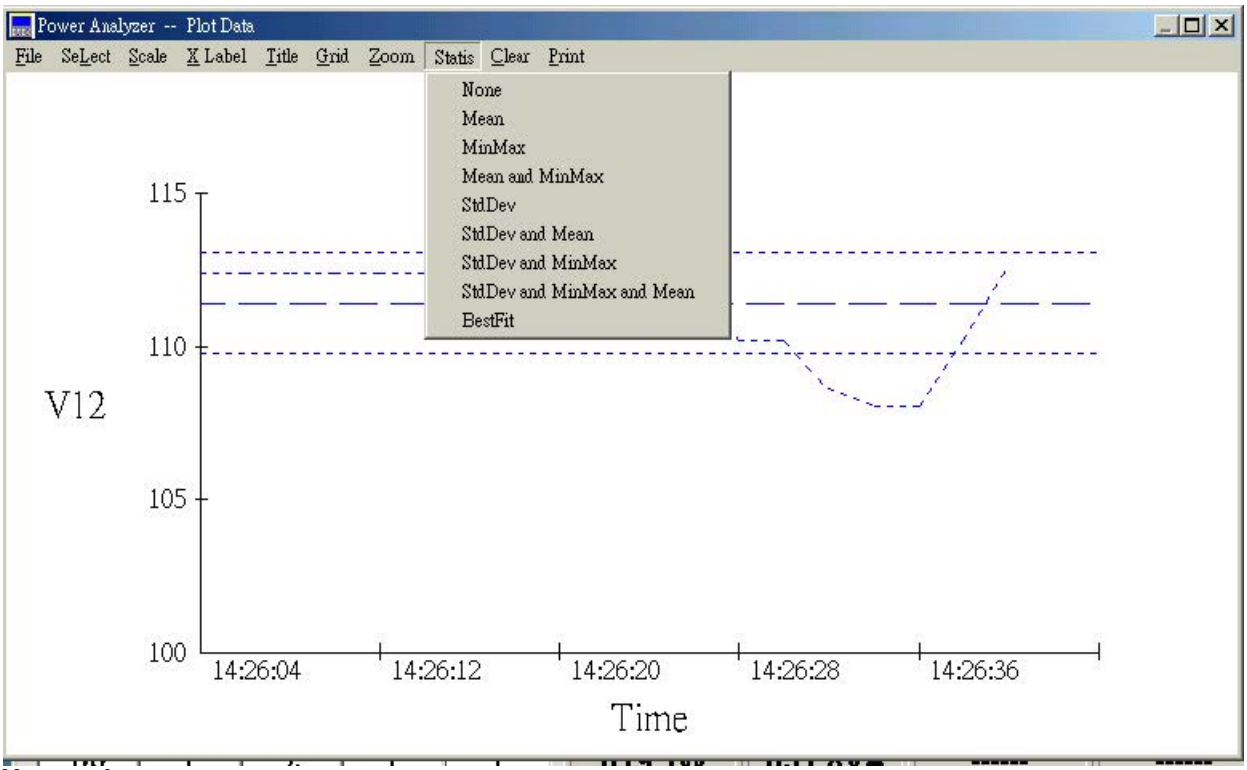


Click on the Select menu to plot other power parameters



Plot Power Data – Statistics

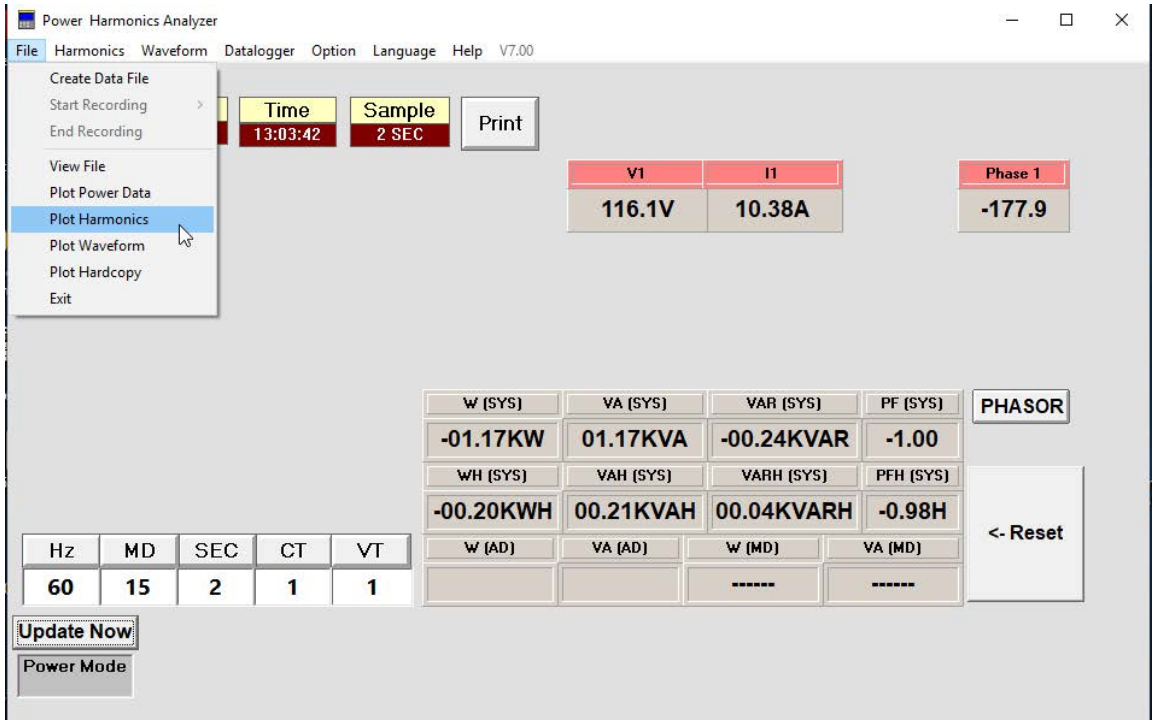
The program can also plot statistical data such as Max, Min, Mean, and Standard Deviation.
Click on the Status menu and choose the type of plot



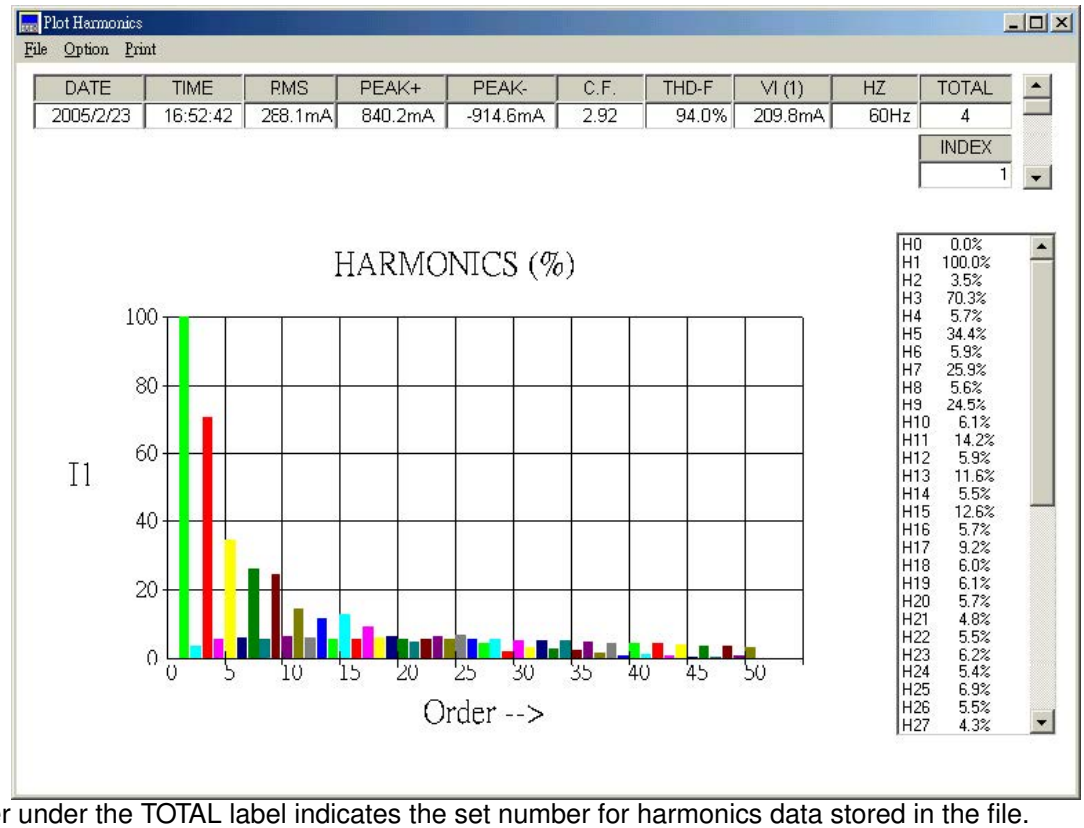
Plot Harmonics

The Harmonics data down loaded from the analyzer can be graphed by selecting.

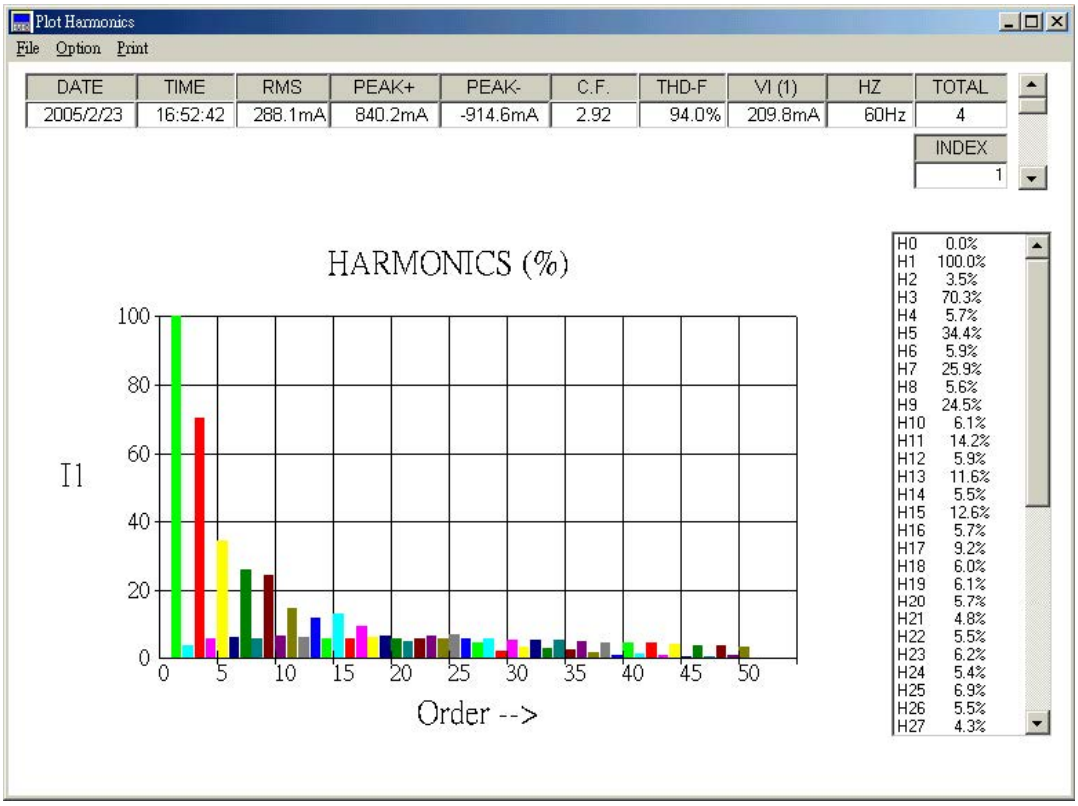
Click on the FILE menu and choose Plot Harmonics Data



Select a saved Harmonics data file to view the data.

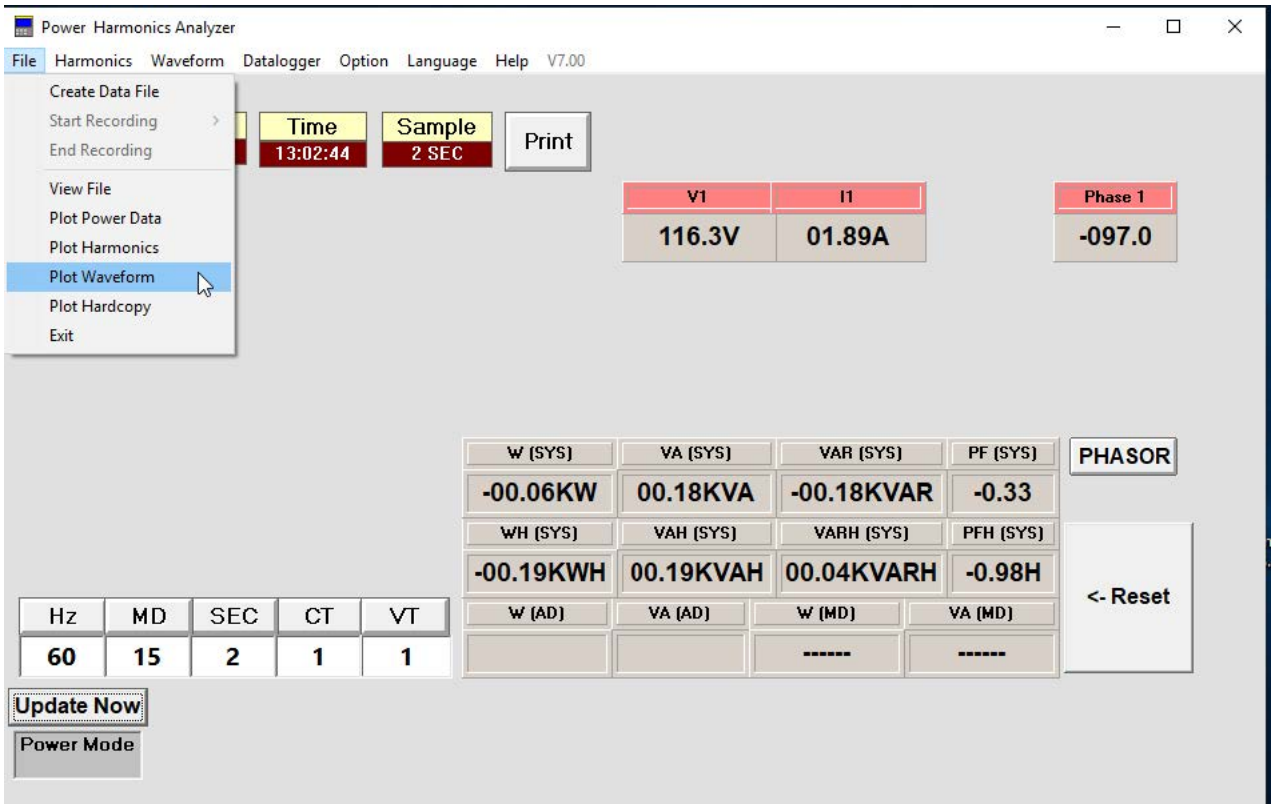


The number under the TOTAL label indicates the set number for harmonics data stored in the file.
Use the vertical scroll bar to plot a specific set of harmonics data. To see the percentage (%) of a specific order, use the other vertical scroll bar.

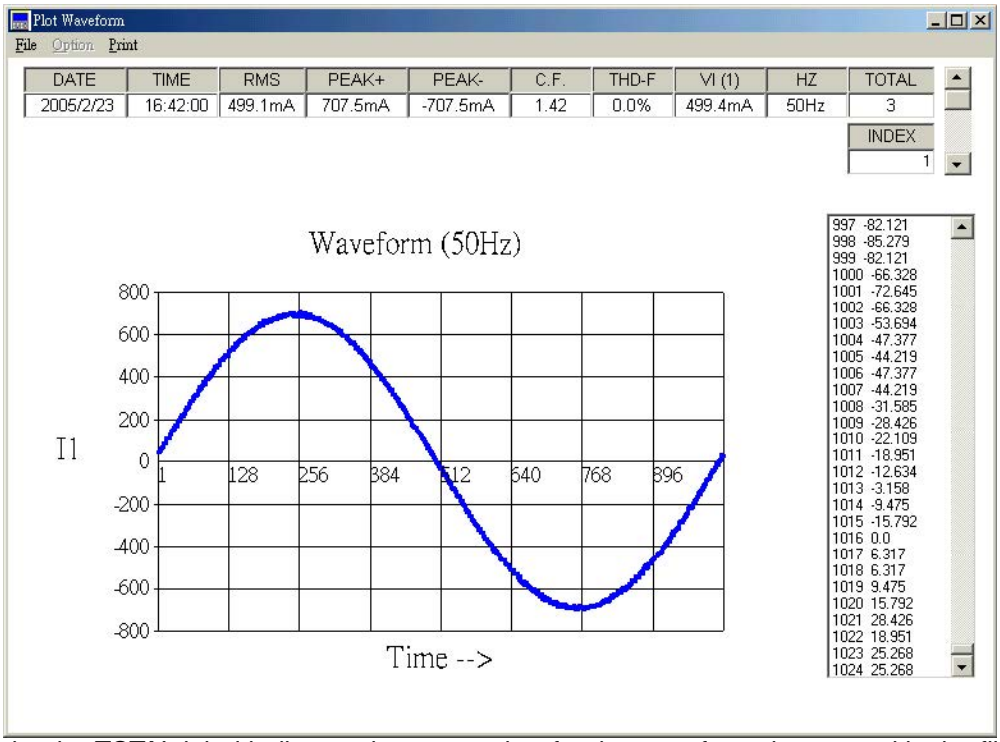


Plot Waveform

Click on the File menu and select Plot Waveform

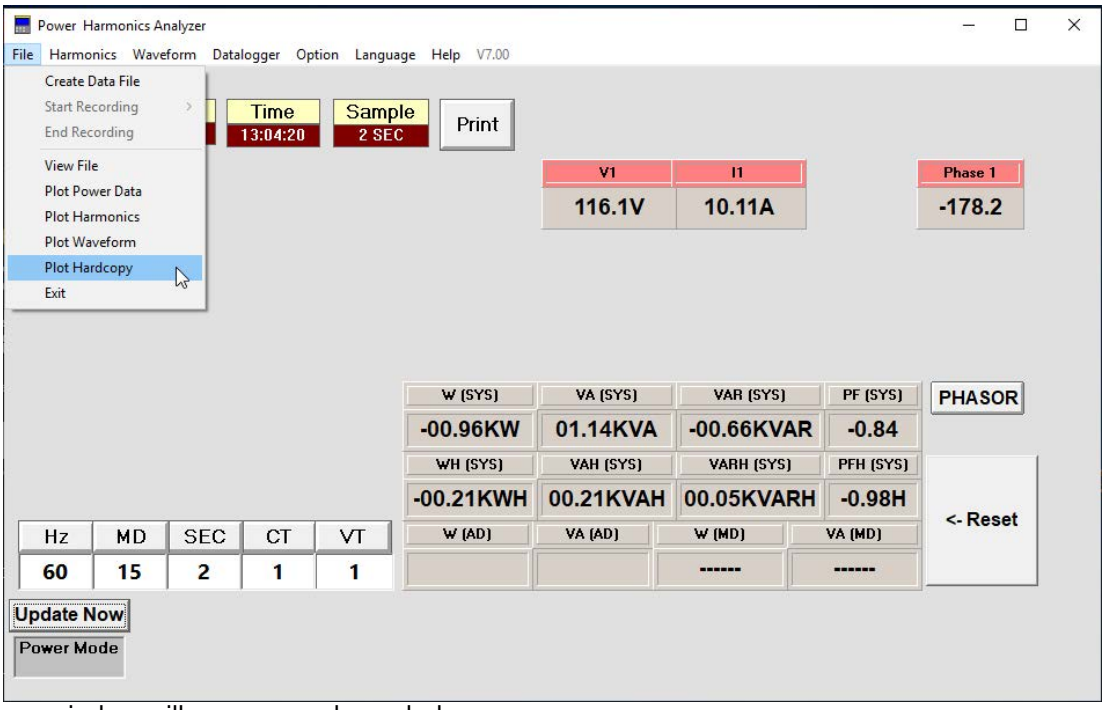


From the Plot Waveform page, open the File menu and select the filename to open.

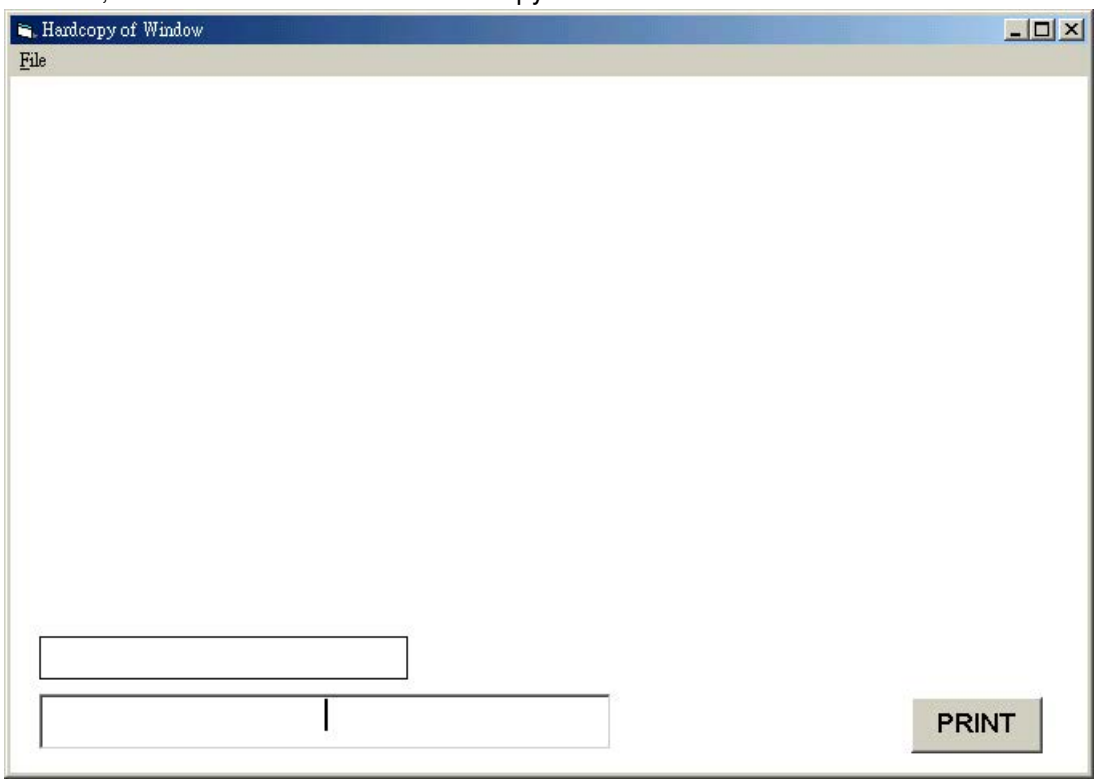


The number under the TOTAL label indicates the set number for the waveform data stored in the file. Use the vertical scroll bar to plot a specific set of waveform data.
Each waveform consists of 1024 points of data. To see the value of a specific point, use the upper vertical scroll bar.
NOTE: The values for all of the 1024 data points are used for reference only. They are not calibrated, as is the RMS value. 32 PQ3350-SW-HELP-EN_V2.0 10/19

Plot Hardcopy
Click on the FILE menu and select Plot Hardcopy

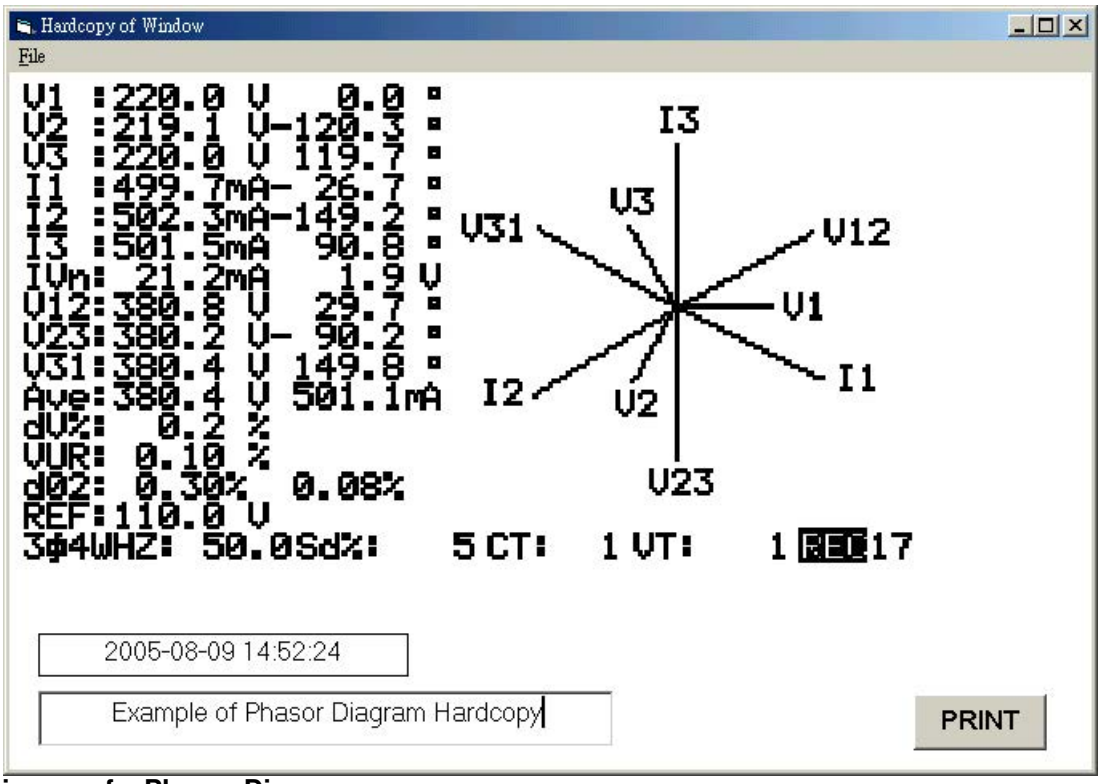


The Hardcopy window will appear as shown below.
From the File menu, Select the File to view the hardcopy data.

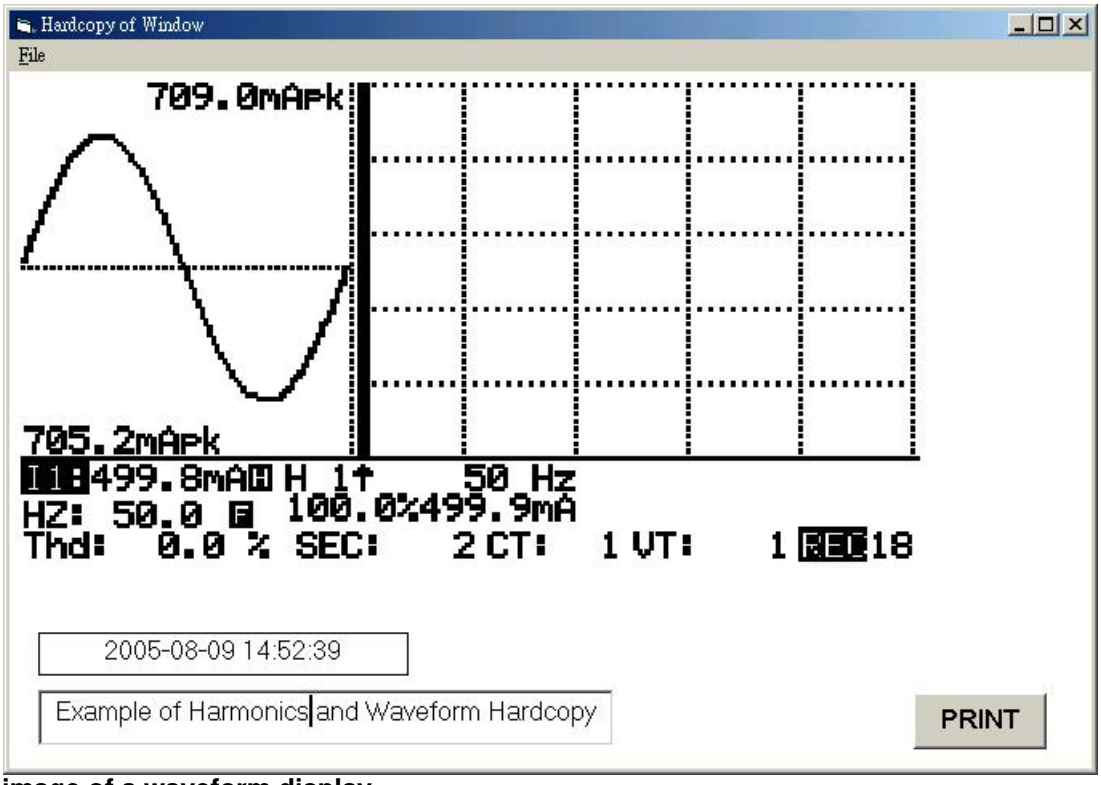


Examples of Hardcopy Data

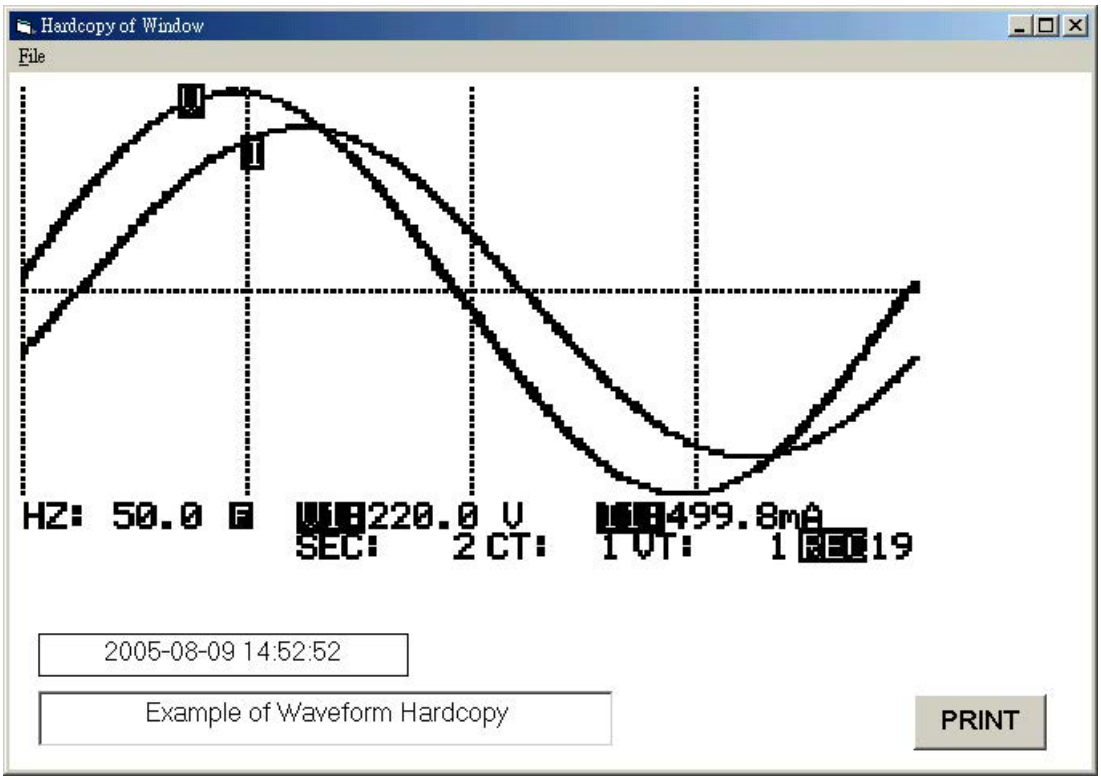
Hardcopy image of Power Data



Hardcopy image of a Phasor Diagram



Hardcopy image of a waveform display



Print Data
Each page in the software has a Print button.
Click on the Print button to the print an image of the data on the page.

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Documents / Resources

	EXTECH PQ3350 Power and Harmonics Analyzer [pdf] User Manual PQ3350 Power and Harmonics Analyzer, PQ3350, Power and Harmonics Analyzer, Harmonics Analyzer, Analyzer

References

- Software Downloads | Extech Instruments
- Extech is now on FLIR.com | Teledyne FLIR
- Extech is now on FLIR.com | Teledyne FLIR

Manuals+,