Matrix PureSine®

SineSync® Monitoring Software

USER MANUAL

PART NO. INSTR –029

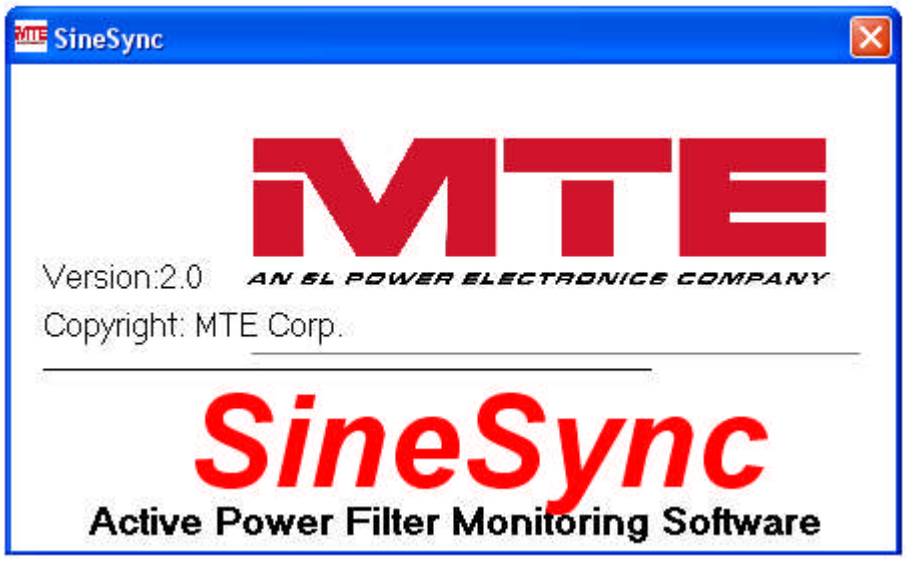
REL. 110513

REV. 001

IMPORTANT USER INFORMATION

NOTICE

The MTE Corporation Matrix PureSine® Active Harmonic Filter is a powerful filtering solution for coordinated variable load power factor correction (PFC), phase imbalance correction, and harmonic mitigation. The suitability of this filter for a specific application must therefore be determined by the customer. In no event will MTE Corporation assume responsibility or liability for any direct or consequential damages resulting from the use or application of this filter. Nor will MTE Corporation assume patent liability with respect to the use of information, circuits or equipment described in this instruction manual. The purpose of this manual is to instruct the user on the requirements, installation, and operation of the Matrix PureSine monitoring software. In case any error message occurs, most of them can be identified and troubleshot through this manual. In case any error message occurs, which does appear in this manual, you have to contact with local authorized service agent for troubleshooting and repair.



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1. Introduction

SineSync is the monitoring software for the ***Matrix PureSine***. Users can use this software to monitor the operation status of the ***PureSine*** and download the waveform, spectrum, and event log data from the ***PureSine***.

This manual explains how to install and operate ***SineSync***.

1-1 System Requirements

Basic requirements:

- ❑ Pentium-III 800M Hz, 256MB, HD500MB
- ❑ Microsoft Windows 2000
- ❑ Display 1024x768

Recommend requirement

- ❑ Pentium-4 1.8G Hz, 512MB, HD2GB
- ❑ Microsoft Windows XP
- ❑ Display 1024x768

2. Installing *SineSync*

The installation steps are as follows,

Step 1:

Double click Setup.exe to start the installation; refer to figure 2-1.

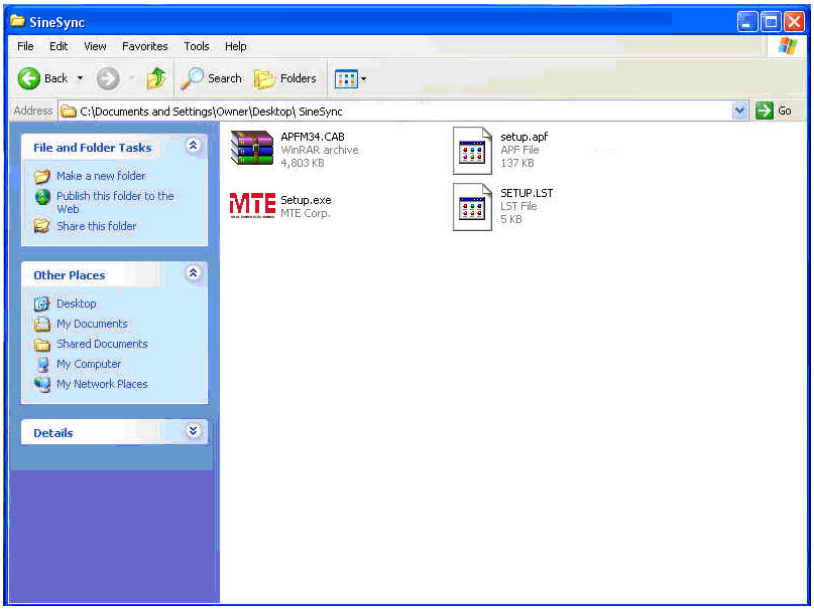


Figure 2-1

Step 2:

If you agree with the Software License Agreement, please click "ACCEPT" to continue the installation. If not, please click "DO NOT ACCEPT" to stop the installation; refer to figure 2-2.

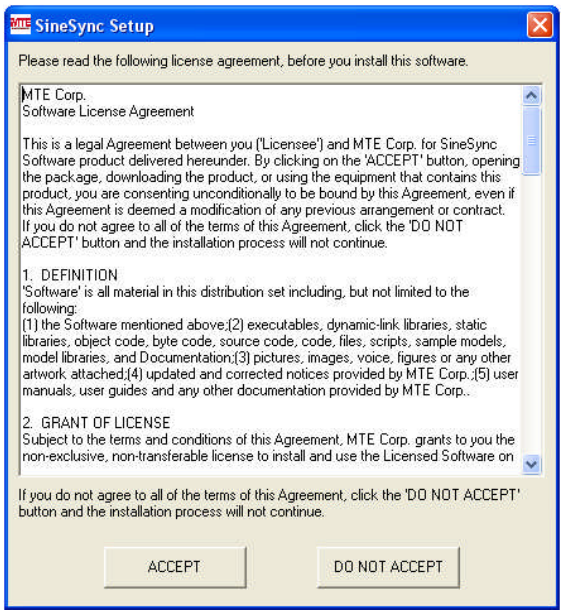


Figure 2-2

Step 3:

Click the "OK" button to continue the installation; refer to figure 2-3.

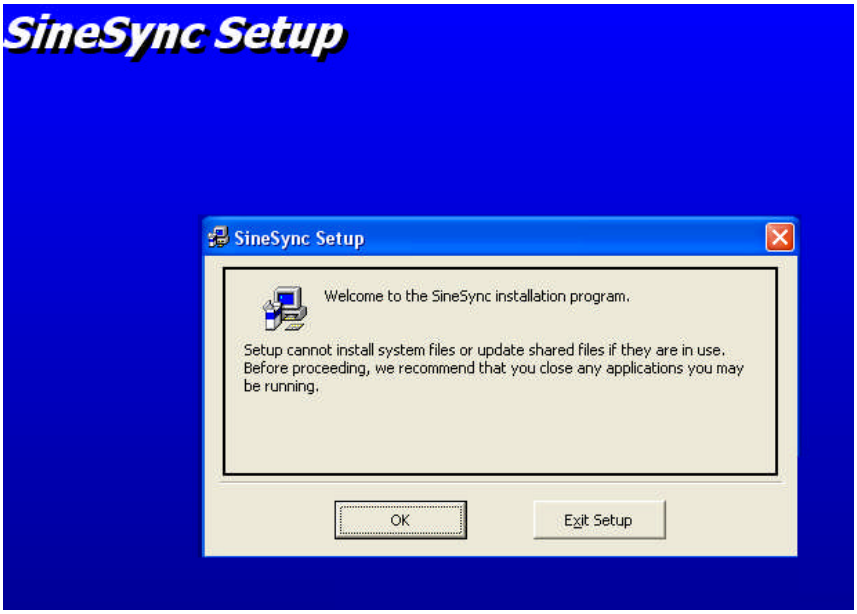


Figure 2-3

Step 4:

Change the directory if desired to a specified destination directory and then click  button to install this program; refer to figure 2-4.

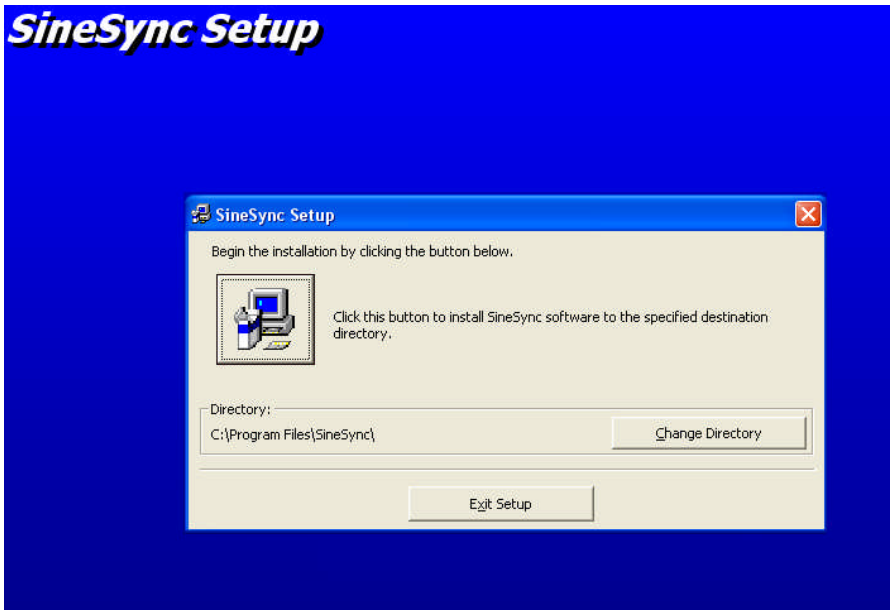


Figure 2-4

Step 5:

Enter the program group name and click the "Continue" button to continue installing the program; refer to figure 2-5.

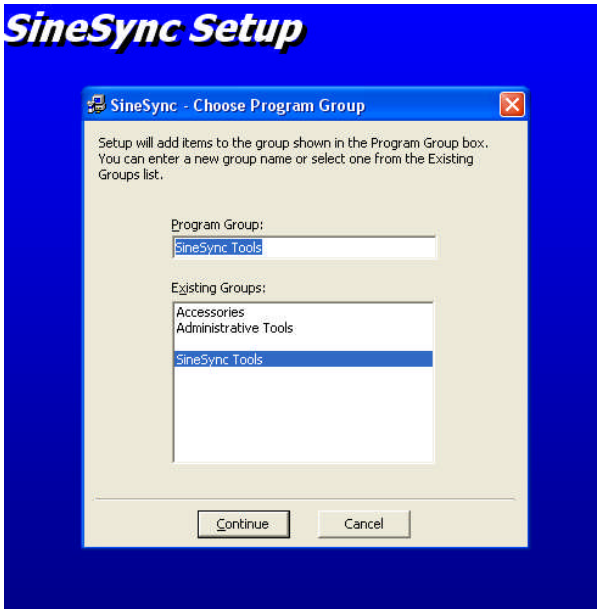


Figure 2-5

Step 6:

SineSync has been successfully installed. Click the "OK" button to exit the installation; refer to figure 2-6.

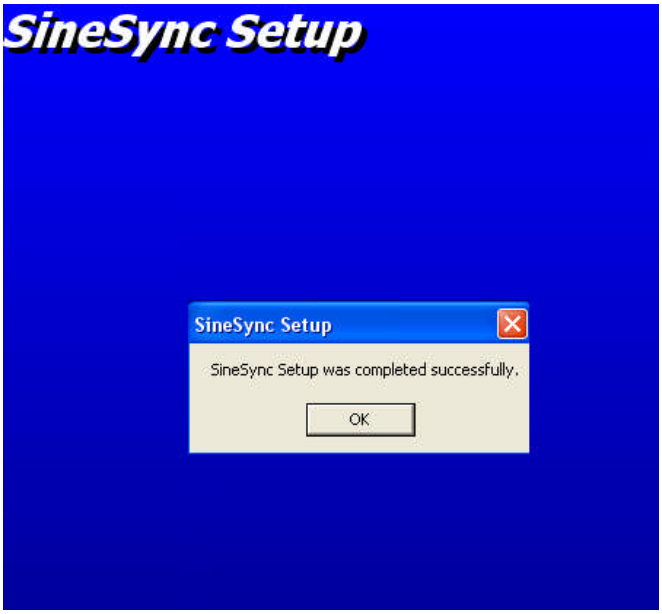


Figure 2-6

Step 7:

Now you can start the ***SineSync*** Monitoring Software.

3. Using *SineSync* Software

3-1 Getting Started with *SineSync*

Step 1:

Start ***SineSync*** by clicking on the "SineSync" icon; refer to figure 3-1.

Figure 3-1

Step 2:

Please key in the Serial number and Password, and then click the Register button to register this software; refer to figure 3-2. If the Serial number or Password is incorrect, ***SineSync*** cannot be started.

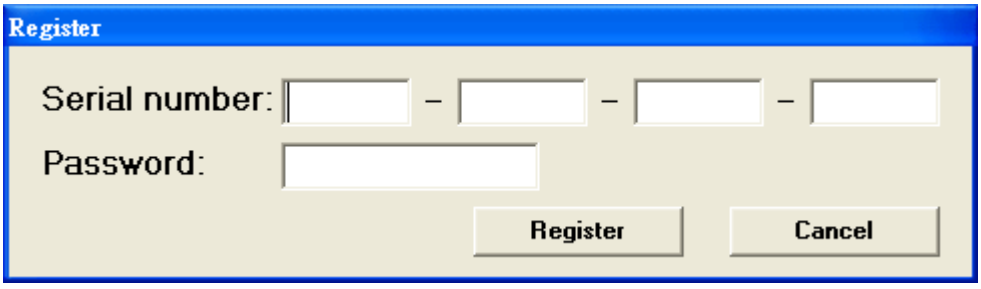


Figure 3-2

Step 3:

Figure 3-3 shows the setting window of the ***SineSync*** software

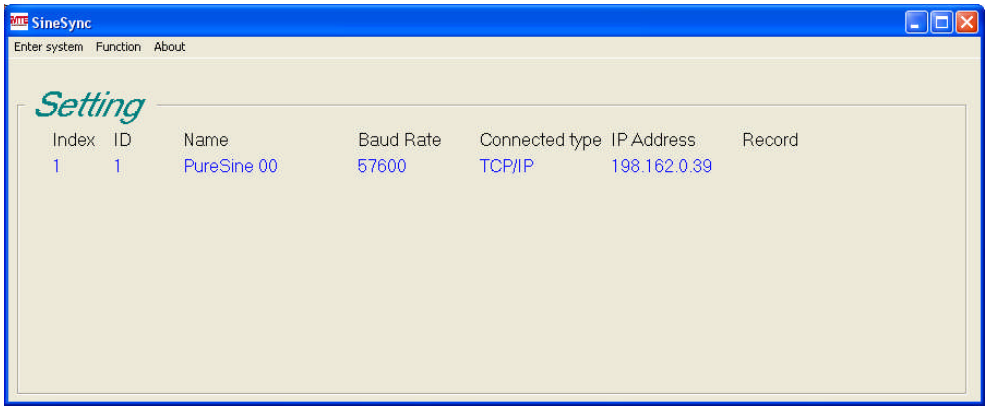


Figure 3-3

a. Enter system : Enters the ***SineSync*** main program window.

b. Function :

Add new APF : Add a ***PureSine*** Control Module to this monitoring system. The maximum number of units the monitoring system can handle is 255.

Delete APF : Delete a ***PureSine*** Control Module from the monitoring system.

Record interval of parameter : To set the record period for the power parameters, set the date you want to start and end the record time. The record interval time can be set from 1 to 60 minutes; refer to figure 3-4.

Note: The hard disk space is less than 100MB after recording 1 record per minute for one PureSine for one year.

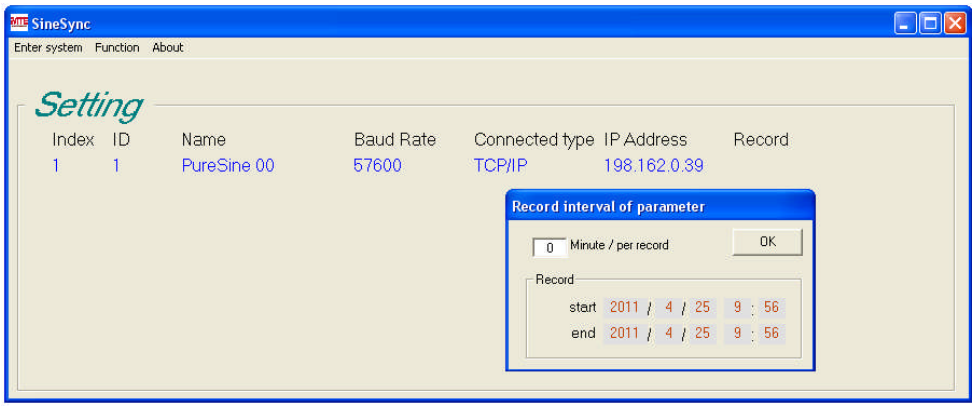


Figure 3-4

c. About : Displays the ***SineSync*** software information.

d. ID : This is the Identification number of the ***PureSine***. Each ***PureSine*** has an ID number that is stored in the EEPROM of the ***PureSine*** controller. This identification number has to be the same as the ID number that is stored in the EEPROM of the ***PureSine*** controller.

If the numbers are different, the computer cannot communicate with the ***PureSine***.

Users can use the "*SineSync Setting Tool*" to read and set the ID numbers. For further details, please refer to "*Matrix PureSine User's Manual*".

e. Name： User defined identification name for the ***PureSine***.

f. Baud Rate： Baud Rate has to be set to the same as the communication card.

Users can use "*SineSync Setting Tool*" to set the Baud Rate of the communication card. For further details, please refer to "*Matrix PureSine User's Manual*".

g. Connected type： COM, USB and TCP/IP are the three types of communication ports that can be selected. The correct type of communication port that is used to connect to the ***PureSine*** needs to be selected. For further details, please refer to Chapter 4 of this manual.

h. Record： When this option is selected; the ***PureSine*** power parameters are recorded.

Step 4:

When all of the settings are completed, please select "Enter system", which will open the ***SineSync*** main window; refer to figure 3-5. The functions of main window are described below.

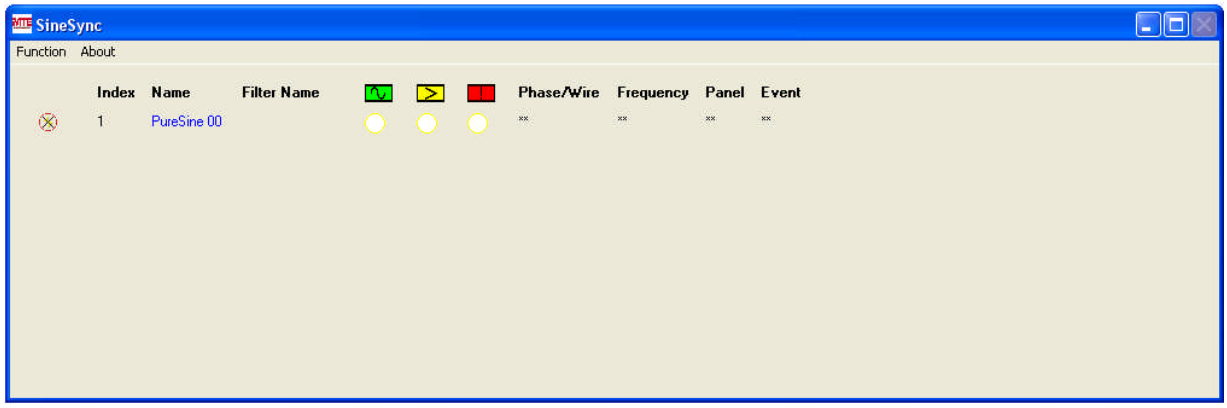


Figure 3-5

a. Communication Status：

Connected.
Disconnected.

b. Parameter Record Status：

When the power parameters record function is enabled, the icon will be showed. On the other hand, icon will be hidden. When the parameter data is recording, the icon will be blinking.

c. Name：

The user defined identification name of the ***PureSine***. Double click this name to see more detailed information.

d. Filter Name：

The identification name of the ***PureSine*** from the Control Unit. Double click this name to see more detail information.

e. Filtering：

When the ***PureSine*** is filtering, the indicator is green. When the ***PureSine*** is not filtering, this indicator is white.

f. Full Correcting :

When the ***PureSine*** operates under full load condition, the indicator is yellow. On the other hand, this indicator is white.

g. Error :

During possible external and internal fault conditions the indicator turns red and the ***PureSine*** should be stopped. On the other hand, this indicator is white.

h. Phase/Wire :

Displays the utility system, 3 phase 3 wire.

i. Freq. :

Displays the utility frequency, 50Hz or 60Hz.

j. Panel :

Displays the control panel type, LCD.

k. Event :

Displays the newest event or status of the ***PureSine***.

To change any of the original settings, select ***Function→Go to Setting Page*** to come back setting window.

Table 3-1 shows the lists of functions the ***SineSync*** is able to display with the LCD panel.

Table 3-1 Function list of the ***SineSync***

Function \ Panel	LCD Panel
Status	●
Identification	●
Parameters	●
Waveform	●
Spectrum	●
Event Log	●
Compensation Selection	●
Dry Contract	●
Parameter Record	●

● : Support this function

X : Without this function

3-2. Status & Information

Figure 3-6 shows the Status & Information window. All of the functions are described below.

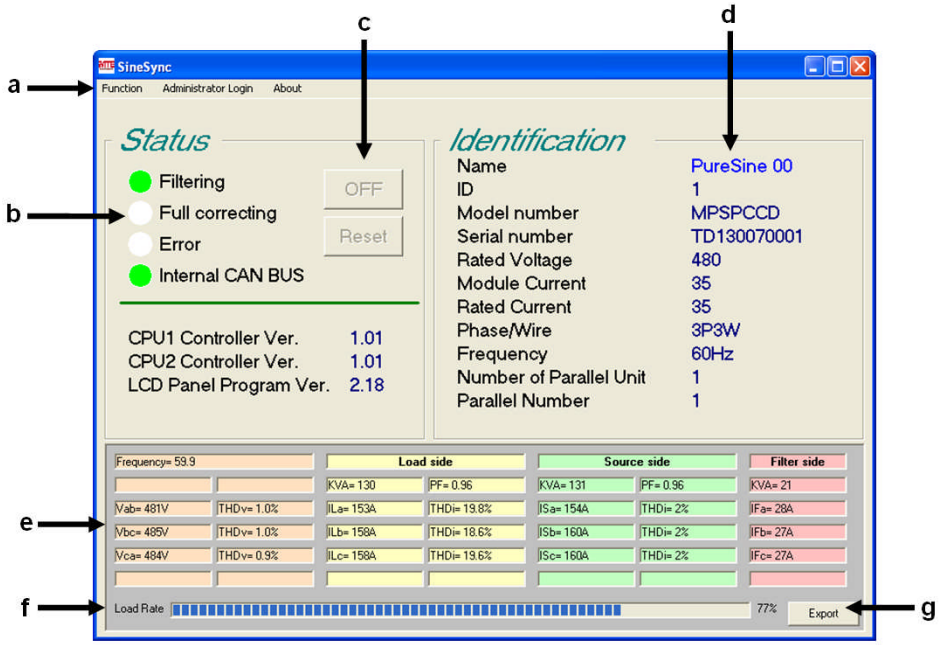


Figure 3-6

a. Functions :

Users can use this menu to switch between function windows.

1) **Status & Information**
2) **Waveform**
3) **Spectrum**
4) **Event log**
5) **Compensation Selection**
6) **Parallel Information**
7) **Dry Contact Setting**
8) **Parameter Record**

b. Status :

1) **Filtering :**
   When the ***PureSine*** is filtering, this indicator is green.

2) **Full Correcting :**
   When the ***PureSine*** operates under full load condition, this indicator is yellow.

3) **Error :**
   During possible external and internal fault conditions the indicator is red, the ***PureSine*** should be stopped.

4) **Internal CAN BUS：**
When the communication between the ***PureSine*** control board and the LCD panel is normal, the indicator is green. If the communication is abnormal, the indicator is red.

5) **CPU1 Controller Ver.：**
Displays the CPU1 controller version.

6) **CPU2 Controller Ver.：**
Displays the CPU2 controller version.

7) **LCD Panel Program Ver.：**
Displays the LCD Panel controller version.

c. Control Button：

1) **ON/OFF：**
Only the Authorized Administrator can click this button to control the ***PureSine.***

2) **RESET：**
Click this button to clear the error status.

d. Identification：Displays the information of the ***PureSine***.

1) **Name：**The identification name of the ***PureSine***.

2) **Filter Name：**The identification name of ***PureSine*** from the Control Unit***.***

3) **ID：**The Identification number of the ***PureSine***.

4) **Model Number：**Model number of the ***PureSine***.

5) **Serial Number：**Serial number of the ***PureSine***.

6) **Rated Voltage：**Rated voltage of the ***PureSine***.

7) **Module Current：**Rated current of the Power Module.

8) **Rated Current：**Rated current of the ***PureSine***.

9) **Phase/Wire：**Displays the utility system, 3P3W.

10) **Frequency：**Displays the utility frequency, 50Hz or 60Hz.

11) **Number of Parallel Unit：**Displays the number of parallel Control Modules.

12) **Parallel Number：**Displays the parallel number of the Control Module.

e. Parameters：Displays the power parameter information.

1) **Frequency：**Utility frequency.

2) **3 phase voltage：**

2-1) Vab, Vbc, Vca：RMS Voltage.

2-2) THDv：Total Harmonic Voltage Distortion.

3) **Load Side：**

3-1) KVA：Complex Power of the Load side.

3-2) PF：Power Factor of the Load side.

3-3) ILa, ILb, ILc, In：Load side RMS Current.

3-4) THDi：Total Harmonic Current Distortion of the Load Side.

4) Source Side：

4-1) KVA：Complex Power of the Source side.

4-2) PF：Power Factor of the Source side.

4-3) ISa, ISb, ISc, In：Source side RMS Current.

4-4) THDi：Total Harmonic Current Distortion of the Source Side.

5) Filter Side：

5-1) KVA：Complex Power of the Filter side.

5-2) IFa, IFb, IFc, In：Filter side RMS Current.

f. Load Rate： The percentage of the ***PureSine*** output current.

g. Export： Export the parameter data to a Comma Separated Value (CSV) file format.

3-3. Waveform

Figure 3-7 shows the Waveform window. This window can display waveforms for the voltages and currents of the Source, Load and Filter side.

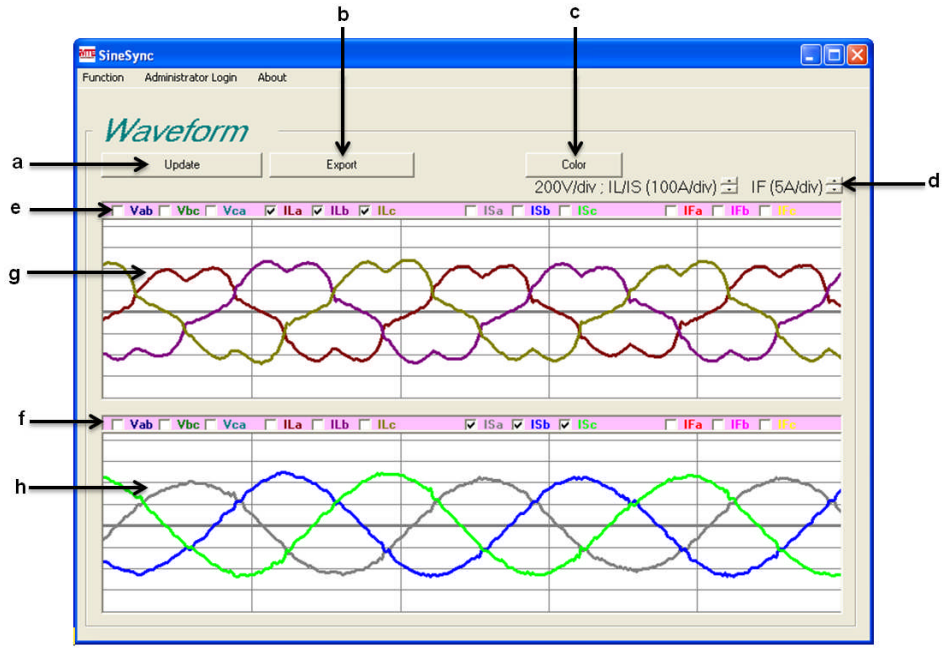


Figure 3-7

a. Update： Click the Update button to download the waveform from the ***PureSine***.

b. Export： Click the Export button to store the waveform data to a Comma Separated Value file.

c. Color： Click the Color button to change the waveform color.

d. Scale： Click the up/down button to change the current scale.

1) IL/IS：Source side current and Load side current.

2) IF：Filter side current.

e. Menu for waveform window 1.

1) Vab, Vbc, Vca：3 phase line voltage waveform.

2) ILa, ILb, ILc, ILn：3 phase current waveform of Load side.

3) ISa, ISb, ISc, ISn：3 phase current waveform of Source side.

4) IFa, IFb, IFc, IFn：3 phase current waveform of Filter side.

f. Menu for waveform window 2.

g. Display of waveform window 1.

h. Display of waveform window 2.

3-4. Spectrum

Figure 3-8 and figure 3-9 are the Spectrum windows. Figure 3-8 shows Spectrum in as a graph and figure 3-9 shows Spectrum in data table. User can use this function to view the spectrum of the voltages and currents.

a. Update： Click the Update button to download the spectrum data from the ***PureSine***.

b. Export： Click the Export button to store the waveform data in a Comma Separated Value file.

c. Color： Click the Color button to change the color of spectrum bar.

d. Spectrum： Click the Spectrum button and to see the spectrum in a graph.

e. Table： Click the Table button and to see the spectrum data in table.

f. The Spectrum menu to choose the voltages and currents.

1) Vab, Vbc, Vca：3 phase line voltage.

2) ILa, ILb, ILc：3 phase current of the Load side.

3) ISa, ISb, ISc：3 phase current of the Source side.

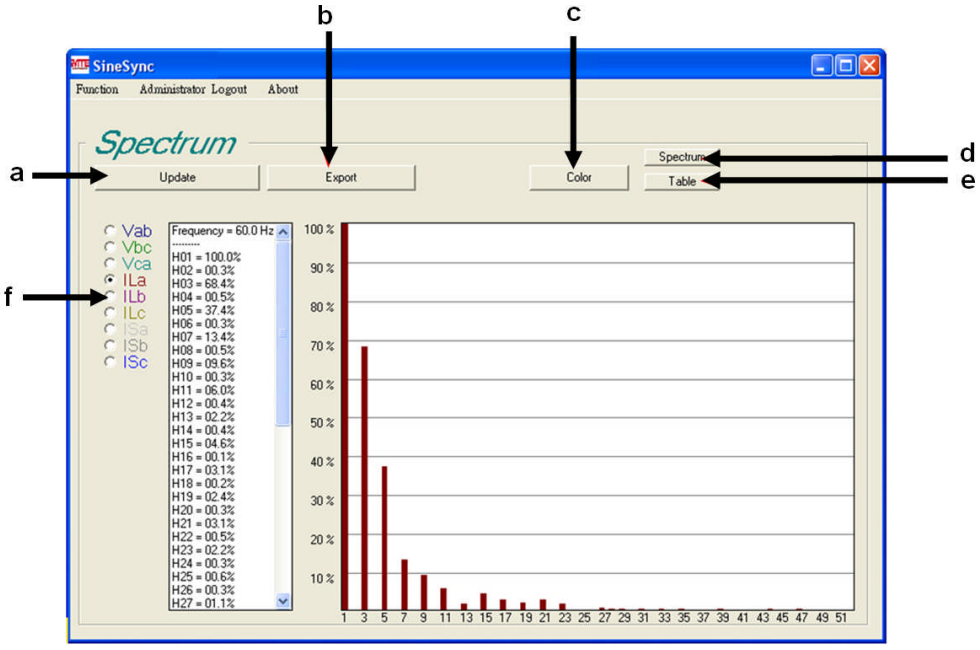
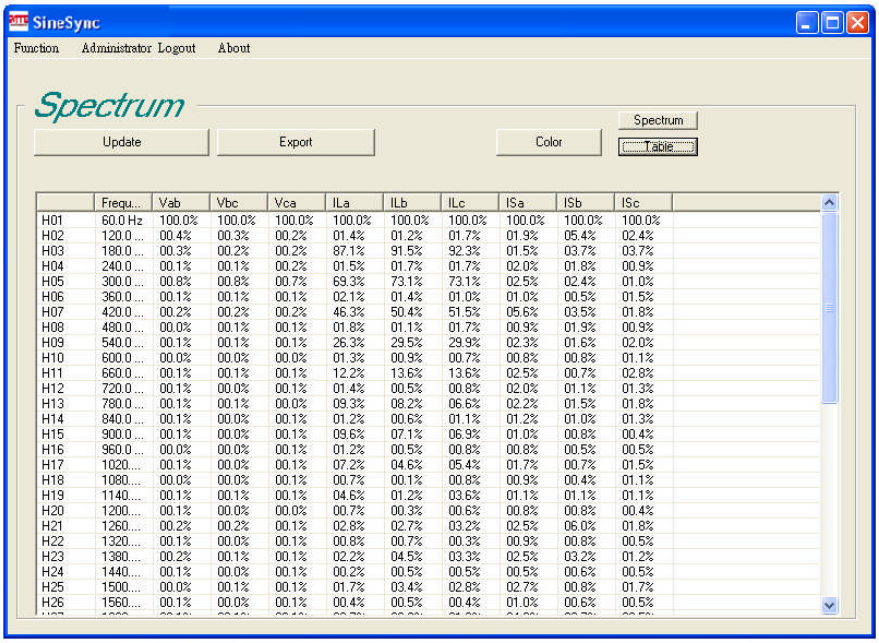


Figure 3-8



	Frequ...	Vab	Vbc	Vca	ILa	ILb	ILc	ISa	ISb	ISc
H01	60.0 Hz	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
H02	120.0 ...	00.4%	00.3%	00.2%	01.4%	01.2%	01.7%	01.9%	05.4%	02.4%
H03	180.0 ...	00.3%	00.2%	00.2%	87.1%	91.5%	92.3%	01.5%	03.7%	03.7%
H04	240.0 ...	00.1%	00.1%	00.2%	01.5%	01.7%	01.7%	02.0%	01.8%	00.9%
H05	300.0 ...	00.8%	00.8%	00.7%	69.3%	73.1%	73.1%	02.5%	02.4%	01.0%
H06	360.0 ...	00.1%	00.1%	00.1%	02.1%	01.4%	01.0%	01.0%	00.5%	01.5%
H07	420.0 ...	00.2%	00.2%	00.2%	46.3%	50.4%	51.5%	05.6%	03.5%	01.8%
H08	480.0 ...	00.0%	00.1%	00.1%	01.8%	01.1%	01.7%	00.9%	01.9%	00.9%
H09	540.0 ...	00.1%	00.1%	00.1%	26.3%	29.5%	29.9%	02.3%	01.6%	02.0%
H10	600.0 ...	00.0%	00.0%	00.0%	01.3%	00.9%	00.7%	00.8%	00.8%	01.1%
H11	660.0 ...	00.1%	00.1%	00.1%	12.2%	13.6%	13.6%	02.5%	00.7%	02.8%
H12	720.0 ...	00.1%	00.0%	00.1%	01.4%	00.5%	00.8%	02.0%	01.1%	01.3%
H13	780.0 ...	00.1%	00.1%	00.0%	09.3%	08.2%	06.6%	02.2%	01.5%	01.8%
H14	840.0 ...	00.1%	00.0%	00.1%	01.2%	00.6%	01.1%	01.2%	01.0%	01.3%
H15	900.0 ...	00.1%	00.0%	00.1%	09.6%	07.1%	06.9%	01.0%	00.8%	00.4%
H16	960.0 ...	00.0%	00.0%	00.1%	01.2%	00.5%	00.8%	00.8%	00.5%	00.5%
H17	1020....	00.1%	00.0%	00.1%	07.2%	04.6%	05.4%	01.7%	00.7%	01.5%
H18	1080....	00.0%	00.0%	00.1%	00.7%	00.1%	00.8%	00.9%	00.4%	01.1%
H19	1140....	00.1%	00.1%	00.1%	04.6%	01.2%	03.6%	01.1%	01.1%	01.1%
H20	1200....	00.1%	00.0%	00.0%	00.7%	00.3%	00.6%	00.8%	00.8%	00.4%
H21	1260....	00.2%	00.2%	00.1%	02.8%	02.7%	03.2%	02.5%	06.0%	01.8%
H22	1320....	00.1%	00.0%	00.1%	00.8%	00.7%	00.3%	00.9%	00.8%	00.5%
H23	1380....	00.2%	00.1%	00.1%	02.2%	04.5%	03.3%	02.5%	03.2%	01.2%
H24	1440....	00.1%	00.0%	00.1%	00.2%	00.5%	00.5%	00.5%	00.6%	00.5%
H25	1500....	00.0%	00.1%	00.1%	01.7%	03.4%	02.8%	02.7%	00.8%	01.7%
H26	1560....	00.1%	00.0%	00.1%	00.4%	00.5%	00.4%	01.0%	00.6%	00.5%

Figure 3-9

3-5. Event log

Figure 3-10 shows the Event log window. Users can download the event logs from the ***PureSine***.

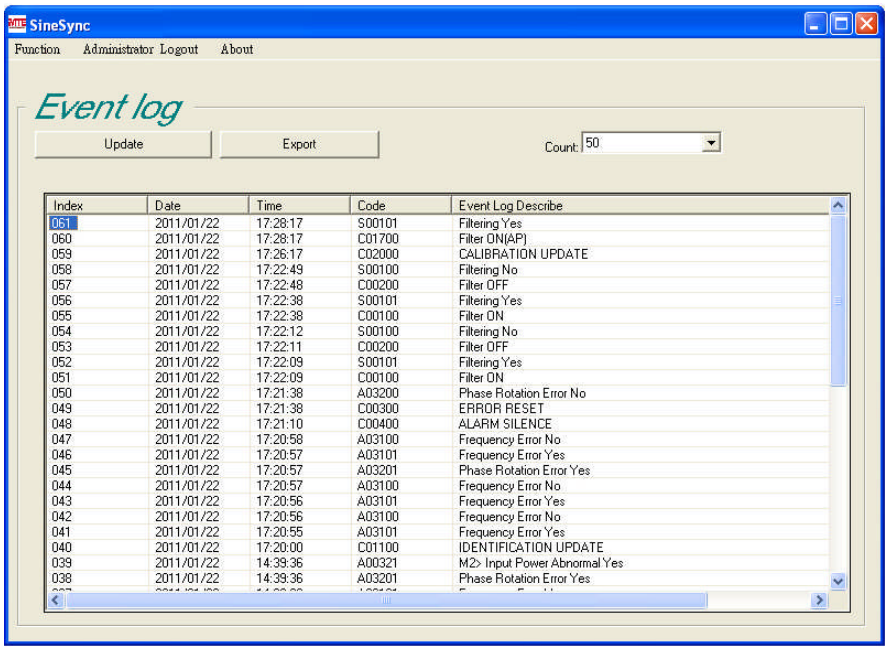


Figure 3-10

a. Update： Click the Update button to download the event log data from the ***PureSine***.

b. Export： Click the Export button to store the event log data in a Comma Separated Value file.

c. Count： Choose the number of event logs to download.

3-6. Compensation Selection

Figure 3-11 and figure 3-12 show the Compensation Selection window.

NOTE

This window only provides the user the ability to view the compensation settings of the *PureSine*. The user cannot change any of these settings. If the User wants to change the setting, please contact a local authorized service agent.

3-6-1. Setting Function

A. Compensation Setting

Table 3-2 Compensation Setting Descriptions

Item	Function Description	Option or Input Range	Default
Harmonic Compensation	Enable or disable the Harmonic Compensation.	ENABLE or DISABLE	ENABLE
Power Factor Correction	Enable or disable the Power Factor Correction.	ENABLE or DISABLE	ENABLE
Compensation Priority	To set the priority of the compensation, either Harmonic Compensation or Power Factor Correction.	Harmonic or PFC	Harmonic
Reactive Power	To set the reactive power compensation mode. Dynamic when Harmonic Compensation is enabled. Fixed when Power Factor Correction is enabling.	Dynamic or Fixed	Dynamic
Target DPF (cos ¢)	To set the Target DPF cos¢$_1$ when Harmonic Compensation is enabled.	┼: leading ξ : lagging 0.7~1.0	ξ0.95
Fixed KVAR	To set the Fixed KVAR when Power Factor Correction is enabled.	┼: leading ξ : lagging Please refer to table 3-3 for input range.	0
Balance Utility	The Balance Utility will compensate for any unbalance from the utility current. **This function is not available at this time.**	ENABLE or DISABLE	DISABLE
Application Mode	***PureSine*** has several control parameters for different type of loads to obtain the best performance.	0~6 Please refer to table 3-4.	5

Table 3-3 Fixed KVAR Input Range

PureSine Model		Input Range (KVAR)
Voltage Rated	Current Rated	
480V	35 A	∓ 24.2 ~ ∓ 24.2 (∓ 100% ~ ∓100%)
	60 A	∓ 41.6 ~ ∓ 41.6 (∓ 100% ~ ∓100%)
	90 A	∓ 62.4 ~ ∓ 62.4 (∓ 100% ~ ∓100%)
	120 A	∓ 83.1 ~ ∓ 83.1 (∓ 100% ~ ∓100%)

Table 3-4 Application Mode Description

Application Mode	Description
0	For single phase rectifier.
1	For 3P3W 6pulse rectifier.
2	For 3P3W 6pulse and single phase rectifiers.
3	For 3P3W 6pulse rectifier with even order harmonic.
4	For single phase rectifier with even order harmonic.
5	For all type loads.
6	For all type loads.

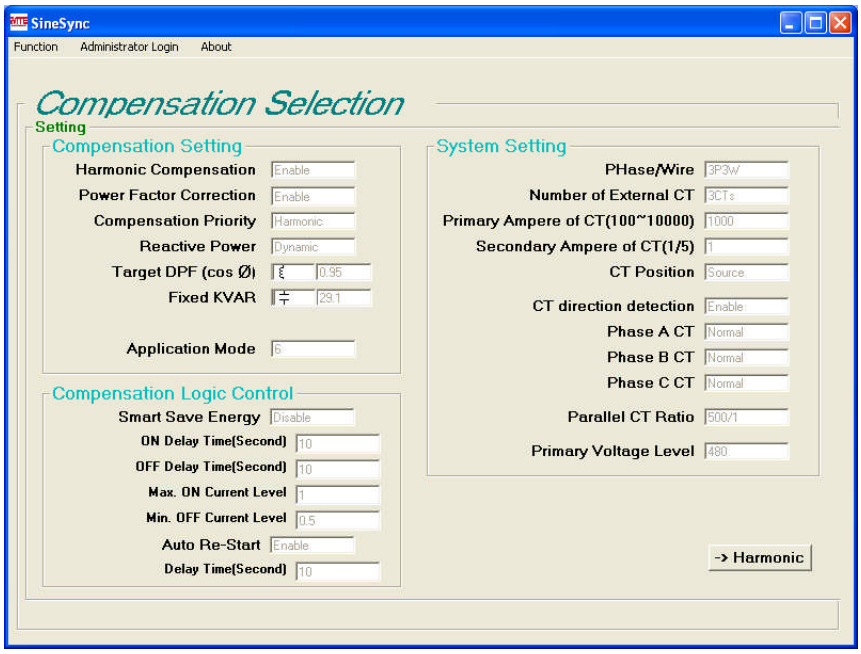


Figure 3-11

B. Compensation Logic Control

Table 3-5 Compensation Logic Control Description

Item		Function Description	Option or Input Range	Default
Smart Save Energy	Smart Save Energy	When this function is enabled, the filter can start-up or shutdown automatically, according to the load current level. When the load current is less than Min. OFF Current Level, or the load current becomes greater than Max. ON Current Level, the filter will shut down automatically.	ENABLE or DISABLE	DISABLE
	ON Delay Time	The delay time for automatic start-up.	0~3600 Seconds	10
	OFF Delay Time	The delay time for automatic shutdown.	0~3600 Seconds	10
	Max. ON Current Level	The current level for automatic start-up. For example, if the Max. ON Current Level is 1.5 for a 60A ***PureSine***, it means the load current has to greater than 90A. This current level has to greater than Min. OFF Current Level.	0.1~10.0	1.0
	Min. OFF Current Level	The current level for automatic shutdown. For example, if the Min. OFF Current Level is 0.5 for a 60A ***PureSine***, it means the load current has to greater than 30A. This current level has to less than Max. ON Current Level.	0.1~10.0	0.5
Auto Re-Start	Auto Re-Start	When this function is enabled, the ***PureSine*** is allowed to automatically re-start when some abnormal conditions return to normal.	ENABLE or DISABLE	ENABLE
	Delay Time	The delay time for automatic re-start.	0~3600 Seconds	10

C. System Setting

Table 3-6 System Setting Description

Item	Function Description	Option or Input Range	Default
Phase/Wire	Select the 3P3W power system for the ***PureSine*** connection. A neutral line doesn't need to be connected.	3P3W	3P3W
Number of External CT	Select 2 or 3 external CTs that will be installed at Source or Load side. 3 CTs is preferred.	2 CTs 3 CTs	3 CTs
Primary Ampere of CT	Set the primary current rating of the External CT.	100~10000	1000
Secondary Ampere of CT	Set the secondary current rating of External CT. The Control Module can accept a 1A or 5A rating. If 5A CT will be used, an optional auxiliary CT card is needed.	1 A 5 A	Auto Detection
CT Position	Select the location where the External CTs are installed.	Load Source	Source
CT Direction Detection	When this function is enabled, the ***PureSine*** will diagnose the polarity of External CT. If the polarity is incorrect, the ***PureSine*** will display an alarm and will not start.	ENABLE DISABLE	ENABLE
Phase A CT	If the polarity of the External CT of Phase A is incorrect, this function can change the CT polarity without reconnecting the CT wires.	Normal Reverse	Normal
Phase B CT	If the polarity of the External CT of Phase B is incorrect, this function can change the CT polarity without reconnecting the CT wires.	Normal Reverse	Normal
Phase C CT	If the polarity of the External CT of Phase C is incorrect, this function can change the CT polarity without reconnecting the CT wires.	Normal Reverse	Normal
Parallel CT Ratio	When the Control Modules are connected in parallel each phase has to install 1 CT.	500/1 1000/1 2000/1	500/1
Primary Voltage Level	Different voltage levels can be applied to the ***PureSine*** with an external transformer that is installed at the input side of the filter. When an external transformer is used, the voltage level should be set to primary voltage of the transformer.	190~6600V	480

3-6-2. Harmonic Function

a. Order：

Shows the harmonic order that the ***PureSine*** will compensate. The maximum number of harmonic orders that can be selected at once is 12.

b. Active：

The function shows the harmonic orders which are compensated by the ***PureSine***. The filter will disable the harmonic order if resonance occurs between the ***PureSine*** and load.

c. Reduction (%)：

The function sets the harmonic current reduction ratio.

For example, when the load 5th harmonic current is 10A and the reduction is set 80%, the ***PureSine*** only compensate 8A of the 5th harmonic current.

d. High Order Compensation：

The function enables the ***PureSine*** to compensate from 32nd to 51st harmonic orders.

Figure 3-12

3-7. Parallel Information

Figure 3-13 shows the Parallel Information window on a system level. It will show the status of Control Modules and the rated current of the total Power Modules which are connected to a Control Module. As a reference, one Control Module can be connected with a total 4 numbers Power Module totaling a maximum compensating current of 120 Amps. 8 of such units can be paralleled to offer a maximum compensating current of 960 Amps.

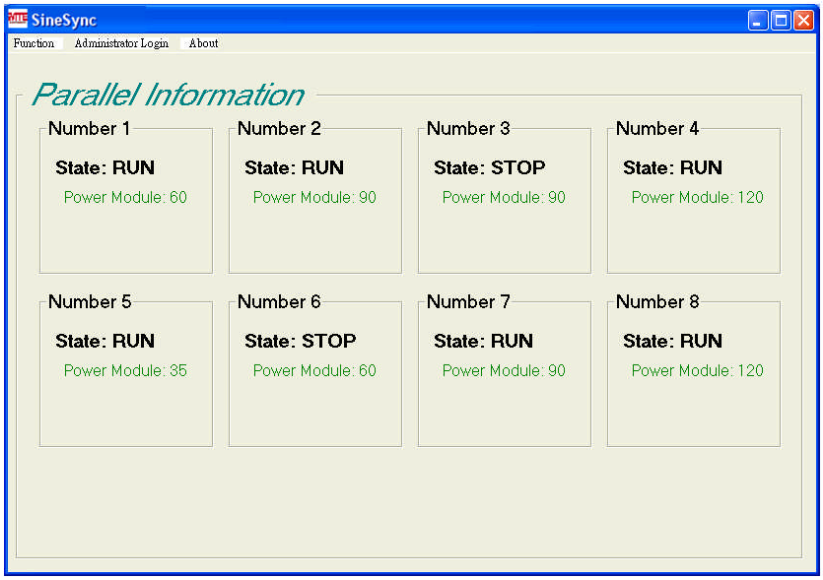


Figure 3-13

When user connects to the Centralized Control Unit, it will show the window seen in Figure 3-14.

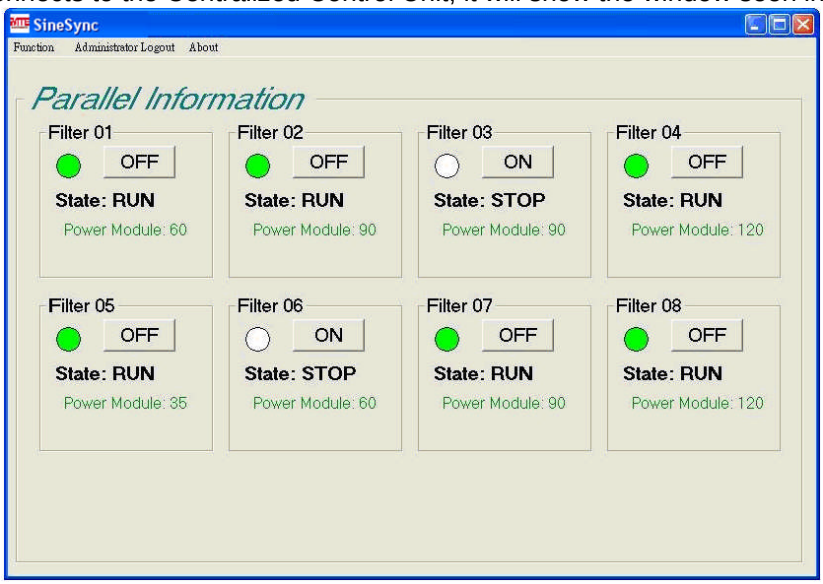


Figure 3-14

Indicator：

This indicator will be green when the ***PureSine*** turns on, otherwise it will be white.
When one of the units experiences an abnormal condition, this indicator will become red.

NOTE

ON/OFF Button to turn on and off each ***PureSine*** is only available for Authorized Administrators.

3-8. Dry Contact Setting

Figure 3-15 shows the Dry Contact Setting window. Users can define the actions of each dry contact with this window. Click the "Edit" button to enter the window to modify the dry contact settings (figure 3-16). There are 38 action events that can be set (refer to table 3-7) and the action mode can be set to either NO (Normal Open) or NC (Normal Close). After finish defining the settings, click the "Update" button to store the new settings.

The default settings for the dry contacts are listed in Table 3-8.

The Remote Control sets the function of input dry contact. For a detailed description of the input dry contact refer to Section 2-1-2(D) of the "Matrix *PureSine User's Manual*".

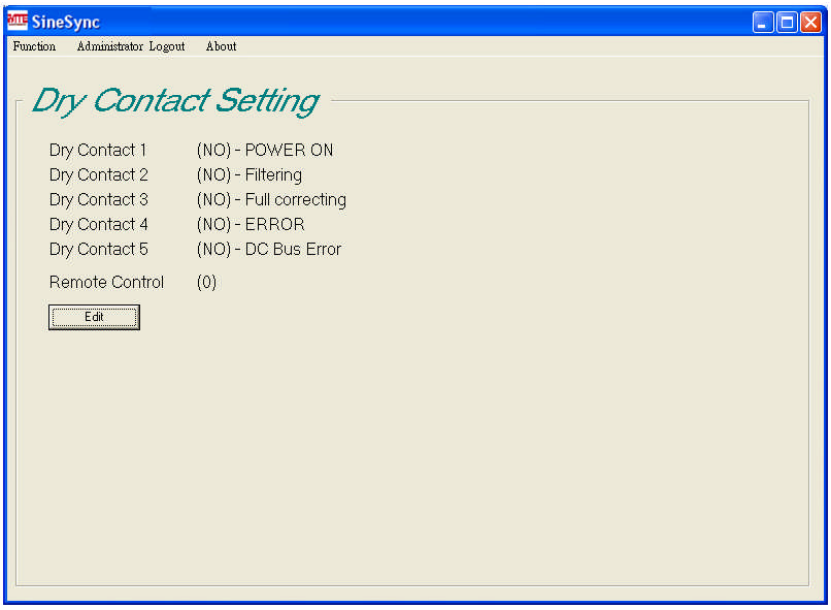


Figure 3-15

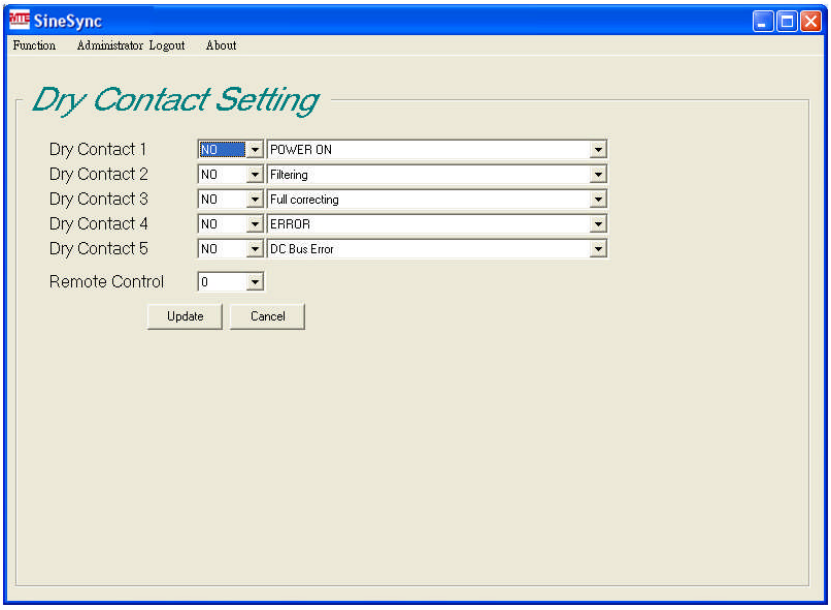


Figure 3-16

Table 3-7 Event list

Item	Event	Item	Event
1	POWER ON	2	Filtering
3	Full correcting	4	ERROR
5	MCCB Tripped	6	Fuse Blown
7	Input Power Abnormal	8	IGBT Fault
9	High Frequency Resonance	10	Over Peak Current
11	Over Current	12	Over Temperature(Power)
13	Fan Fault	14	Temp. Sensor Disconnected
15	DC Bus Error	16	DC Bus Under Voltage
17	DC Bus Over Voltage	18	External CTA Reversed
19	External CTB Reversed	20	External CTC Reversed
21	Parallel CTA Reversed	22	Parallel CTB Reversed
23	Parallel CTC Reversed	24	System Voltage Abnormal
25	System Under Voltage	26	System Over Voltage
27	Frequency Error	28	Phase Rotation Error
29	Control Board Error	30	Control Board EEPROM Error
31	Control Panel EEPROM Error	32	Power Supply Error
33	Current Cable Disconnected	34	CAN Bus Disconnected
35	Parallel Disconnected	36	Parallel ID Duplicated
37	Parallel Setting Error	38	Over Temperature(Control)

Table 3-8 The Default Definition of the Output Dry Contacts

Dry Contact	Event	Active
Dry Contact 1	POWER ON	NO (Normal Open)
Dry Contact 2	Filtering	NO (Normal Open)
Dry Contact 3	Full correcting	NO (Normal Open)
Dry Contact 4	ERROR	NO (Normal Open)
Dry Contact 5	DC Bus Error	NO (Normal Open)

3-9. Parameter Record

Figure 3-17 shows the Parameter Record window. This window displays the power parameter records.

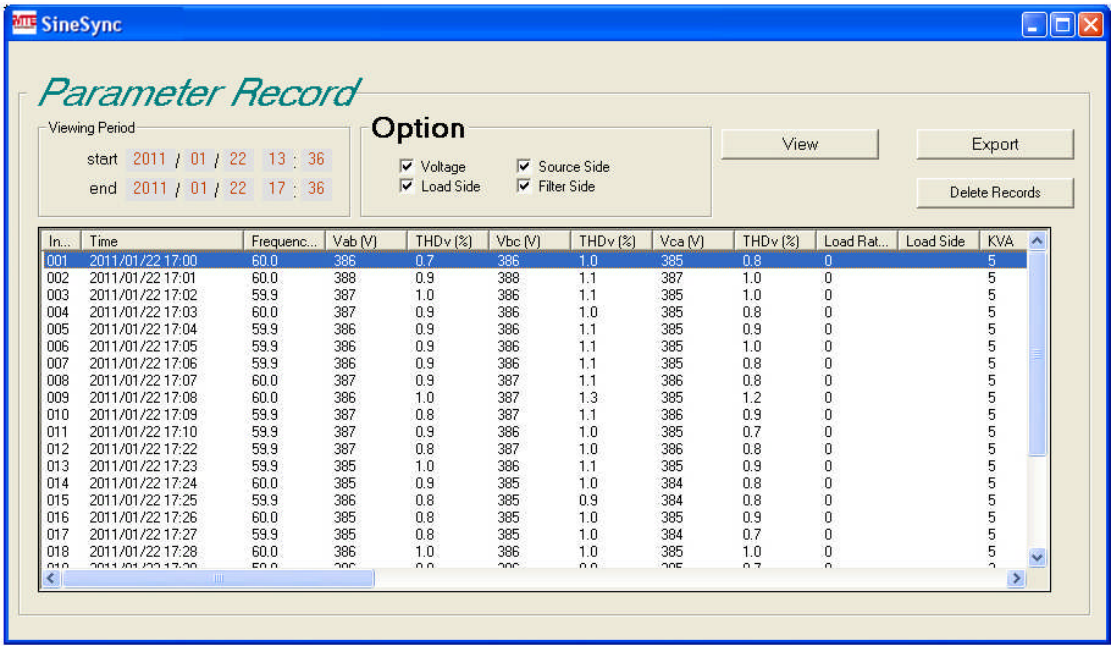


Figure 3-17

a. Viewing Period : Sets the start and end viewing times.

b. Option : Selects the power parameters the user wants to view.

c. View : Click the "View" button to load the power parameters data.

d. Export : Click the "Export" button to store the power parameters data in a Comma Separated Value (CSV) file.

e. Delete Records : Click the "Delete Records" button to set the start and end time of the records desired to be deleted. See Figure 3-19. Click the "Delete" button to delete the power parameters data from the database.

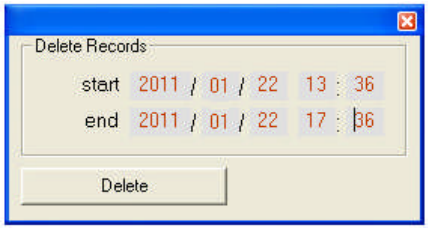


Figure 3-18

3-10. Disconnected

When the communication between the computer and the ***PureSine*** is disconnected, the ***SineSync*** main window will display the disconnected symbol and a **de-link** message. Please refer to figure 3-19 and figure 3-20.

When the communication is disconnected, please check if the communication cable between the computer and ***PureSine*** is properly connected and that the communication card is operating properly. If the problem persists, please contact a local authorized service agent.

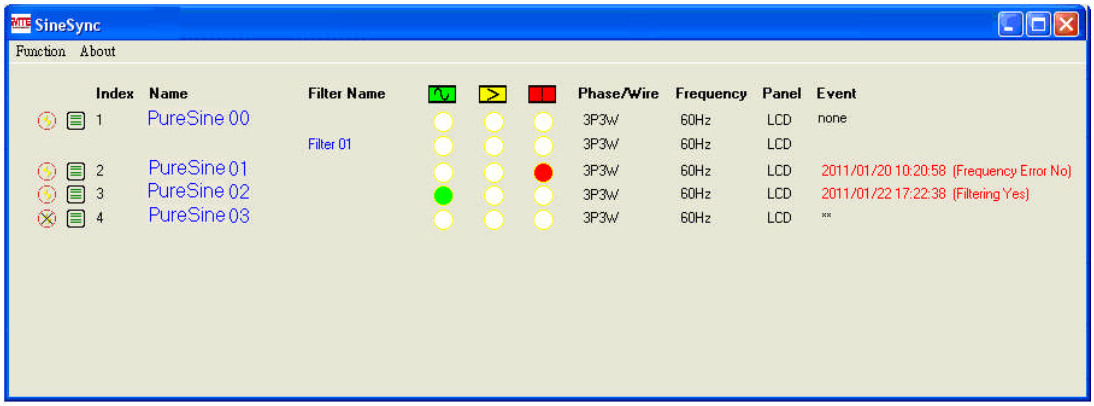


Figure 3-19

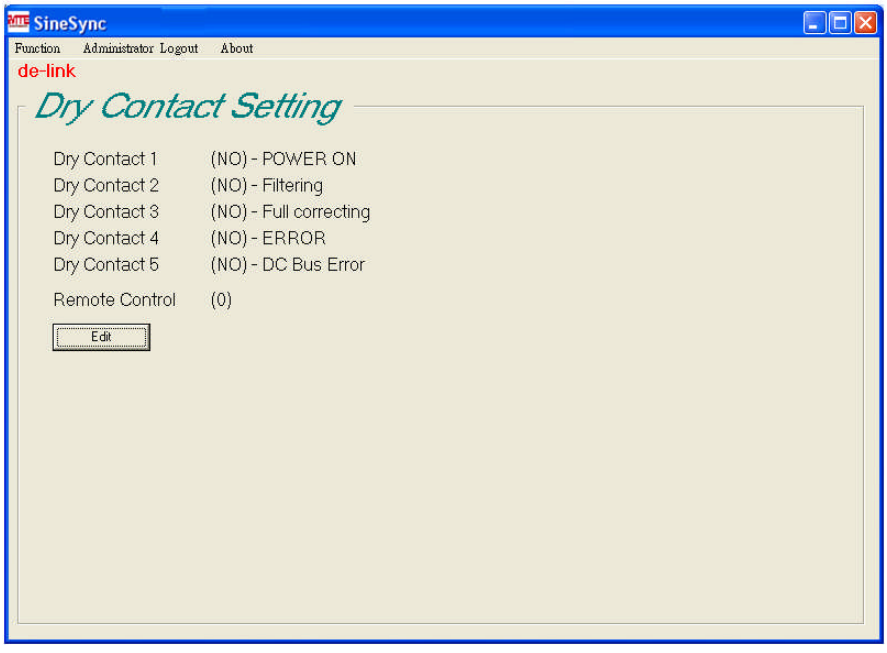


Figure 3-20

4. *SineSync* Communication Port Setting

4-1. TCP/IP Setting

When the communication port type is TCP/IP, the user has to set the ID, Baud Rate, and IP Address. The ID number has to the same as the ***PureSine,*** and the Baud Rate and IP Address have to the same as the communication card of the ***PureSine***.

Note: The TCP/IP communication port communicates with the external network by port 1000. If you have to communicate with an external network, please ask your system administrator to release port 1000.

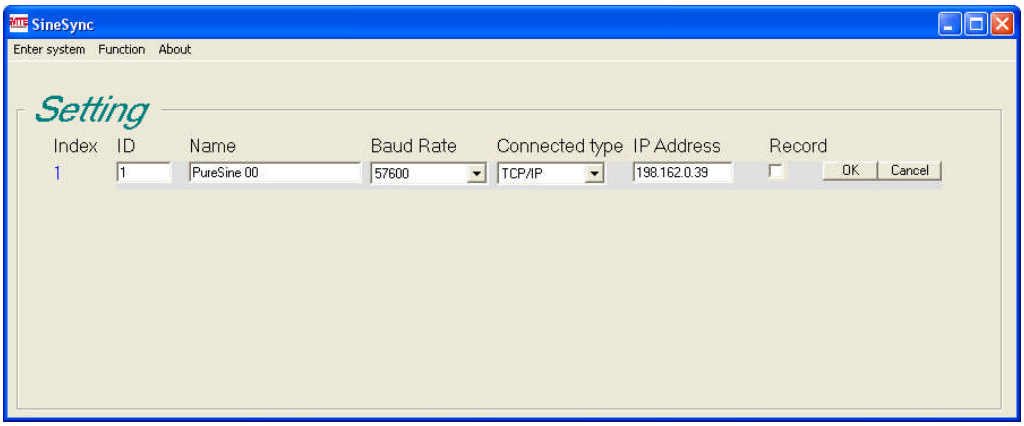


Figure 4-1

4-2. USB Setting

When the communication port type is USB, the user has to set the ID and the Baud Rate. The ID number has to the same as the ***PureSine,*** and the Baud Rate has to the same as the communication card of the ***PureSine***.

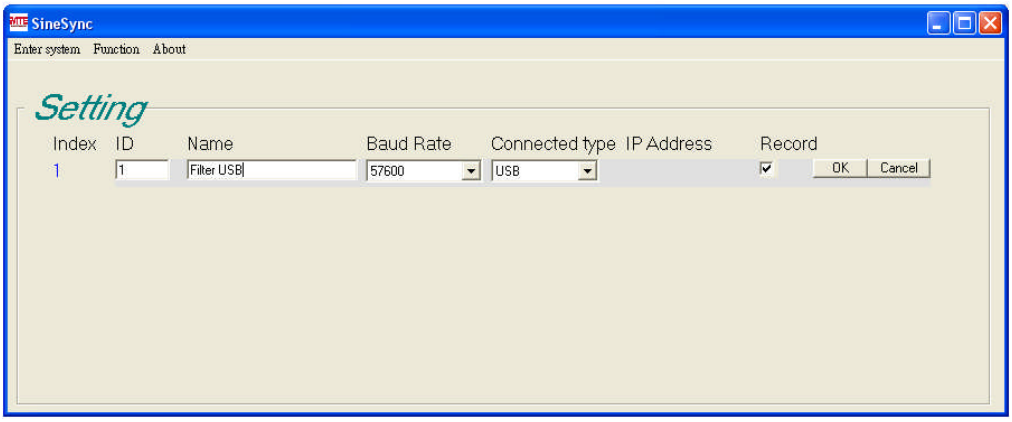


Figure 4-2

4-3. COM(RS-232) Setting

When the communication port type is COMx, the user has to set the ID and the Baud Rate. The ID number has to the same as the ***PureSine,*** and the Baud Rate has to the same as the communication card of the ***PureSine***. If the user is using a USB to RS232 converter, please ensure that the COM port setting is correct.

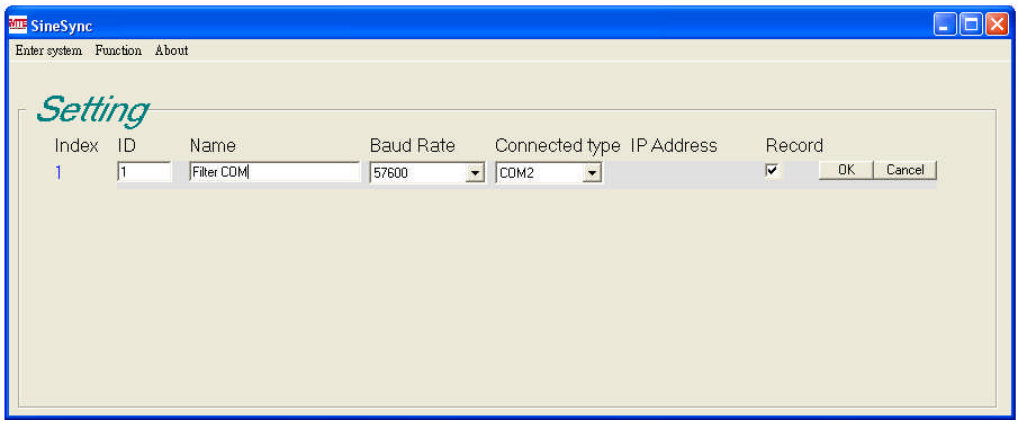


Figure 4-3

4-4. RS-485/422 Setting

When the user uses the RS-485/422 communication card, the communication port type is COMx. The user has to set the ID and the Baud Rate. The ID number has to the same as the ***PureSine***, and the Baud Rate has to the same as the communication card of the ***PureSine***.