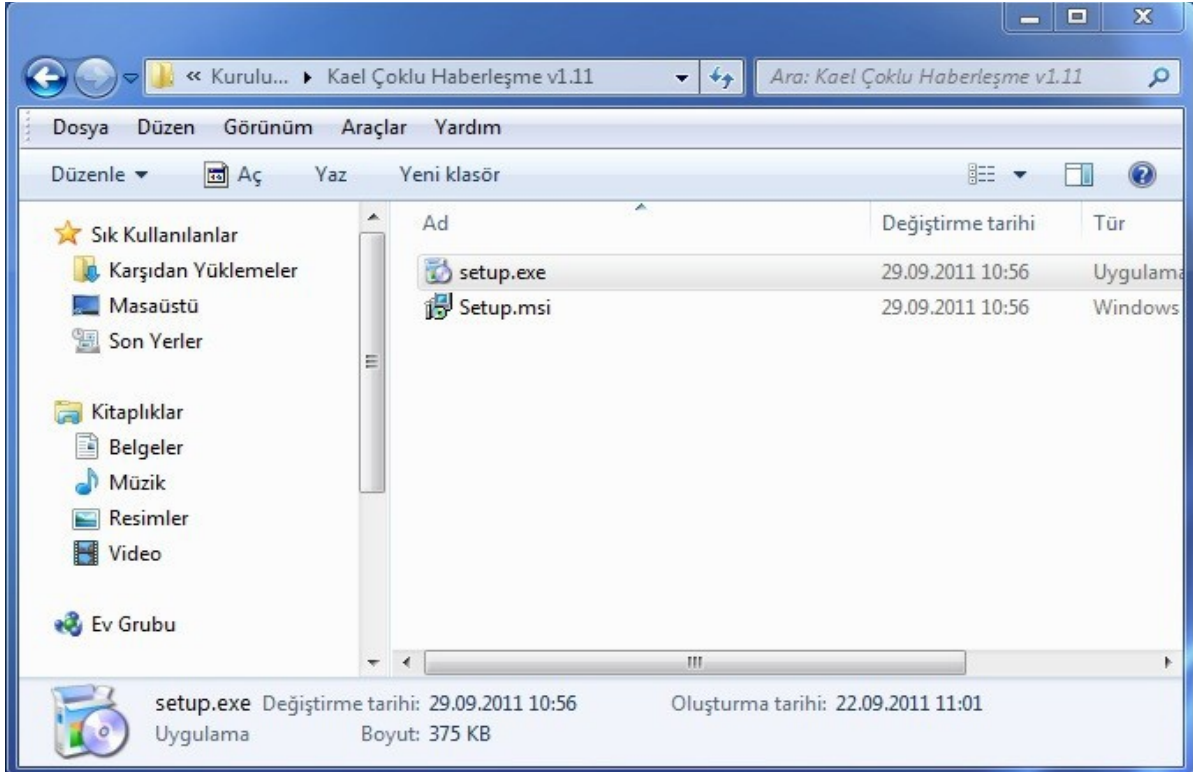


## KAEL TRACKING SET UP

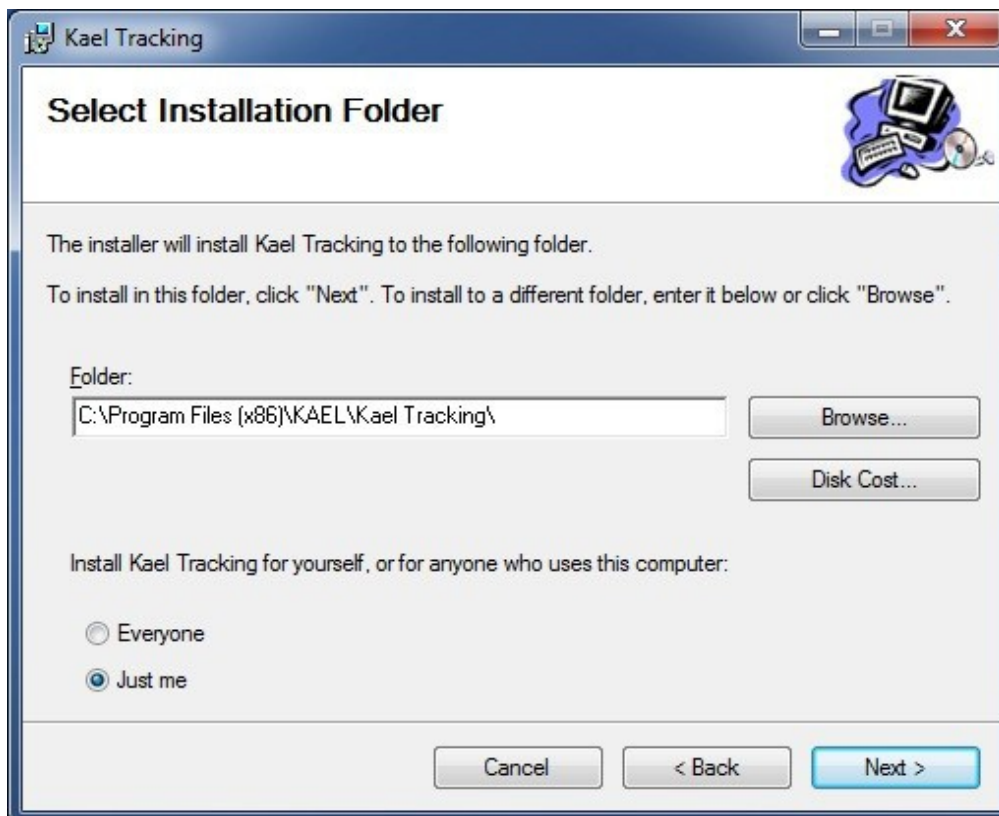
1. Download the Kael Tracking Software program from <https://www.kael.com.tr/eng/yazilimlar.php>. Double click on the setup file to start the installation.



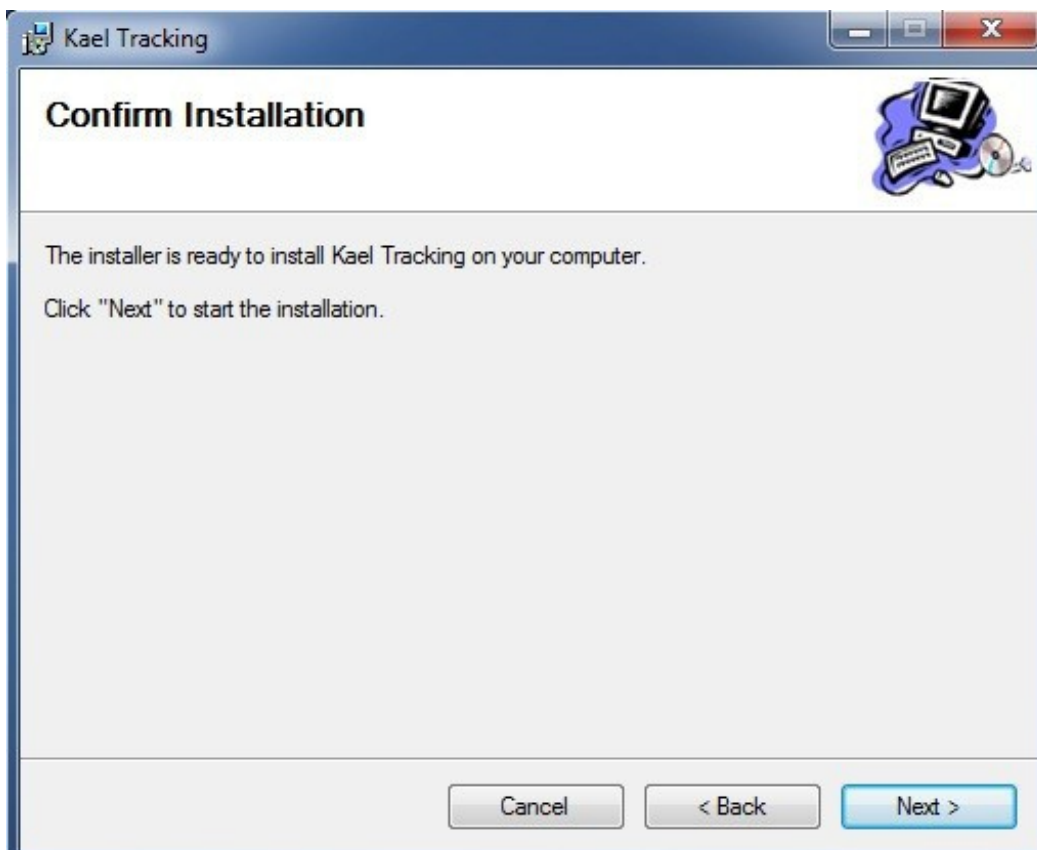
2. When you run the software, you will see the welcome screen in the picture on your screen. Please click the "Next" button.



3. Then you will see the installation folder and user selection screen on your screen. Please make your settings and click the "Next" button.



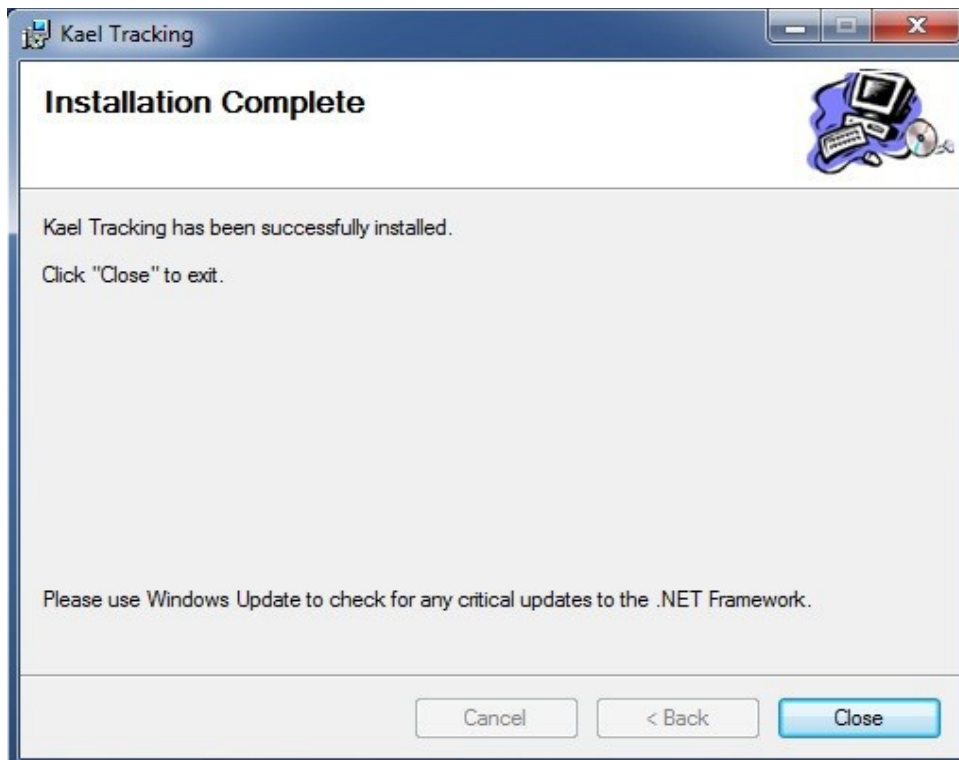
4. Click "Next" button to start installation.



5. Wait for the installation to continue.

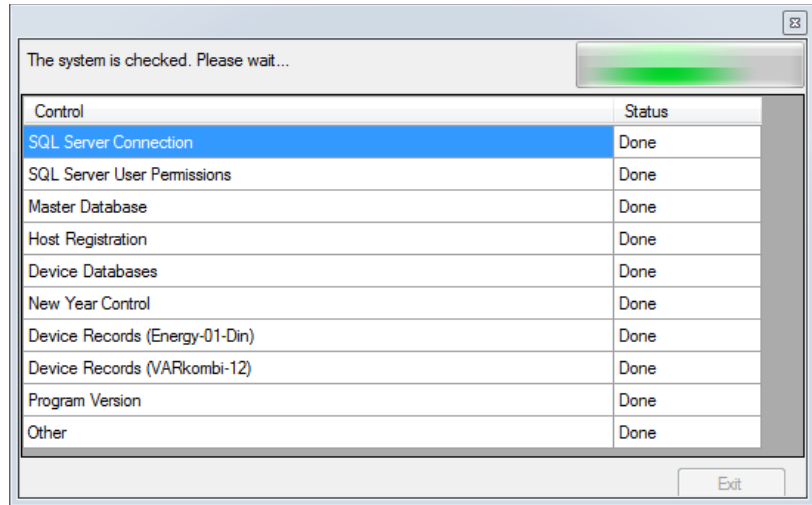


6. Click "Close" to complete the installation and exit the Setup screen.



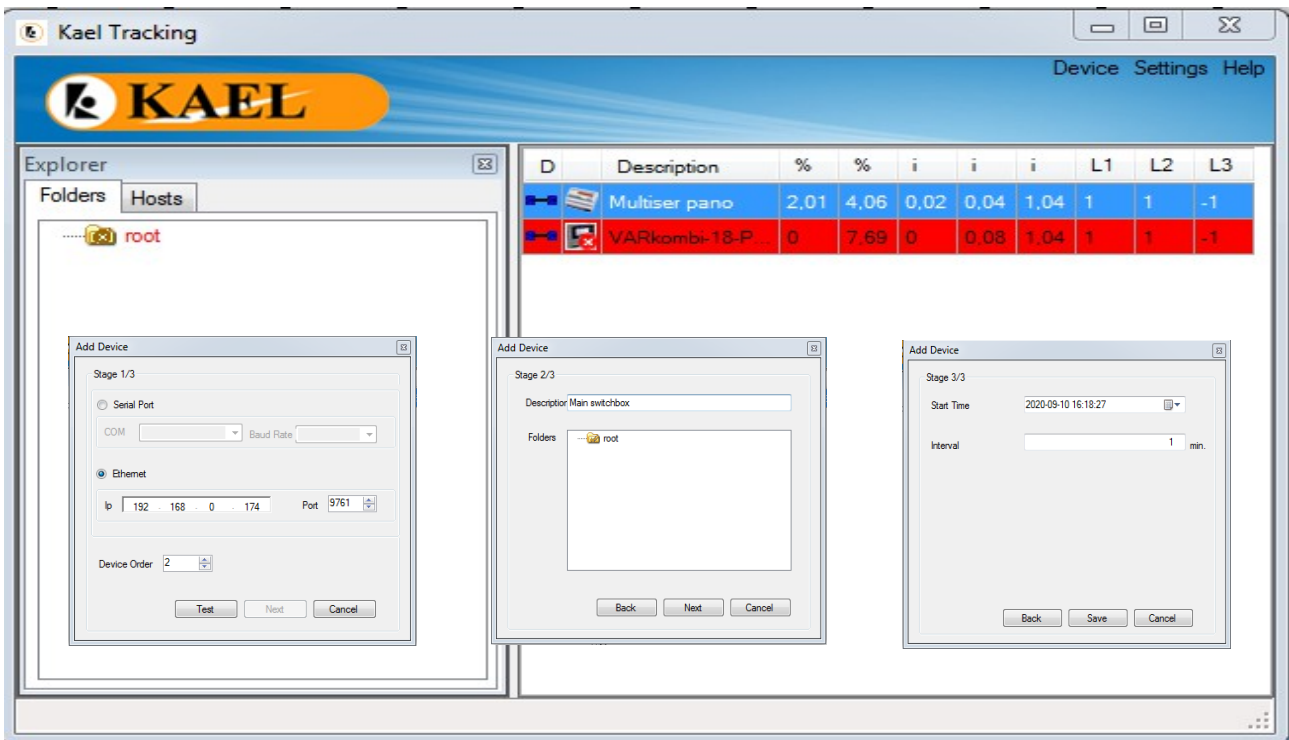
## USING KAEL TRACKING SOFTWARE

Double click the 'Kael Multicast' shortcut to launch the software.

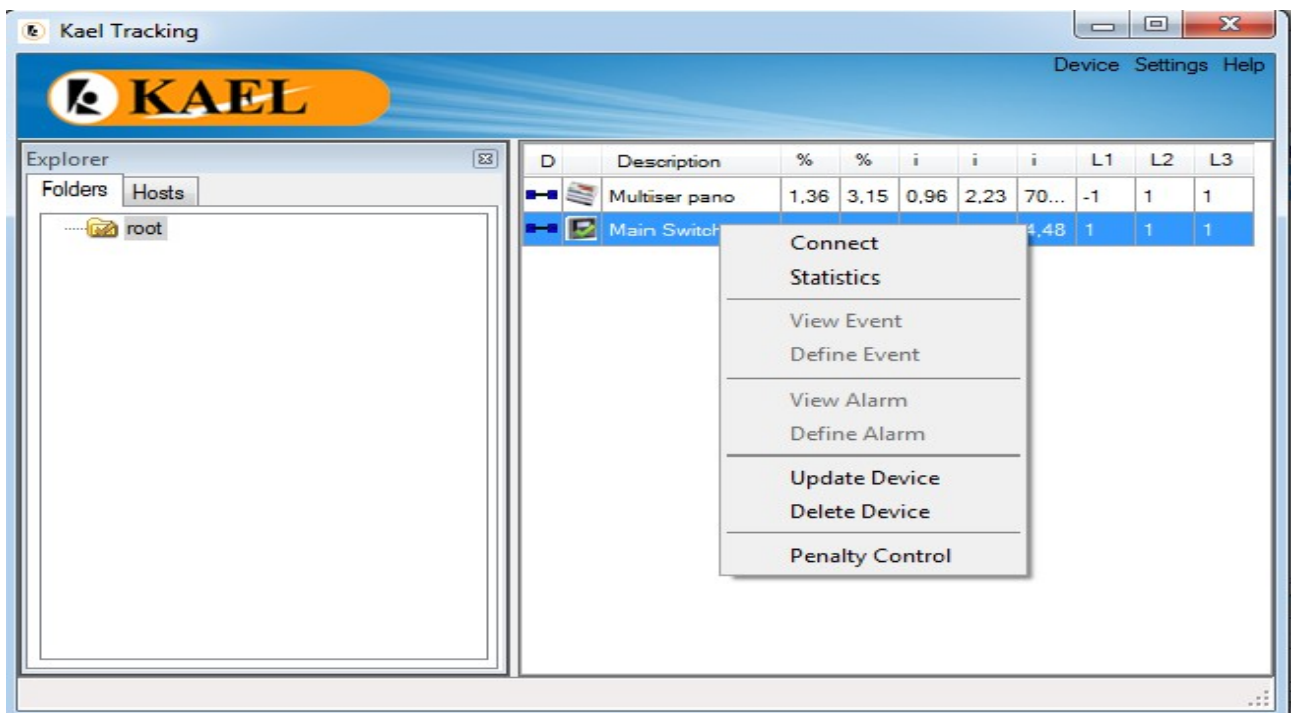


The program asks you to select the sql name you entered while installing the sql server, select your sql name from the Server Address section and click the Test icon in the lower left corner. If your sql installation is successful, "Connection is successful" will appear. If "Writing to database is unsuccessful" appears on your screen, try to install the program again by turning off your virus program and User control (Control Panel \ All Control Panel Items \ User Accounts). If you are using the Windows Starter version, you can not install the Sql server.

After the connection is made, click the OK icon and the following page appears. On this page, you can click the Add Device section of the Device menu in the upper right corner of the devices you want to communicate and record data, and enter the IP or COM number and add the related devices to the software as shown below.

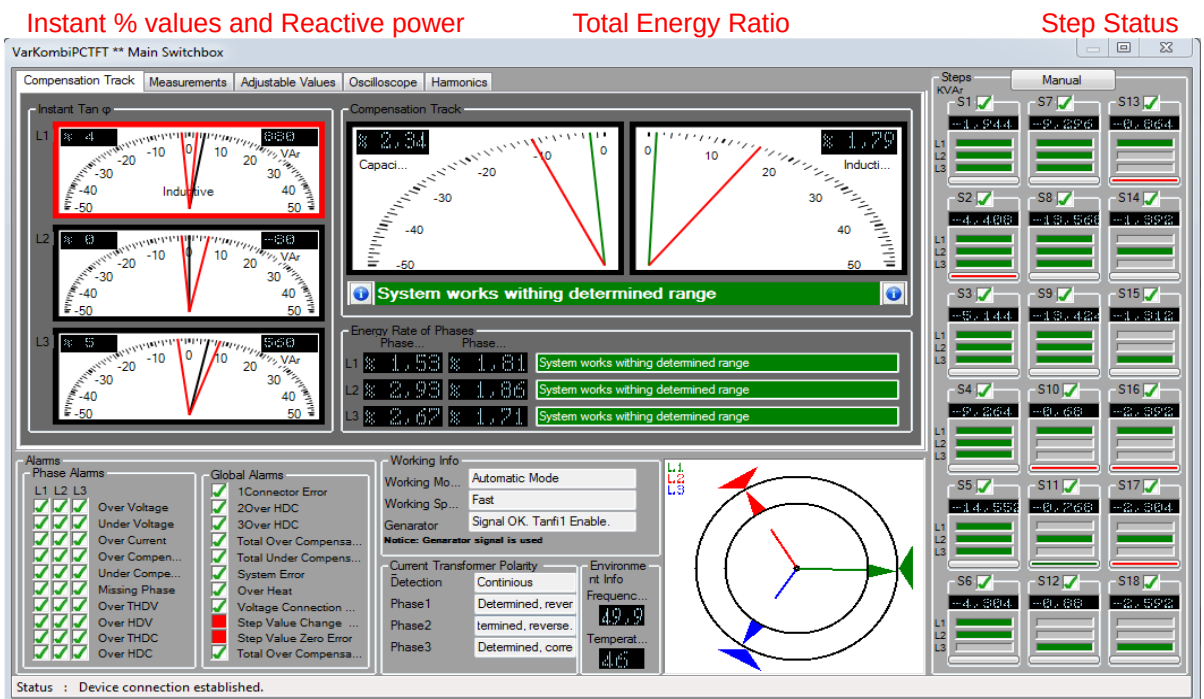


We right click on the line where the device we want to examine is located. The menu that opens may differ depending on the device. Let's examine the sub-menus one by one.



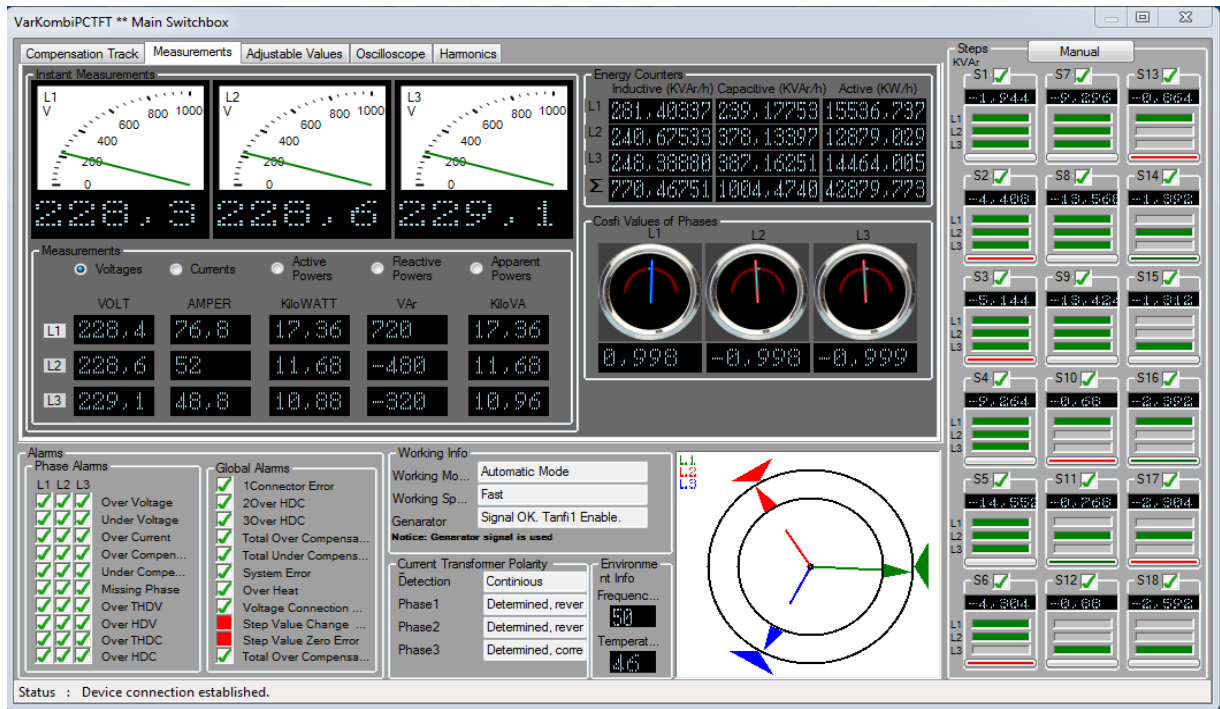
When we click on the “Connect” menu, we see the Kael Universal Software interface. This software allows us to have information about instantaneous voltage, current, active, reactive, apparent power, general inductive capacitive penalty limits, accumulated energies, alarms. At the same time, we can interfere with all settings of the relevant device from the computer .

### Compensation Tracking Screen



## Measurements Screen Electrical Values of 3 phases

$\Sigma W, \Sigma VA_r, \Sigma VA, \Sigma Wh, \Sigma VA_rh, \Sigma VAh VL-N,$

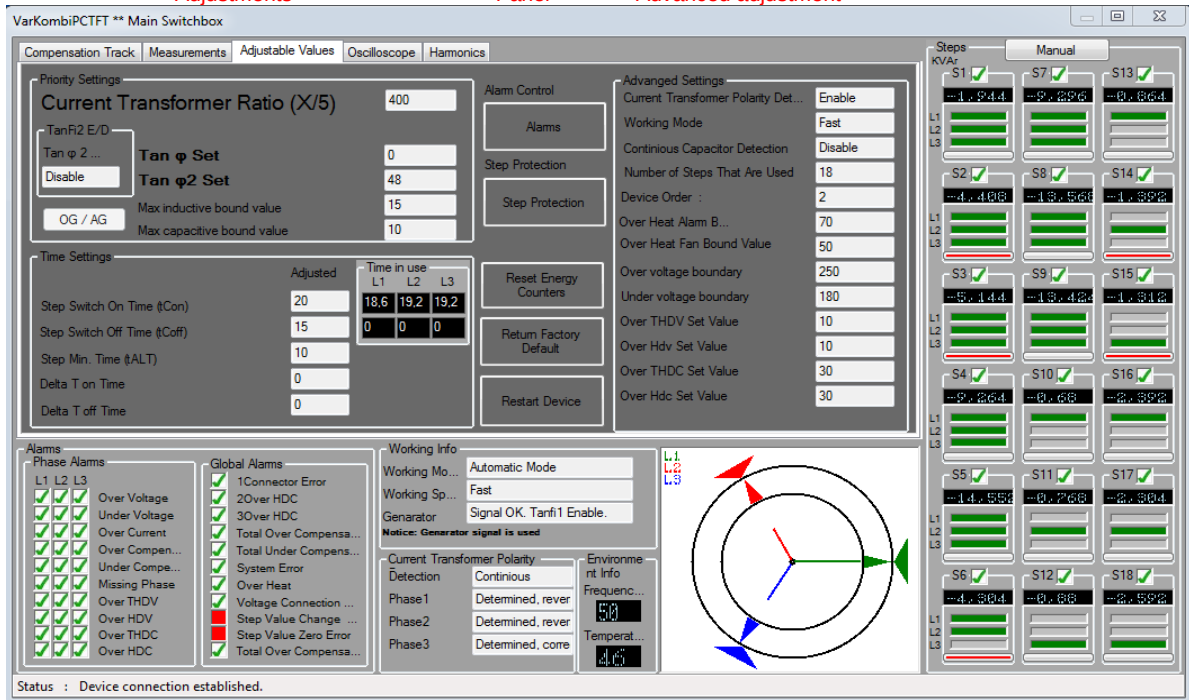


## Adjustable Values Screen

Prior and Time  
Adjustments

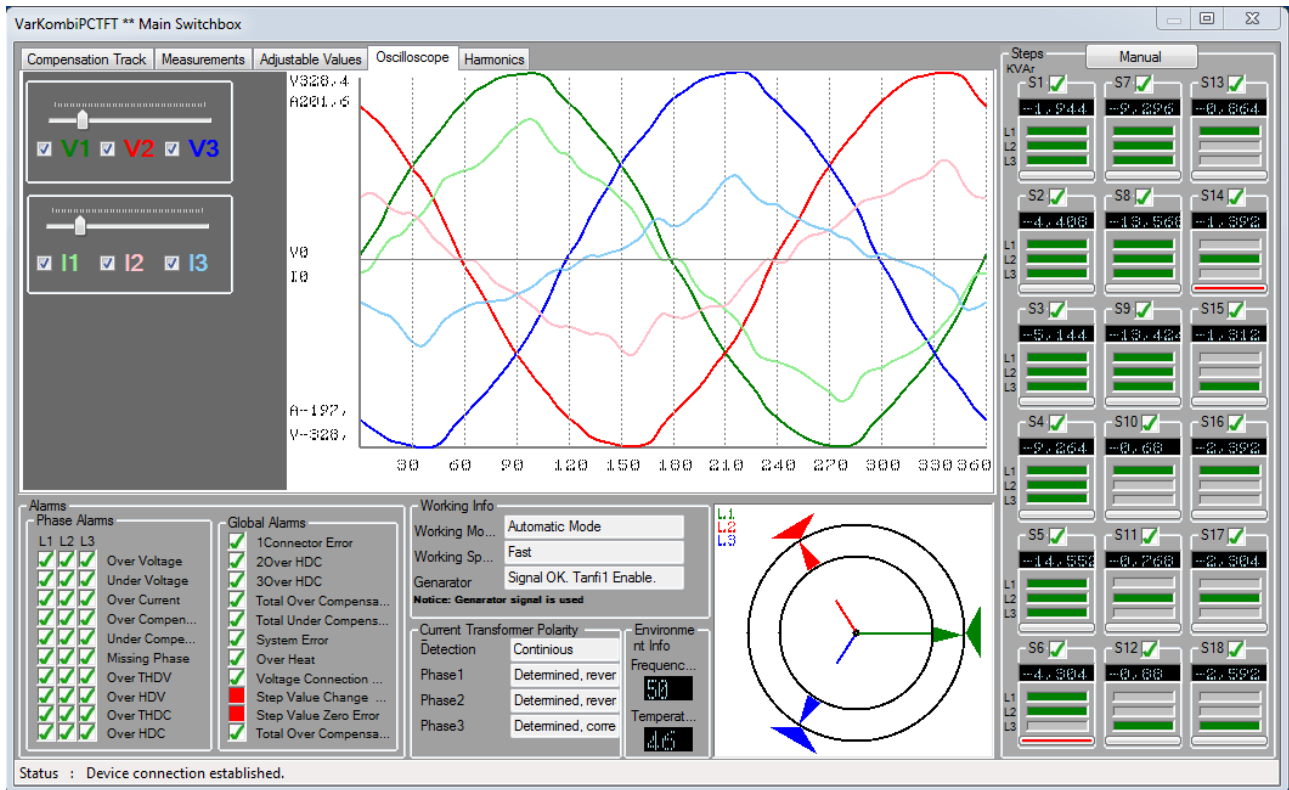
Alarm Control  
Panel

Advanced adjustment



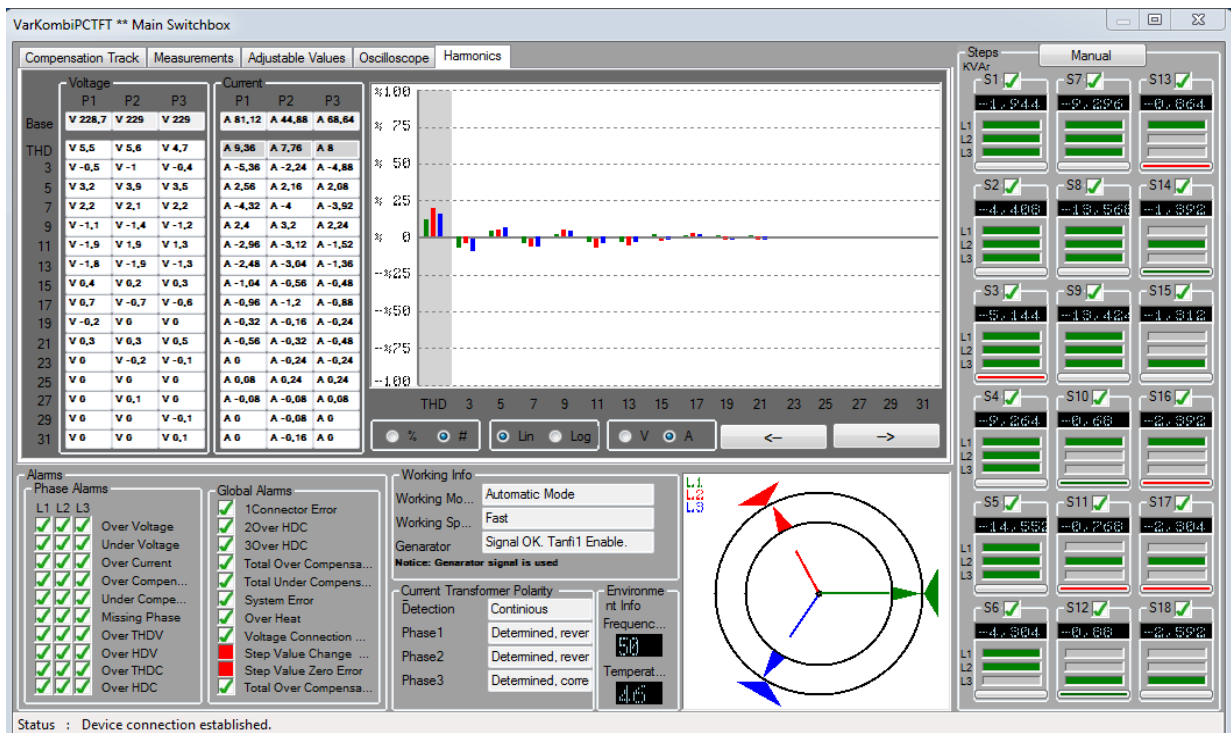
## Oscilloscope Screen

We can observe the distortions in the Current and Voltage Signals of 3 Phase from this screen.

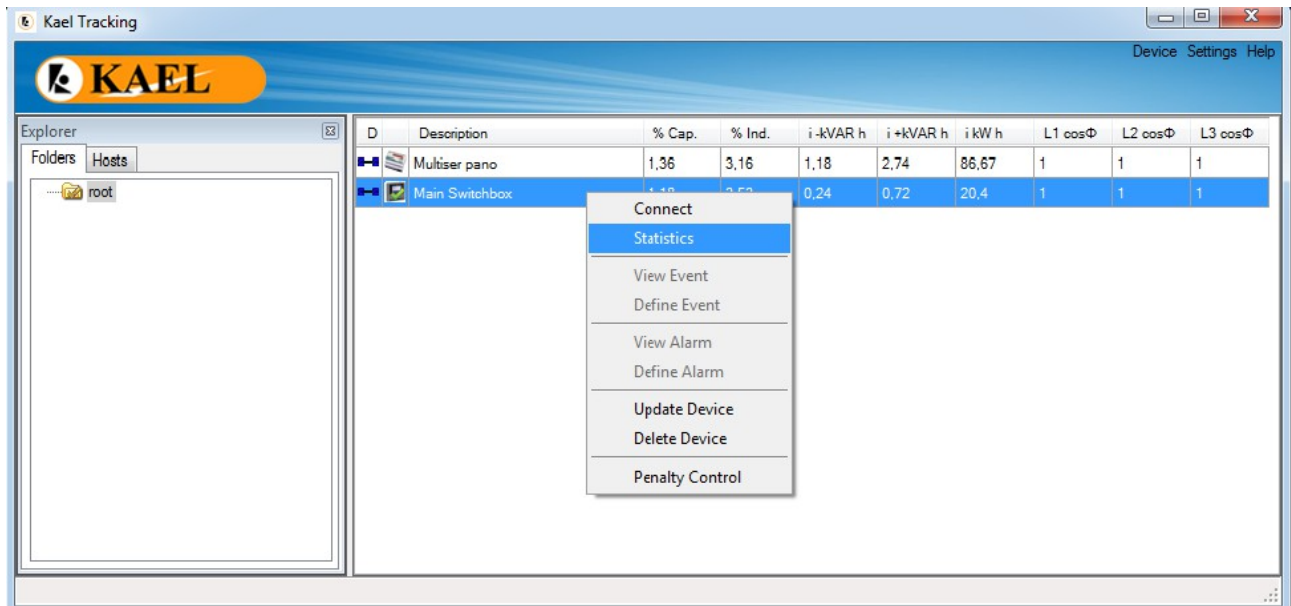


## Harmonics Screen

We can monitor the Voltage and Current Harmonics of 3 Phase from this screen in % - amplitude, logarithmic - linearly.



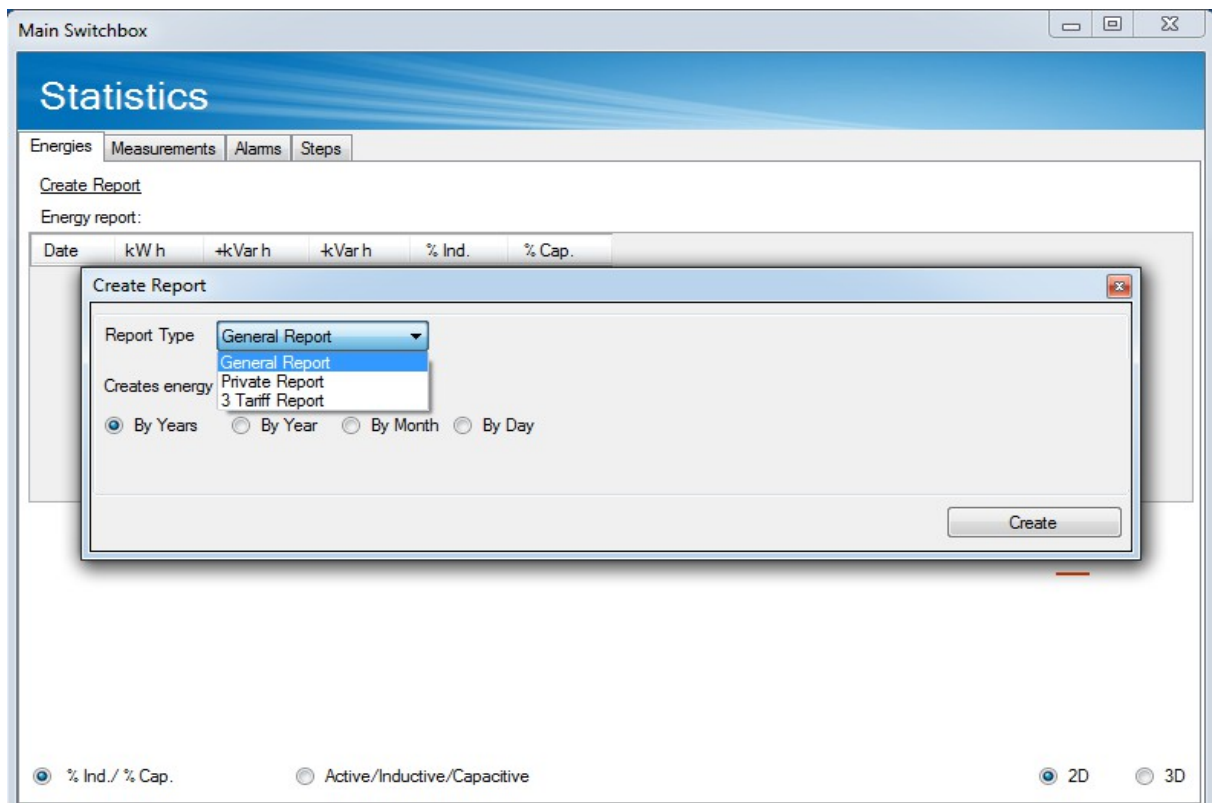
Statistics menu provides graphical and numerical reporting of historical data recorded on your computer.



The statistics menu is also divided into sub-menus. These menus are as follows if the connected device is the reactive power control relay. Now let's briefly talk about these sub-menus.

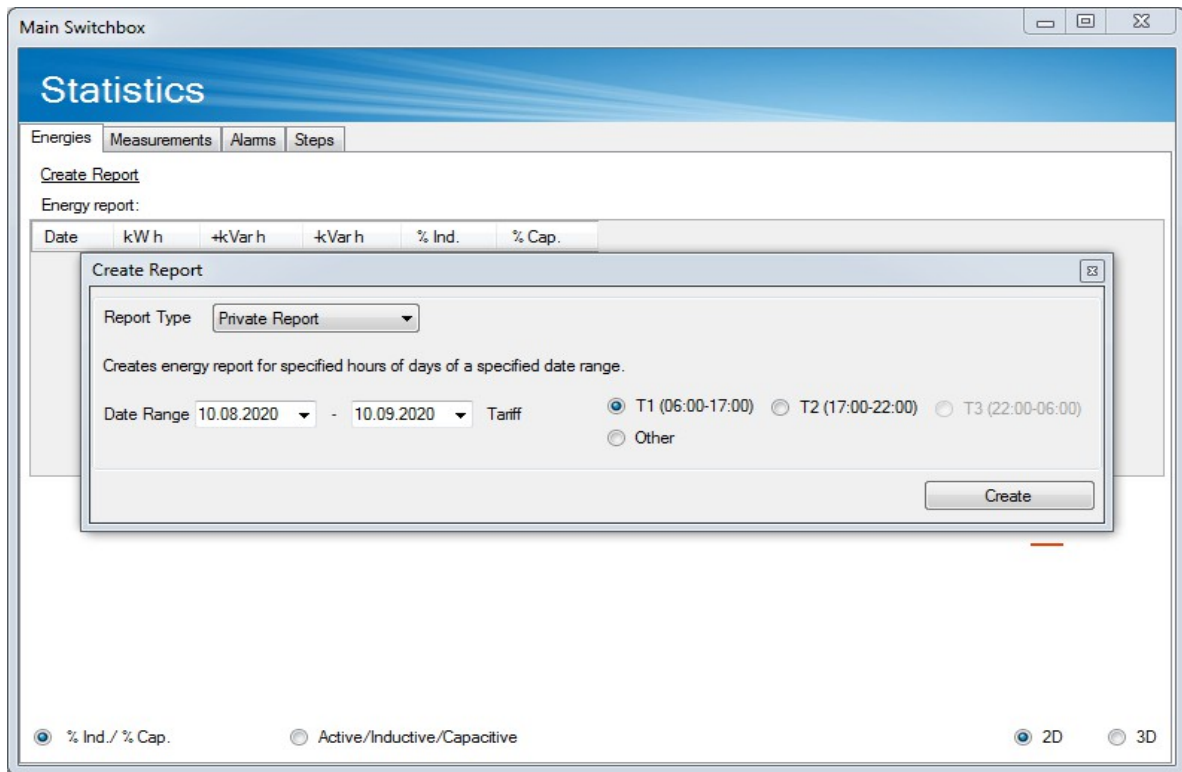
- Energies menu; It enables the past accumulated active and reactive powers to be reported as percentage or energy accumulation in specified date or time intervals. These reports;
  - General report
  - Special report
  - 3 times report

**General Report:** Provides reports on the basis of the desired years, year, month and day.

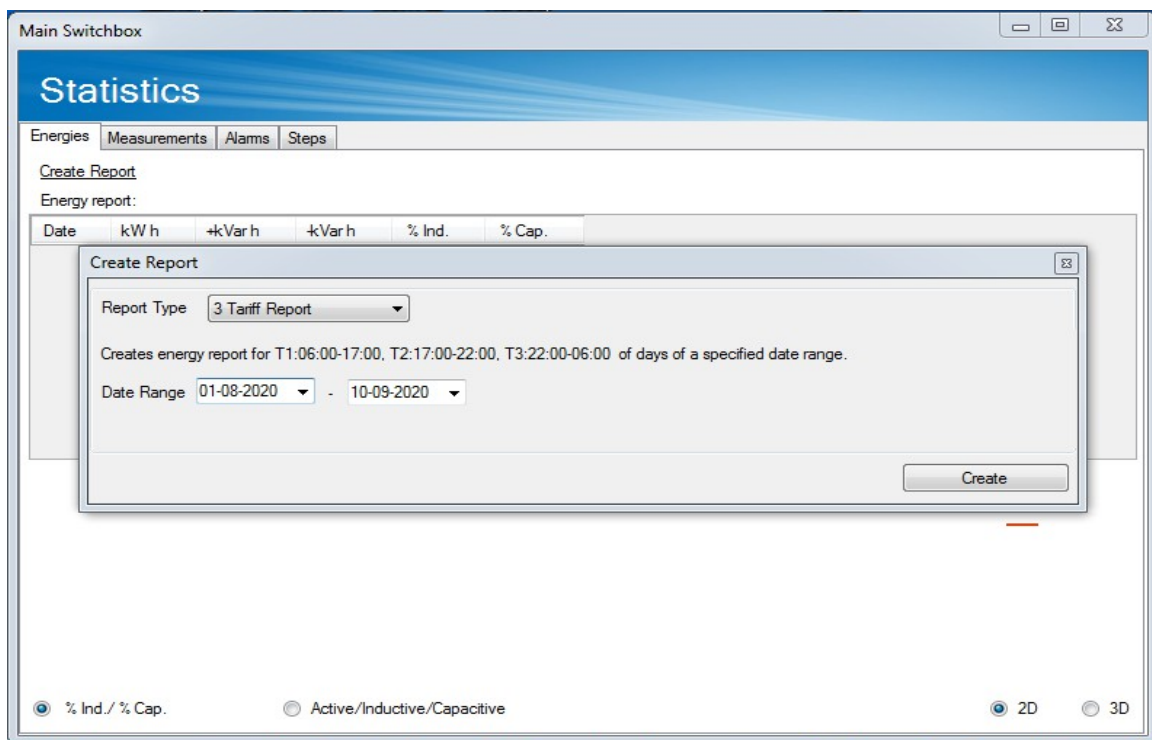




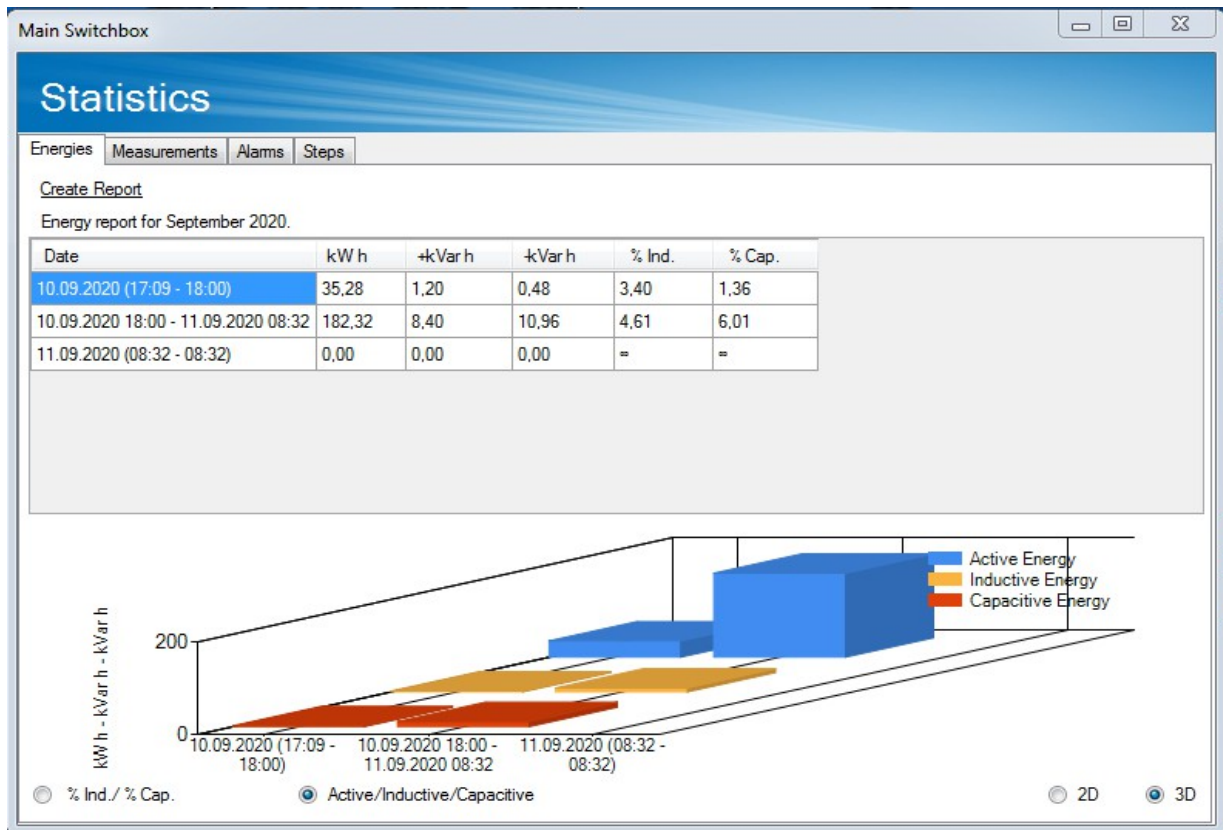
**Special Report:** It allows us to get reports at the desired date or time intervals.



**3 Time Tariff Report:** It enables us to receive energy reports in 3 different tariffs at desired dates or date intervals.



Example of energy report;



**Measurements:** Creates a report regarding Voltage, Current, Active, Reactive power values measured between the desired dates or date .

**Measurements Report:**

**Create Report**

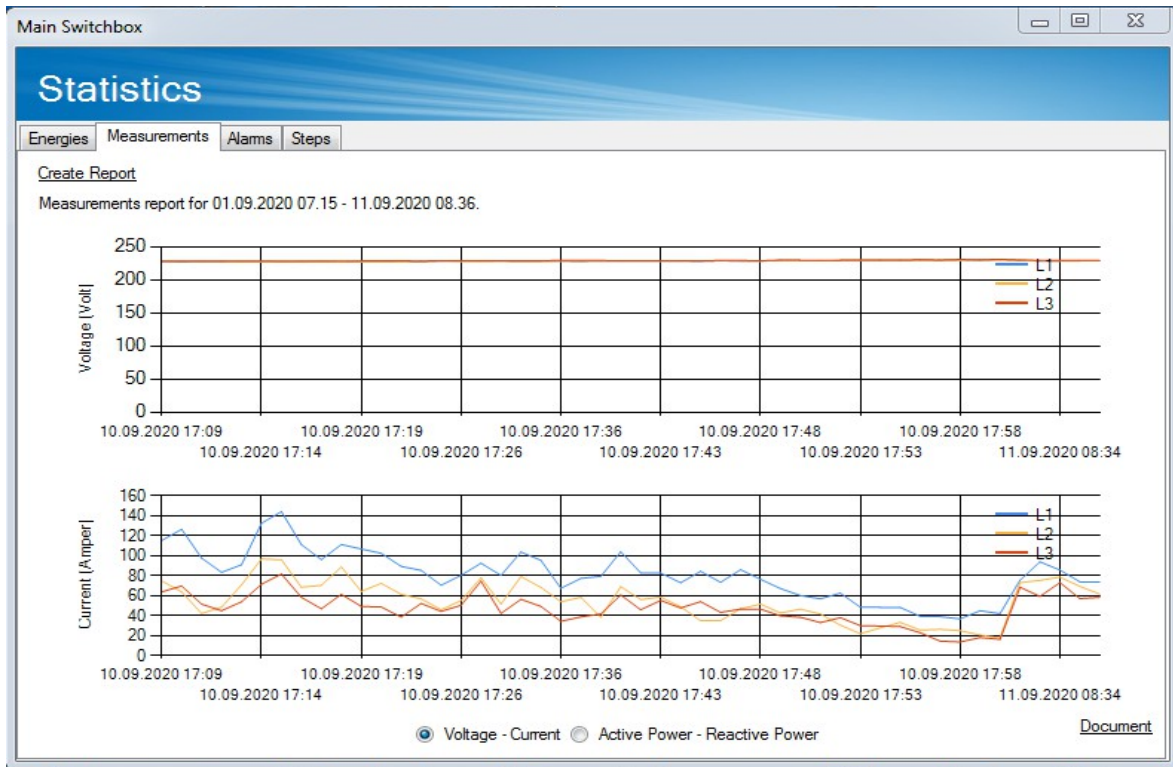
Report Type:  (Dropdown menu showing: General Report, General Report, Daily Report)

Create measurements report for a specified date range.

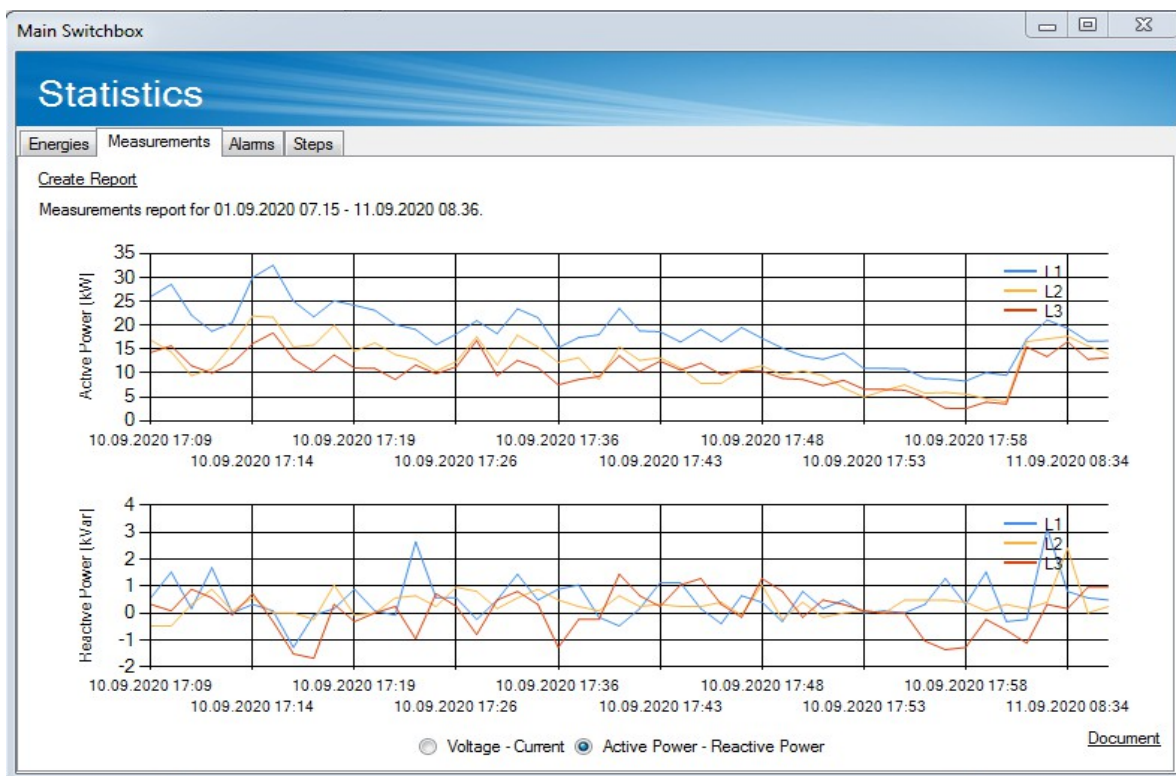
Date Range:  -

Voltage - Current  Active Power - Reactive Power

**Measurements:** It allows to generate reports on Voltage-Current values between the desired dates or date.

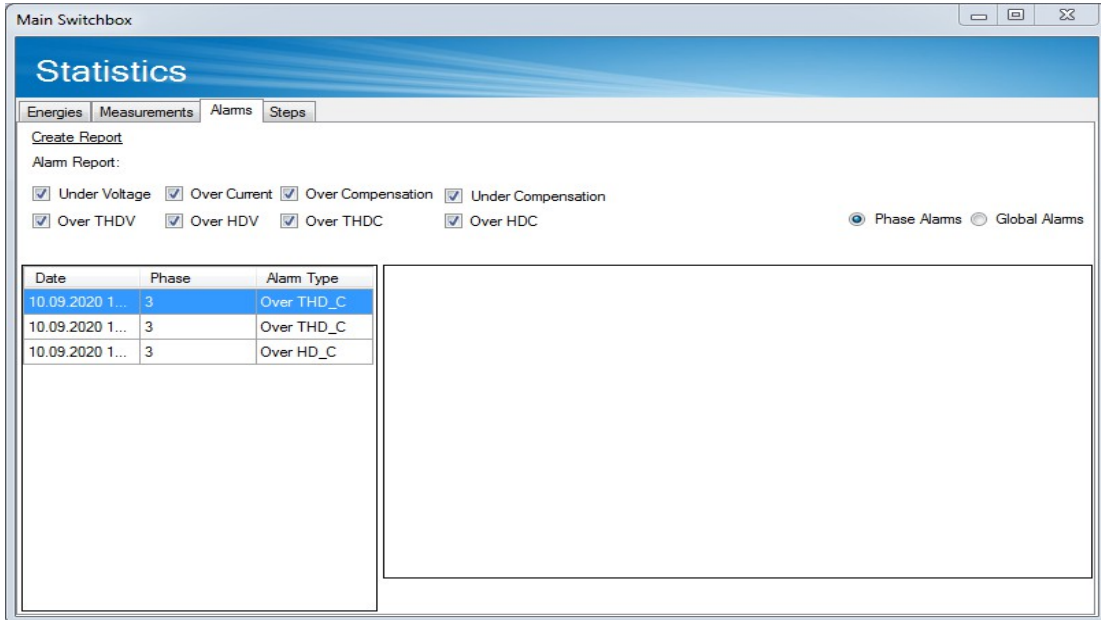


**Measurements:** Provides to create reports on Active-Reactive Power values between the desired dates or date.



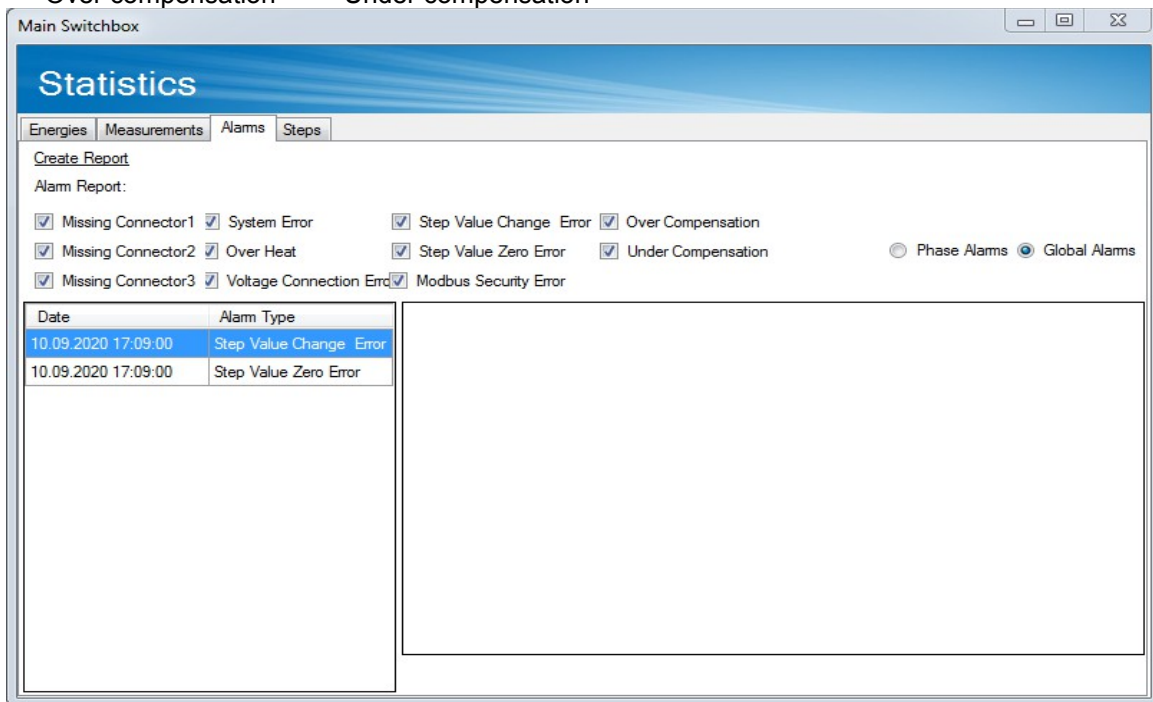
**Alarms- Phase Alarms:** It creates the report of the Phase Alarms occurring between the desired dates or date.

- Over voltage -Under voltage
- Over compensation -Under compensation
- Over THDV -Under HDV
- Over THDC -Under HDC

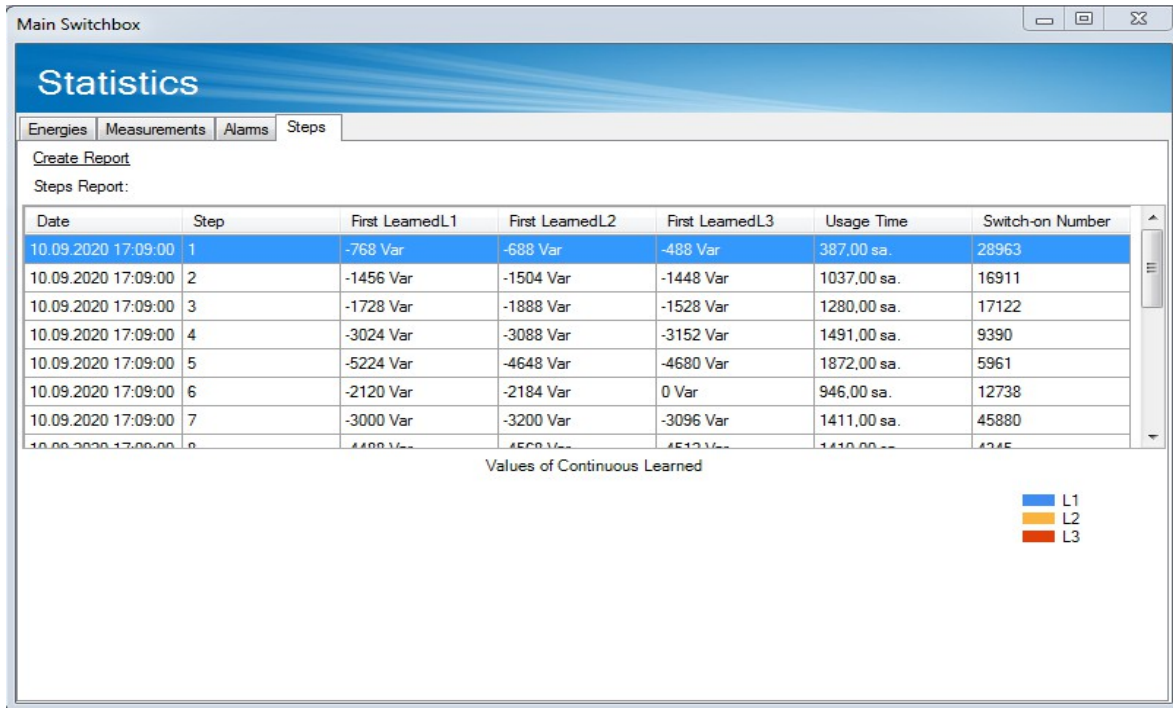


**Alarms - Global Alarms:** Creates a report of Global Alarms occurring between the desired dates or date.

- Lost connector 1
- System failure
- Step change warn
- Over compensation
- Lost connector 2
- Over temperature
- Zero step warn
- Under compensation
- Lost connector 3
- Voltage connection failure
- Modbus, unauthorized communication warn

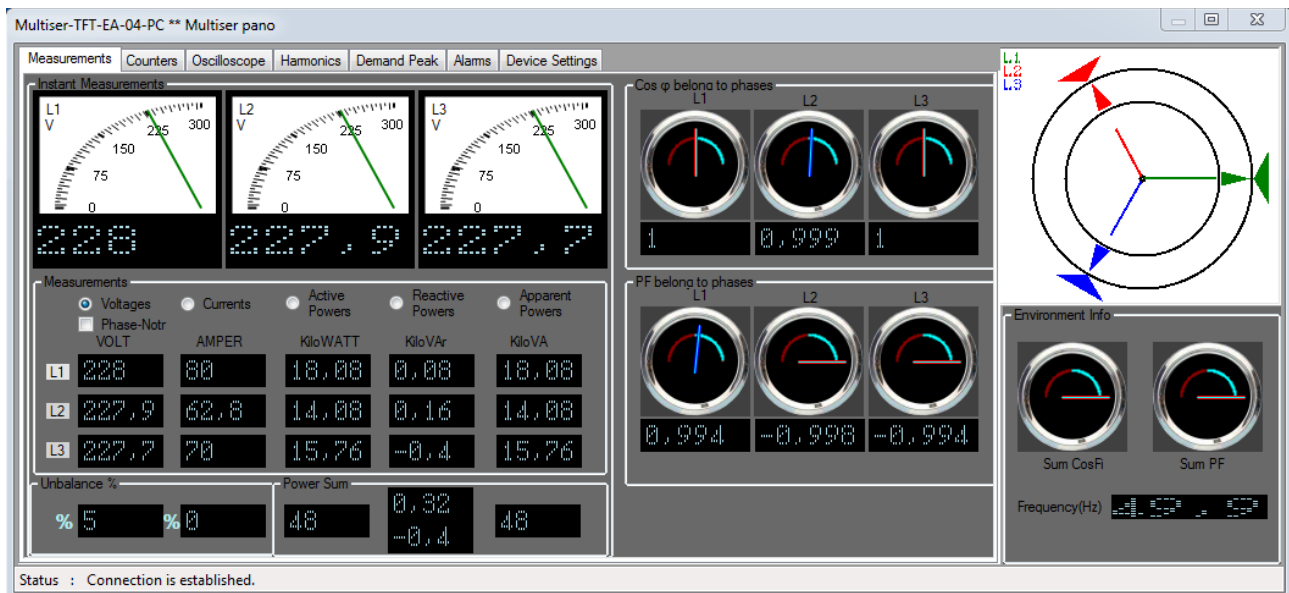


**Levels:** It enables to create a report about the step powers connected in the system between the desired dates or date. In this way, we can observe the changes in the step powers.



### Kael Universal - Energy Analyzer Interface

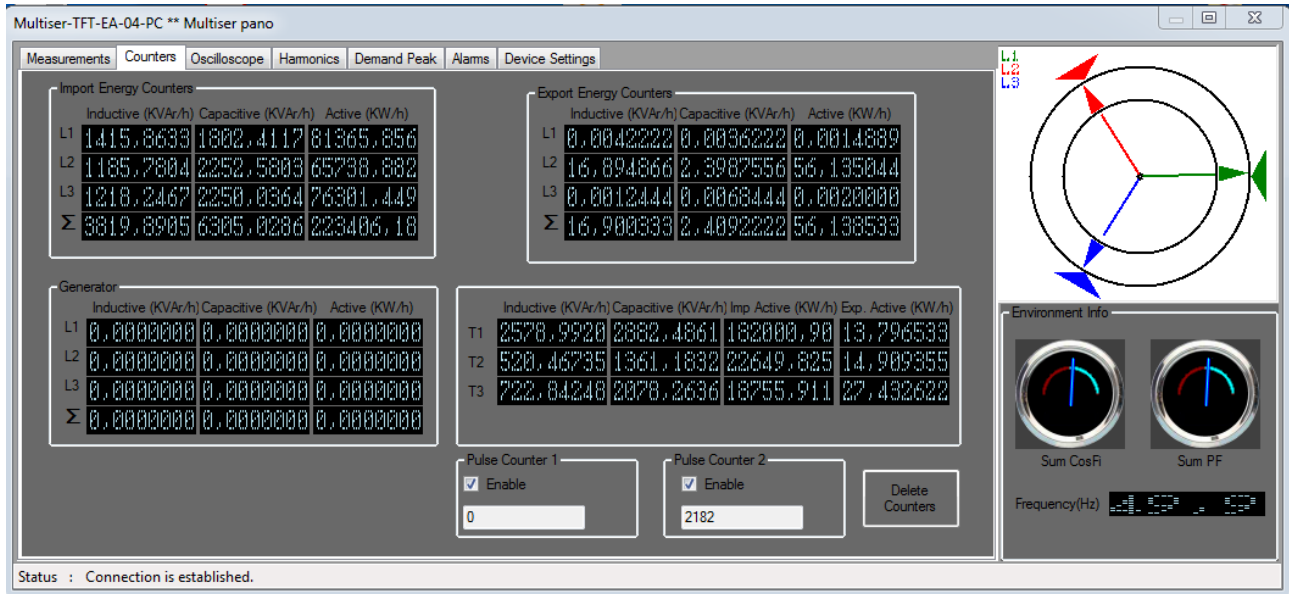
We right click on the line with the relevant analyzer from the list. We select "Connect" from the menu that opens. And we come across a different interface. Thanks to this interface, we can easily examine the data from our analyzer.



## Counters

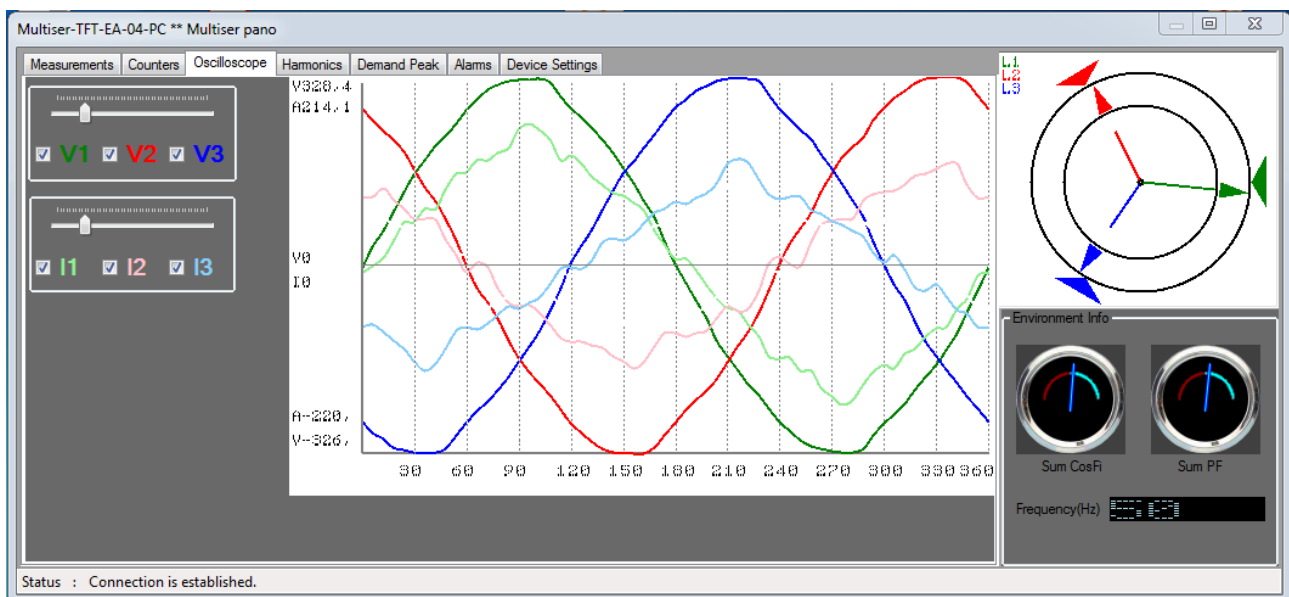
It is the screen on which we observe the Import and Export energy savings.

Import-export  $\Sigma W$ ,  $\Sigma VAR$ ,  $\Sigma VA$ ,  $\Sigma Wh$ ,  $\Sigma VArh$ ,  $\Sigma VAh$



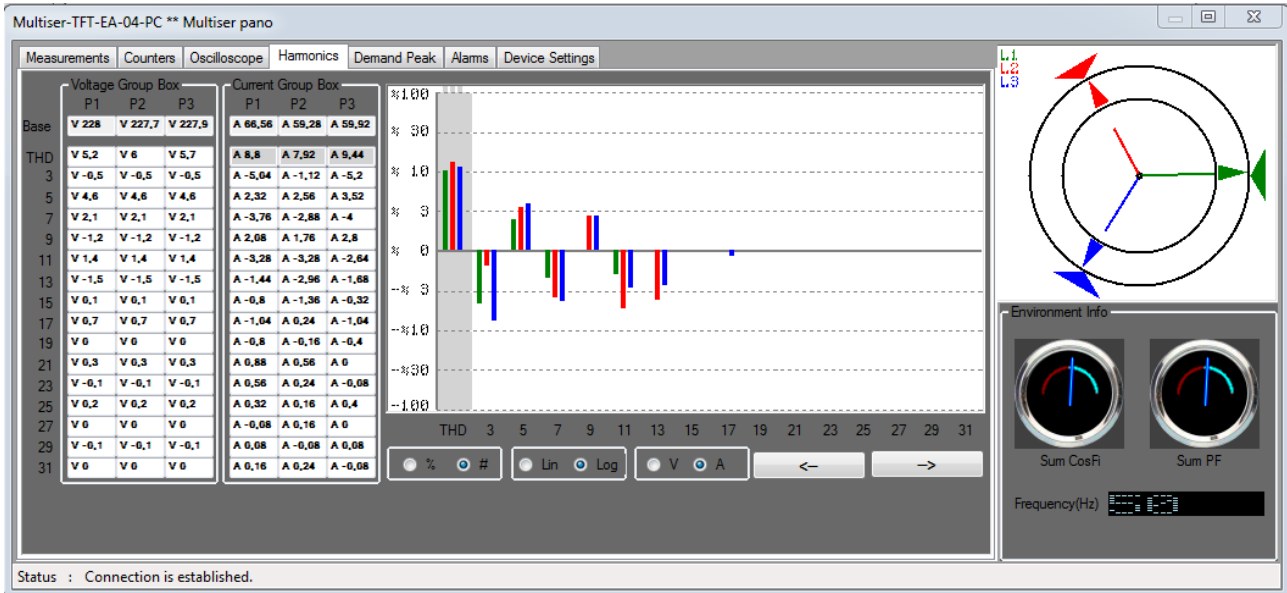
## Oscilloscope Screen

We can observe the distortions in the Current and Voltage Signals of 3 Phase from this screen.



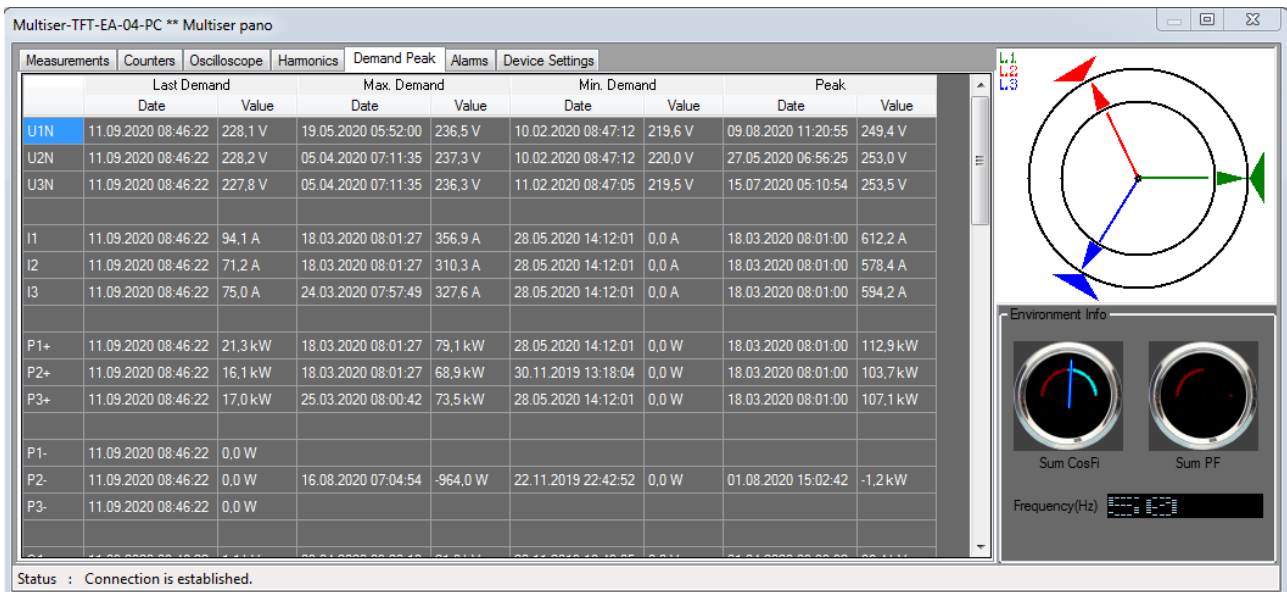
## Harmonics Screen

From this screen, we can watch the Voltage and Current Harmonics of 3 Phases in% - amplitude, logarithmic – linearly.



## Demand & Peak Screen

It is the page where the demand peak values formed related to the electrical parameters measured in the system are reported.



## Alarms Screen

This is the page where you can see the alarms that occur when the electrical parameters measured in the system exceed the limit values we set.

The Alarms Screen displays the following components:

- Alarms Table:**

| Alarm         | Relay 1 | Relay 2 |
|---------------|---------|---------|
| Over Voltage  | ✓       | ✓       |
| Under Voltage | ✓       | ✓       |
| Over Current  | ✓       | ✓       |
| Under Current | !       | !       |
| Over THD-V    | ✓       | ✓       |
| Over HD-V     | ✓       | ✓       |
| Over THD-C    | !       | !       |
| Over HD-C     | ✓       | ✓       |
| Missing Phase | ✓       | ✓       |
| Relay Status  | ⏻       | ⏻       |
- Active Alarms Table:**

| No                   | Number | Alarm | Value | Set | Status |
|----------------------|--------|-------|-------|-----|--------|
| Reading remote file. |        |       |       |     |        |
- Environment Info:**
  - Sum CosFi: [Gauge]
  - Sum PF: [Gauge]
  - Frequency(Hz): [Display]

Status : Connection is established.

## Adjustable Values Screen

The Adjustable Values Screen displays the following configuration sections:

- General Settings:**
  - Current Transformer Ratio (X/5): 400
  - Voltage Transformer Ratio: 1.0
  - Data Save Time (s): 5
  - Connection Settings: 3P - 4W
  - Date Time Settings: 11.09.2020 08:51
- Serial Port Settings:**
  - Baud Rate: 9600
  - Stop Bits: 0
  - Parity: No
  - Device No: 1
- Micro SD:**
  - MicroSD card is inserted.
  - Used Space: 3189,7 MB
  - Free Space: 27302,3 MB
  - Capacity: 30492,0 MB
- Control Buttons:**
  - Reset Energy Counters
  - Return Factory Default
  - Restart Device
  - Reset Demand
  - Delete Counters T1-T2-T3

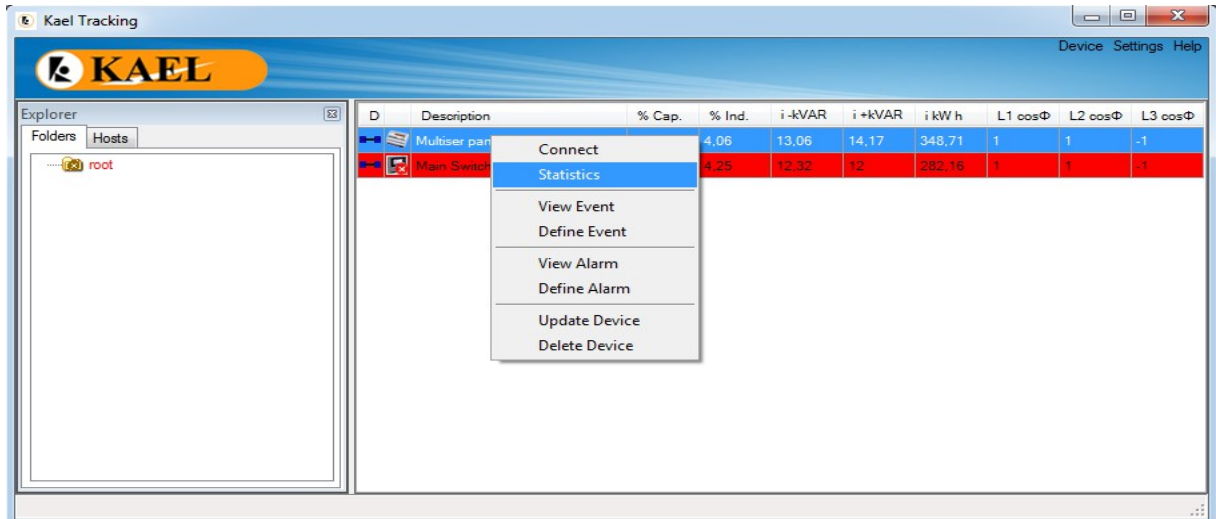
Status : Connection is established.



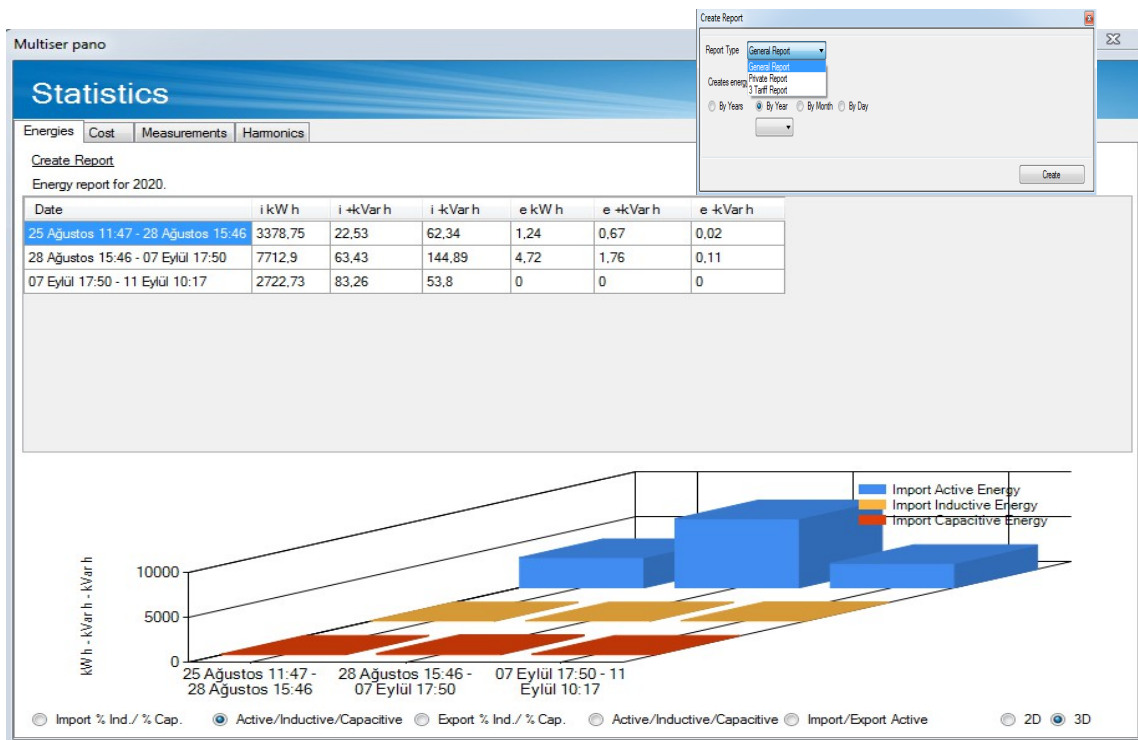
Statistics menu provides graphical and numerical reporting of historical data recorded on your computer.

Energies menu; It allows the past accumulated active and reactive powers to be reported as percentage or energy accumulation at specified date or time intervals .

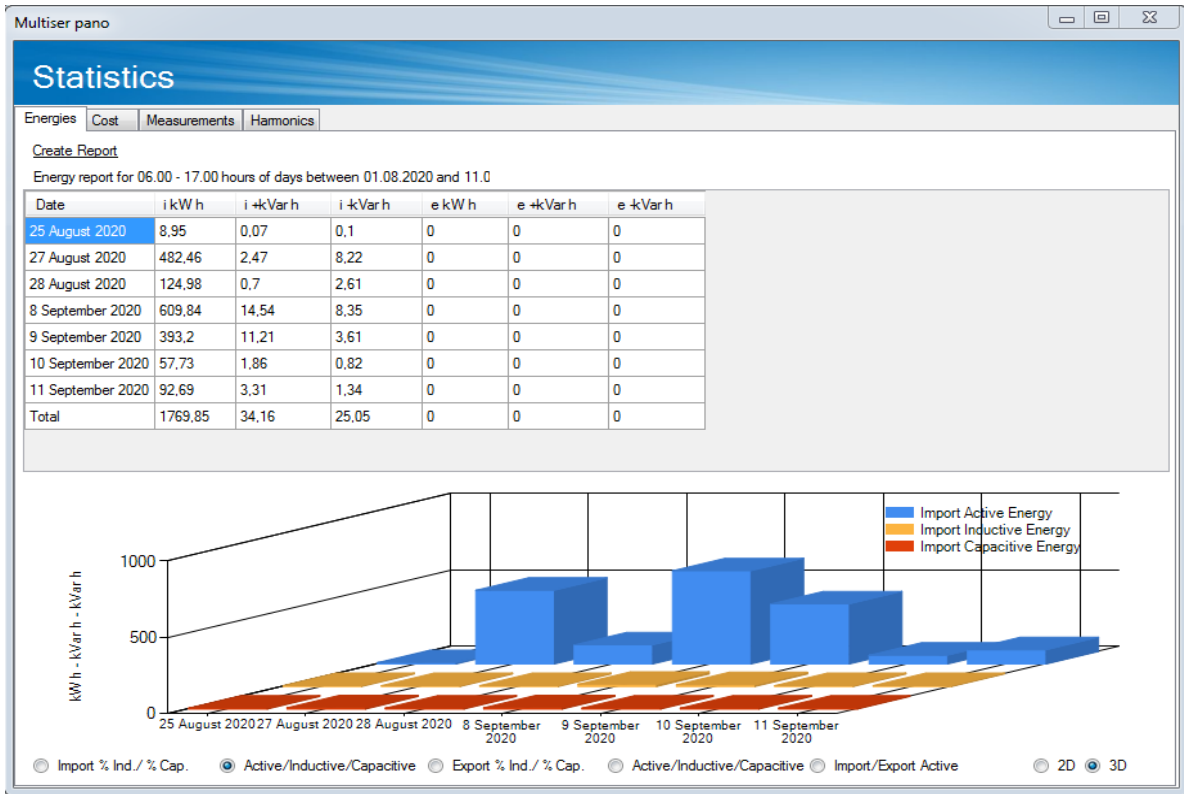
- General Report
- Special Report
- 3 Timed Tariff Report, divided into 3 in itself.



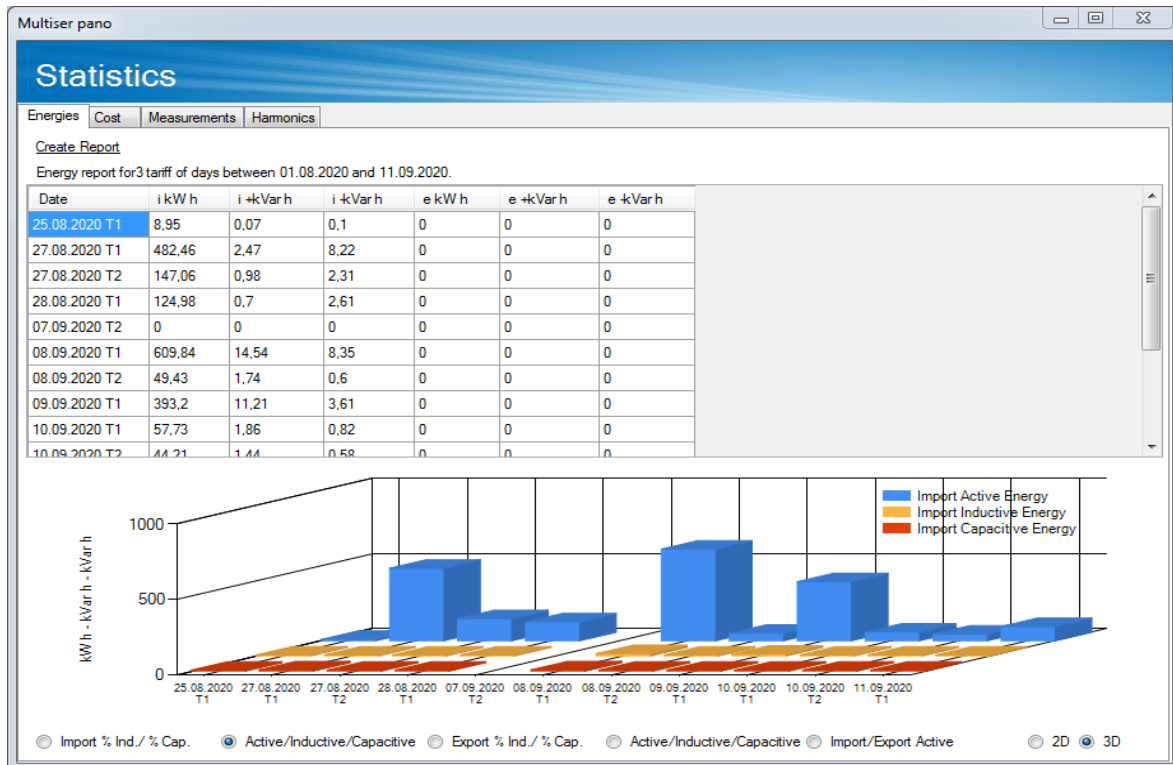
**General Report:** Provides reports on the basis of the desired years, year, month and day.



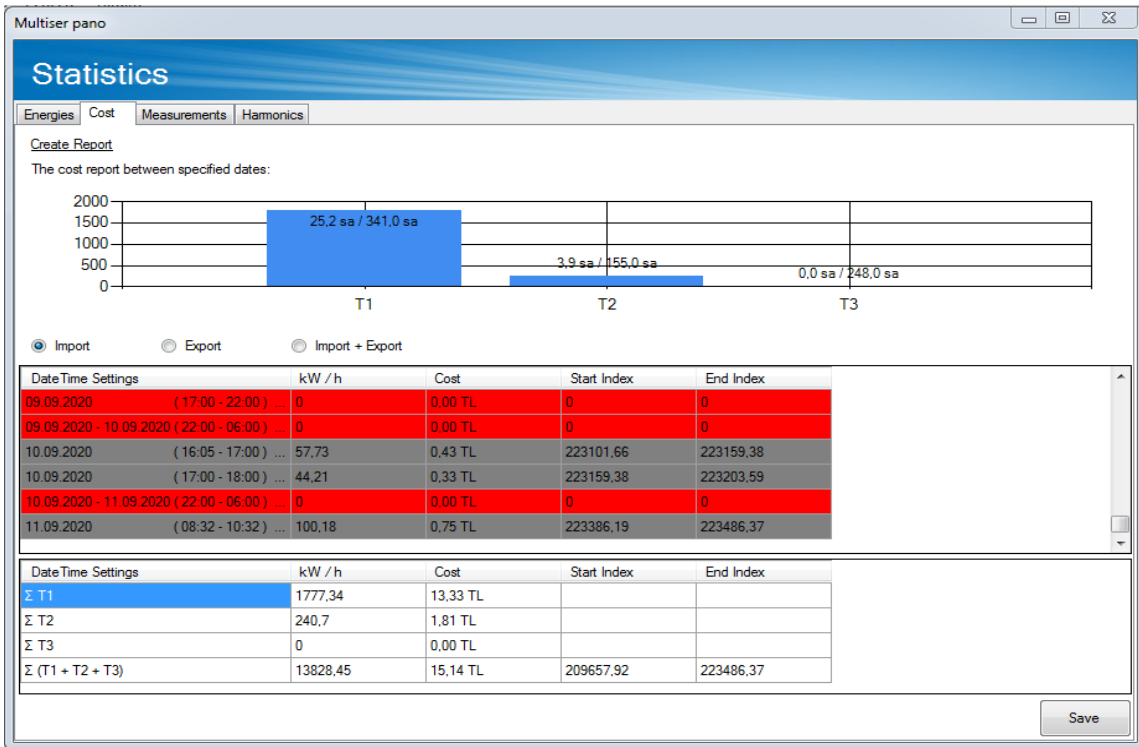
**Special Report:** It allows us to get reports at the desired dates or time intervals.



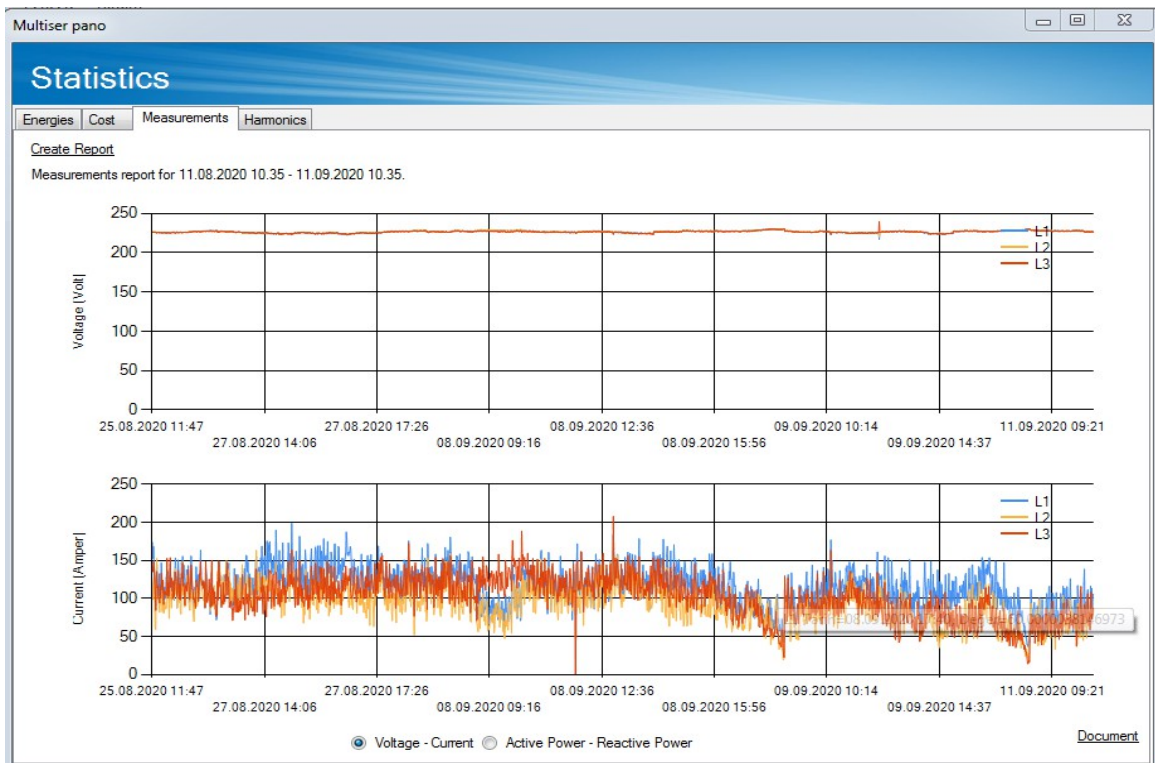
**3 Time Tariff Report:** It allows us to see the energy consumption in 3 different tariffs at desired dates or date intervals.



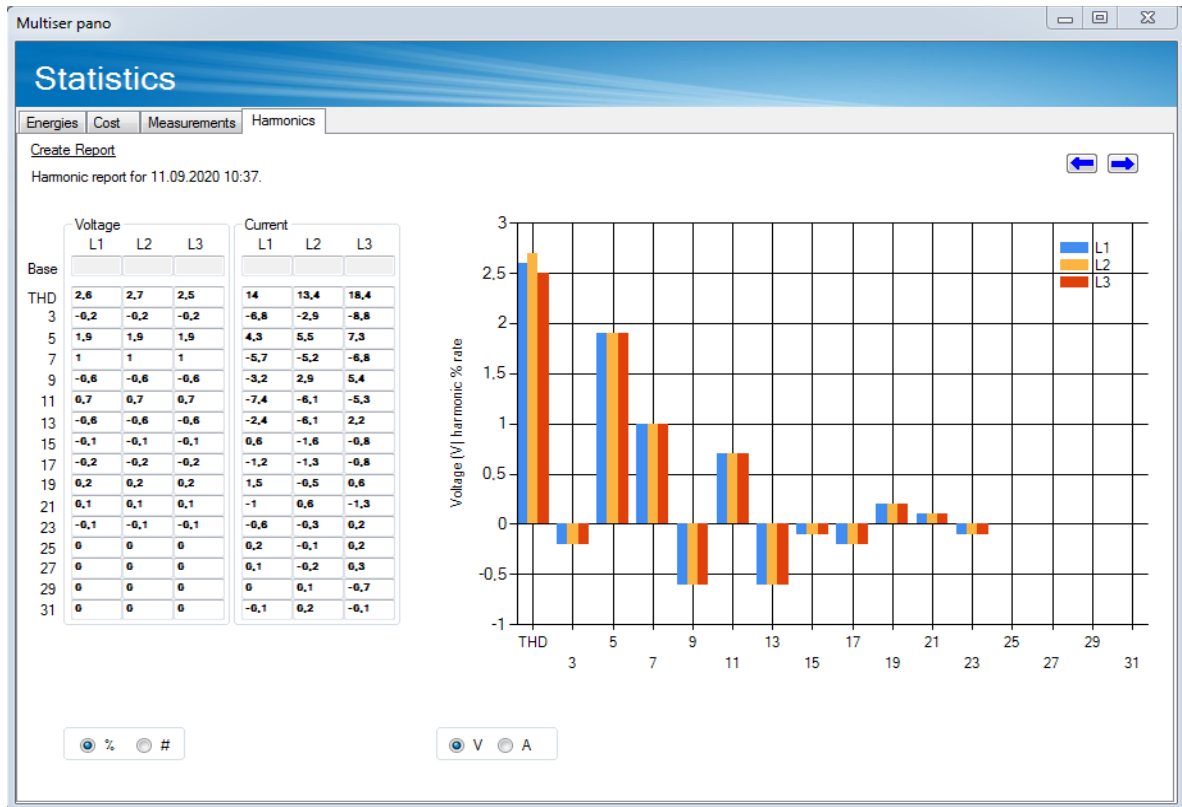
**The cost;** It allows us to get the cost report of the energy consumed in the desired dates or date intervals.



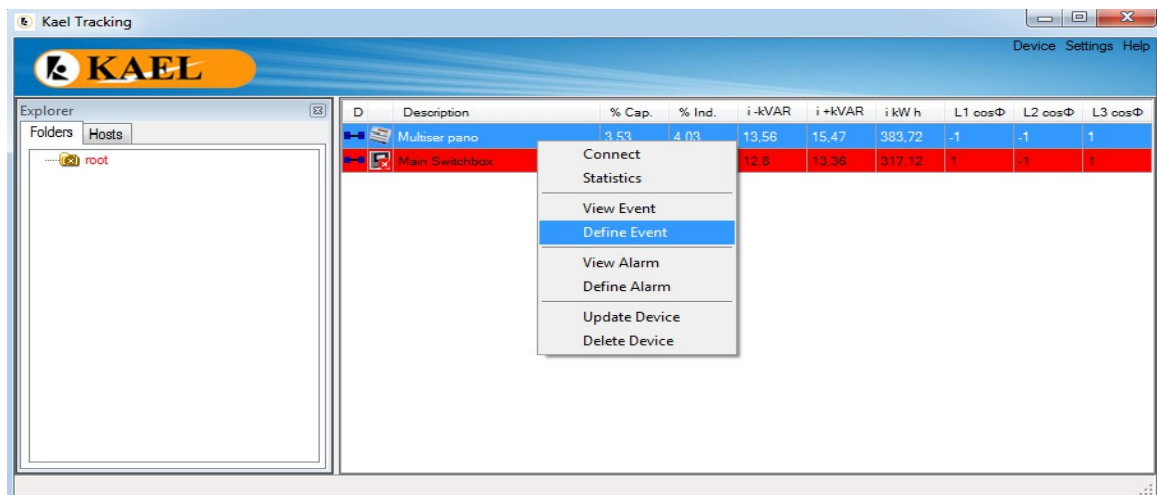
**Measurements:** Allows us to generate reports on Voltage-Current values between the desired dates or date.



**Harmonics:** It allows us to create a report on the Harmonic values of the desired dates.



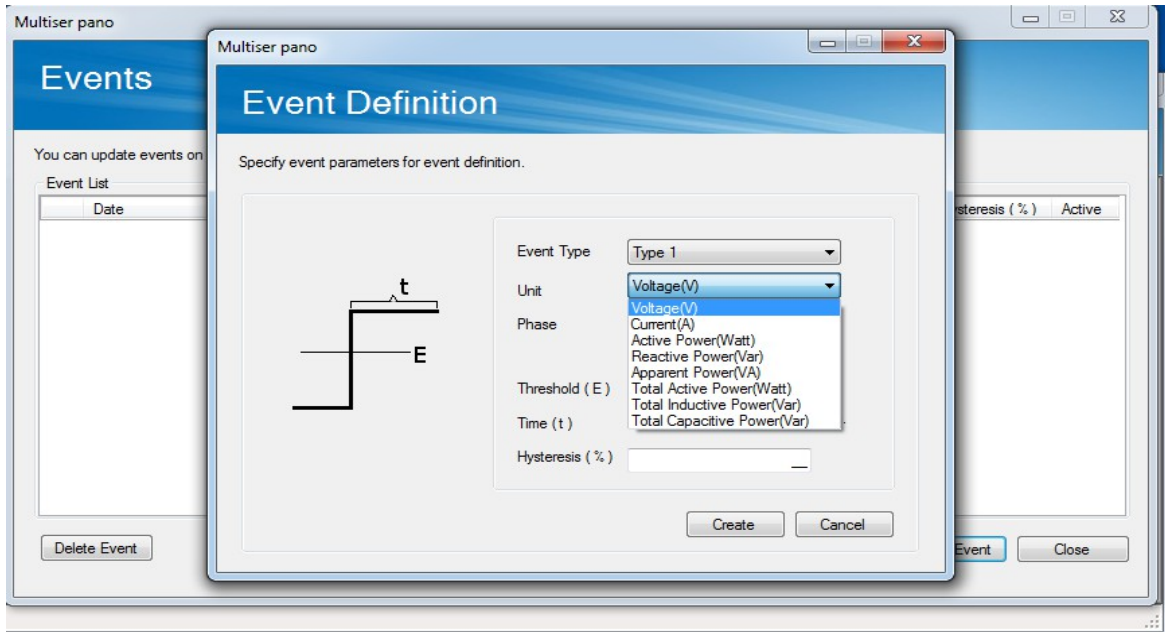
**Event Identification:** If we define the important limit values for us (Current, Voltage etc.), the program warns us in case of exceeding these limit values. At the same time, it allows us to reach the program more easily by examining the past reports of when and how the event took place.



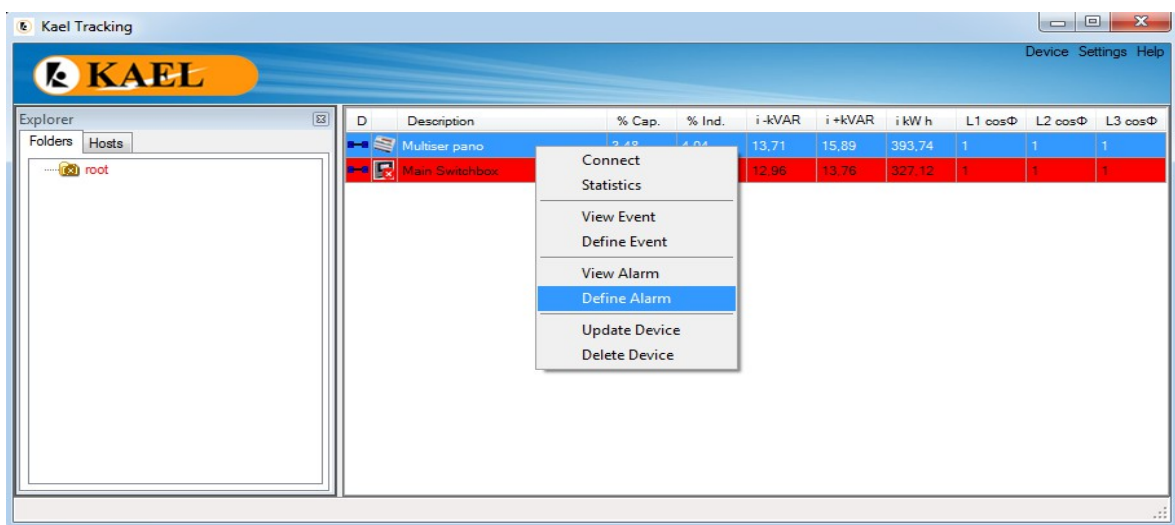
## Identifiable Event Units;

- Voltages
- Active power
- Total active power
- Currents
- Reactive power
- Total reactive power
- Appearance power
- Total appearance power

Enterable data pertaining to the defined events; threshold value, opening time, hysteresis (recovery from failure) percentage values.



In case of exceeding the specified limit values, we can make the program give an alarm and inform us. Alarms are divided into two as Phase Alarms and Global Alarms.

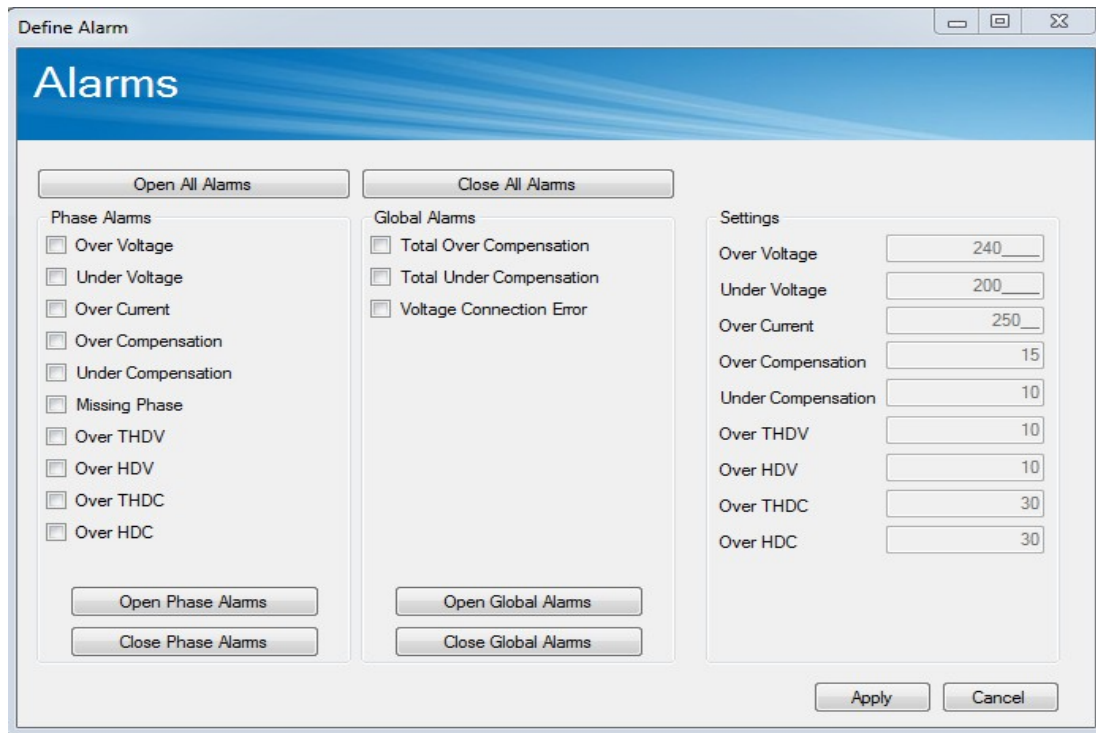


**Alarms - Phase Alarms:** The program warns us in case of exceeding the specified limit values.  
Related Alarms;

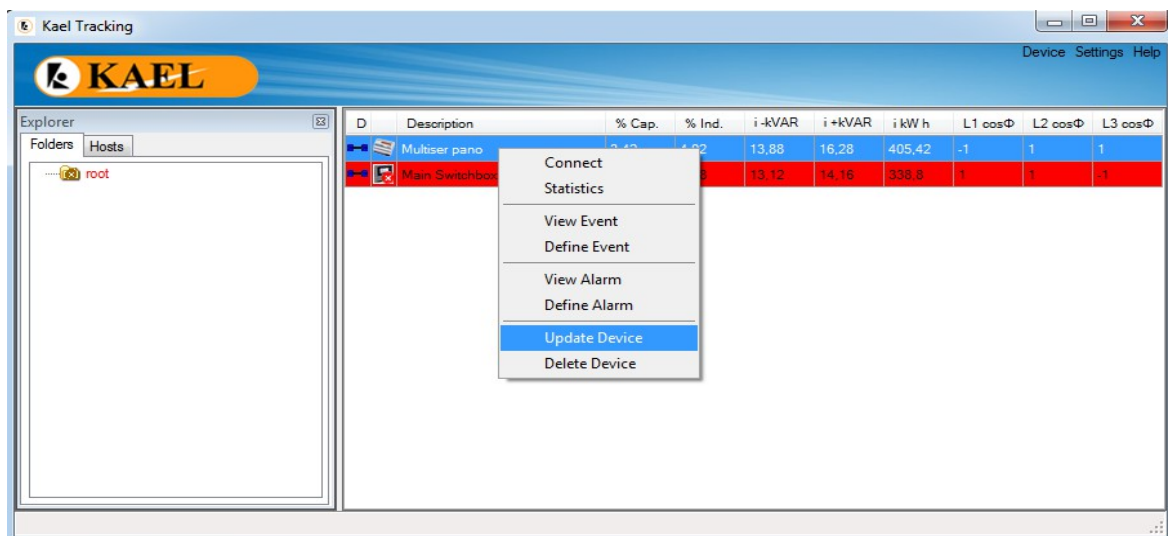
- Over voltage                      -Under voltage                      -Over current
- Over compensation              -Under compensation              -Lost phase
- Over THDV                        -Over HDV
- Over THDC                        -Over HDC

**Alarms - Global Alarms:** The program warns us in case of exceeding the specified limit values.  
Related Alarms;

- Over compensation                      -Under compensation                      -Voltage connection failure

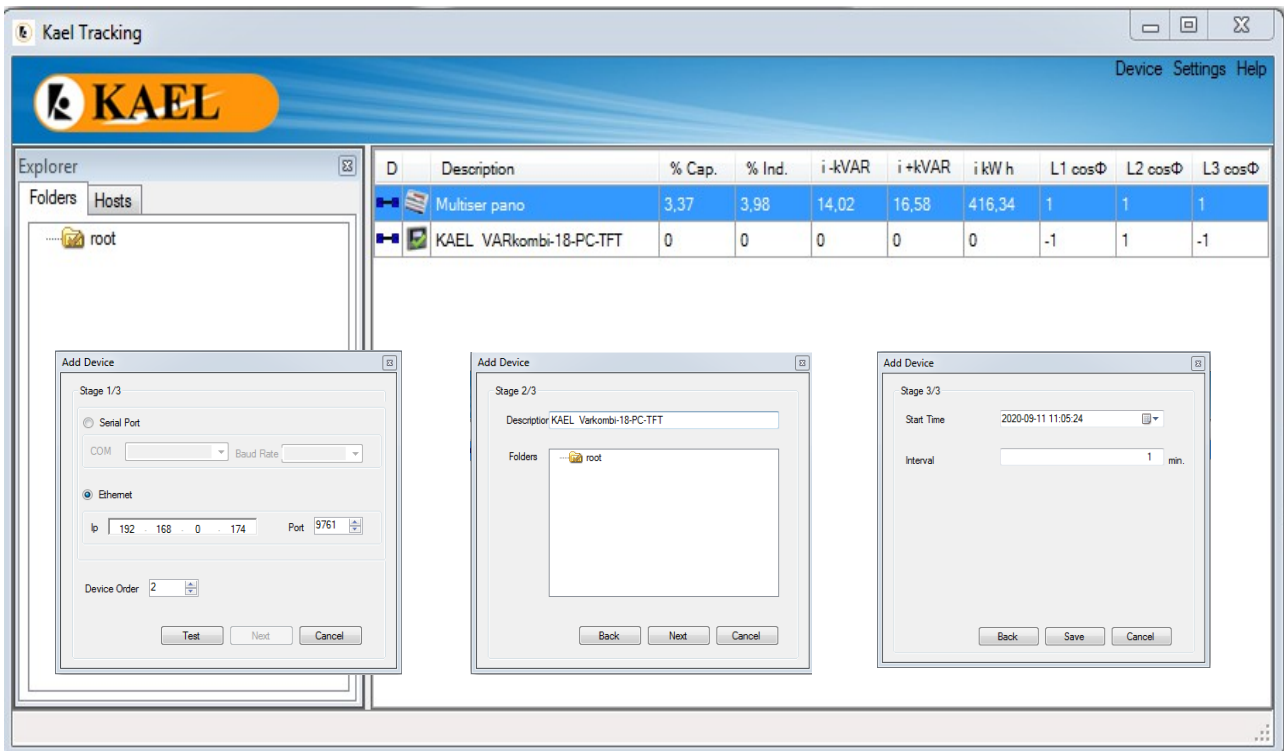


If there is a change in the related information of one of the devices attached to the software, we can edit the new information about the device under the "Update Device" menu.

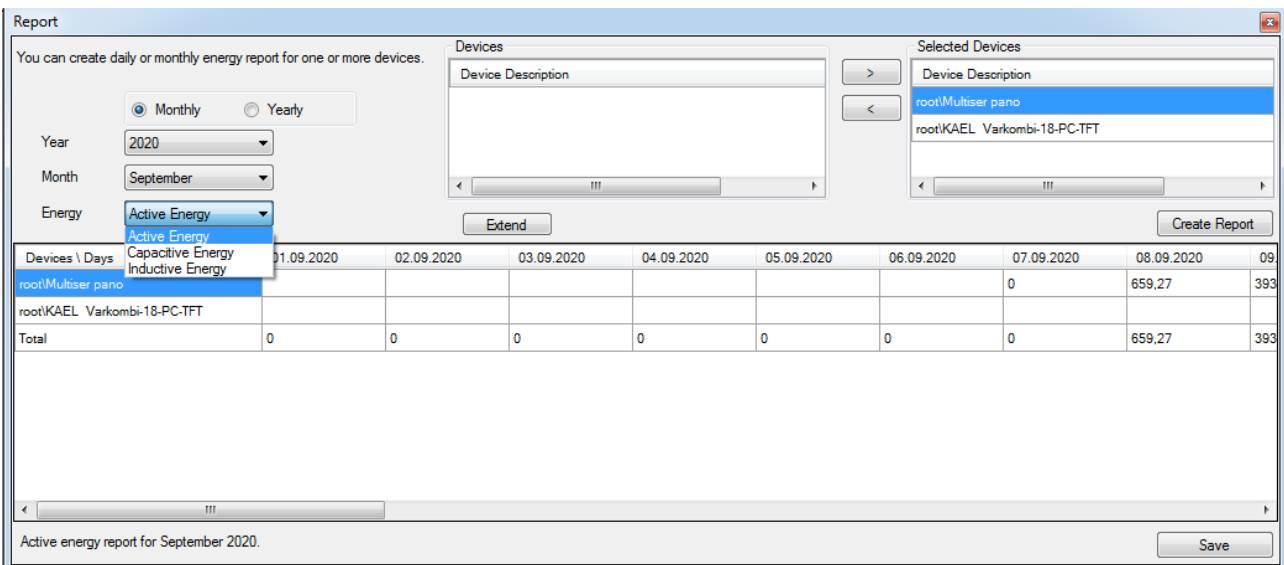


The changes we can make under the “Update Device” Update submenu;

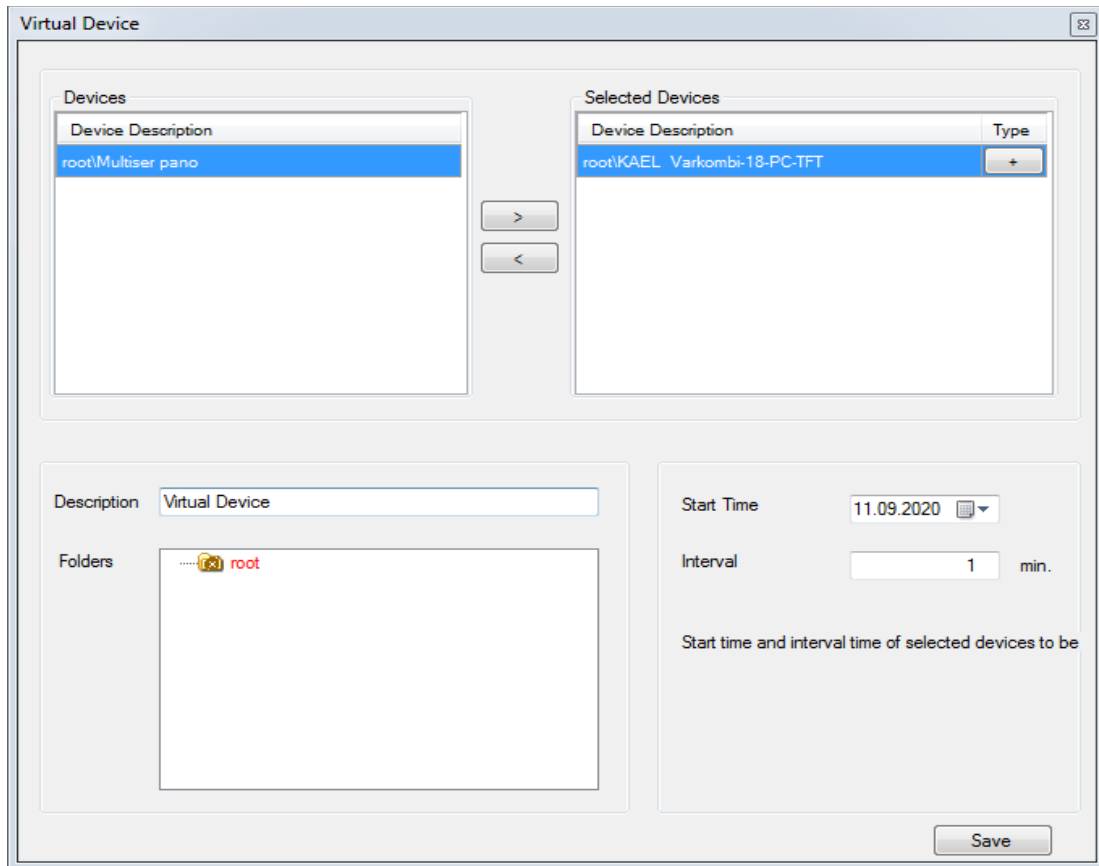
- Device's connection type (IP or serial port)
- Device description and associated folder selection
- Data recording time interval (min.1 minute)



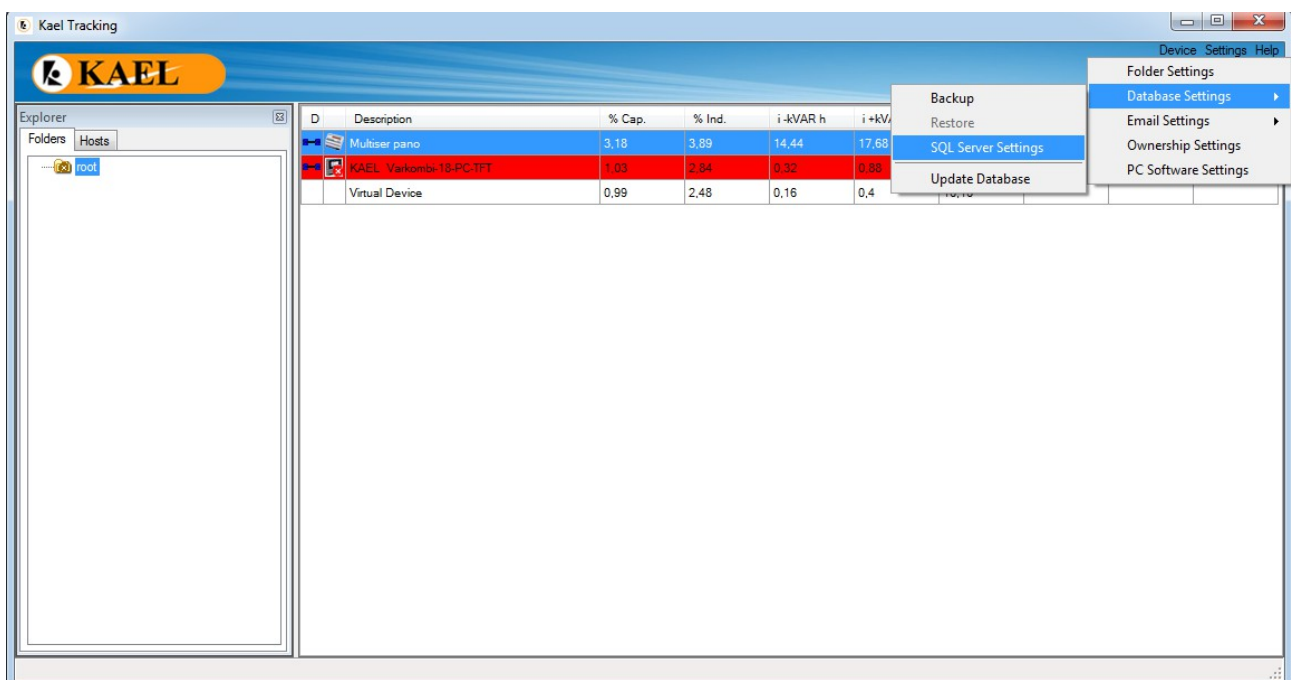
A daily energy report can be created for one or more devices on the software. Devices that we want to receive daily reports are moved to the right window with the right arrow button on the window. As seen below, the software gives us daily reports on “Selected Devices” in a list.



Total consumption of more than one devices can be viewed by "Virtual Device". Related devices should be added to the menu of "Selected Devices".



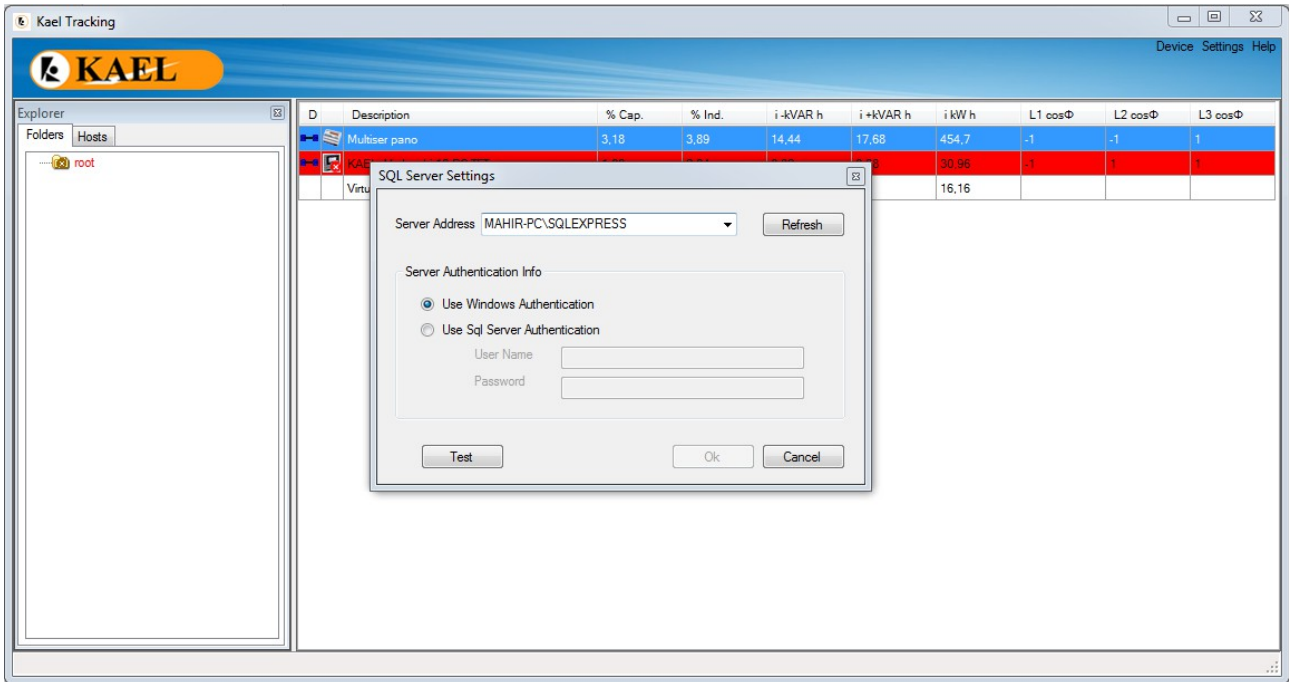
If we want to have a back up of datas saved in the PC; Input to "Backup" in the "Database Settings".



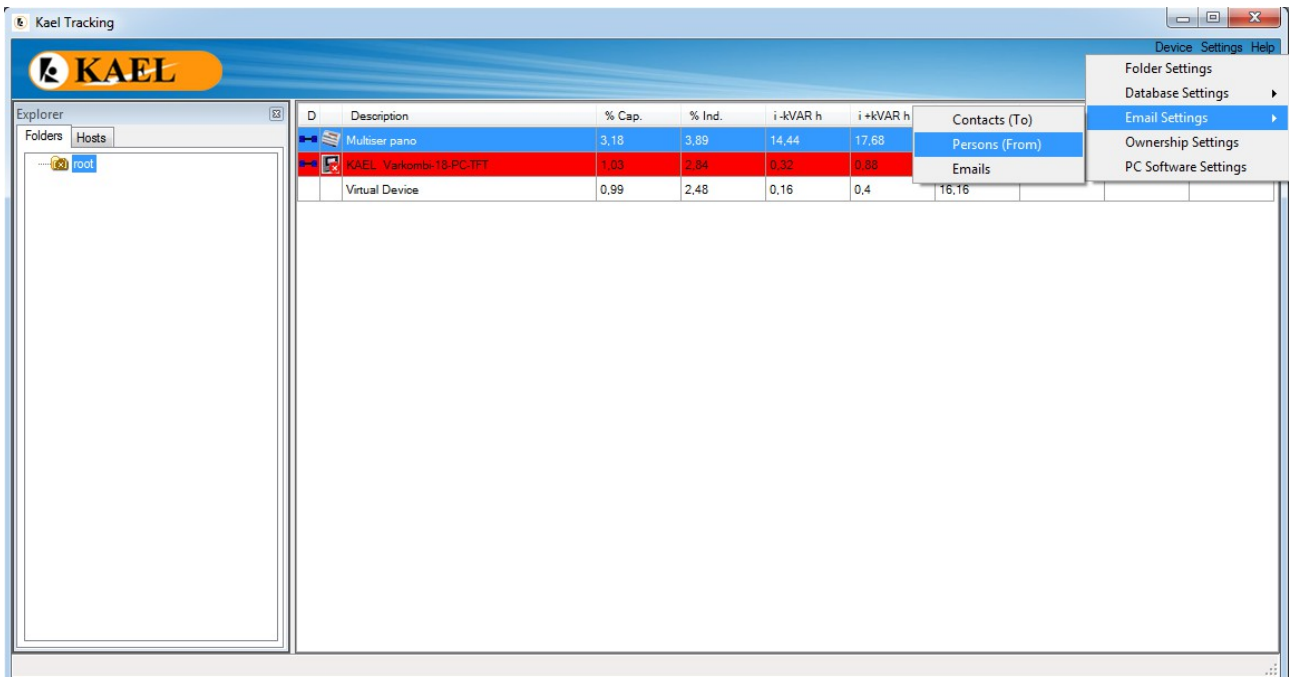


We use the Sql server settings menu to verify our current sql server settings or access data backed up on the server from another computer in the network .

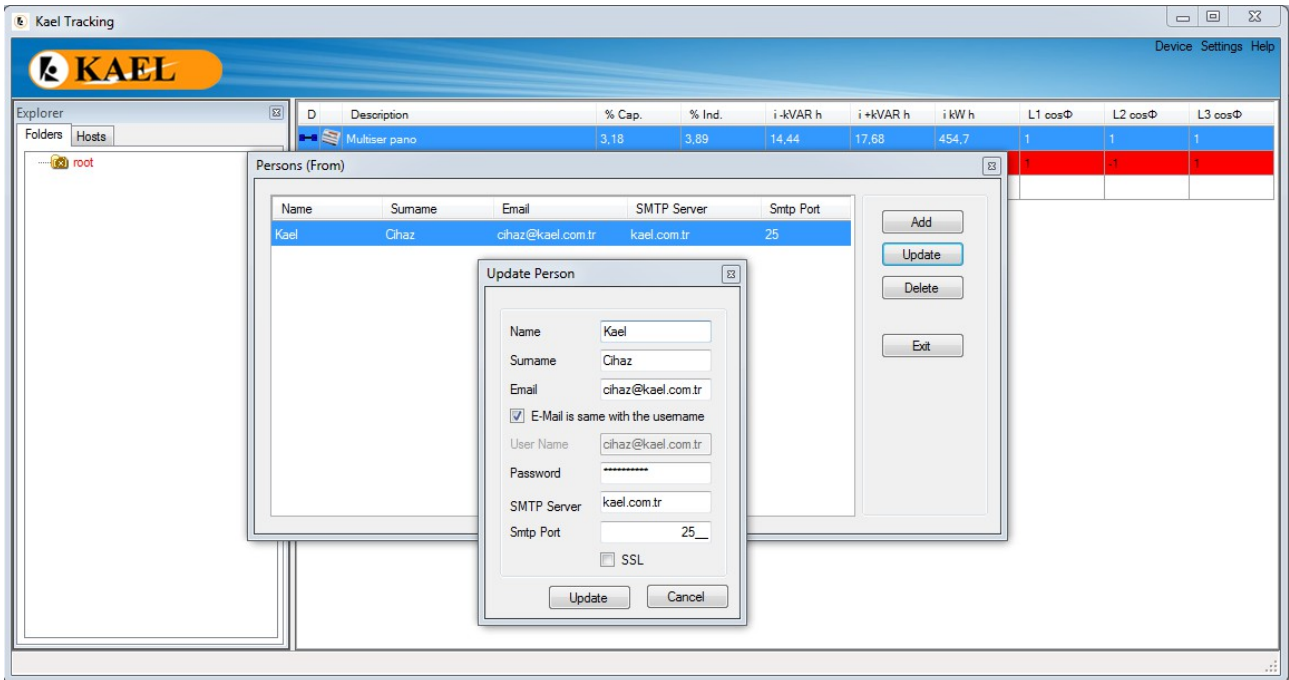
Note: The server whose data we want to access should be given our permission by the admin.



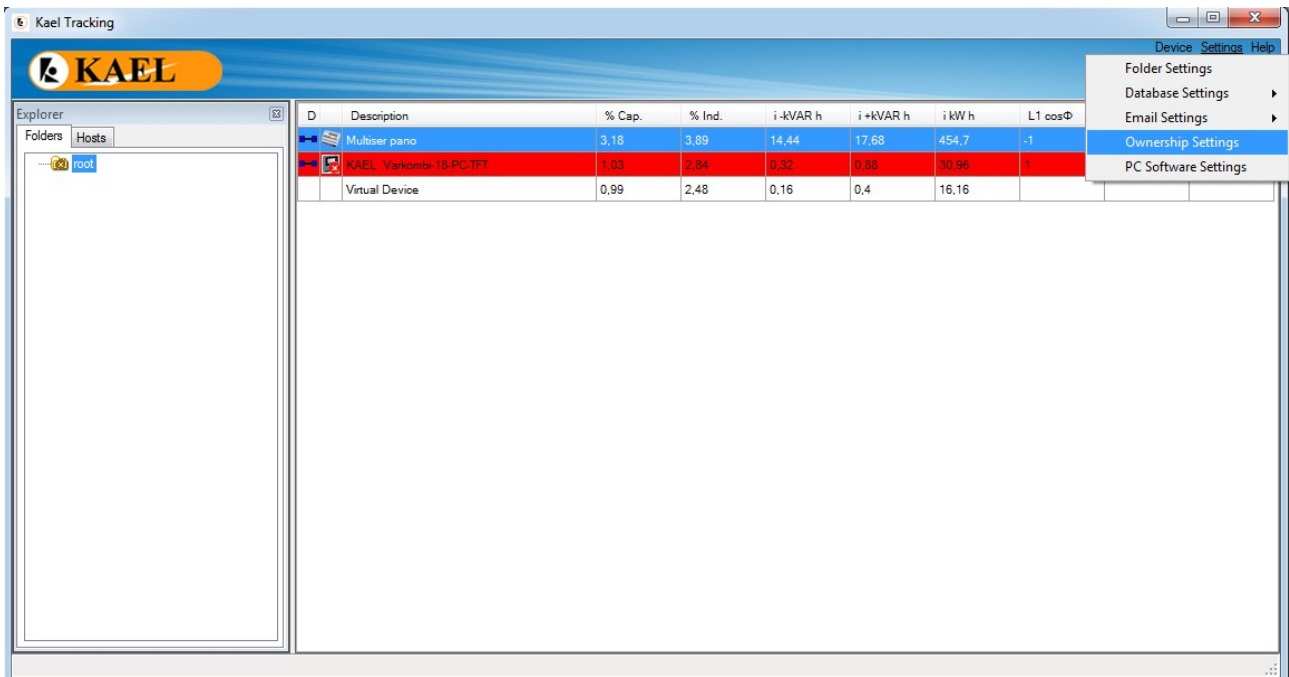
If we want the software to send us an e-mail, we need to enter the persons to be mailed to and our mail server settings from the relevant menu, from the E-mail Settings sub-menu.



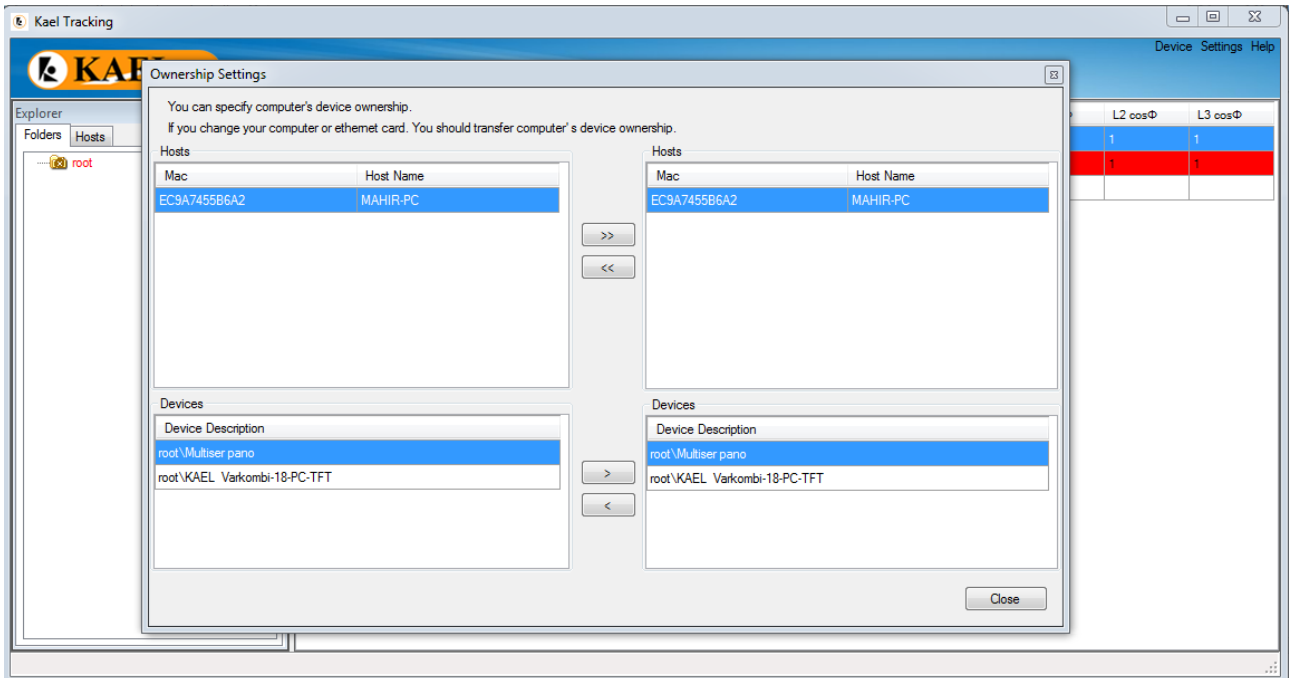
At the same time, it would be best to inform your own IT officer and help you with the relevant settings. The information processing officer must allow the software through the firewall as well as the relevant settings, otherwise the software will not send you mail.



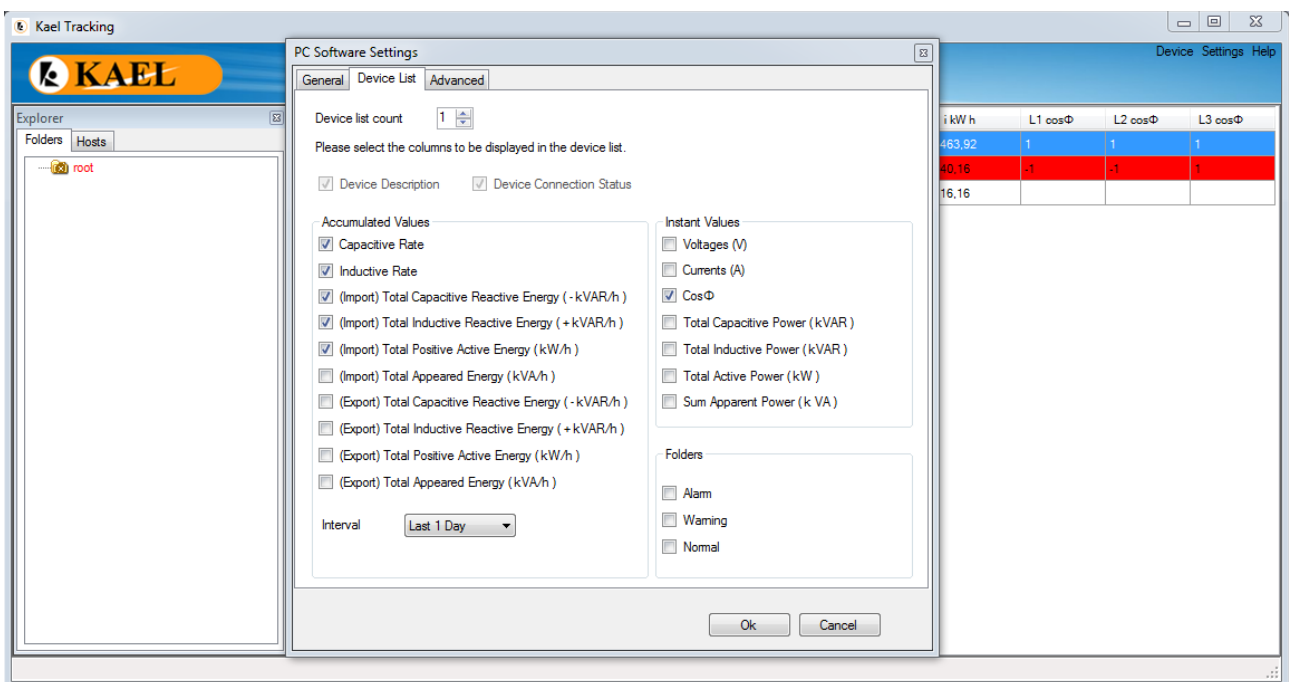
Devices whose data are stored on a computer are matched with the MAC number of that computer. When this data is transferred to another computer, the device ownership settings must be transferred to the new computer in order to access the relevant data.



We can also encounter this situation when switching from ethernet connection to wifi or using “Virtual PC”. We transfer the ownership settings by looking at the mac address of the computer we want to transfer.



We can choose the data we want to see on the main screen from the “PC Software Settings” menu. These data are divided into two as “Accumulated Values” and “Instant Values”. The accumulated energies are updated at least every 1 minute, user-defined. Instantaneous energies change every second. Instant data can tire your system if your computer isn’t very good at tracking too many devices. If you encounter such a situation, our recommendation is to turn off instant data. If the number of devices you are following does not fit on the screen, you can divide the screen into the number you want from the device list tab to see all the devices you follow on a single screen.



Depending on the performance of your system, you can make the following settings from the Advanced setting menu.

The screenshot shows the Kael Tracking software interface. A 'PC Software Settings' dialog box is open, displaying the 'Advanced' tab. The settings are as follows:

- Max. thread count for instant reading: 10
- Max. thread count for recording: 10
- Refresh period for accumulated values in device lists: 10 min.

At the bottom of the dialog box are 'Ok' and 'Cancel' buttons. In the background, a data table is visible with the following content:

| i kW h | L1 cosΦ | L2 cosΦ | L3 cosΦ |
|--------|---------|---------|---------|
| 463.92 | 1       | 1       | -1      |
| 40.16  | 1       | 1       | -0.99   |
| 16.16  |         |         |         |