

SOFTWARE

# ZR SOFTWARE COMMUNICATION SOFTWARE VIA COUNTERS

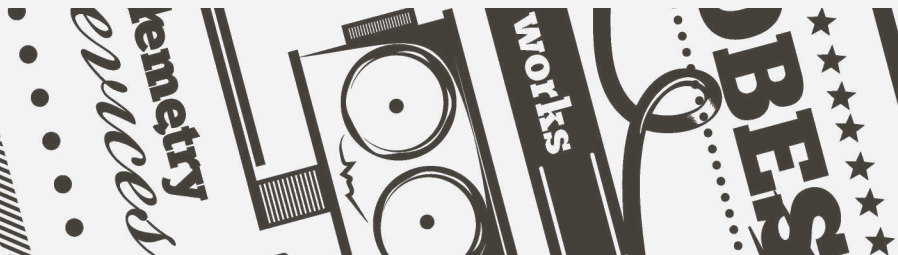
USER MANUAL



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# 01. ABOUT THIS DOCUMENT

This document, tells about the utilization of ZR software which enables reading values of electronic electrical counters communicating in standards of IEC62056-21, IEC870-5-102, DLMS / COSEM manually and automatically, saving, analyzing numerical and graphically, sending informative mails to related people, sharing the result values with ZR Cloud which is a cloud software. Z Telemetry may apply changes that are not mentioned in this document to the software without prior notice.

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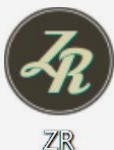


## 02. OPERATING ZR SOFTWARE

Please, setup the program by double clicking on Setup package just like any other Windows application and obtain a valid license.

**Supported Systems:** Win10, Win8.1, Win8, Win7 SP (Both 64 Bit and 32 Bit systems are supported)

**Supported languages:** Turkish, English, Spanish and Polish, any other language on demand.



Once the program is installed, you may start the program by double clicking on ZR icon shown at Figure 1.

FIGURE 1

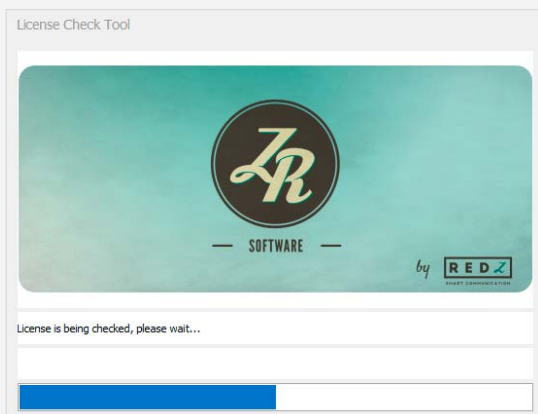


FIGURE 2

As soon as the program starts, the license information will be checked as in Figure 2. Then the program will be started. Please wait the main screen of ZR software to open.

Your license type might be one of the following;

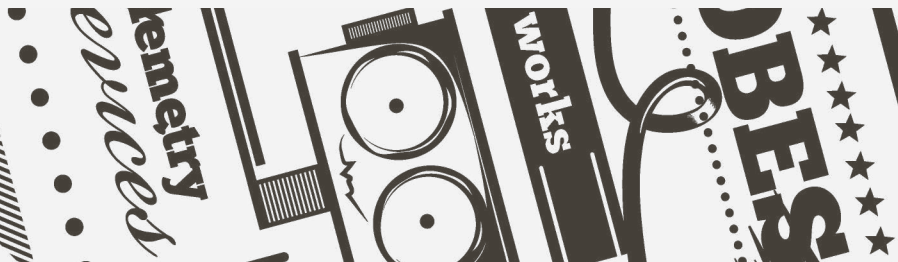
- Time limited demo license
- Use count limited demo license
- Counter number limited license
- Unlicensed
- Unlimited License

There may be one or more modules can be found mentioned below according to your license type as well;

- Serial Communication Module
- Ethernet Communication Module
- GSM Communication Module
- Automatic Reading Module
- Formulas Module
- Custom Reports Module
- Server and Client Module
- Mail Sending Module
- ZR Cloud Connection Option

The features that are independent from license

- Settings Module
- Counter Register Module
- Load Profile Reading Module
- Counter Values Module
- Tariffs Module



## 03. MODULES IN THE SYSTEM

ZR software, has been developed in a modular structure that consists of ribbon pages and advantages of this structure are as follows:

- Enabling the system constantly expandable by various modules
- Upgrading the software properties by extra licensing of various modules on request
- Utilization of the system with the relevant modules and thanks to it avoiding extra costs due to extra modules
- Realization of licensing easily according to the utilized modules

Every module has its own special functionality. You may own one or more than one modules according to your license restrictions.

### 3.1. SETTINGS MODULE

The basic module of ZR software is **Settings** module. It is independent from your license type and it is available in the software with all license types. The properties of menu options are described in Figure 3.

Program language can be changed by program options

When you click here you can pass to **Load Profile Module**

When you click here you can pass to **Meter Registration Module**

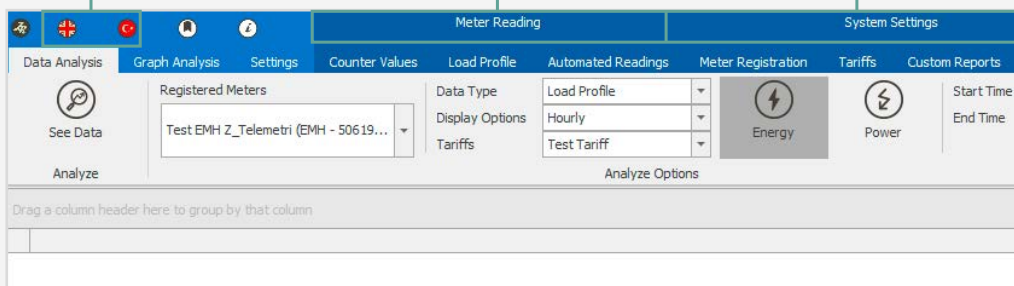


FIGURE 3

It is possible to change relevant settings of your license by **Licence Configuration Utility**

By **About** button, It is possible to reach to Software version information and **Z Telemetri** communication information

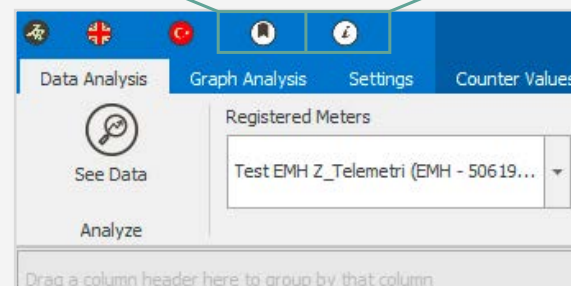


FIGURE 4

### 3.1.1. LANGUAGE SELECTION GROUP

After the determination of the preferred language please change the language by pressing to the relevant button. Software language will change immediately for all software and modules. Available languages are as follows;

- Turkish
- English (English)
- Espanol (Spanish)
- Polskie (Polish)



**NOTE:** Please contact to our company for the integration of other languages to the software.



With language types options you can change the language of the software

You can change relevant settings of your license by **License Configuration Utility**

Using **About** button, you can reach to Software version information and **Z Telemetri** communication information

FIGURE 5

### 3.1.2. LICENSE GROUP

Please, press **License** button in order to open License Configuration Tool. Screen at Figure 6 will appear.

Please contact our company to buy a valid license by the “Site Code” information that appears on this screen and press “Confirm” button by entering the “Site Key” information sent to you. Your program will be registered then.

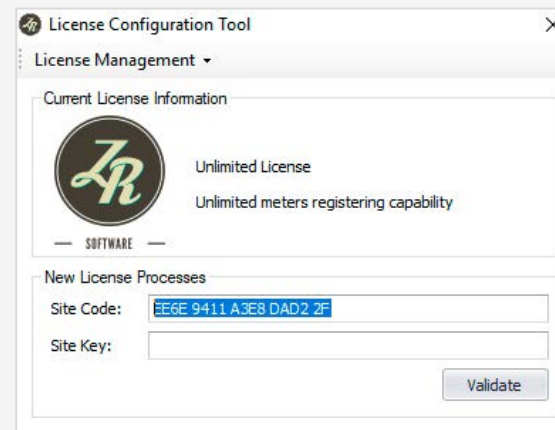


FIGURE 6



### 3.1.3. ABOUT GROUP

Please click on “**About**” button in order to get the software version information and **Z Telemetry** company contact information. You may click on the link shown at Figure 7 to access to the related website.

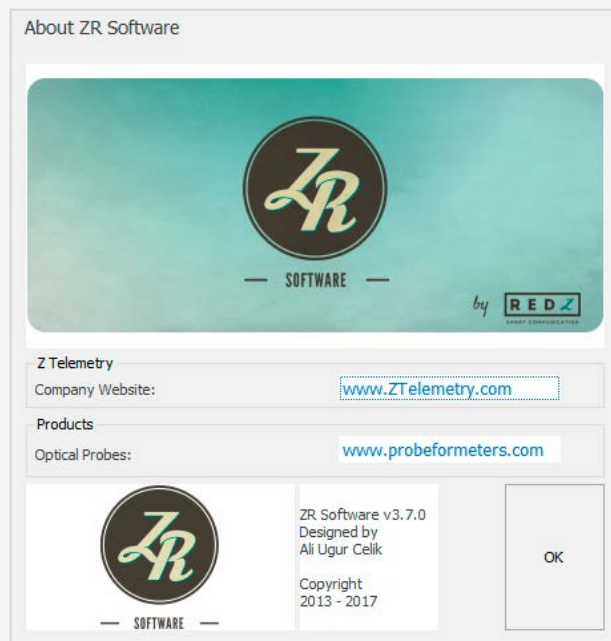


FIGURE 7

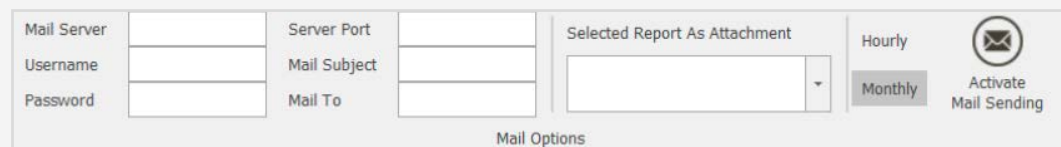


FIGURE 8

### 3.1.4 MAIL GROUP

It is possible to send special reports to relevant mail addresses. You should specify the **Mail Server, User Name, Password, Server Port, Mail Subject** and **Mail Address** which you can see at Figure 8. Then you should also specify the period of reporting. Finally when you click Activate Mail Sending button the counter data read will be sent to the related person.

For Monthly selection, every month at 12:07, the monthly report is sent. For Hourly selection, values for that day are reported at each 10 minutes. Both selections can be active at the same time.

### 3.1.5. SERVER SETTINGS GROUP

This software is designed to run as Server or Client. Depending on the type of license, the software can only be Server or Client. The server software is no different from standard ZR Software. In case of client software, the reading functions are restricted and the data can only be extracted and analyzed from the server ZR Software. It has been developed for the use of a location which has more than one type of ZR Software.

In the server software, the **Server Listening Port** specified in Figure 9 must be specified. The number of **ZR Client** which the server will connect, must be specified and then you should click the **Server Start**. The corresponding port must be accessible via the network (the relevant firewall settings must be made if necessary). After the correct operation the button will remain pressed.

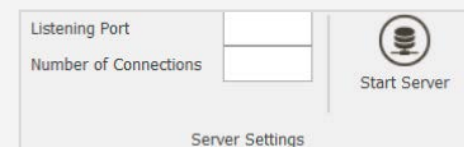


FIGURE 9

### 3.1.6. CLIENT SETTINGS GROUP

The software has been developed to operate as both Server and Client.

In client ZR Software, the reading functions are restricted and the data can only be extracted and analyzed from the server ZR Software. It has been developed for the use of more than one type of ZR Software at the same location. For the client software in Figure 10, the Server IP of the ZR software running as the Server should be specified in, the Server Port must be entered, and you should

click to the **Connect Server** key. The corresponding port must be accessible via the network (the relevant firewall settings must be established if necessary). After the correct operation, the button will be pressed and the registered meters will be listed. The client software only works with Data analysis options. All other settings are checked from the server software. Example menu options are shown in Figure 11.

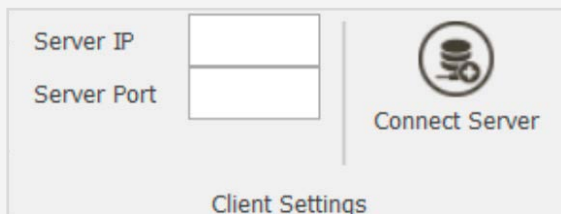


FIGURE 10



FIGURE 11

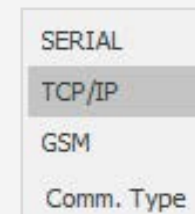


FIGURE 13

## 3.2. METER REGISTRATION MODULE

In order to read faster and easier more than one **EMH, Elster, Itron (previously known as Actaris) Landis&Gyr, Iskra, Pozyton, Socomec, Köhler, Makel, counter that supports IEC870-5-102 protocol** or other (mentioned as NONE) counter registry is made by entering counter information and communication type. Registry process is also has to be executed for load profile reading process. Saved counters are displayed in all communication types. Necessary procedures in order to execute counter registry are described in Figure 12.

### 3.2.1. COMMUNICATION TYPE GROUP

At Communication Type group communication type that will be registered is selected. According to the selected communication type SERIAL, ETH and GSM setting can be changed.

The relevant settings, must be entered as it is described in SERIAL, ETH and GPRS Communication Modules. In Figure 13, one of the exemplary preference is shown.



In **Counter Information** group the location name of the counter, serial number, counter type and counter factor are displayed and organized

At **Settings** section, there are specific settings for the chosen communication type. Within this framework, settings are applied as it is told in the relevant module's setting

All of the defined counters in the system can be seen at **Registered Counters** list

At Operations section adding new counter to system, editing information for existing counter and deleting selected counter at the registered counters list from the system can be executed

At Communication Type group, communication type that will be registered is selected

The complete list of saved counters, is displayed on the bottom of screen

When you double-click to the meter you want to select, the relevant information will be automatically selected at the options

**Information Bar** sums up existing settings

You can enter the name of the meter you want to search for and click **Find** to have the corresponding meter filtered from the list below. If you click **Clear**, the counter that you wrote, will be deleted from the corresponding tab

The screenshot shows the ZR Software interface with the following sections:

- Counter Information:** Location Name (Test EMH Z\_Tele...), Meter Type (EMH), Serial Number (5061905), Multiplier (1).
- Settings:** IP (192.168.1.1), Port (5001), Physical Address (5061905), Final Speed (19200).
- Registered Counters:** A table listing various meters with columns for Location Name, Meter Type, Serial Number, Comm. Type, Physical Address, IP, Port, Final Speed, Initial Baud Rate, and Multiplier.
- Operations:** Add, Edit, Delete buttons.

Location Name	Meter Type	Serial Number	Comm. Type	Physical Address	IP	Port	Final Speed	Initial Baud Rate	Multiplier
Test EMH Z_Telemetri	EMH	5061905	TCP/IP	5061905	192.168.1.1	5001	1	19200	1
Azızoğlu	Itron (Actaris)	63022748	TCP/IP	2748	5.11.174.60	10001	1	9600	0
ASİL GIDA TURZ. OTEL. SAN. VE TİC. LTD. ŞTİ. E125	Itron (Actaris)	63007580	TCP/IP	7580	5.26.191.239	5001	0	300	0
DUYHAN GIDA TARIM SAN.VE TİC.A.Ş. E103	Itron (Actaris)	63022745	TCP/IP	2745	5.11.174.23	5001	0	300	0
Mordoğan	Elster	471137	TCP/IP	471137	85.105.29.77	10001	0	300	0
Büyükdüz	Elster	419678	TCP/IP	419678	78.188.239.205	10001	0	300	0
ARAFAT KAROSER DEMİR DOĞ.OTOM.NAK.İNŞ.SAN.VE TİC.LTD.ŞTİ. E157	Itron (Actaris)	63022647	TCP/IP	2647	5.11.152.211	5001	0	300	0
Kızıltepe Star	Itron (Actaris)	63022636	TCP/IP	2636	5.11.174.6	5001	0	300	0
CEMDUY	Itron (Actaris)	63022666	TCP/IP	2666	5.11.175.114	5001	0	300	0
YAY ÇİVİ TEL VE GIDA SAN.TİC.A.Ş. E029	Itron (Actaris)	63022633	TCP/IP	2633	5.26.105.171	5001	0	300	0
Köyer Telist	Itron (Actaris)	63224046	TCP/IP	4046	5.11.174.80	5001	0	300	0
Sanko_Test	EMH	6839360	TCP/IP	6839360	212.175.77.254	10001	0	19200	0
Duyan Un(Hacıakroğulları)	Itron (Actaris)	63022638	TCP/IP	2638	5.26.105.175	5001	0	300	0
Demirler Çataltepe	EMH	6839363	TCP/IP	6839363	88.250.249.195	10001	1	19200	0
ROBİN MOBİLYA TARIM GIDA NAK.İNŞ.SAN.VE TİC. LTD.ŞTİ. E30	Itron (Actaris)	83848181	TCP/IP	8181	5.11.174.71	5001	0	300	0
YEŞİLMEN METAL İNŞ.VE YAPI AKSESUARLARI SAN.VE TİC.LTD.ŞTİ. E131	Itron (Actaris)	83848180	TCP/IP	8180	5.11.152.207	5001	0	300	0
USYAP KASSAP PİYÇ DOĞRAMA NAK.İNŞ.TAR.KUY.SAN.VE TİC.LTD.ŞTİ. E136	Itron (Actaris)	83848179	TCP/IP	8179	5.11.175.106	5001	0	300	0
İREM TAR. ÇİRCİR İŞL.NAK.SAN.VE TİC.LTD.ŞTİ. E027	Itron (Actaris)	83848187	TCP/IP	8187	5.11.174.32	5001	0	300	0
SUMER PAM.YAĞI ÇİRCİR.TAR.İNŞ.NAK.SAN. E062	Itron (Actaris)	83848177	TCP/IP	8177	5.26.141.116	10001	0	300	0
İREM TAR. ÇİRCİR İŞL.NAK.SAN.VE TİC.LTD.ŞTİ. E027	Itron (Actaris)	83848187	TCP/IP	8187	5.11.174.32	5001	0	300	0
GOOD CHOICE TEKSTİL SAN. VE TİC. AŞ. E164	Itron (Actaris)	65007941	TCP/IP	7941	5.26.105.179	5001	0	300	0

Connection Type: TCP/IP Connection Details: 192.168.1.1:5001 Meter Type: EMH

FIGURE 12

### 3.2.2. METER INFORMATION GROUP

**Location Name:** Denotation that states the location of the counter

**Serial number:** Serial number of the counter. If it is shorter than 8 digits, it is recommended to be completed by adding «0» (zeros) at the beginning.

Location Name: GOOD CHOICE T...

Meter Type: Itron (Actaris)

Serial Number: 65007941

Meter Multiplier: 1

Meter Info

FIGURE 14

### Counter Type:

- EMH LZQJ-XC, LZQJ, LZKM ... series
- Elster A1500 and A1350
- ITRON (Actaris) SL7000 and ACE6000 series
- Landis & Gyr ZMD and ZMB series
- Köhler Ael.tf series
- Makel all series
- All of the counters that support IEC870-5-102 protocol

Or if it any other of than these can be selected as None. None option can be used if the counter is none of the types mentioned above. If selected None, communication is realized through IEC62056-21 Mode C protocol.

**Counter Factor:** This option is only used at the multiplication of counter profile values with an external factor during the registry. It is not essential for serial communication module. This value cannot be left blank and if there is no factor it must be entered as 1. When the selected counter changes in the list of registered counters the information of recently selected counter is filled automatically at the fields shown in Figure 15. When the location name, serial number, counter type and factor values are desired to be changed, after selecting the relevant counter from the registered counters then the modifications can be applied by updating at these fields under the **Operations** group. There will be no changes at the system for the new entries or alterations on existing counter information unless saving to the system by the utilization of buttons at the Operations group. These fields must not be left blank in the course of registering and saving the counter.

**NOTE:** All of the index values that operates at the standard of IEC62056-21 can be read by using ZR software. Yet load profile reading module operates for (if you have in your license) EMH, Elster, Landis & Gyr, ITRON (Actaris), counters that support IEC870-5-102 protocol, Köhler and Makel counters. Within this scope selection of counter type is essential for Load Profile Module.

## 3.2.3. SETTINGS GROUP

### Settings Group – SERIAL

Setting group can change according to the selected communication type. When serial communication type is selected it is shown in Figure 15.

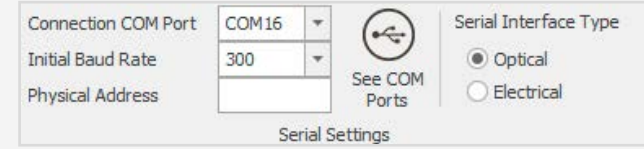


FIGURE 15

In order to communicate with counter, there are some simple settings must be made in the software.

1. Correct COM port must be chosen. To choose the correct COM port please display installed COM ports in your system by clicking on **See COM Ports**

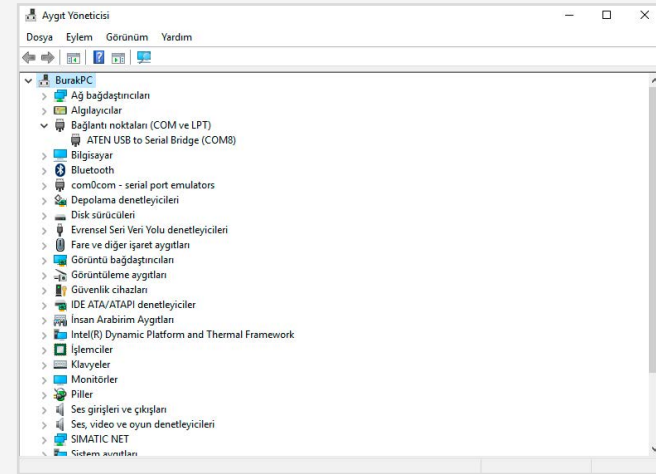


FIGURE 16

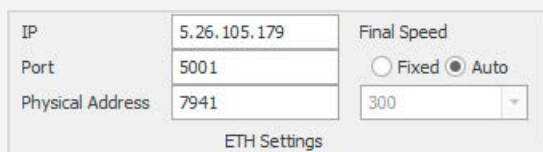
(communication devices such as optical port installed in the system). Once the Device Manager opened you may display the installed COM ports, under the Ports (COM and LPT) as it is shown in Figure 16.

After making sure that your device is connected to COM port, please close the Device Manager and choose the relevant COM port under **Connection Com Port**.

2. Choose the initial speed of the communication that will be executed with the counter through **Initial Baud Speed**. This value is attached to configuration of the counter generally;
  - 300 bauds for optical port
  - Between 4800 and 19200 bauds for RS232 and RS485 ports
3. Optionally enter the physical address to **Physical Address** field. This field;
  - Is **optional** at communications executed via Optical port and RS232 port
  - Is **obligatory** at communications executed via RS485 port if there is more than one counters at RS485 bus
4. Through Serial Interface Type, the type of the physical connection that will be connected to the counter is selected. It varies according to the counter protocol.

### Settings Group – ETH and GPRS

Setting group changes according to the chosen communication type. When TCP/IP communication type is selected it is shown in Figure 17.



IP	5.26.105.179	Final Speed <input type="radio"/> Fixed <input checked="" type="radio"/> Auto 300
Port	5001	
Physical Address	7941	

ETH Settings

FIGURE 17

In order to execute communication with counter, there are some simple settings must be made in the software.

1. It is required to enter valid and reachable **IP** information of the device you use for communication.
2. It is required to enter **Port** information of the device you use for communication



**NOTE:** Please make sure that the connection to the communication device and remote port is executed correctly. If you have any hesitations about checking the connection with the remote port is executed correctly, please ask help from your network administrator.

- IP value for RS / ETH, RS / Fiber Optical serial device servers is the IP value that you set into the device. Please make sure that you can reach to these IP's within your own local network. IP value for GPRS modems, is the IP information that the GSM operator assigned to the line.
  - Port value, is the listening Port value you set into the device.
3. Optionally enter the physical address to **Physical Address** field. This field;
    - Is **optional** at communications executed via Optical port and RS232 port.
    - Is **obligatory** at communications executed via RS485 port if there is more than one counters at RS485 bus.
  4. From the **Final Speed** section, select the final speed whose information will be sent to the counter via confirmation message.
    - If your communication device has been set to a different speed than your final speed of counter, please tick the **Fixed** option and set the speed that you use in your communication device to the software. This option is utilized when the counter doesn't support fixed communication speed.
    - If your counter supports fixed communication speed and your communication device has the same speed as counter does, please tick **Auto** option.

## Settings Group – GSM

The settings group changes with the selection of communication type. You can see the case of GSM communication type selected, from the Figure 18.

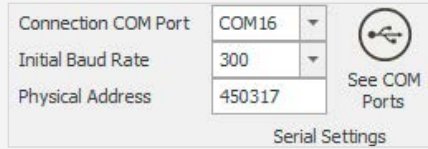


FIGURE 18

In order to communicate with counter, few simple adjustments have to be made in the software.

1. The correct COM port must be selected. This COM port refers to the port which modem is connected. To select the correct COM port, please click on **View COM ports** to see the installed COM ports (communication devices such as optical probe) in your system. When you open Device Manager, you can see the installed COM ports under the heading of Connection points (COM and LPT) as in Figure 19.

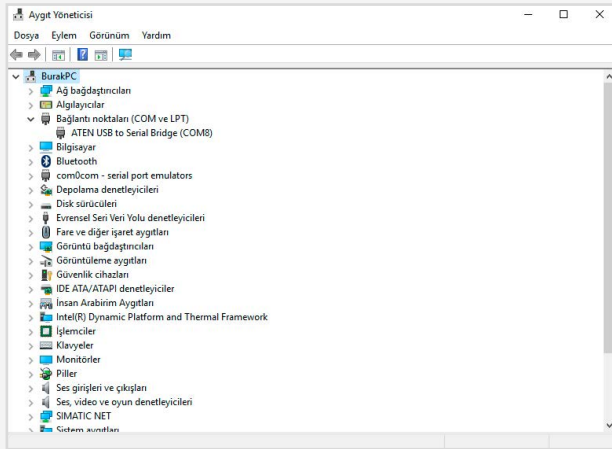


FIGURE 19

Once you are sure of the COM port of your installed device, please close **Device Manager** and select the relevant COM port under **Connect COM Port**.

2. Enter GSM modem phone number which has CSD feature, to be used on the other side to connect the Phone Number.
3. Optionally enter the Startup Command to the modem. It can be entered as any required command from the AT command set.

## 3.2.4. REGISTERED COUNTERS GROUP

It is sufficient to press Read button after selecting the desired meter listed under Registered Counters in order to make easy readings in the system. Yet in order to save read counter to the system and to read quickly without entering the parameters of this counter in the future again, user need to add it to Registered Counters as it is shown in Figure 20. In this group registered counters to the system are displayed. Within this list all the counters which use different communication infrastructures are displayed together. When a new counter is selected from the list, the relevant communication infrastructure type will be selected and the relevant parameters will be filled automatically.



FIGURE 20

The location name, counter type, serial number of the counter and the registered id number of the counter in the registered counters list is displayed in the following format. The important thing for the user here is the location of the counter, type of counter and its serial number.

**Location name (Counter Type – Serial Number) (Counter Id)**

A new counter can be added, the information of the available registered counter can be edited or another available registered counter can be deleted from the registered counter list by using the Operations menu group. For details please apply to Operations Group descriptions.

At the bottom of the window, all the registered counters are listed. An example is shown at Figure-21. It is possible to select meter briefly at the top by double clicking the corresponding number. It is also possible to quickly search by entering the information (counter serial number, location name, etc.) of any recording into the corresponding box.

Drag a column header here to group by that column

	Location Name	Meter Type	Serial Number	Comm. Type	Physical Address	IP	Port	Final Speed	Final Speed	Initial Baud Rate	Multiplier
▶	test actaris	Itron (Actaris)	36000112	SERIALOPTIC	17	0	COM16	0	0	300	1
	test BT	None	36000112	SERIALOPTIC	17	0	COM16	0	0	300	1
	test elster	Elster	450317	SERIALOPTIC	450317	0	COM16	0	0	300	1

FIGURE 21

### 3.2.5. OPERATIONS GROUP

In Operations Group, **Add**, **Edit** and **Delete** processes are available. ZR software enables saving and recalling the counter information in the system. This way previously identified counters are listed in the **Registered Counters** group every time ZR is opened. Index reading or load profile reading processes can be executed by choosing these counters. In the processes group a new counter can be added by using **Add** button. In the Settings and Counter Information group entered counter information is saved to the system. In the same way, when it is wanted to change counter information, counter information can be updated by using the latest information that has been entered to Settings and Counter Information group by clicking on **Edit** button. In order to delete a registered counter from the system it is needed to click on **Delete** button. These buttons are shown in Figure 22.

In order to prevent executing on the counter by mistake, the confirmation of the user is obtained before the process has been completed **“Are you sure to save a new counter?”**, **“Are you sure to change the selected counter?”** or **“Are you sure to delete the selected counter?”** questions are asked by the system.

Before adding new counter and editing counter processes a check is executed by the system whether the necessary data is entered or not. For instance, If Location Name wasn't entered, user is warned by **“Please enter Counter Location!”**. The required fields in the new counter entry and edit counter for serial communication are as follows: **Communication Information, Location Name, Serial Number, Counter Type and Counter Multiplier**.



FIGURE 22

### 3.3. COUNTER VALUES READING MODULE

You can communicate with all counters which use IEC62056-21 (previously known IEC1107) Mode-C and IEC870-5-102 standards without brand or type restriction. Also you can read index values with DLMS/COSEM protocol with Landis & Gyr and Itron (former name Actaris) brand counters if you have the relevant license. For Socomec counters, you can communicate with Modbus protocol.

The billing values for the read counters are stored in the database as a single row. This value is usually the first day of the month recorded by the meter which is recorded at 00:00. This value will be recorded if it is performed manually

with the button on the counter. The date and time of all values are read from the counter.

User can communicate with the following communication methods over Serial, TCP/IP and GSM; Menu preferences are described in Figure 23.

- Optical probe
- RS232 port
- RS485 port
- RS / Fiber Optical Serial Device Server
- RS / ETH Serial Device Server
- VCOM created with a network device like GPRS Modem (Virtual COM Port)
- GPRS / EDGE / 3G / 4G modem.

Counter reading process is started by **Read** button

In **Registered Counters** list all the identified counters to the system can be displayed

In **Communication Status**, you can monitor communication status instantly

**Information Bar** sums up the current settings of the module

With **Save, Open** and **Print** buttons, processes of saving on read data, reopening and printing can be executed

In Data Analyze section, the read data is presented apprehensible and graphically

FIGURE 23



### 3.3.1. FAST READ GROUP

Fast Read group enables the execution of communication with the counters. Menu preferences are presented in Figure 24:



FIGURE 24

Please click on **Read** Button to start reading after executing the settings. The program, will start the counter communication with the mentioned settings and will display instant reading status in **Communication Status** section. Sample reading is presented in Figure 25.

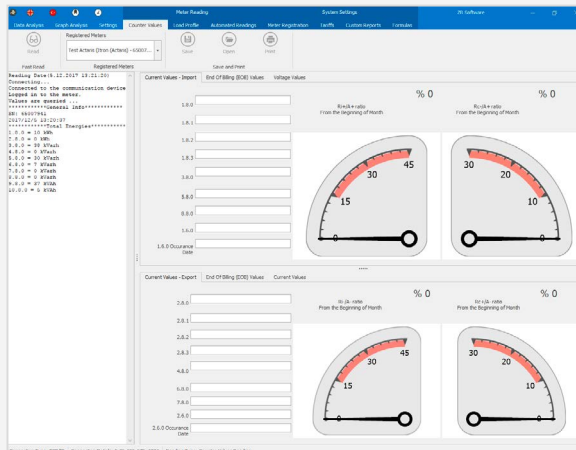


FIGURE 25

In case of an error during reading, detailed information will be presented in the instant communication section concerning the error. In this situation, try reading the counter once again by changing reading options within the scope of details listed in instant communication status.

In the event of reading the counter successfully, the Device has been read successfully and BCC correct statements will take place in the instant communication status section and this section will turn into **green**. In case of an error during reading, again the error will be notified in the same section and this section will turn into **red**. The screenshot sample after the correct reading is represented in Figure 26.

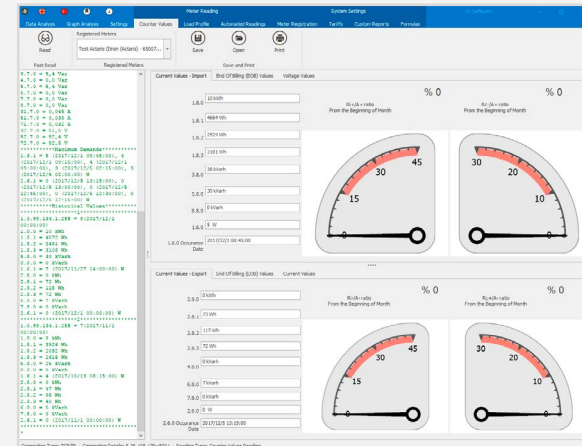


FIGURE 26

In the event of a successful reading, data will be displayed in **Data Analyze** section in a more legible and graphical formatting after being analyzed.

In **Current Values** section, in addition to existing billing values and voltage ratings reactive/active energy ratios that has been composed from the latest billing period will be displayed in import and export directions as shown in Figure 27.

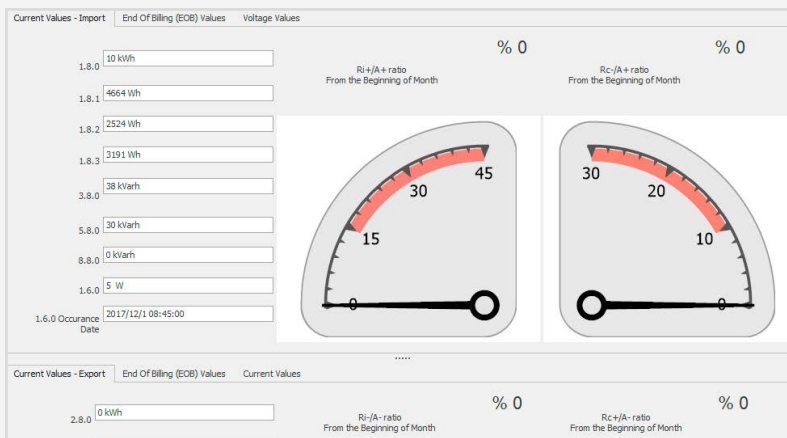


FIGURE 27

In **End of Billing Values** section the latest and the previous Billing values are displayed in import and export directions and by this means the latest and the previous billing periods values are available as it is shown in Figure 28.

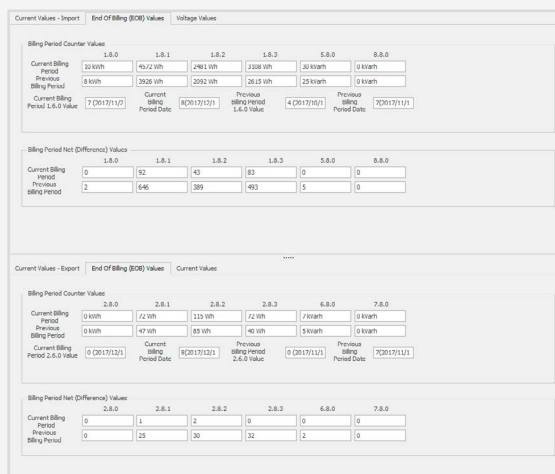


FIGURE 28

In **Voltage and Current Values** section values are displayed for all phases as it is shown in Figure 29. These values can be displayed in all counters that which supports communication.

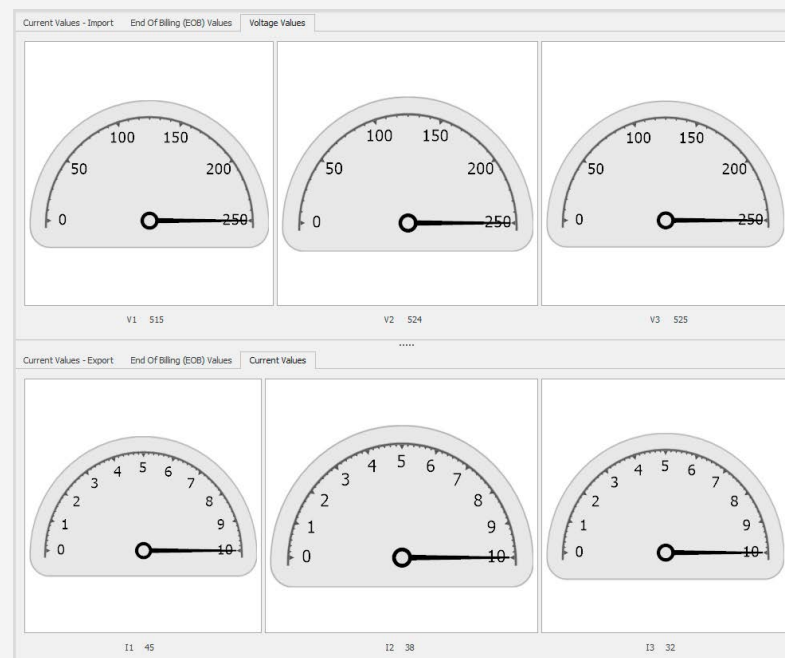


FIGURE 29

You can also check those important settings from **Information Bar** and change them according to your needs. A sample of information Bar is shown in Figure 30.



FIGURE 30

### 3.3.2. REGISTERED COUNTERS GROUP

It is sufficient to press **Read** button after selecting the desired meter listed under **Registered Counters** in order to make easy readings in the system. Yet in order to save read counter to the system and to read quickly without entering the parameters of this counter in the future again, user need to add it to **Registered Counters** as it is shown in Figure 32. In this group registered counters to the system are displayed. Within this list all the counters which use different communication infrastructures are displayed together. When a new counter is selected from the list, the relevant communication infrastructure type will be selected and the relevant parameters will be filled automatically.

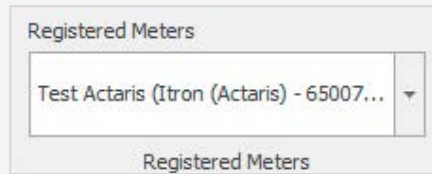


FIGURE 31

The location name, counter type, serial number of the counter and the registered id number of the counter in the registered counters list is displayed in the following format. The important thing for the user here is the location of the counter, type of counter and its serial number.

**Location name (Counter Type – Serial Number) (Counter Id)**

A new counter can be added, the information of the available registered counter can be edited or another available registered counter can be deleted from the registered counter list by using the Operations menu group. For details please apply to Operations Group descriptions.

### 3.3.3. SAVE AND PRINT GROUP

Through the buttons of Save and Print group, it is possible to save the read data, to reopen the saved data and to print it. By this means archival storage and utilization of the read data in different time frames are possible. Menu options are presented in Figure 32:

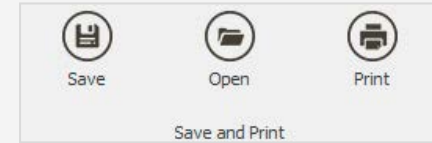


FIGURE 32

Once the counter is read correctly **Save** button must be clicked on so as to save the read data. Saving dialogue window will be opened as shown in Figure 33.

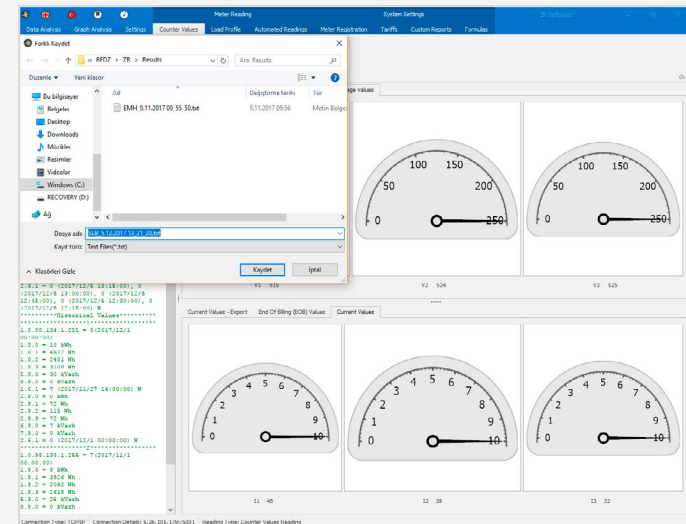


FIGURE 33

**Default path of the saved file:** The folder that the program installed \Results

**Default name of the saved file:** in the format of (if available) IEC code - reading date - reading time.

Once the name of the file is determined **Save** button must be clicked on so as to execute saving process.

If the previously saved file is needed to be viewed by reopening it **Open** button must be clicked. Open file dialogue window will be opened as shown in Figure 34.

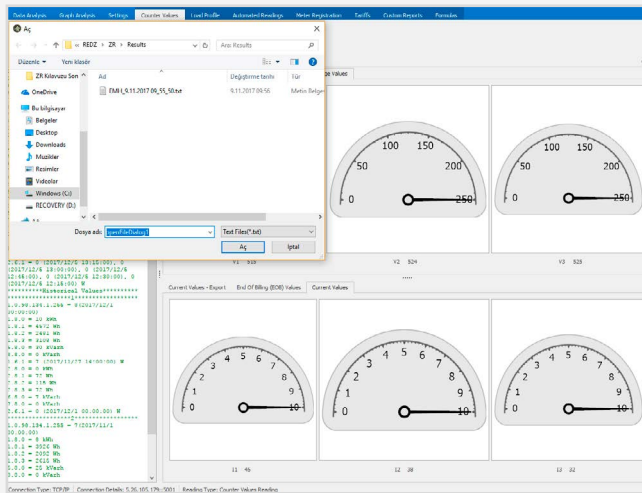


FIGURE 34

**NOTE:** It is possible to save any data shown at instant communication status including the errors occur during communication. Therefore, Data Analyze section will not be updated once a new file is opened.

**Print** button must be clicked on so as to create reports from previously read or recently read data. **Report Creation Options** shown in Figure 35 will be displayed.

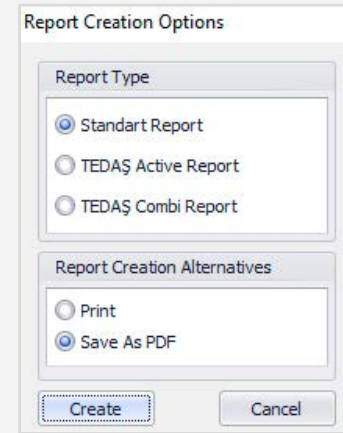


FIGURE 35

Initially please choose the report type, then click on **Create** button after choosing report creation alternative. Available versions are as follows;

Report Types:

- Standard Report
- Tedaş Active Report
- Tedaş Combi Report

Report Creation Versions:

- Printing
- Saving as PDF



**NOTE:** Please contact our company for your special reporting needs.



Screen shots related to available reporting are presented below as an example.

**Standard Report:** Is a report that index values are displayed as a result of reading. Standard report sample can be seen in Figure 36.

ELECTRONIC ELECTRICITY METER READOUT VALUES		
Meter ID:	Reading Date: 5.12.2017 13:21:20	Printing Date: 12/5/2017 1:36:11 PM
SN: 65007941		
2017/12/5 13:20:37		
*****Total Energies*****		
1.8.0 = 10 kWh		
2.8.0 = 0 kWh		
3.8.0 = 38 kVarh		
4.8.0 = 0 kVarh		
5.8.0 = 30 kVarh		
6.8.0 = 7 kVarh		
7.8.0 = 0 kVarh		
8.8.0 = 0 kVarh		
9.8.0 = 37 kVAh		
10.8.0 = 5 kVAh		
*****Energy Tariffs*****		
1.8.1 = 4664 Wh		
1.8.2 = 2524 Wh		
1.8.3 = 2601 Wh		

FIGURE 36

ELECTRONIC ELECTRICITY METER REGISTRY VALUES		
ELM79672712	Reading Date/Time: 1.8.2016 09:22:59	Printing Date/Time: 8/1/2016 9:26:13 AM
GENERAL VALUES		LAST ENERGY VALUES
Meter ID	ELM4<1>MAEC058614BH0	<b>Active Energy Counter Values</b>
Meter Serial Number	79672712	T (1.8.0) : 04168.028*kWh
Meter Time(hh:mm:ss)	09:37:26	T1 (1.8.1) : 02467.931*kWh
Meter Date(yy:mm:dd)	16-08-01	T2 (1.8.2) : 00797.596*kWh
Day of Week	1 Monday	T3 (1.8.3) : 00902.501*kWh
Demand Period	15*min	T4 (1.8.4) : 00000.000*kWh
Manufacturing Date	14-02-25	<b>Reactive Energy Counter Values</b>
Tariff Structure Config Time	00-00-00,00:00	Ri (5.8.0) :
Calibration Time		Rc (8.8.0) :
Battery Status	1(Good)	<b>Max. Active Demand, Date, Time</b>
Main Cover Opening Time, Num.	00-00-00,00:00	P (1.6.0) : 000.520*kW
Terminal Cover Opening Time, Num.	00-00-00,00:00,00	: 16-08-01,09:28

FIGURE 38

**Tedaş Active Report:** Is a report of the counters which execute Active Energy measurement in details. Tedaş Active Report sample can be seen in Figure 37.

### 3.4. TARIFFS

For the tariffs you want to save under the Targets module; You create the tariff by entering the **tariff name**, **tariff start time** and **tariff end time** information and clicking the **Add button**. You can then analyze the data from Data Analysis Module by selecting this tariff you created. Figure 39 shows the example of the tariff.

The tariff-based report example in data analysis is shown in Figure 40. The values in the specified range are also reported according to the tariff structure created. The hours are grouped according to the tariff name.

ELECTRONIC ELECTRICITY METER REGISTRY VALUES		
ELM79672712	Reading Date/Time: 1.8.2016 09:22:59	Printing Date/Time: 8/1/2016 9:25:39 AM
GENERAL VALUES		LAST ENERGY VALUES
Meter ID	: ELM4<1>MAEC058614BH0	<b>Active Energy Counter Values</b>
Meter Serial Number	(0.0.0) : 79672712	T (1.8.0) : 04168.028*kWh
Meter Time(hh:mm:ss)	(0.9.1) : 09:37:26	T1 (1.8.1) : 02467.931*kWh
Meter Date(yy:mm:dd)	(0.9.2) : 16-08-01	T2 (1.8.2) : 00797.596*kWh
Day of Week	(0.9.5) : 1 Monday	T3 (1.8.3) : 00902.501*kWh
Demand Period	(0.8.0) : 15*min	T4 (1.8.4) : 00000.000*kWh
Manufacturing Date	(96.1.3) : 14-02-25	
Tariff Structure Config Time	(96.2.2) : 00-00-00,00:00	
Calibration Time	(96.2.5) :	
Battery Status	(96.6.1) : 1(Good)	<b>Max. Active Demand, Date, Time</b>
Main Cover Opening Time, Num.	(96.7.0) : 00-00-00,00:00	P (1.6.0) : 000.520*kW
Terminal Cover Opening Time, Num.	(96.7.1) : 00-00-00,00:00,00	: 16-08-01,09:28

#### TIME SWITCHINGS AND TARIFF STRUCTURE

FIGURE 37

**Tedaş Combi Report:** Is a report of the counters which execute Active and Reactive Energy measurement in details. Tedaş Combi Report sample can be seen in Figure 38.

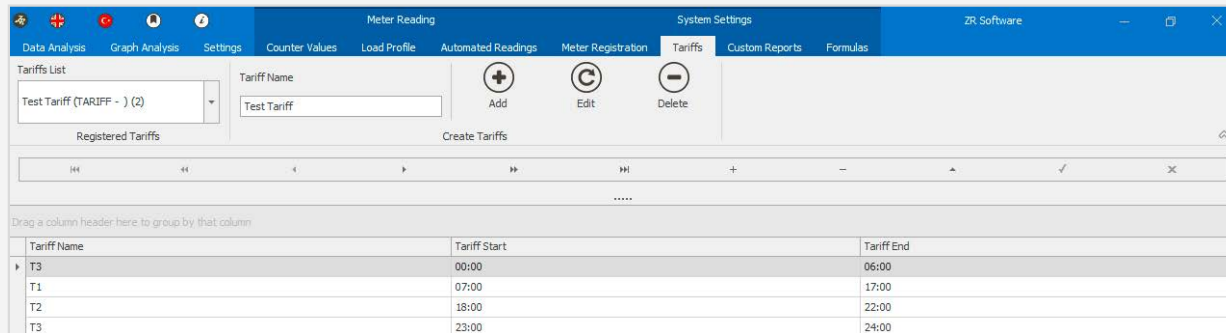
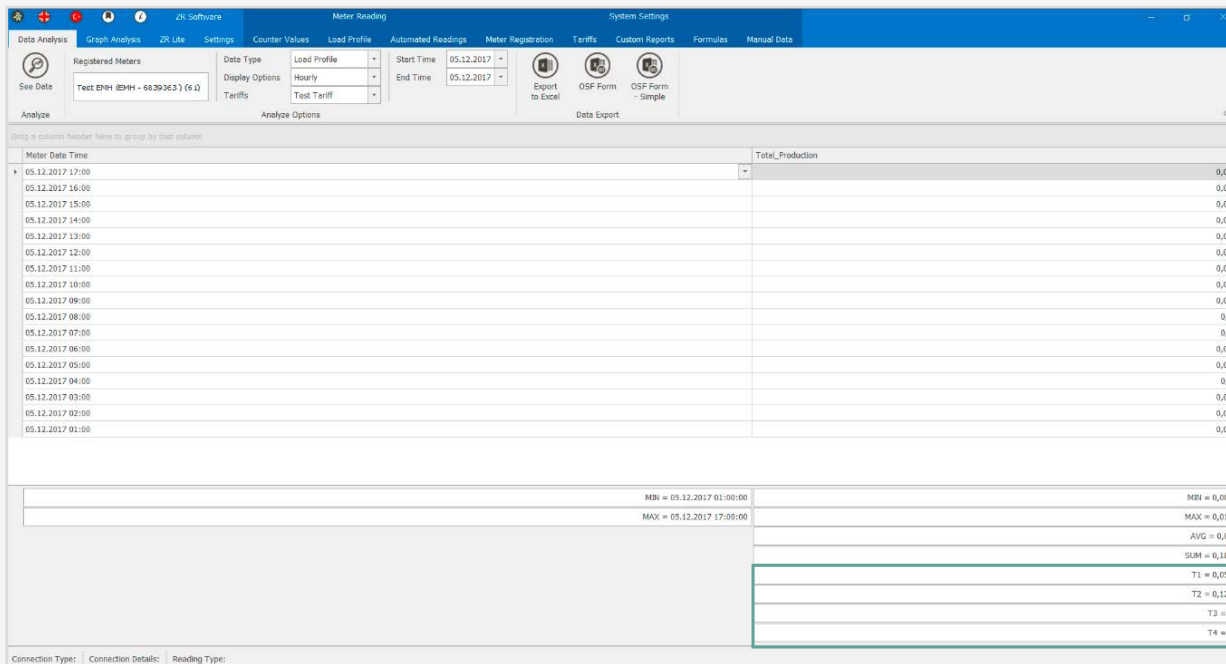


FIGURE 39



According to the time intervals on the selected tariff, registered meters, formulas or custom reports, the reports are created. Using the tariff periods the grouping process is performed

FIGURE 40



### 3.5. LOAD PROFILE READING MODULE

By ZR software, **EMH, Elster, Itron (former name Actaris), Landis&Gyr, Iskra, Pozyton, all counters that communicates in IEC870-5-102 standards, Köhler and Makel counters** load profile values can be read by the utilization of communication infrastructures of the Serial Communication, ETH and GPRS communication modules. The read load profile values are saved within the system. They are reported in different ways based on user selections.



**NOTE:** Please contact our company for the integration of different brand of counters to the system as well.

Please use Load Profile Module to read load profiles of meters. The features of the menu options are described in Figure 41.

In **Registered Counters** list all the registered counters in the system can be displayed. The counter whose load profile will be read is chosen here

Reading frame is determined by selecting **Start / End Date**

The counters load profile reading is initiated with **Read Profiles** button

In **Communication Status**, you can monitor communication status instantly

**Information Bar** sums up the current settings of the module

Registered Meters

Test Actaris (Itron (Actaris)) - 65007...

Start Time: 1.12.2017

End Time: 5.12.2017

Read Load Profiles

Read Load Profile

Settings

Information Bar

Connection Type: TCP/IP

Connection Details: 5.26.105.179::5001

Reading Type: Load Profile Reading

FIGURE 41

## 3.5.1. READ LOAD PROFILES GROUP

Read Load Profiles Group lets user to read load profile from counters. Reading process is started by clicking on **Read Profiles** button. Menu options are presented in Figure 42.



**NOTE:** It is only possible to read Load Profile values of the registered counters of EMH, Elster, Itron (former name Actaris), Landis&Gyr, Iskra, Pozyton, Köhler, Makel and IEC870-5-102 standard counters. Please contact our company for the integration of different brand counters to the system as well.



FIGURE 42

During the load profile reading instant reading status will be displayed in **Communication Status** section shown in Figure 43. In case of an error during reading, detailed information about the error will be presented in the instant communication section.

In the event of reading the counter successfully, **“Registered meter is read correctly”** statement will take place in the instant communication section. In the event of an error during reading, the error will be notified in the same section and **“Registered meter couldn’t be read despite the retries mentioned”** statement will take place.

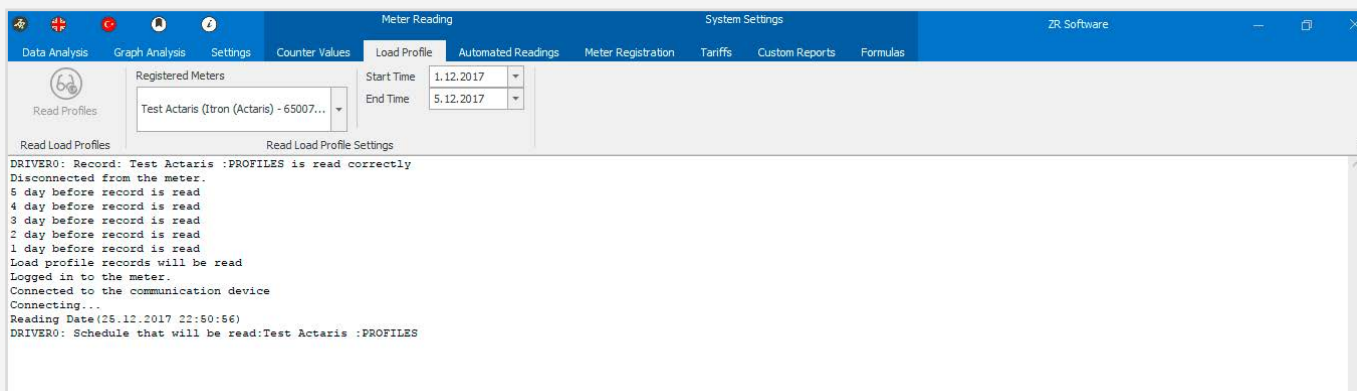


FIGURE 43

## 3.5.2. LOAD PROFILE READING SETTINGS GROUP

All the registered counters to the system are displayed in **Registered Counters** list. Within this list all the counters which use different communication infrastructures are always displayed together. Reading interval is determined by choosing the start and end dates. Start date must be 12 months before from end date at most. This process is valid for counters of **EMH, Elster, Itron (former name Actaris), Landis&Gyr, Iskra, Pozyton, IEC870-5-102 standards and Makel**. Load reading profile settings are seen in Figure 44.

FIGURE 44

**Köhler** brand counter doesn't permit reading within the date range. Therefore reading must be executed by entering the number of registers to read. In Figure 45 reading settings for Köhler brand counter can be seen.

FIGURE 45

In **Köhler** brand counters, how many registers from past (each register corresponds to 30 minutes of data, in order to read one day register at least 48 registers must be read), in **EMH, Elster, Itron (former name Actaris), Landis&Gyr, Iskra, Pozyton, counters communicate with standards of IEC870-5-102 and Makel** counters how many days from past will be read must be determined.

## 3.6. AUTO READ MODULE

**Auto Read Load Profile List** is the section where user creates a circular load profile reading list in the system by selecting necessary reading period information for the counters registered in system.

For automatic meter reading, enter the registered counters', Data Type and reading period(month, day, hour, minute) like in Figure-46. Then select the Driver to read. This can be done for multiple counters at the same time.

Any of the counters registered in the system can be selected in the Registered Meters section. There should be sure that the counter values can be read on this meter. In the Data Type section, choose whether to read Load profile or billing values. Load profile reading will be done when load profiles are selected. Reading the billing values will be performed when the billing value is selected. This value is usually 00:00 at the beginning of the month (if the billing is not done via the counter manually).

The month, day, hour and minute selection specifies the period. For instance:

Month	Day	Hour	Minute	Explanation
*	*	*	*	Read in every 2 minutes(30 times per hour)
*	*	*	5	Read in every 5 minutes(12 times per hour)
*	*	13	5	Read every day at 13:05(1 time per day)
*	1	1	30	Read 1.Day of each month(1 time per month)

In the Driver section, the driver to read meter is selected. There are 5 different drivers in the system. Counters connected to the same communication channel (for instance connected to the same serial cable or connected to the same mode) must be read via the same driver.

You can use the Operations section shown in Figure 47 for adding and deleting lines / counters.

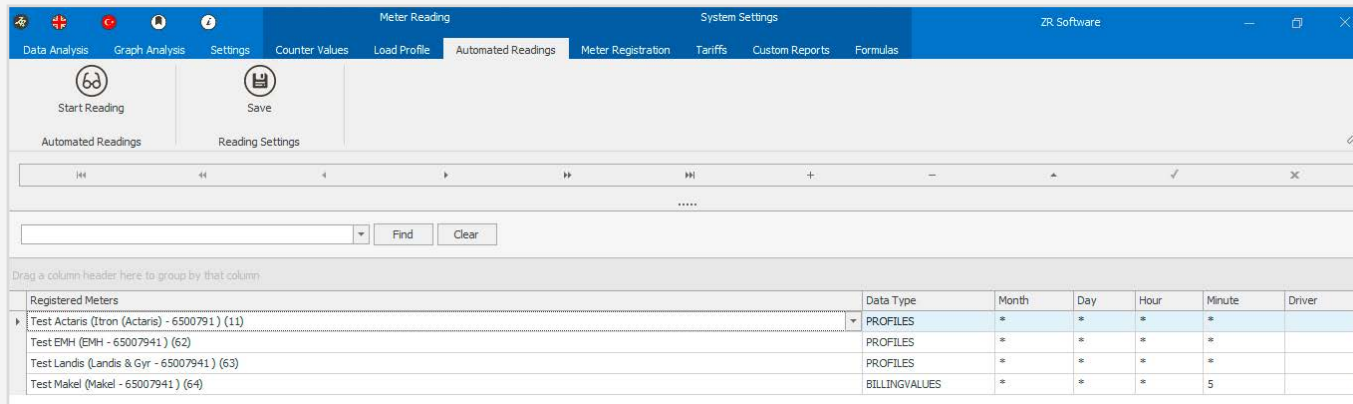


FIGURE 46

In the **Operations** part you can add new counters and also delete remaining ones

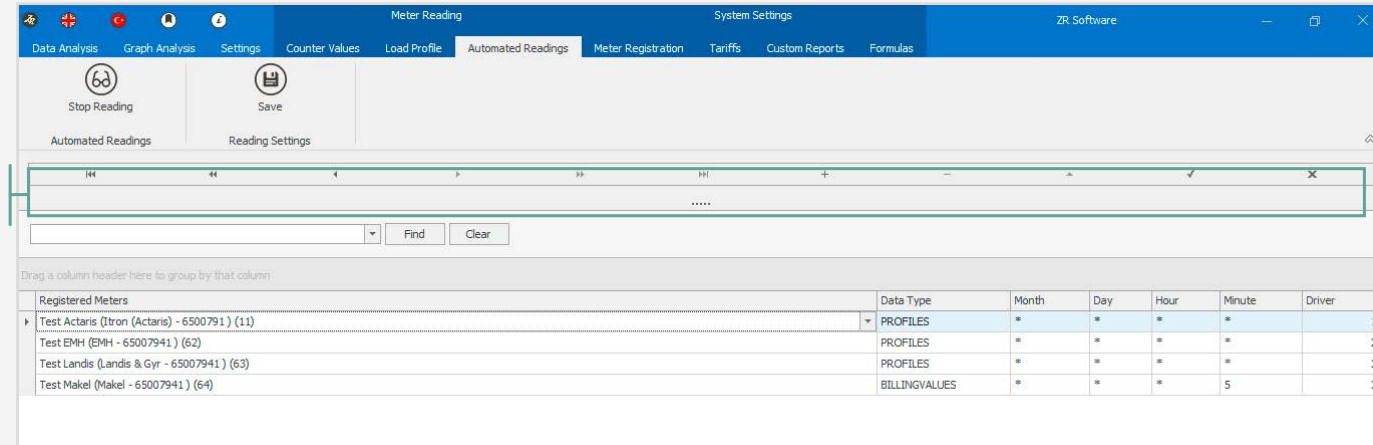


FIGURE 47

After you press **Save button**, the addition, subtraction, editing operations to the reading list are activated. To start automatic reading, press the **Start button**. The same key can be used to terminate reading. System remembers your last

preference, and the program is designed to continue from where you left off even when you restart it. Also the number of unsuccessful attempts after reading is automatically adjusted according to the reading period.

## 3.7. DATA ANALYSIS MODULE

Load profile values read through Load Profile Reading module, are saved in the system database with meter's own period. Load profile values can be displayed through Data analyze module, values can be exported to Excel or OSF form can

be created for the values. The values that will be displayed can be chosen from registered counters, created formulas or created custom reports. This menu options are presented in Figure 48.

In **Registered Counters** list all the registered counters in the system can be displayed. The counter whose load profile will be read is chosen here

**Display options** helps analyzing data of the counters whose load profile is read in detail

You can provide your preference with these buttons to display the data analysis results as **Energy** or **Power** unit. The preference should be selected according to the value type of the meter

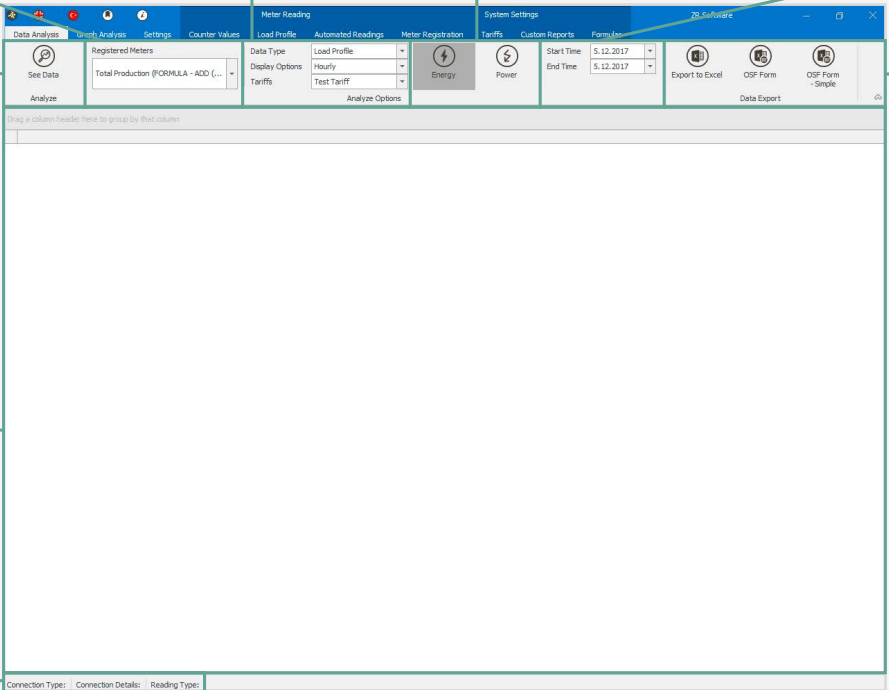
Reading frame is determined by selecting **Start / End Date**

**Analyze Data button** makes a detailed list of the data of the read counters

**Data Export** converts load profile results to Excel and OSF format

In the **Analyze Values** section load profile values are displayed hourly or in detail according to the selection

**Information Bar** sums up the current settings of the module



The screenshot shows the 'Data Analyse' window with a blue header bar containing tabs: Data Analyse, Tariffs, Analysis, Settings, Counter Values, Meter Reading, Automated Readings, Meter Registration, System Settings, Tariffs, Custom Reports, and Formulas. The 'Data Analyse' tab is active, showing a 'Registered Meters' list with 'Total Production (FORMULA - ADD (...))' selected. Below this is an 'Analyze' button. To the right, there are dropdowns for 'Data Type' (Load Profile), 'Display Options' (Hourly), and 'Tariffs' (Test Tariff). Further right are buttons for 'Energy' and 'Power'. To the right of these are 'Start Time' and 'End Time' dropdowns, both set to '5.12.2017'. At the bottom right are buttons for 'Export to Excel', 'OSF Form', and 'OSF Form - Simple'. The main area below the header is a large empty table with a prompt 'Drag a column header here to group by that column'. At the very bottom is an 'Information Bar' with 'Connection Type:', 'Connection Details:', and 'Reading Type:'.

FIGURE 48

### 3.7.1. ANALYZE GROUP

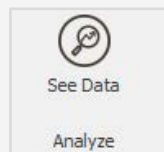


FIGURE 49

Analyze group, provides the process of analyzing load profile data that is read from counters and listing in detail. Analyzing process is initiated by clicking on **See Data** after the counter is selected. Menu options are presented in Figure 49.

### 3.7.2. ANALYZE OPTIONS GROUP

In **Registered Counters** list all counters registered to the system are displayed. Within this list all the counters which use different communication infrastructures are displayed together. Also the previously defined formulas and custom reports are listed in this place.

In the **Data Type** section, choose the data to be analyzed whether as Load Profile or Billing Value. Billing values usually start at the beginning of the month, you should make sure that there is also a record value in the date selection.

In the Start/End Dates and display options (Detailed, 15 Minutes, 30 Minutes, Hourly and Daily), the time range and reading period of the data are determined. The detailed data represent the display of the counter according to the default period and also showing all the values read. The information stored in the load profile can also be viewed. If a predefined tariff is available in the schedules, it can also be selected. Values on this page will be grouped by tariff. Some counter **values** in load profiles, some of them store **energy**, and some store **power** values. ZR software tries to read all these values and keeps them in the database. Depending on whether your meter's stored data is Energy or Power value, the relevant selection must be made. After all selections, the data is listed by pressing the **See Data button**. Figure 50 shows the See Data settings.

 See Data Analyze	Registered Meters	Data Type	Load Profile	 Energy	 Power	Start Time	5.12.2017
	Total Production (FORMULA - ADD (...))	Display Options	Hourly			End Time	5.12.2017
	Tariffs	Test Tariff					

Analyze Options

FIGURE 50

If the analyze results are desired to be displayed in details, the counter that will be analyzed is chosen and after selecting Detailed option from the Display Options See Data button is clicked. The data will be displayed in details as it is shown in Figure 51. The time range and detail of this data may vary according to the counter type.

Minimum (MIN), maximum (MAX) average (AVG) and total values (SUM) of the data analyze period are displayed at the bottom of the columns automatically.





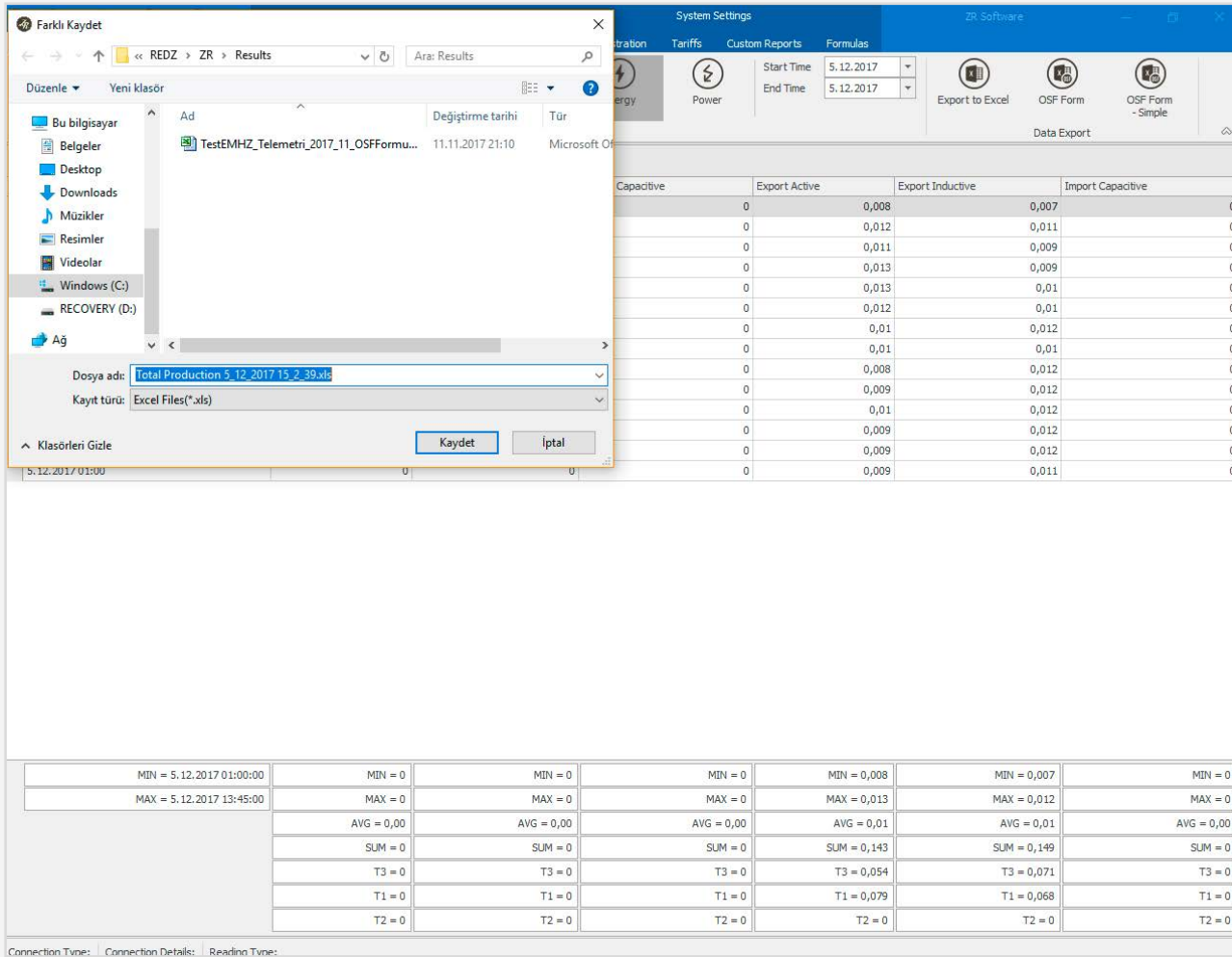


FIGURE 53

To convert load profile analyze results to OSF form it is enough to click on the OSF form button **after choosing the relevant month**. Sample screenshot is presented in Figure 54.

**NOTE:** The beginning and the end date of selection is must be in the month that the reported needed to be created.OSF report of the entire month will be exported.

**MEASUREMENT POINT IMPORT/EXPORT VALUES REPORT**

**Measurement Point Info**

Meter Location : EKS.NAK.SAN.VE TİC .LTD.Ş

Meter Serial Number : 83948197

Utility Name :

Multiplier : 1

Billing Period : 01.12.2017

Hour/Da	1	2	3	4	5	6	7	8	9	10	11	12	13	14
00-01	Export	0	0	0	0	0	0	0	0	0	0	0	0	0
01-02	Import	0	0	0	0	0	0	0	0	0	0	0	0	0
02-03	Export	0	0	0	0	0	0	0	0	0	0	0	0	0
03-04	Import	0	0	0	0	0	0	0	0	0	0	0	0	0
04-05	Export	0	0	0	0	0	0	0	0	0	0	0	0	0

MIN = 5.12.2017 01:00:00	MIN = 0	MIN = 0	MIN = 0	MIN = 0,008	MIN = 0,007	MIN = 0
MAX = 5.12.2017 13:45:00	MAX = 0	MAX = 0	MAX = 0	MAX = 0,013	MAX = 0,012	MAX = 0
AVG = 0,00	AVG = 0,00	AVG = 0,00	AVG = 0,00	AVG = 0,01	AVG = 0,01	AVG = 0,00
SUM = 0	SUM = 0	SUM = 0	SUM = 0	SUM = 0,143	SUM = 0,149	SUM = 0
T3 = 0	T3 = 0	T3 = 0	T3 = 0	T3 = 0,054	T3 = 0,071	T3 = 0
T1 = 0	T1 = 0	T1 = 0	T1 = 0	T1 = 0,079	T1 = 0,068	T1 = 0
T2 = 0	T2 = 0	T2 = 0	T2 = 0	T2 = 0	T2 = 0	T2 = 0

FIGURE 54

## 3.8. GRAPH ANALYSIS MODULE

This module is used for creating graphics from registered counters whose load profile is read, from the created formulas or created Custom reports. The necessary procedures to create a graphic is explained in Figure 55.

In **Registered Counters** list all the registered counters in the system can be displayed. The counter subject to graphic is chosen here counter whose load profile will be read is chosen here

By **Start and End Dates** the beginning and ending dates of the data which forms the base of the graphic is selected

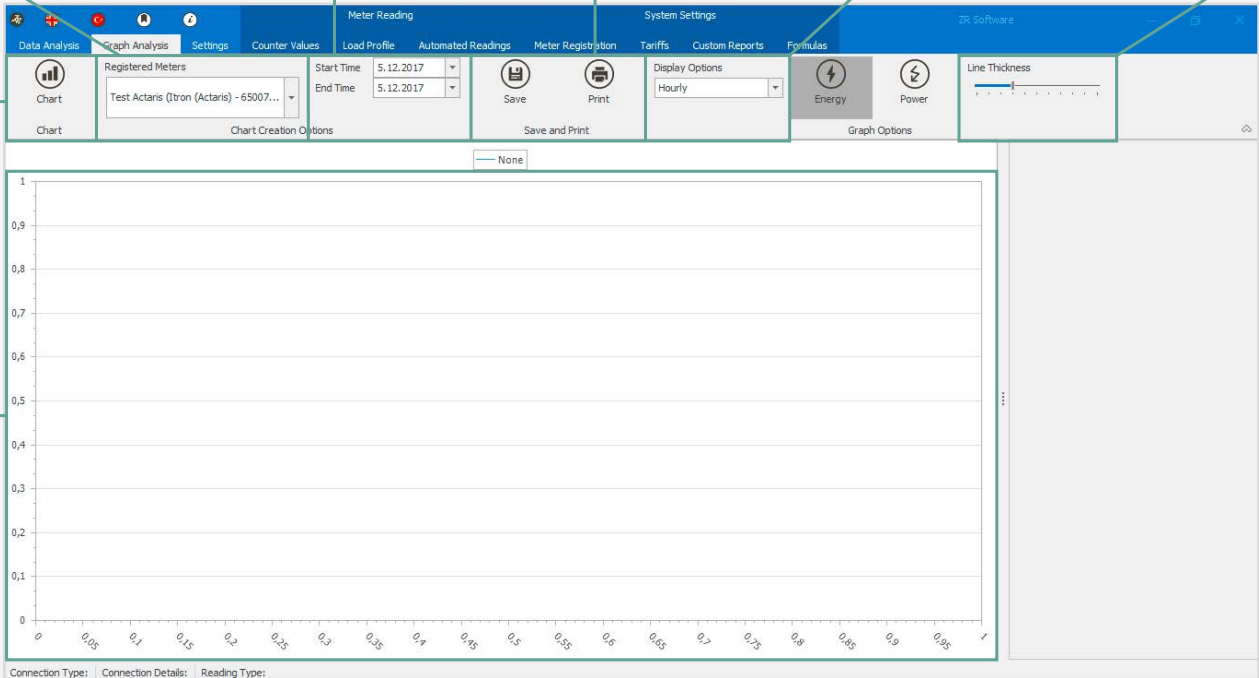
By **Save and Print** options graphic created can be saved or can be printed

By **Display Options**, it is selected whether the graphic is created from hourly values, Daily values or the detailed values in the counter period

Graphic line thickness is set at the **Line thickness Field**. This preference is used in all future graphics by saving into database

By **Chart Button** graphics are created according to the preferences

Created Graphic is displayed in **Graphic Field**



The screenshot shows the 'Graph Analysis' module interface. The top navigation bar includes 'Data Analysis', 'Graph Analysis' (active), 'Settings', 'Counter Values', 'Load Profile', 'Automated Readings', 'Meter Registration', 'Tariffs', 'Custom Reports', and 'Formulas'. The main panel is divided into several sections: 'Registered Meters' with a dropdown menu showing 'Test Actaris (Itron (Actaris) - 65007...'; 'Chart Creation Options' with 'Start Time' and 'End Time' set to '5.12.2017'; 'Save and Print' buttons; 'Display Options' with a dropdown set to 'Hourly'; 'Graph Options' with 'Energy' and 'Power' radio buttons; and a 'Line Thickness' slider. Below these is a large 'Graphic Field' displaying a blank coordinate system with axes ranging from 0 to 1. The bottom status bar shows 'Connection Type:', 'Connection Details:', and 'Reading Type:'.

FIGURE 55

### 3.8.1. CHART CREATION GROUP

After selecting the counter, created formula or created custom report from the registered counters list, time frame that the values will be analyzed must be selected. After this process graphic type must be chosen from **15 minutes, 30 minutes, hourly, daily or Detailed** from **Display Options**. Detailed data is shown

at counter period (generally 15 minute intervals are available at the counters). Hourly data is consisted of summing up those values hourly. Daily data is consisted of summing up those values daily as well. After those settings, Chart button can be clicked. Sample Graphic is shown in Figure 56.

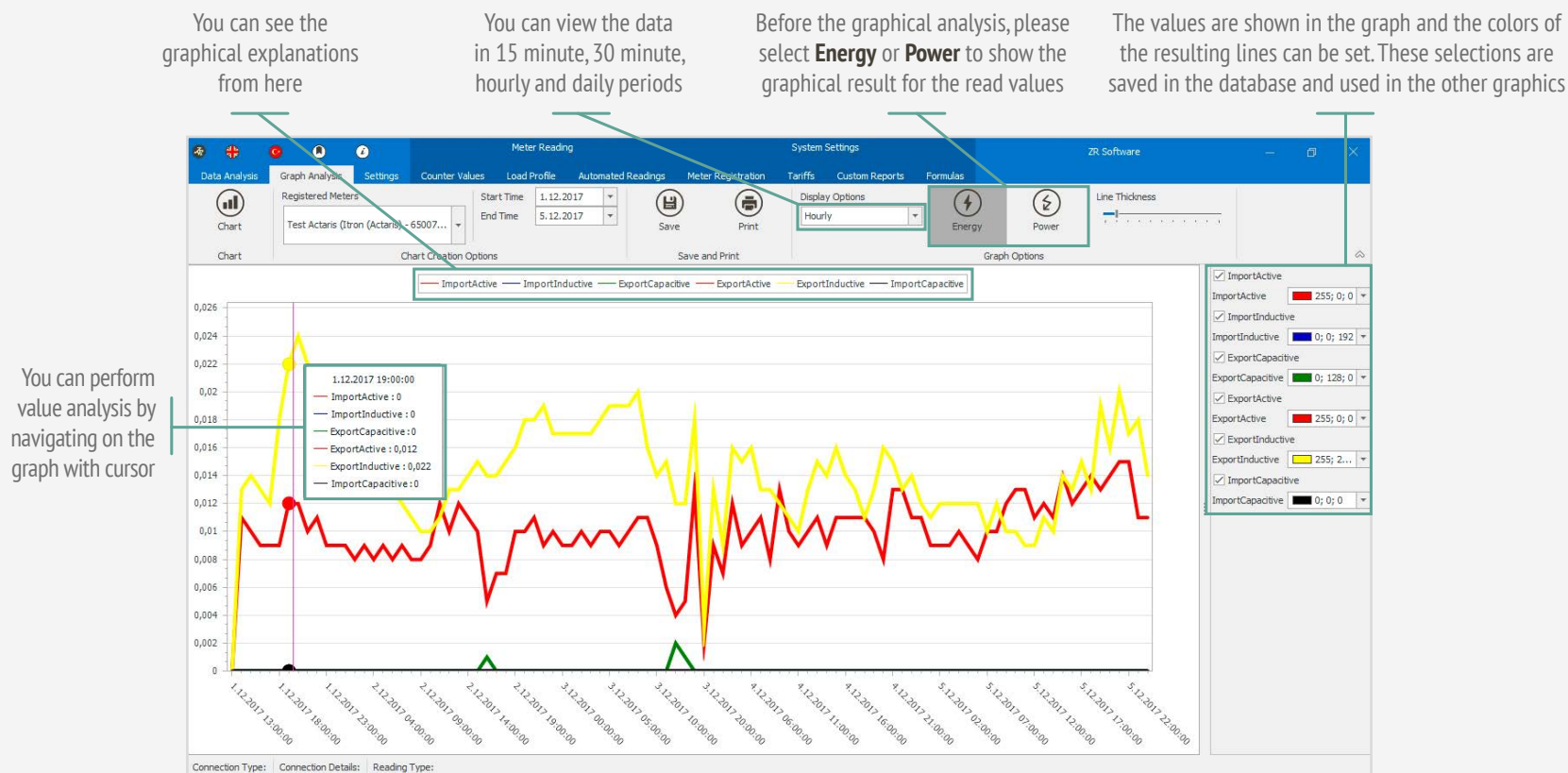


FIGURE 56

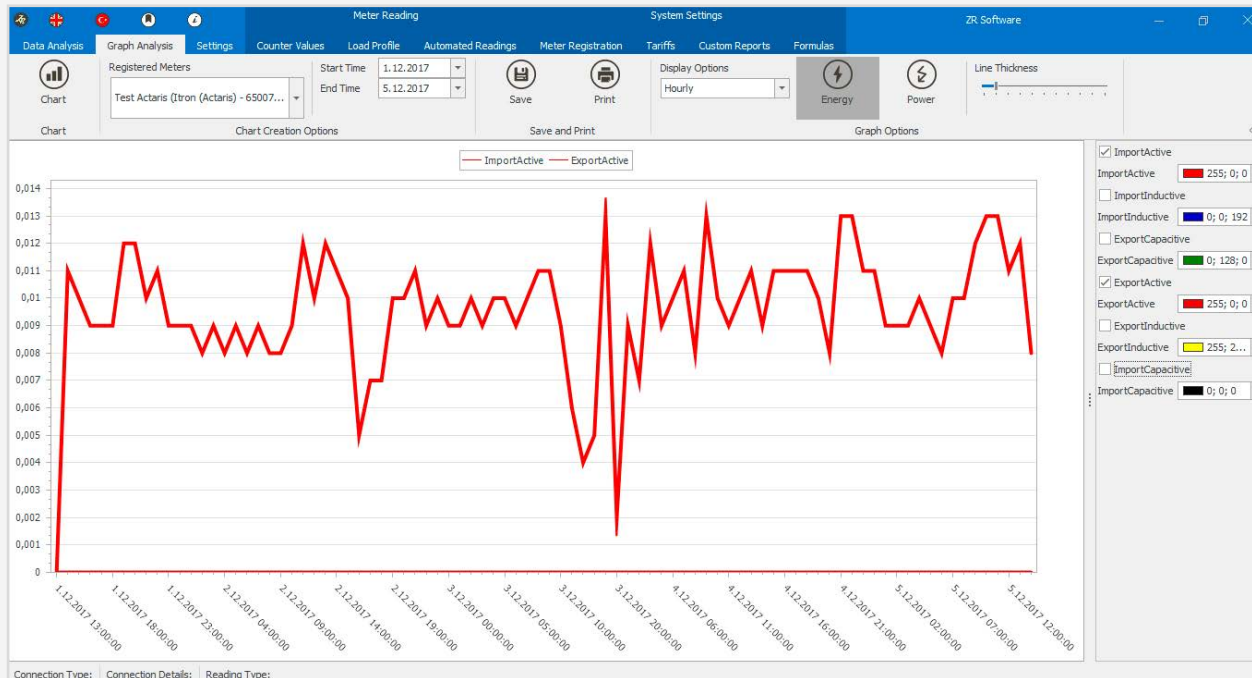


FIGURE 57

It is possible to remove or add again one or a few of the displayed values off the display with the help of the menu which is located at the right side of the screen. Ticking the boxes that are next to the counter parameters is sufficient to do so. It is shown in Figure 57.

In addition to this it is possible to change the color of the graphic lines with the help of the menu. As color options different colors can be assigned for each counter parameter such as Custom, Web and System. It is shown in Figure 58.

The thickness of the graphic lines created can be adjusted by Line Thickness section in the Graphic Preferences menu. It is shown in Figure 59.

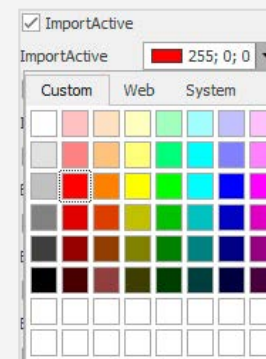


FIGURE 58

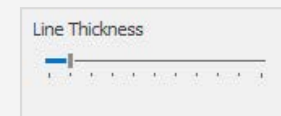


FIGURE 59

### 3.8.2. SAVE AND PRINT GROUP

Graphic analyze results can be saved as PDF format and can be printed same way. Menu options are shown in Figure 60.



FIGURE 60

In order to save Graphic analyze result by converting into PDF format **Save** button should be clicked. File is saved in the opened window as pdf file (pdf extension file). Sample screenshot is shown in Figure 61.

Graphic sample created in PDF format is presented in Figure 62.

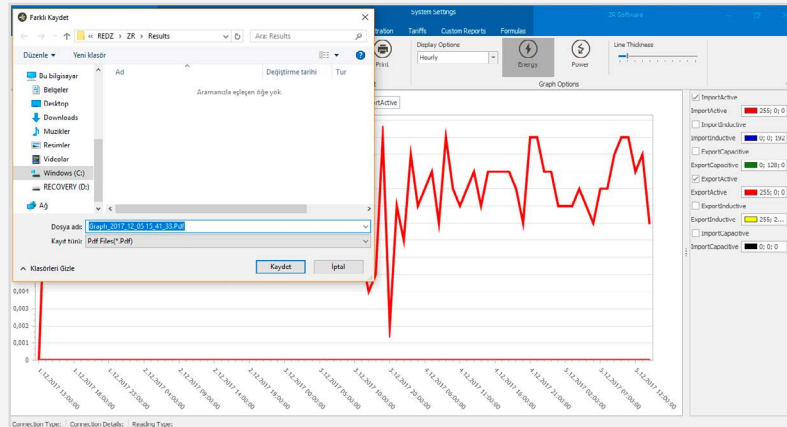


FIGURE 61



FIGURE 62

In order to save previously created or recently created graphic as a report, **Print** button should be clicked on. It is shown in Figure 63.

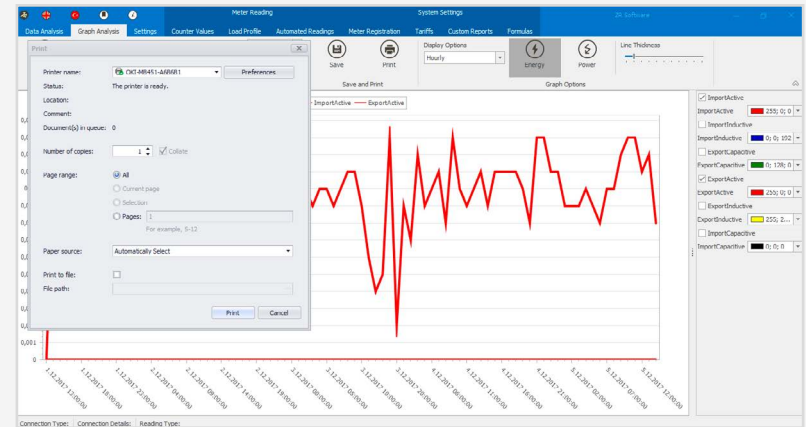


FIGURE 63



## 3.9. CUSTOM REPORTS MODULE

Custom Reports Module lets user to create custom reports based on registered counters whose load profile is read or the formulas created. Thus user can analyze any data at the measuring point in a report that is created after delivery of ZR Software

by user. Different measuring points can be analyzed at the same report alongside and also virtual data created at the formula section can be attached to the same report. Necessary procedures to create a special report, is explained in Figure 64.

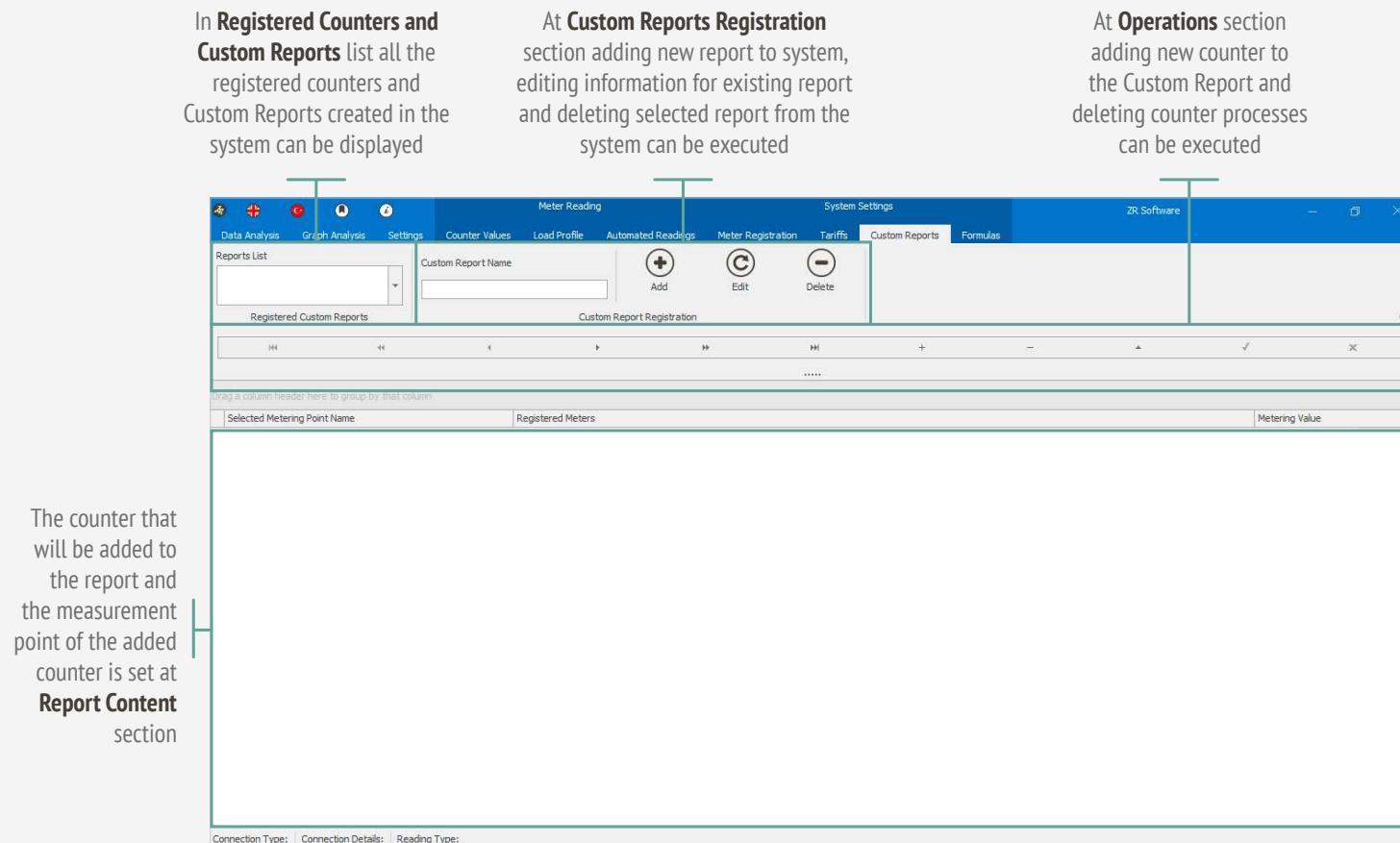


FIGURE 64

### 3.9.1. CUSTOM REPORT CREATION GROUP

In order to create Custom Report, first of all the name of the report is entered as shown in Figure 65. After setting the name of Custom Report a new row can be added from the operations menu by clicking on “+” button and by clicking on “-” button existing row can be deleted. It is shown in Figure 66.



A dialog box titled "Custom Report Name" with a text input field containing the text "Total Production".

FIGURE 65

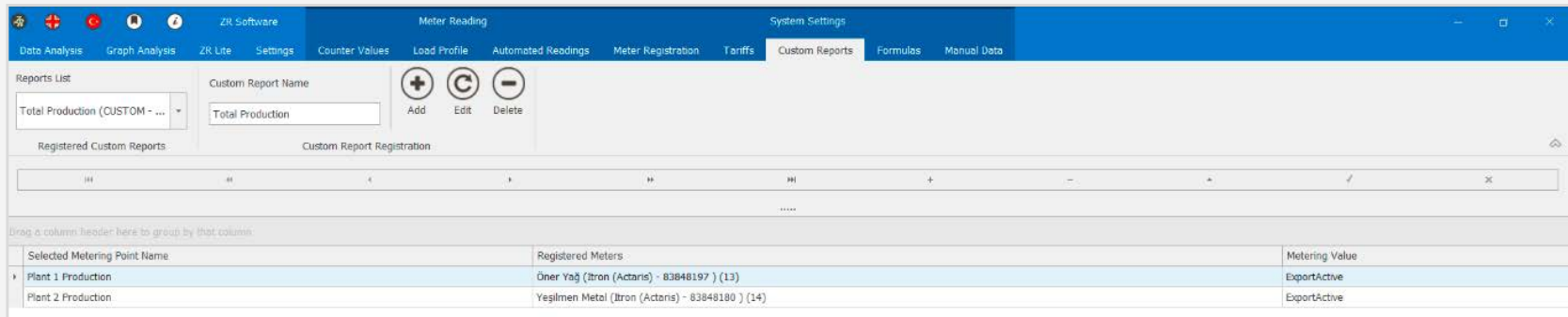


A table with three columns: "Selected Metering Point Name", "Registered Meters", and "Metering Value". The table has a header row and two empty data rows. Above the table is a toolbar with navigation icons and a "+" button. Below the table is a text prompt: "Drag a column header here to group by that column".

FIGURE 66

Selected Measuring Point name is entered to the new added row. This value is used for the column heading of the reporting. Counter is chosen at the registered counters and Metering Value relevant to the registered counter is entered. This process is repeated for each new added counter row, an example

Custom Report is displayed in Figure 67. By clicking on **Add** button the new Custom Report will be added. To apply the changes made at the current report **Edit** and to delete the report **Delete** button can be used.



A screenshot of the "Custom Reports" window in the ZK Software. The window has a menu bar with "Data Analysis", "Graph Analysis", "ZK Lite", "Settings", "Counter Values", "Load Profile", "Automated Readings", "Meter Registration", "Tariffs", "Custom Reports", "Formulas", and "Manual Data". The "Custom Reports" tab is active. Below the menu bar, there is a "Reports List" section with a dropdown menu showing "Total Production (CUSTOM - ...)". To the right of the dropdown is a "Custom Report Name" input field with "Total Production" entered. Below the input field are three buttons: "Add", "Edit", and "Delete". Below these buttons is a "Registered Custom Reports" section with a table. The table has three columns: "Selected Metering Point Name", "Registered Meters", and "Metering Value". The table has two data rows: "Plant 1 Production" with "Öner Yagı (İtron (Actaris) - 83848197 ) (13)" and "ExportActive", and "Plant 2 Production" with "Yegilmen Metal (İtron (Actaris) - 83848180 ) (14)" and "ExportActive".

FIGURE 67

Both data analyze and graphic analyze of the created Custom Report can be executed.As it is shown in Figure 68 it is possible to analyze the Custom Report in between selected dates from the Data Analyze Module.

All the display options of the Data Analyze and Exporting to Excel is available for Custom Report,too

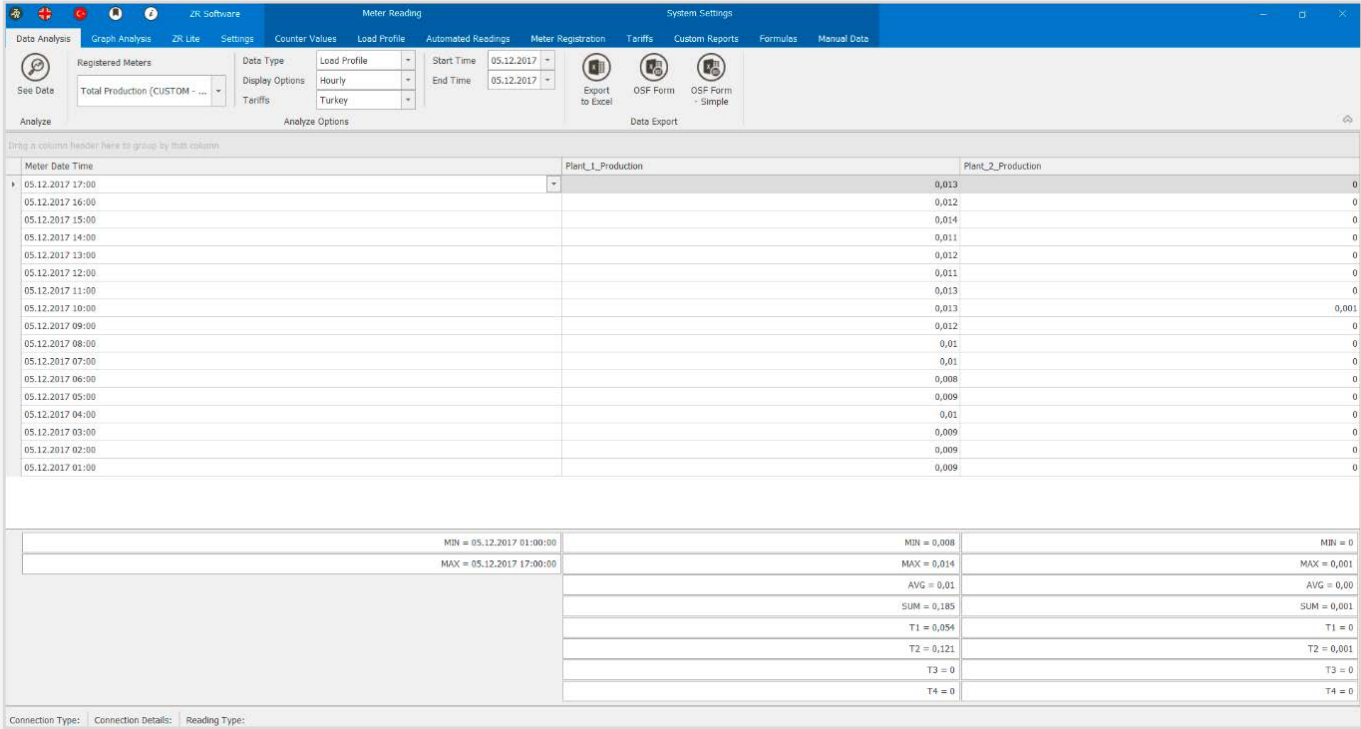


FIGURE 68

In a similar way as it is shown in Figure 69 it is possible to analyze the Custom Report in between selected dates from the Graphic Analyze Module. Each measuring point specified at the graphic is represented by a different color.

All the display options at the graphic analyze are also available for Custom Reports such as Line Thickness, colors of the series in graphic, Saving and Printing processes.

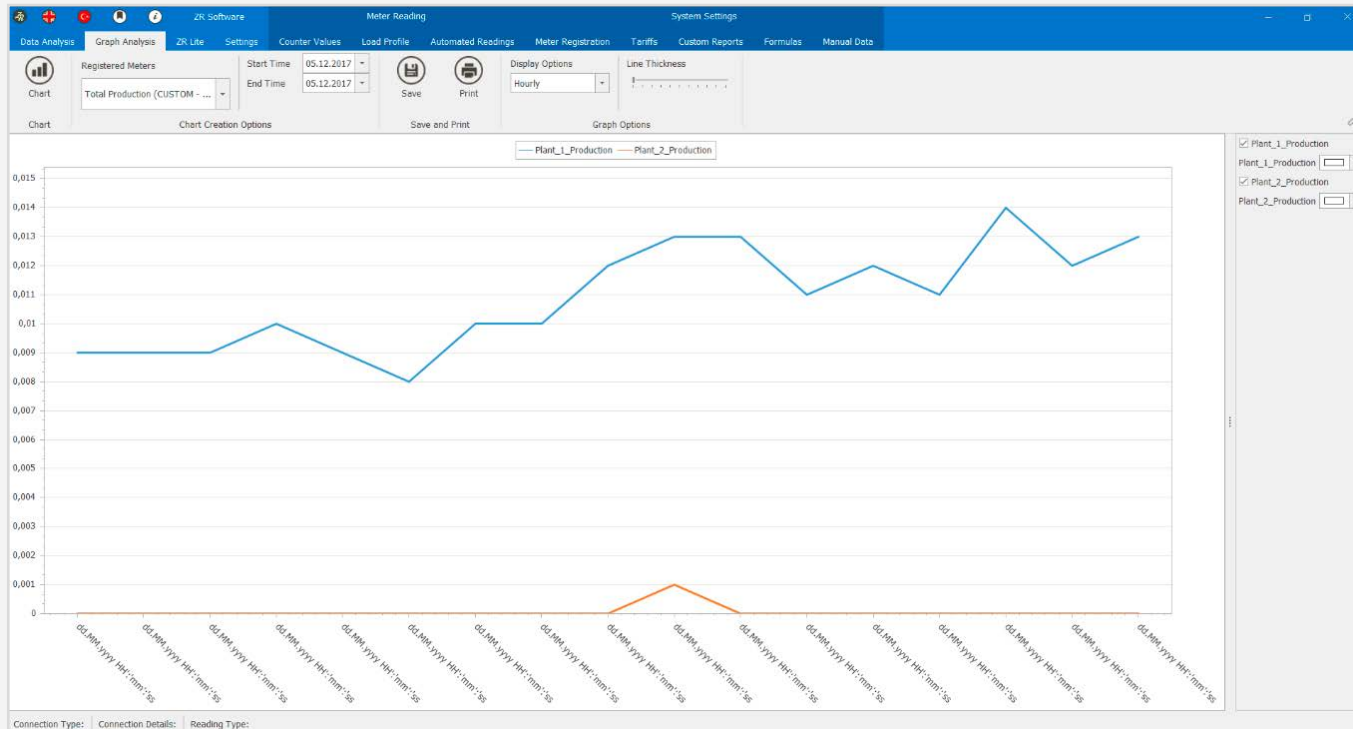


FIGURE 69

## 3.10. FORMULAS MODULE

It is used to create special formulas from the registered counters whose load profile is read. A special formula is created by values read from the counters (Export Active, Import Active, Export Inductive, Import Inductive, Export

Capacitive, Import Capacitive) and it is made possible to analyze them as user needed. It is explained in detail in Figure 70.

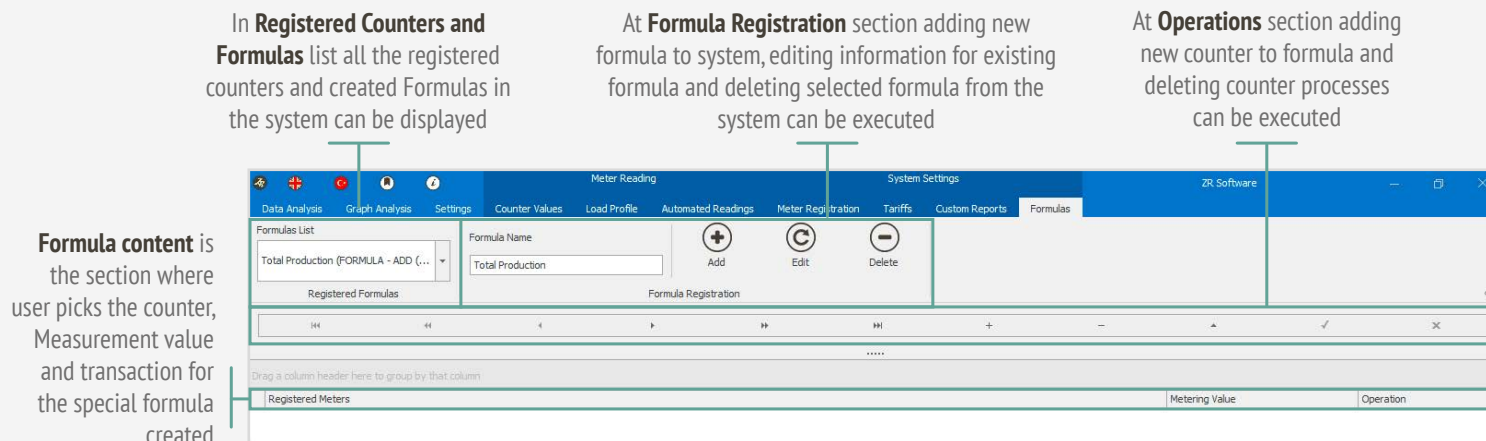


FIGURE 70

### 3.10.1. FORMULA REGISTRATION GROUP

In order to create a new formula, the name of the formula must be entered as it is shown in Figure 71. After setting the name of Formula a new row can be

added from the operations menu by clicking on “+” button and by clicking on “-” button existing row can be deleted. It is shown in Figure 72.

Formula Name

Total Production

FIGURE 71

Registered Meters

Metering Value

Operation

FIGURE 72

At the new added row one of the registered counters is selected, Counter Measurement Value relevant to the registered counter is picked and after then within the formula “+” (sum up) or “-” (subtract) transaction is chosen according to the user formula need. This process is repeated for each row added. A sample formula is shown in Figure 73. A new formula will be added by clicking on Add button. Changes realized at the existing formula can be saved by Edit button. Delete button is used for deleting existing formula.

Both data analyze and graphic analyze of the created Formula can be executed. As it is shown in Figure 74 it is possible to analyze the Formula in between selected dates from the Data Analyze Module. All the display options of the Data Analyze and Exporting to Excel is available for Formulas, too.

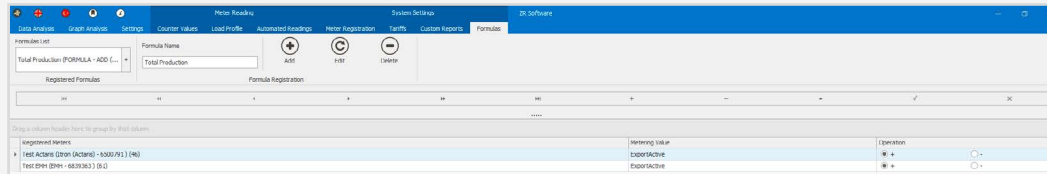


FIGURE 73

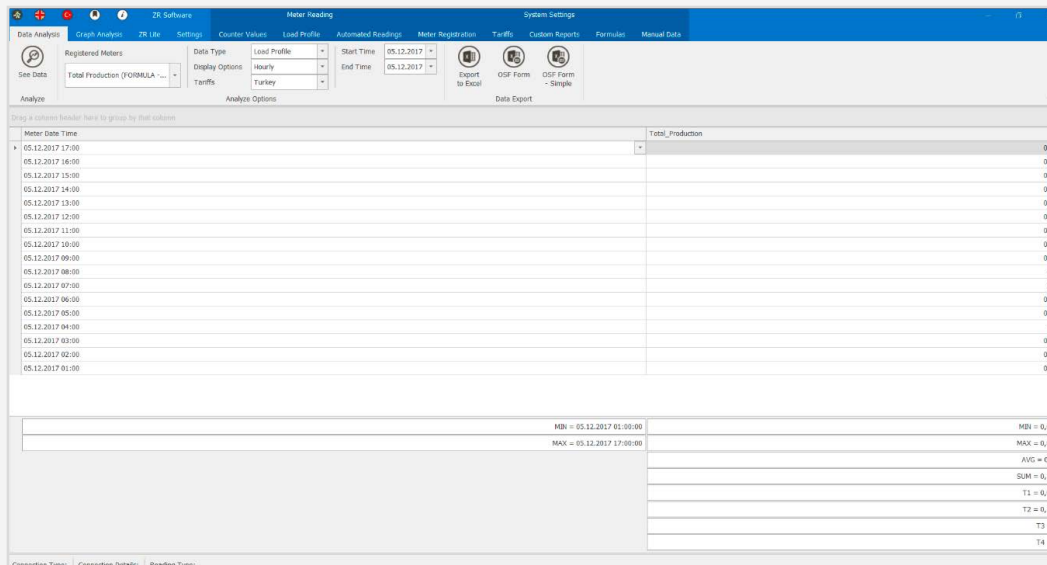


FIGURE 74

In a similar way as it is shown in Figure 75 it is possible to analyze the Formula in between selected dates from the Graphic Analyze Module.

All the display options at the graphic analyze are also available for Formulas such as Line Thickness, colors of the series in graphic, Saving and Printing processes.

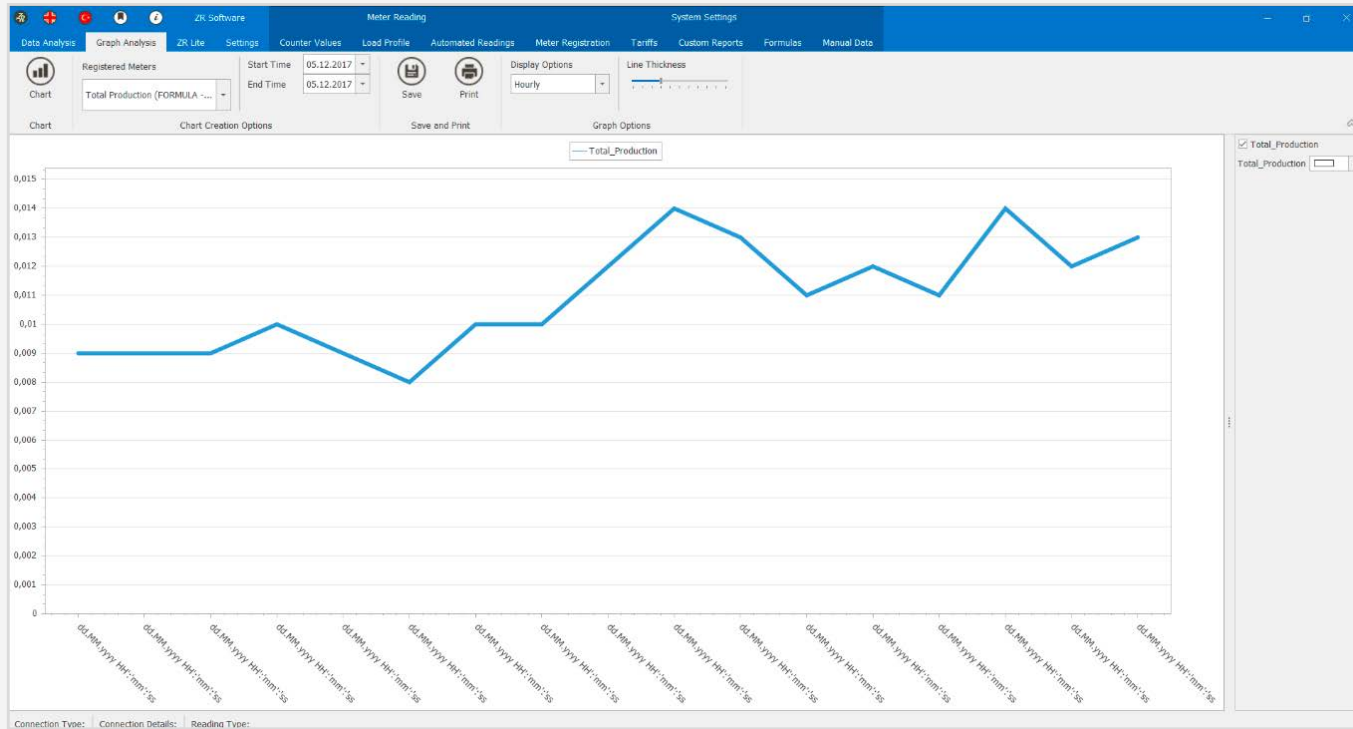


FIGURE 75





## 04. VERSION

Document Code: RZYT\_D\_101

Document Date: 12.12.2017

Document Version: 1

Version Details:

V2	The new interface and description of ZR added according to new architecture Auto-read module renewed Server and Client modules are added Mail Sending module is added Energy and power Options are added in Data Analysis Module Reading of Iskra, Pozyton and Socomec counters are added
V1	Document created Auto Reading and Tariff modules are added Spelling errors are fixed