AKIM ELEKTRONİK LTD

AKIM DATA COLLECTOR SOFTWARE

USER MANUAL

Version: 1.0

Revision: 05/15

Contents

1. System Requirements

1.1. Hardware and Software Requirements

AkimDataCollector software is designed with 32-bit software infrastructure to enable operation on Microsoft Windows operation systems. Recommended minimum computer configurations for software operation are Windows XP, Windows Vista, Windows7, Windows8.

Note: Screen printouts and instructions used in this document are from Windows 8.1, the latest Microsoft Windows Operating System on the preparation date of this document.

1.2. TCP/IP Services

AkimDataCollector software used TCP/IP services to communicate with remote devices. You may contact your IT officer in order to verify accuracy of your TCP/IP Services and local network configurations.

1.3. Comport Services

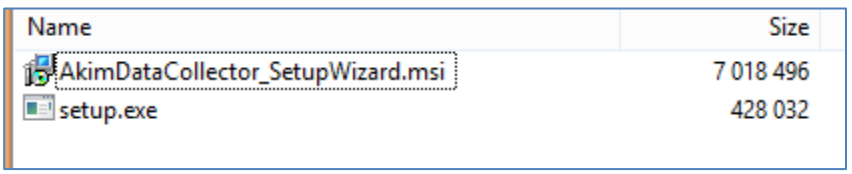
AkimDataCollector software supports RS232 serial communication protocol in order for on-site control of your device. Virtual or a physical Comport can be used for such control. You may contact your computer support unit in order to ensure that Comport drivers are installed correctly and operating properly.

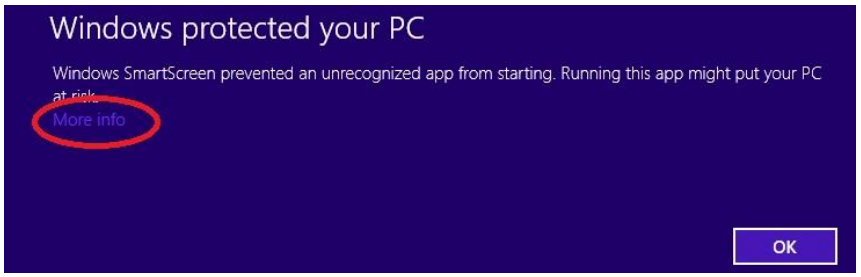
2. Installation

You may request current version of AkimDataCollector software from Akım Elektronik technical team.

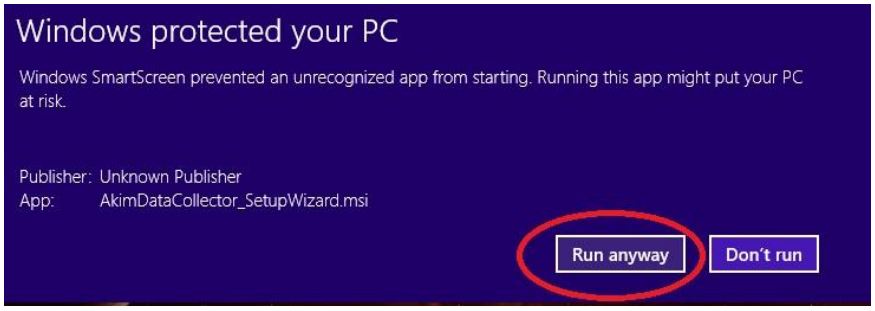
2.1. New Installation

Current version includes two set-up files; “AkimDataCollector_SetupWizard.msi” and “setup.exe”. We recommend running “.msi” extension set-up file. It is possible that you may receive warnings depending on your Windows version.

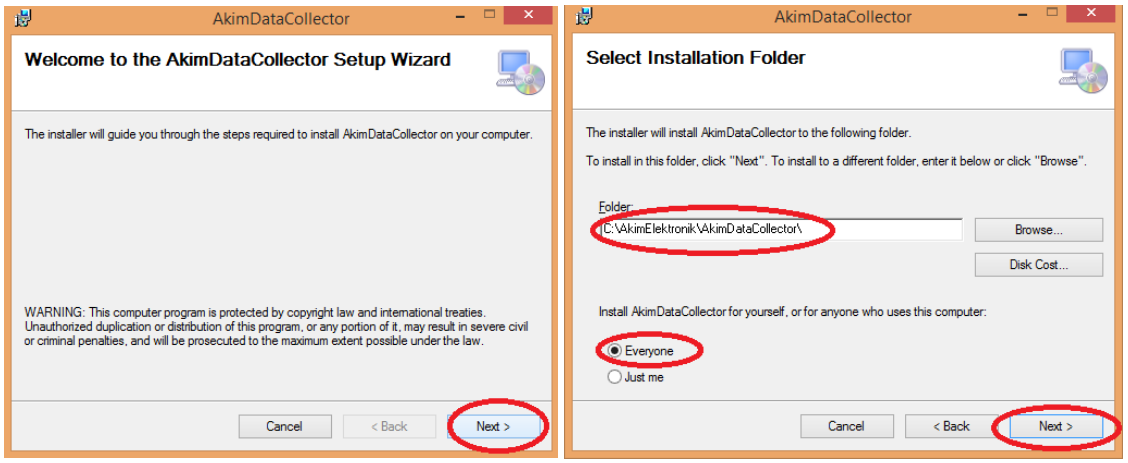




Select "More info" option;



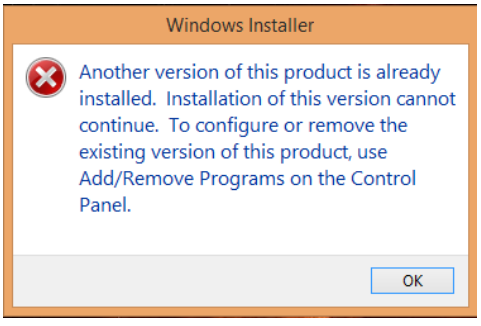
and select “run anyway” to start set-up.



Follow the instructions and complete the set-up.

2.2. Re-Installation

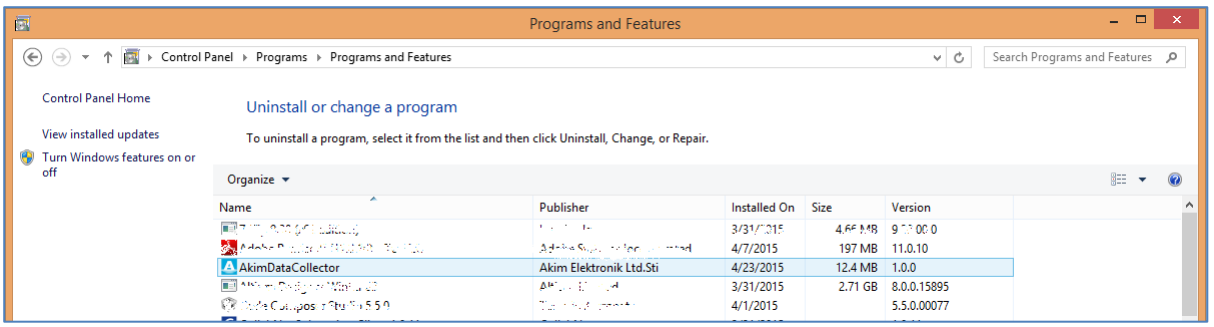
If you wish to install a version ofAkimDataCollector software different than the currently installed version, following warning will be displayed.



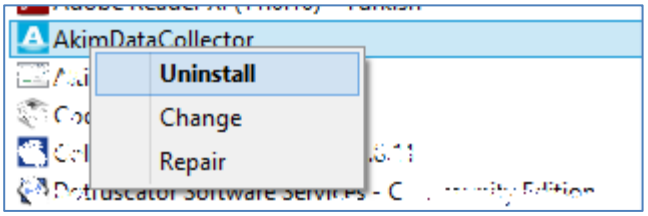
In that case, you will need to remove previous version and perform a new set-up.

2.2.1. Removing previous version

Open Settings > Control Panel > Programs and Options.



Click on "uninstall" from the options using right mouse button to uninstall the software.



After this point on, new set-up instructions should be followed.

Note: Re-Installation does not result in previous setting and data loss. However, it is recommended to back-up your data and settings

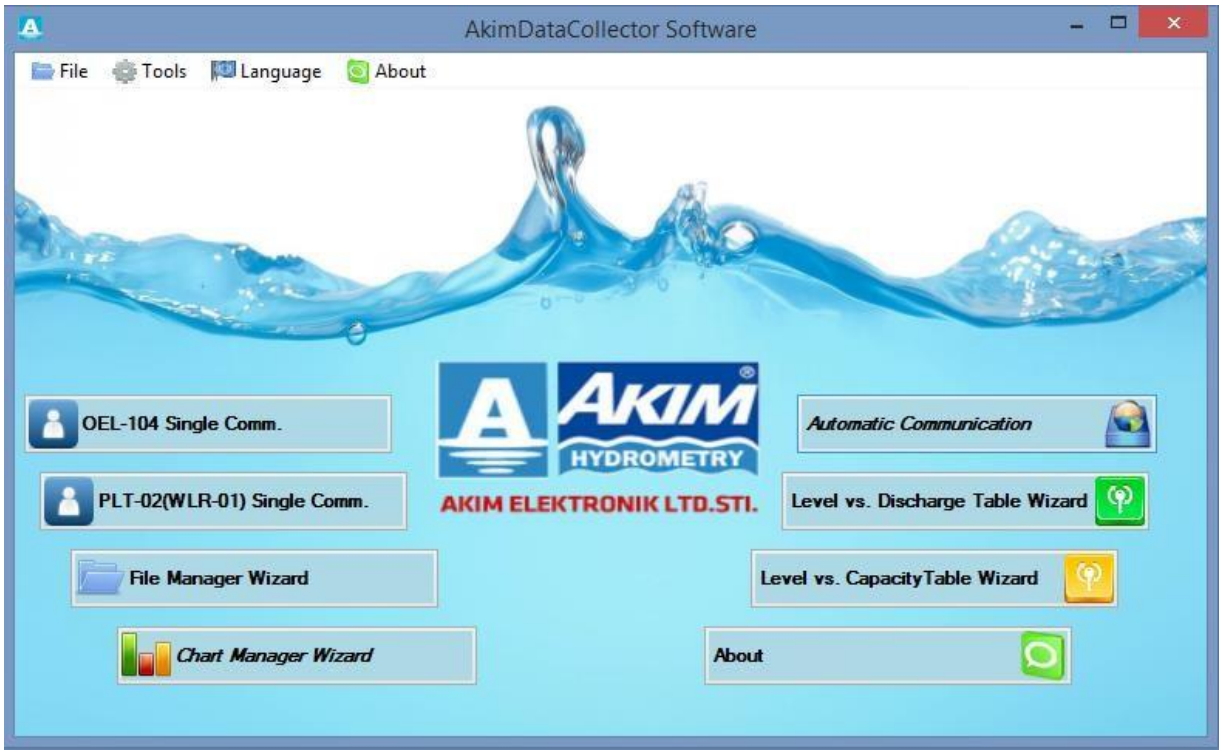
before New Installation.

3. About Akim Data Collector Software

3.1. Introduction

AkimDataCollector software is a support software designed by Akım Elektronik Ltd. Şti. for set-up, data collection, display and

monitoring over network as well as conversion of obtained data into user friendly formats for OEL-104 float type, PLT-01 pressure sensor type and WLR-01 contactless radar sensor type water level data collection devices.



There are 8 buttons on AkimDataCollector introduction page enabling various functions.

- **OEL-104 Single Comm.**

Opens OEL-104 float type water level recorder and manual single communication, set-up and data transfer interface. This interface enables connection to the device over serial port or TCP/IP protocol, transfer of recorded data and new set-ups

- **PLT-02 / WLR-01 Single Comm.**

Opens PLT-02 pressure sensor, WLR-01 contactless radar sensor type water level recorder and manual single communication, set-up and data transfer interface. This interface enables connection to the device over serial port or TCP/IP protocol, transfer of recorded data and new set-ups

- **File Manager Wizard**

Opens file manager wizard. Data files of devices where data are extracted manually or automatically before can be created in excel, txt, xml formats using this interface.

- **Chart Manager Wizard**

Opens chart manager wizard. Data files of devices where data are extracted manually or automatically before can be displayed on a chart and saved in .png format using this interface.

- **Automatic Communication**

Opens Automatic Communication data collection interface. This interface enables multiple communication over TCP/IP protocol.

- **Level vs. Discharge Table Wizard**

Opens Level-Flow Table wizard. This interface enables creation of level and flow correlation tables.

- **Level vs. Capacity Table Wizard**

Opens Level-Capacity Table wizard. This interface enables creation of level and capacity correlation tables.

- **About**

Opens About tab. This tab displays the used version.

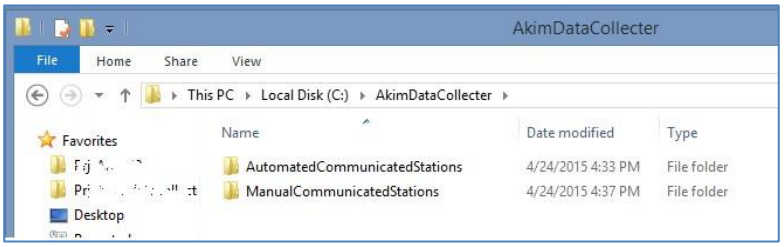
3.2. About Akim Data Collector File Management

AkimDataCollector software uses “Region”, “Basin”, and “Station No” parameters (Shortly: RBN). User should pay attention that RBN trio should be unique. In other words, there shouldn't be more than one station having same station number within a relevant basin of a region. Software classifies and created file names and folders based on RBN code.

AkimDataCollector uses two general communication methods.

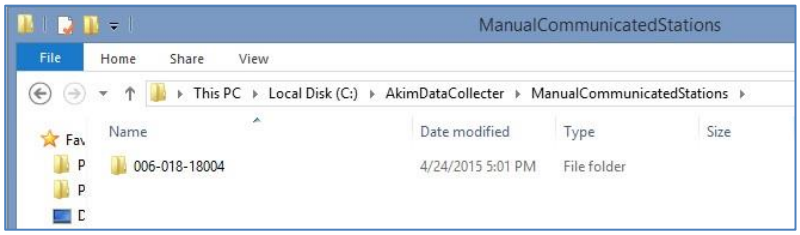
- Manual (Single) communication: Established by connecting to an on-site or a remote single station.
- Automatic (Multiple) communication: Established by connecting to multiple remote stations on intervals identified by user. Automatic communication interface is designed to collect most up to date data from multiple stations on a server or computer and to monitor current data.

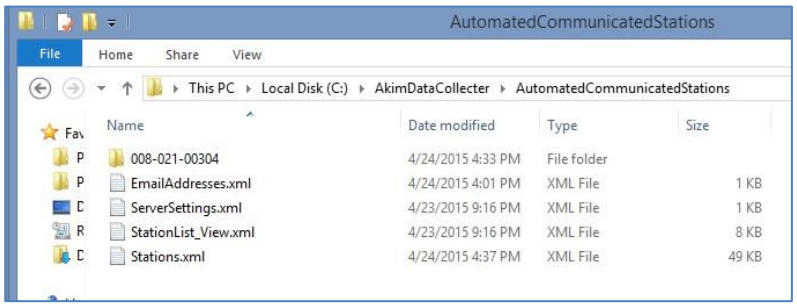
Thus, software created two main folders under computer parent directory under a folder where data files are saved. “C:\AkimDataCollecter…”



Station data collected by automatic communication are saved in “AutomatedCommunicatedStations” folder;

Station data collected by manual communication are saved in are saved in “ManualCommunicatedStations” folder, in a file created using the station's unique RBN code.





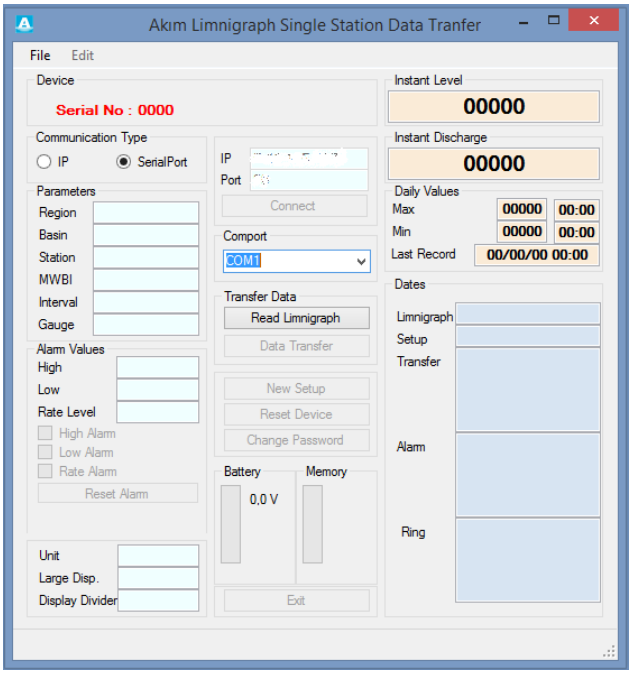
There are 4 ".xml" extension filed under “AutomatedCommunicatedStations” folder. These files stores following information from automatically communicated stations;

- “EmailAddresses.xml” E-mail information,
- “ServerSettings.xml” server settings,
- “StationList_View.xml” station list view,
- “Stations.xml” station list created by user.

User can back-up data by by backing-up “C:\AkimDataCollecter…” folders including its sub-folders.

4. Manual Communication

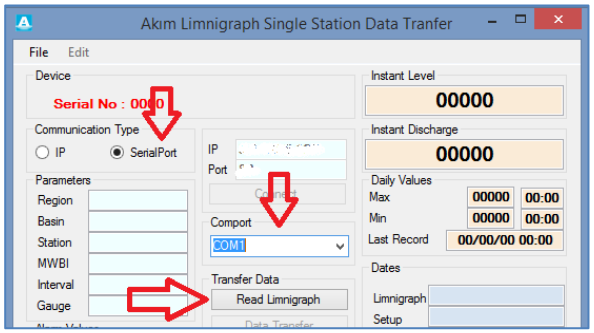
4.1. OEL-104



Using OEL-104 Single station data transfer interface, device can be communicated over serial port or IP based connection for data transfer or new set-up.

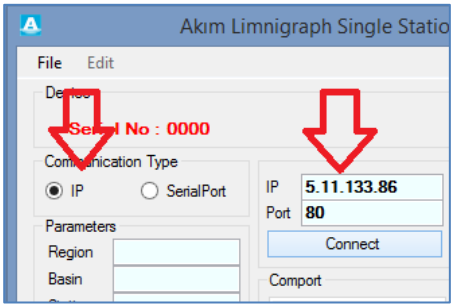
4.1.1. Connection

4.1.1.1. Comport



Select “Serial Port” for communication type. Serial communication ports that are configured on the computer will be listed in "Comport" box. Select the Comport channel that device is connected and click on "Read Limnigraph" button. Instant data received from OEL_104 are transfered to relevant parameter text boxes.

4.1.1.2. IP

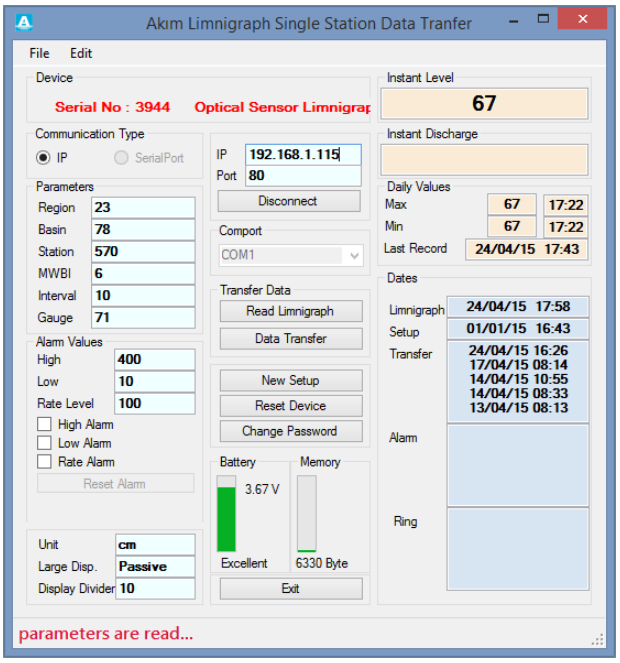


Select "IP" for communication type. Enter remote device IP and port number, and click on "Connect" button.

When the device connection is established, OEL-104 data are automatically received and transfered to relevant parameter text boxes.

4.1.2. Data Transfer

4.1.2.1. Set-Up Information and Instant Data



Set-up information and instant data is sent as response to "Read Limnigraph" command. Those are read only data. New set-up must be performed in order to change those parameters.

Set-Up Information

- Serial No: Serial number assigned by manufacturer.
- Region: Region number entered by user during set-up stage.
- Basin: Basin number entered by user during set-up stage.
- No: Station number entered by user during set-up stage.

- MWBI: Measurement interval.
- Interval: Specifies number of measurement averages for recording. Recording occurs once at MWBI x Interval value.
- Gauge: Gauge level entered by user during set-up.
- Alarm Values: Alarm set-up information
    - High: High level alarm generation threshold value.
    - Low: Low level alarm generation threshold value.
    - Rate: Rapid level increase alarm generation threshold value.
    - High Alarm: High level alarm active/passive indicator.
    - Low Alarm: High level alarm active/passive indicator.
    - Rate Alarm: High level alarm active/passive indicator.
- Unit: Recording unit.
- Large Disp.: Large display active/passive indicator.
- Display Divider: Divides the screen

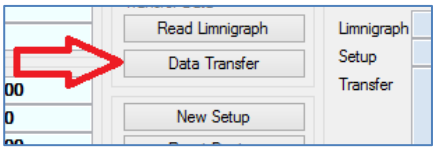
Instant Values:

- Battery: Indicates embedded battery status.
- Memory: Indicates memory space.
- Instant Level: Instant level information.
- Instant Discharge: Flow information corresponding to instant level.
- Daily Values: Daily values
    - Max: Maximum level within that day and its time
    - Min: Minimum level within that day and its time
    - Last Record: Last record date/time.
- Dates: Date hour values.
    - Limnigraph: Current date and time of device
    - Setup: Device setup date and time
    - Transfer: Last five values transfer date and times
    - Alarm: Type of last five generated alarms and their date/time.
    - Ring: Memory capacity overreach date.

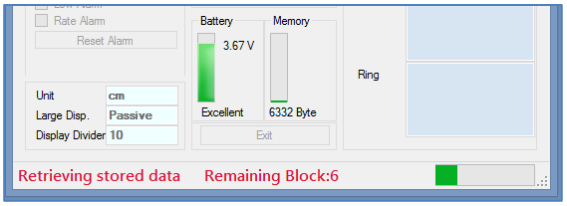
Command Buttons:

- Connect/Disconnect: Enables TCP/IP connection. Clicking this button when there is a connection will cause disconnection.
- Read Limnigraph: Sends command to read Limnigraph set-up and instant values.
- Data Transfer: Sends command to request recorded data blocks.
- New Setup: Opens up new set-up window to perform new set-up.
- Reset Device: Opens up new set-up window to reset the device.
- Change Password: Opens up new set-up window to assign new password.

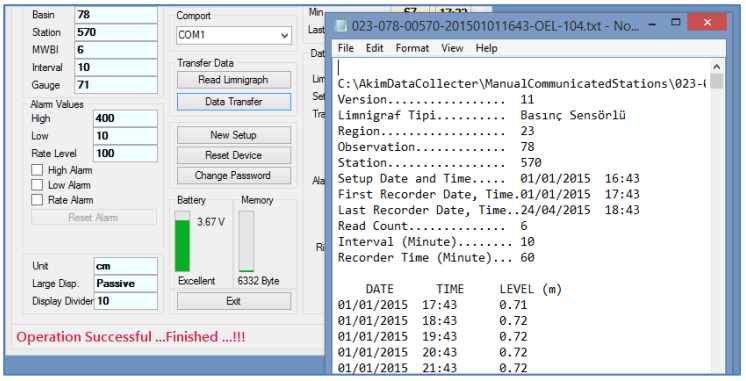
4.1.2.2. Recorded Data



After connection is established with the device and instant values are received, data recorded on the device can be retracted using “Data Transfer” button. Data stored on the device are retracted in data blocks.

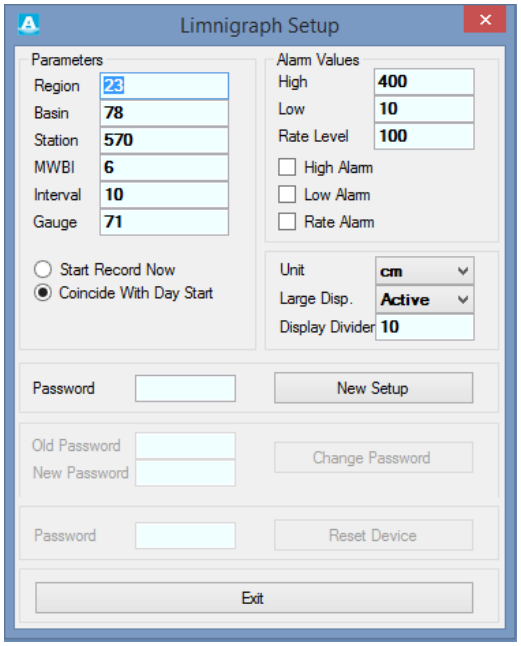


OEL-104 is constituted of total 256 x 1024 byte blocks.



When the data transfer is completed, a text box is automatically created in order for user to view recorded data.

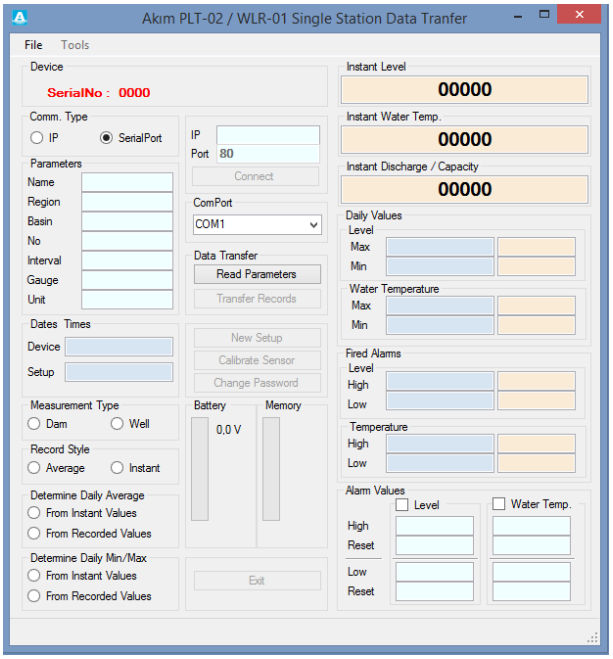
4.1.3. New Set-Up



In order to perform a new set-up on device, click "New Setup" button to open up set-up window once the connection is established. After parameter changes are made, enter the password and send new setup command using "New Setup" button.

New set-up should be made based on actual gauge level on site.

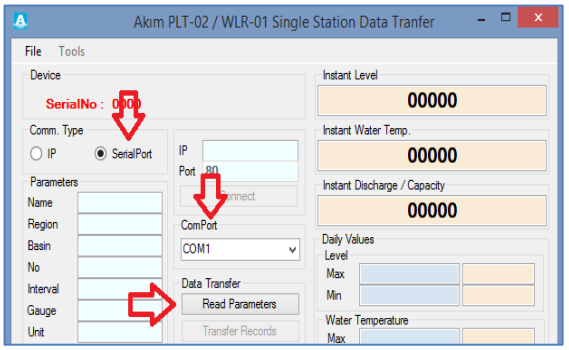
4.2. PLT-02 / WLR01



Using PLT-02 and WLR-01 Single station data transfer interface, device can be communicated over serial port or IP based connection for data transfer or new set-up.

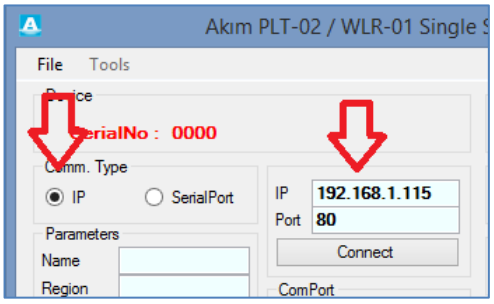
4.2.1. Connection

4.2.1.1. Comport



Select "Serial Port" for communication type. Serial communication ports that are configured on the computer will be listed in "Comport" box. Select the Comport channel that device is connected and click on "Read Parameters" button. Instant data from PLT-02/WLR-01 are transfered to relevant parameter text boxes.

4.2.1.2. IP

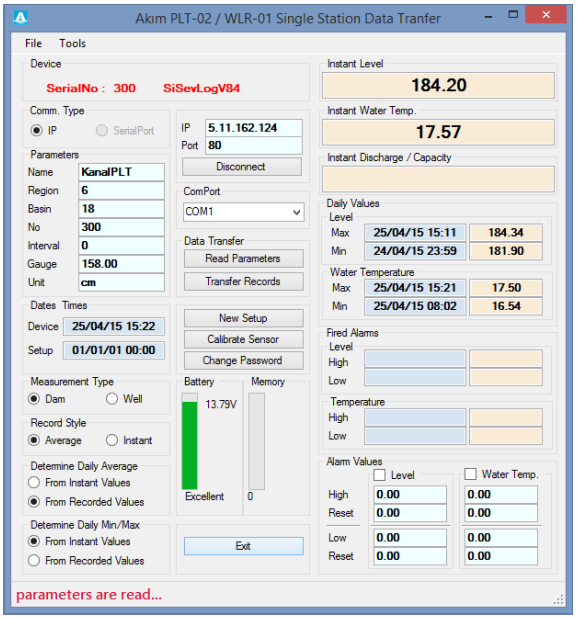


Select "IP" for communication type. Enter remote device IP and port number, and click on "Connect" button.

When the device connection is established, OEL-104 data are automatically received and transfered to relevant parameter text boxes.

4.2.2. Data Transfer

4.2.2.1. Set-Up Information and Instant Data



Set-up information and instant data is sent as response to "Read Parameters" command. Those are read only data. New setup must be performed in order to change those parameters.

Set-Up Information

- Serial No: Serial number assigned by manufacturer.
- Devicetype: is received as “SiSevLogVxx” for PLT-02. is received as “RadDatLogVxx” for WLR-01.

  ..
- Name: Station name.
- Region: Region number entered by user during set-up stage.
- Basin: Basin number entered by user during set-up stage.
- No: Station number entered by user during set-up stage.
- Interval: Recording interval.
- Gauge: Gauge level entered by user during set-up.
- Unit: Recording unit.
- Dates Times: Date hour values.
  - Device: Current date and time of device
  - Setup: Device setup date and time

- Measurement Type: Identifies sensor's measurement type
    - Dam: Selected for measurement types such as dam, river, etc.
    - Well: Box type measurement.
- Record Style: Identifies recording style.
    - Average: Takes samples throughout two recording times and records the average.
    - Instant: Takes sample at recording time and records it.
- Determine Daily Average: Identifies how to take daily averages.
    - From Instant Values: Determines daily averages based on instant values
    - From Average Values: Determines daily averages based on recorded values
- Determine Daily Min/Max: Determines how to take daily Max/Min values.
    - From Instant Values: Determines daily Max/Min values based on instant values.
    - From Average Values: Determines daily Max/Min values based on recorded values.
- Alarm Values: Alarm set-up information
    - Level: Alarm values for level and active/passive indicator
        - High: High level alarm generation threshold value.
        - Low: Low level alarm generation threshold value.
        - Reset: Alarm reset threshold value.
    - Water Temp: Alarm values for water temperature and active/passive indicator
        - High: High level alarm generation threshold value.
        - Low: Low level alarm generation threshold value.
            - Reset: Alarm reset threshold value.

Instant Values:

- Battery: Indicates embedded battery status.
- Memory: Indicates memory space.
- Instant Level: Instant level information.
- Instant Water Temp.: Instant water temperature information.
- Instant Discharge/Capacity: Flow or capacity information corresponding to instant level.
- Daily Values: Displays Daily values
    - Level: Values regarding level
        - Max: Maximum level within that day and its time

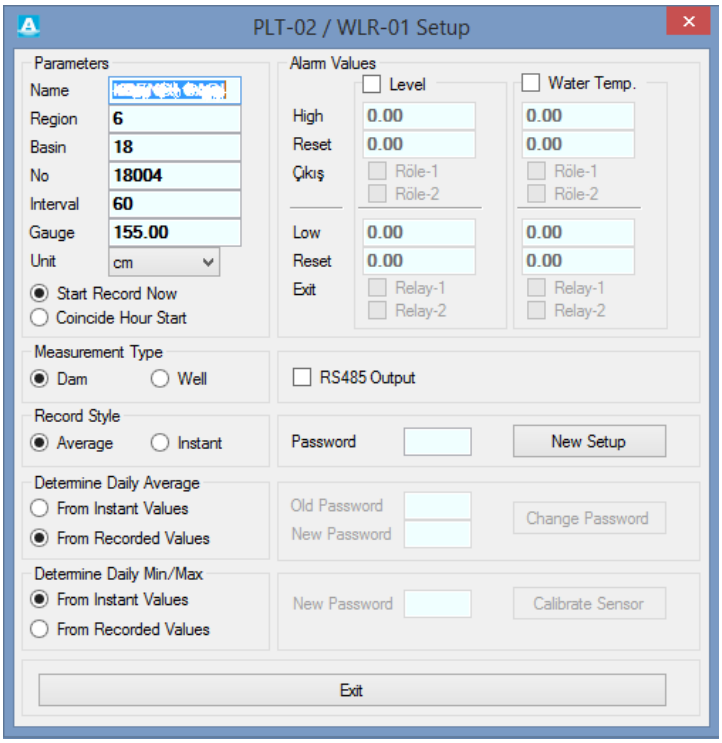
        - Min: Minimum level within that day and its time
    - Water Temperature: Values regarding water level

        - Max: Maximum level within that day and its time
        - Min: Minimum level within that day and its time
- Fired Alarms: Displays trigerred alarm times and types.
    - Level: Level alarms
        - High: High level alarm and its date/time
        - Low: Low level alarm and its date/time
    - Temperature: Water temperature alarms
        - High: High water temperature alarm value and its date/time
        - Low: Low water temperature alarm value and its date/time

Command Buttons:

- Connect/Disconnect: Enables TCP/IP connection. Clicking this button when there is a connection will cause disconnection.
- Read Parameters: Sends command to read Limnigraph set-up and instant values.
- Transfer Records: Sends command to request recorded data blocks.
- New Setup: Opens up new set-up window to perform new set-up.
- Calibrate Sensor: Opens up new setup window for calibration of pressure sensor our of water, under normal atmosphere conditions.
- Change Password: Opens up new set-up window to assign new password.

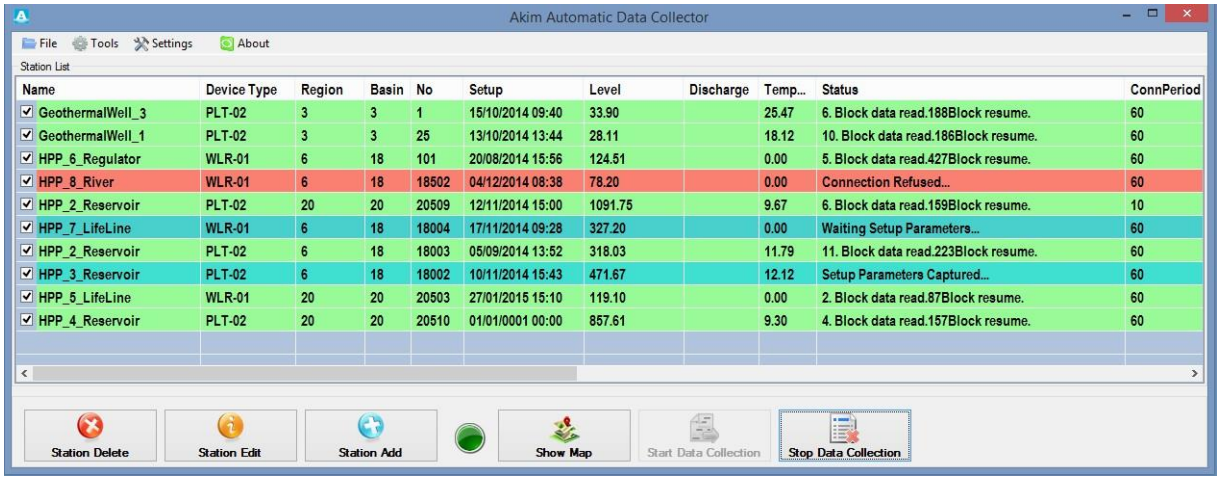
4.2.3. New Set-Up



In order to perform a new set-up on device, click "New Setup" button to open up set-up window once the connection is established. After parameter changes are made, enter the password and send new setup command using "New Setup" button.

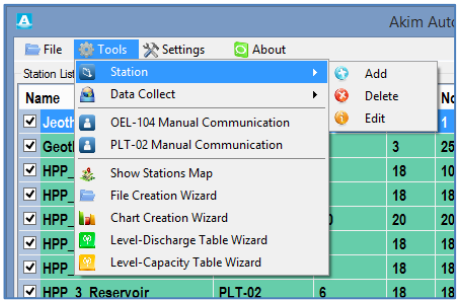
New set-up should be made based on actual gauge level on site.

5. Automatic Communication



AkimDataCollector automatic communication module enables communication with one or more configured stations

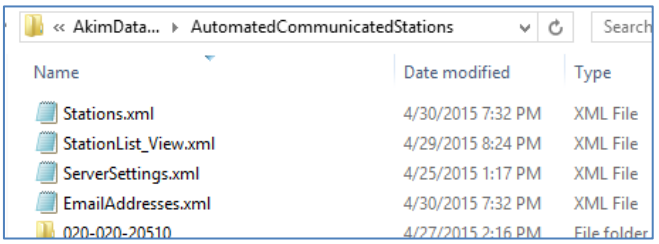
at certain intervals. Module uses an asynchronous multi-tread communication infrastructure with TCP/IP services.



While communication with multiple stations simultaneously, it is possible to use all other functions from "tools" menu independent from data transfer.

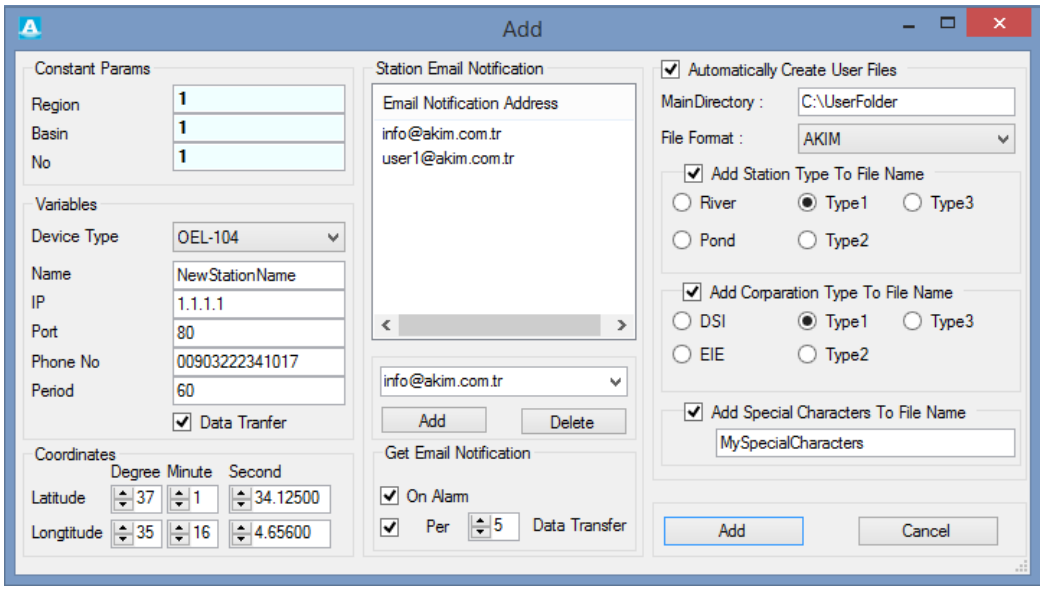
Automatic communication interface enables monitoring of multiple stations at the same time, thus it will meet multiple station monitoring needs.

The list enabling flexible visual changes can also be used as on-line observation screen by alarm threshold values that can be configured to devices. The software can be used as a warning system as well as hydrological observations by use of periodic e-mail notifications, e-mail notifications and screen warnings in case of alarm.



Automatic communication settings are stored in relevant file in 4 xml folders. Those files include Station list, visual data of the list, server settings and e-mails entered for notifications.

5.1. Adding Stations



5.1.1. Fixed Parameters (RBN Code)

Because AkimDataCollector uses a filing structure based on RBN codes, entered region, basin and station numbers should suitable for the devices and unique. RBN codes that are not suitable with devices will result in notification message indicating the codes saved by user and RBN codes sent from the filed are not consistent during communication. In that case, station is switched to passive status and user is expected to correct such conflict. If a previously used RBN code is desired to be used during recording, user will be warned by a warning message stating the code is already in use.

5.1.2. Adjustable Parameters

Device type, station name, IP/port value, telephone number, connection period and data transfer flag are in this section. IP/port pair should be unique. If such recording is previously made, a warning message is given to the user. If field devices are using GSM/GPRS modems, a telephone number is stored in order to record the number provided by operator. However, no input is required, it is for information purpose only.

Connection period unit is in minutes. Subsequent connection is established after specified value has passed upon end of previous connection.

Data Transfer flag enables resume data block reading from the last block reading. In case it is not marked, only instant data is received.

5.1.3. Coordinate Parameters

Entered by user in order to adjust device position on map display.

5.1.4. Station E-mail Notification Settings

5.1.4.1. E-mail Notification List

You may enter list of e-mails to receive notifications by typing the address in drop-down menu and clicking "add" button. Any selected e-mail can be removed from the list using "delete" button.

5.1.4.2. E-mail Receipt Status

An e-mail is sent to all users in two conditions, based on preference.

- Instantly in case of alarm (see 5.7 E-mail and Alarm Receipt Settings)
- Once in every N data transfer. Here, N value stores number of data transfers required for e-mail receipt. The number 5 in the above illustration means that an e-mail is sent to each address entered in the list after 5 data transfer.

5.1.5. Automatic User File Manager

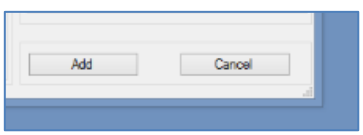
User may have files with ".txt" and ".xml" extensions written in any selected directory during automatic communication. User may add optional characters in certain type to the end of those file names.

In the above sample,

a file named “001-001-00001-????????????-OEL-104-1-1- MySpecailCharacters.txt” is written to “C:\UserFolder” folder once in every 60 minutes. “-????????????-“ part is the device set-up date. This created file is updated with each data transfer.

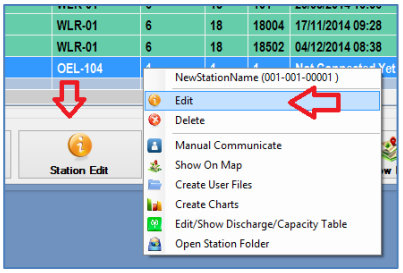
Note: If this option is not required, automatic file manager option should be kept passive in order for efficient use of system resources.

5.1.6. Recording

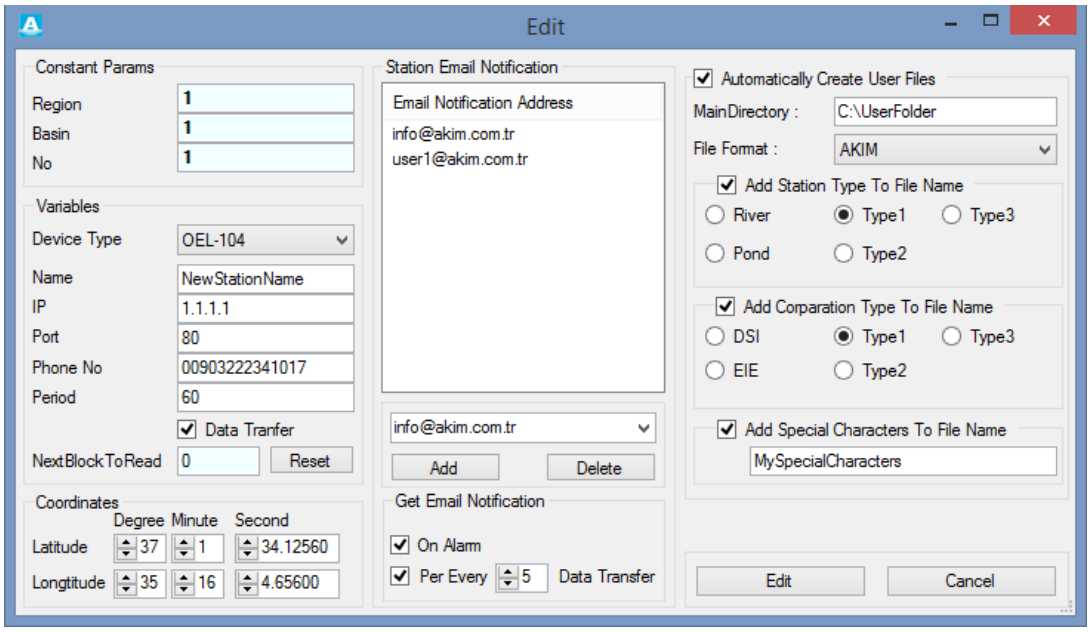


Station is added to the list using "add" button provided in bottom right corner of the window. you may cancel adding by clicking "cancel" button.

5.2. Station Editing



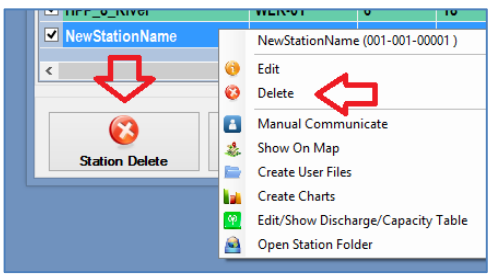
Existing station can be organized by selecting from the list and right clicking the mouse or clicking on edit button to open edit window.



In the station editing window, values other than region, basin, station numbers. A control is also included to reset subsequent block value to be read in addition to the parameters in station adding window. Using "reset" button, station data can be read from the first block.

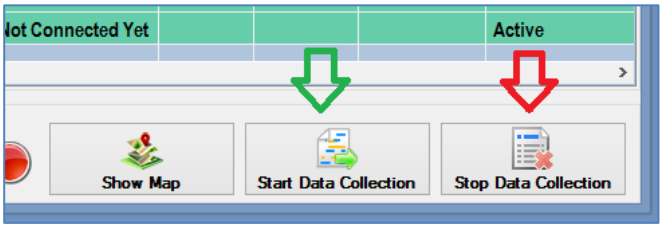
Note: The station being edited will become passive in the list. User should mark the check box provided on the left side of relevant station.

5.3. Station Deleting



Existing station can be deleted by selecting from the list and right clicking the mouse or clicking on delete button provided at the bottom.

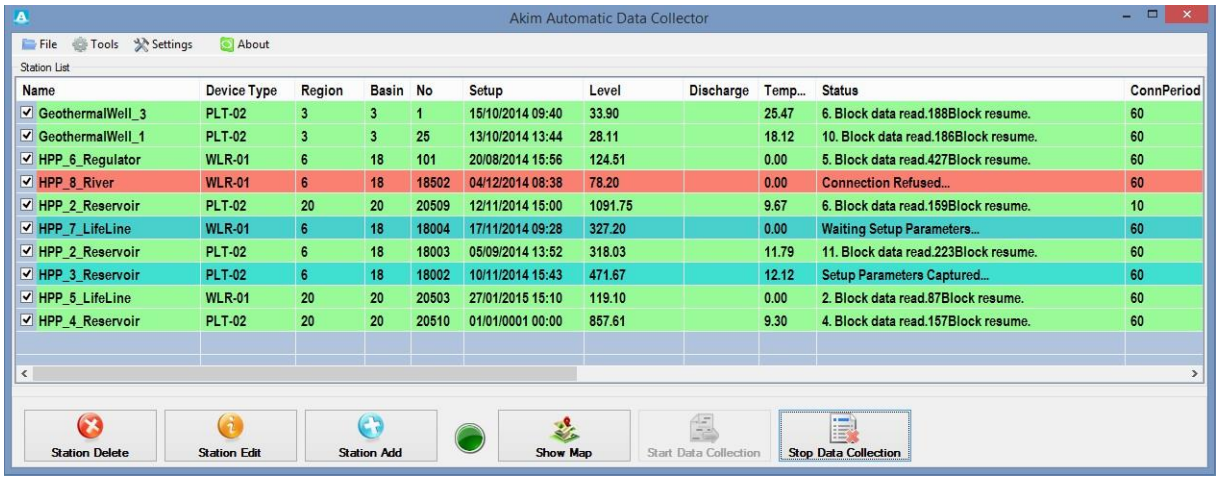
5.4. Start/Stop Communication



The two buttons provided at the lower right of the Automatic Communication window can be used to start and stop the communication.

When the connection is established, the red warning in the center will start blinking in green color.

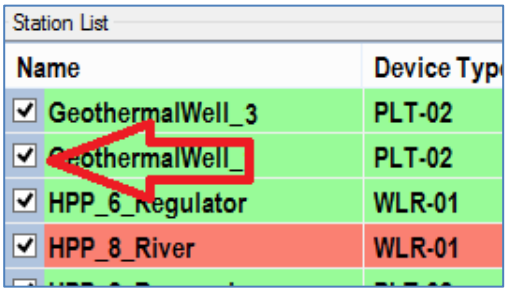
5.5. Station List



AkimDataCollector software is a support software designed for devices designed by Akım Elektronik Ltd. Şti. However, since the Automatic Data Collection window can be used as on-line viewing display, a need for option to change station list view arose.

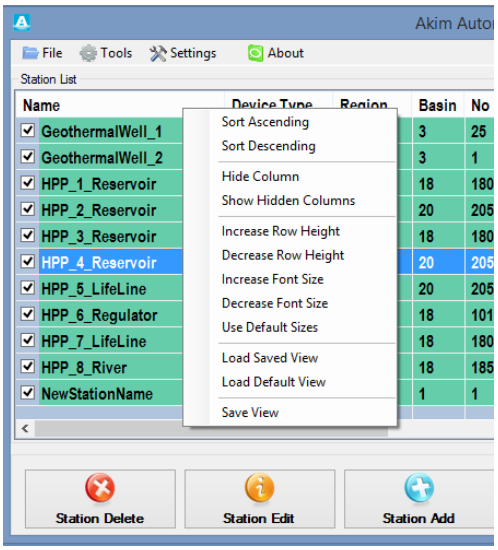
5.5.1. Station List Organization

5.5.1.1. Row Organization



Station name rows are provided with active/passive option. Regardless of communication being active or not, station selection can be done. Each row is equipped with drag-drop feature. This feature enables dragging of any station to any position.

5.5.1.2. Column Organization



Station columns also have drag-drop feature just like rows. Each column can be dragged to desired position.

An edit menu opens up using left mouse buttons on the columns. This menu allows desired visual interface changes.

- Sort Ascending/Descending

Enables sorting the complete list in ascending or descending order.

- Hide Column

Hides the clicked column from the list.

- Show Hidden Columns

Displays all hidden columns.

- Increase/Decrease Row Height

Enables increasing and decreasing row heights.

- Increase/Decrease Font Size

Enables increasing and decreasing font size.

- Use Default Sizes

Returns to default row height and font size.

- Load Saved View

Enables returning to the list view saved by user previously.

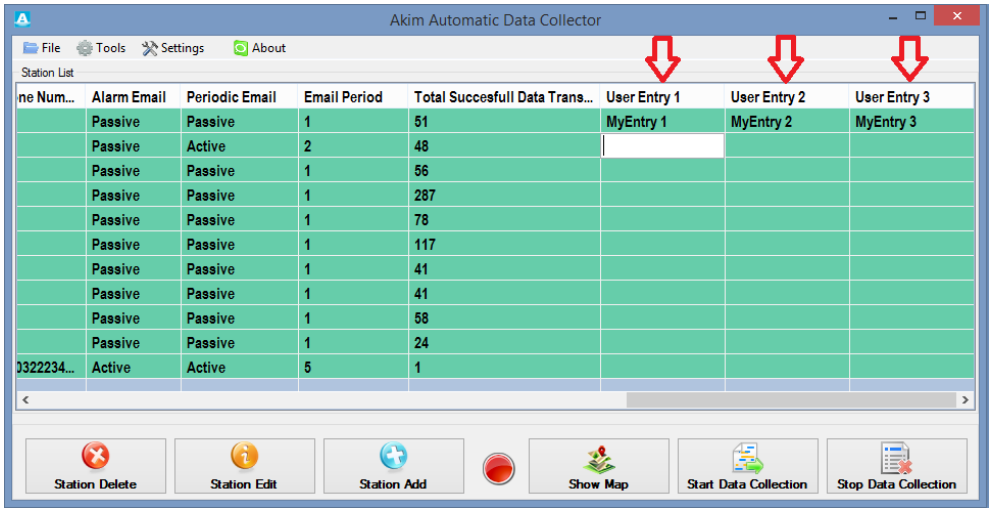
- Load Default View

Enables returning to default list view.

- Save View

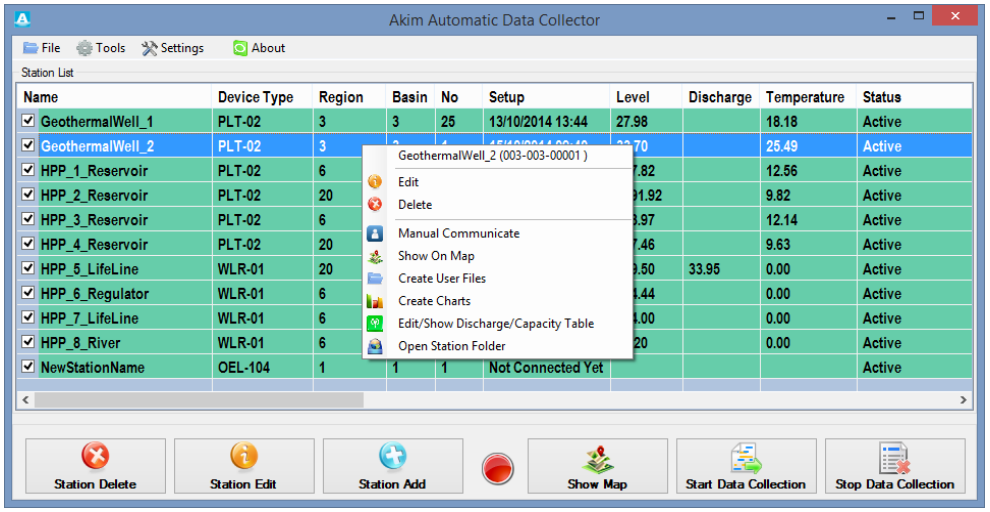
Saves the changes as user input. Next time the list is opened, it is displayed in this saved list view. Default and user settings are stored in "StationList_View.xml" folder.

5.5.1.3. Station User Text



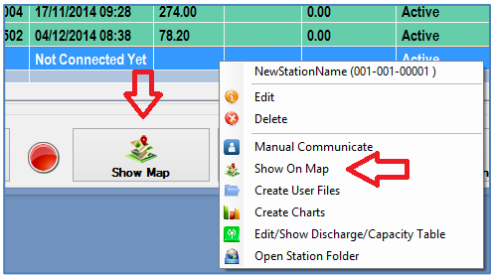
There are 3 text boxes added to the end of each station row in Station List, completely for user convenience. User may enter any value in those boxes by double clicking. Entered values are automatically saved Those columns can be moved to desired position using drag-drop feature. Miscellaneous notes, critic values etc. can be entered in any position on the list using those inputs.

5.5.2. Single Station Control



There is a user friendly menu available for each station which opens up by right clicking on the mouse. This menu is intended for quick use of all functions of software for that specific station. This menu enables editing, deleting stations in the list, manual connection, displaying on the map, creation of user files, creation of graphic visuals, monitoring and editing flow/capacity tables, access to station folder.

5.6. Map Display

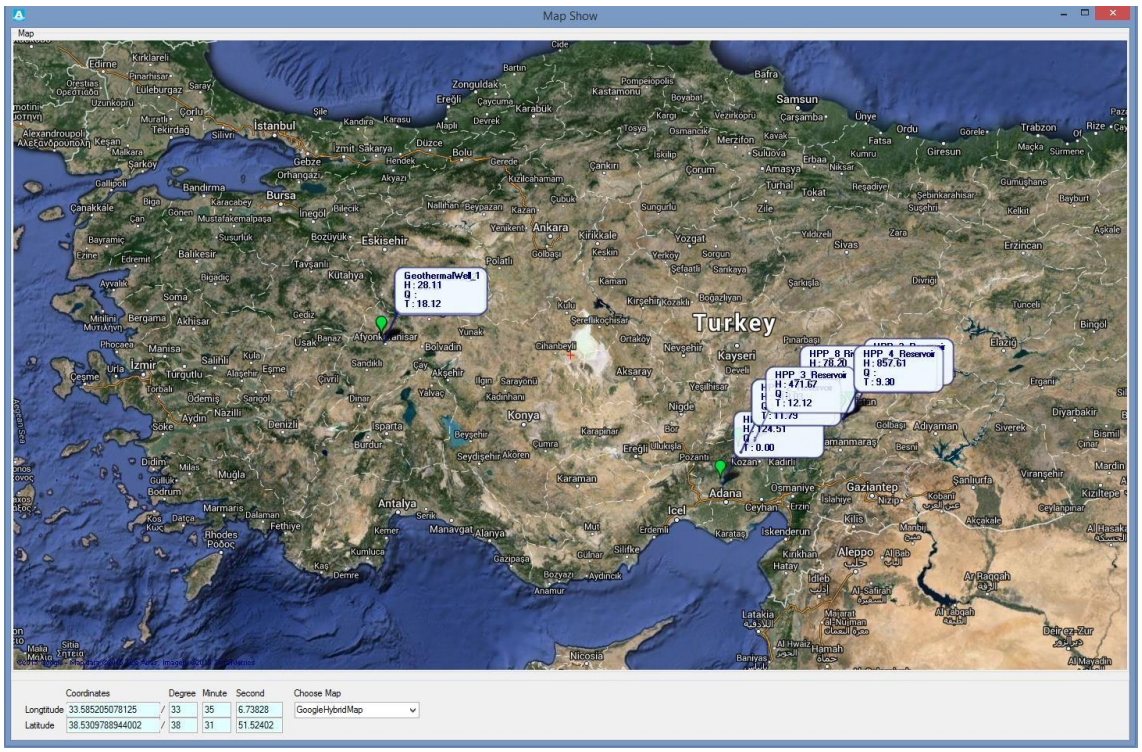


In order to see the location of station selected from the list, click on "show on map" option from the menu opened by right clicking the mouse.

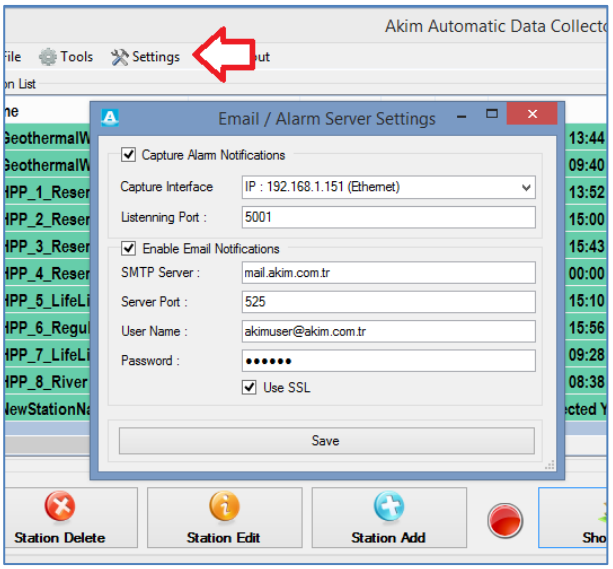
In the map window, station name, "H" water level, "Q" Flow/Capacity value, "T" water temperature are identified on station location tag. This data will be automatically updated by new values.

"Show Map" button on automatic communication window opens up the map where all stations can be observed. The view can be zoomed in and out using scroll wheel.

On the bottom left of the window, there is a latitude-longitude display that shows the geographical coordinates of mouse cursor position on the map. Furthermore, there is a selection box enabling selection of map type.



5.7. E-mail Notification and Alarm Receipt Settings



5.7.1. Alarm Receipt Settings

If the station devices are set to send alarm, it should listen to an TCP/IP port in order to receive the alarms transmitted by device. To do that, "Capture Alarm Notifications" option must be active in settings window. The physical infrastructure to be used by computer where the software is installed should be identified in "Capture Interface" option. A listening port should be entered in "Listening Port" section. The software should be in a network with a static IP, and the necessary routing must be provided in order to receive alarms.

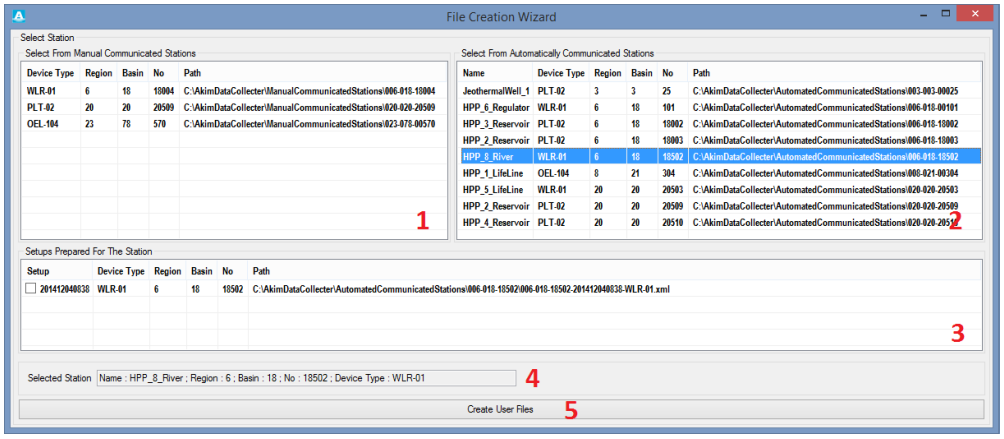
Note: Settings of field device must be consistent with those settings. See data page of relevant device for device settings.

5.7.2. E-Mail Sending Settings

Instructions for entering notification e-mail addresses while adding stations are explained previously. In order to send e-mail to those specified e-mail addresses, software must use an active account available in a mail server. User may perform e-mail account set-up by selecting "Activate E-mail Notifications" option.

Once the setting is complete, save the settings by clicking "Save" button.

6. File Manager Wizard



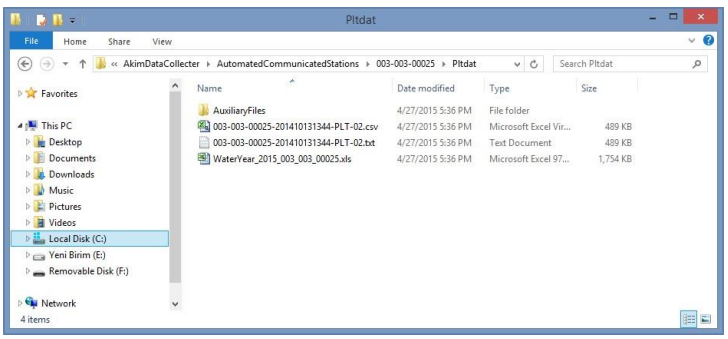
File manage wizard is an interface developed for the purpose of converting station data of which recorded data blocks are extracted into useful data formats for the user.

Devices that user is manually connected and transfered data are listed in the upper left section (1). Devices that user is automatically communicating are listed in the upper right section (2). If any station is selected from those lists, all set-ups that are identified in that station of which the data are transfered as of the moment are displayed in the list in middle section (3). Name, RBN code and device type of the selected station are indicated in a text box at the bottom (4). Set-up list is established based on the set-up date and time stored in the device. There is a check box next to each set-up. User may process one set-up or if any, multiple set-up data by ticking those check boxes.

Once the set-up data to be processed are identified, click on "Create User Files" button (5) to process raw data and convert to other file formats. This action may take varying times based on recorded data size.

After the action is completed, the folder where station user data files are created will automatically open.

Example; The folder to be created for Region 3, Basin 3, Station no. 25;



Note: In order to view flow and capacity values in the created folder, station - flow/capacity files must be in station folder. Otherwise, values will be displayed as blank.

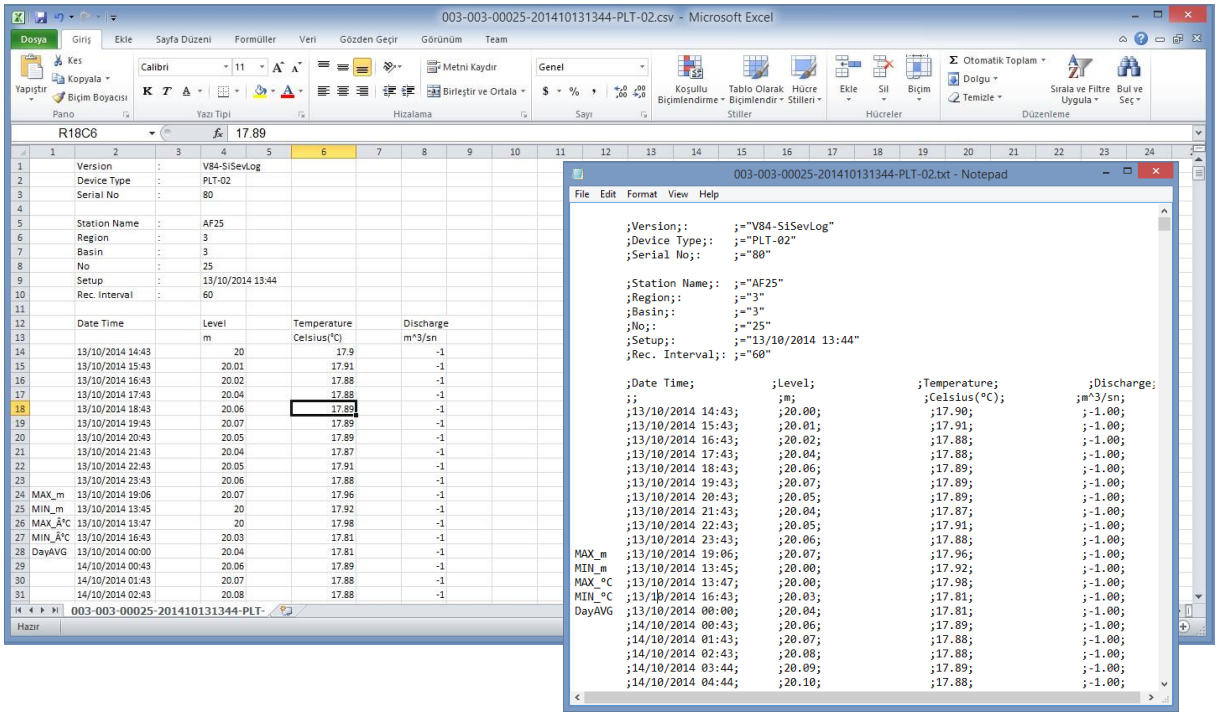
If the station device is PLT-02, "Plttdat" folder will be created automatically, if the device is WLR-01, "Wlrdat" folder, and if the device is OEL-104, "Limdat" folder will be created automatically. If user files are created previously, old folder is transferred to “xxx_Old_Files” old files folder in the upper folder, and tagged with a transfer date/time. User may find the last 10 old folders in that folder.

Created file formats are, “.csv” , “.txt”, “.xls”. In addition, ".xml" and ".dat" files are also available in “AuxiliaryFiles” folder.

RBN code + Set-Up Date and time + device type are used when creating file

names. Example; “003-003-00025-201410131344-PLT-02”

6.1. Csv / Txt File format



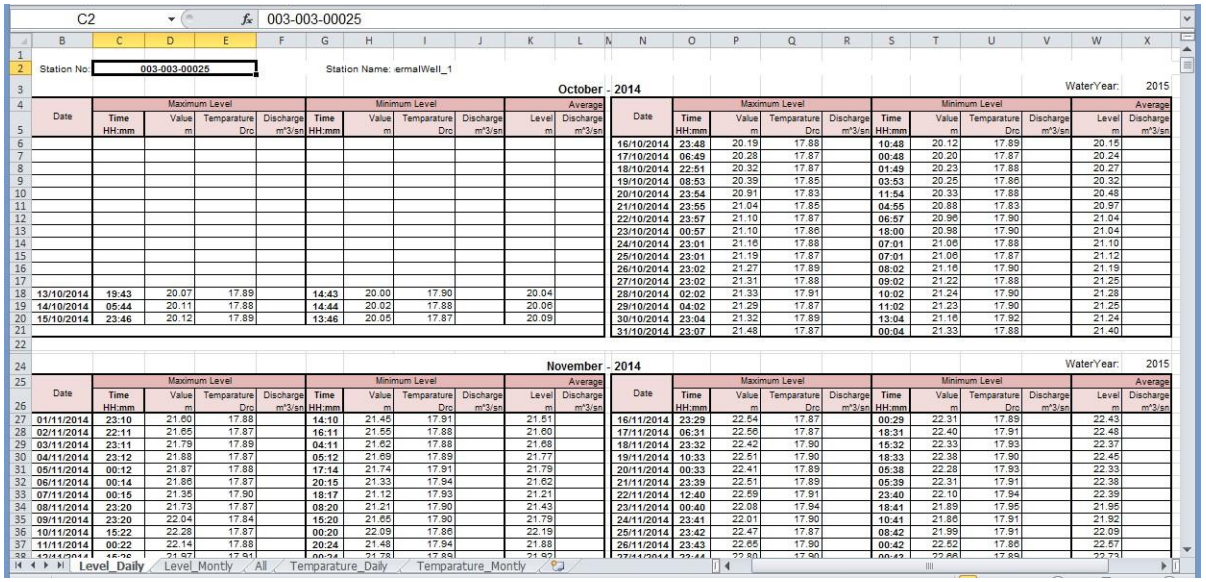
In Csv file format, “;” is used as spacer. Basic data regarding station are saved as title. There are four columns namely data record date/time, level, Temperature and flow/capacity. At the end of each day, daily minimum, maximum and avergae values are saved as data rows.

6.2. Xls File format

File manager wixard creates a different excel file for each water year. File name is created using Water year + RBN code. (Example: Water year_2015_003_003_00025.xls)

Note: Water year starts in October, and ends in September of following year.

6.2.1. Daily Data Page



C2 | 003-003-00025

Station No: 003-003-00025 Station Name: ermalWell_1

October - 2014 WaterYear: 2015

Date	Maximum Level Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Minimum Level Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Average Level m	Discharge m^3/sn
13/10/2014	19:43	20.07	17.89		14:43	20.00	17.90		20.04	
14/10/2014	05:44	20.11	17.88		14:44	20.02	17.88		20.06	
15/10/2014	23:46	20.12	17.89		13:46	20.05	17.87		20.09	

Date	Maximum Level Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Minimum Level Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Average Level m	Discharge m^3/sn
16/10/2014	23:48	20.19	17.88		10:48	20.12	17.89		20.15	
17/10/2014	06:49	20.28	17.87		00:48	20.20	17.87		20.24	
18/10/2014	22:51	20.32	17.87		01:49	20.23	17.88		20.27	
19/10/2014	08:53	20.39	17.85		03:53	20.25	17.86		20.32	
20/10/2014	23:54	20.91	17.83		11:54	20.33	17.88		20.48	
21/10/2014	23:55	21.04	17.85		04:55	20.88	17.83		20.97	
22/10/2014	23:57	21.10	17.87		06:57	20.96	17.90		21.04	
23/10/2014	00:57	21.10	17.86		18:00	20.98	17.90		21.04	
24/10/2014	23:01	21.16	17.88		07:01	21.06	17.88		21.10	
25/10/2014	23:01	21.19	17.87		07:01	21.06	17.87		21.12	
26/10/2014	23:02	21.27	17.89		08:02	21.16	17.90		21.19	
27/10/2014	23:02	21.31	17.88		09:02	21.22	17.88		21.25	
28/10/2014	02:02	21.33	17.91		10:02	21.24	17.90		21.28	
29/10/2014	04:02	21.29	17.87		11:02	21.23	17.90		21.25	
30/10/2014	23:04	21.32	17.89		13:04	21.16	17.92		21.24	
31/10/2014	23:07	21.48	17.87		00:04	21.33	17.88		21.40	

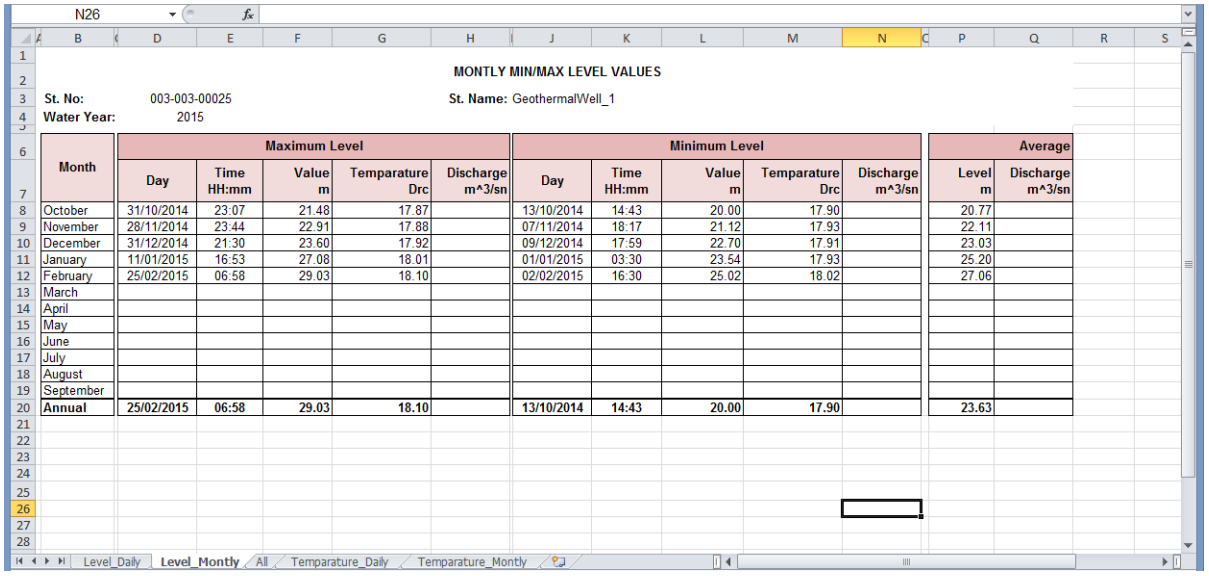
November - 2014 WaterYear: 2015

Date	Maximum Level Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Minimum Level Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Average Level m	Discharge m^3/sn
01/11/2014	23:10	21.60	17.88		14:10	21.46	17.91		21.51	
02/11/2014	22:11	21.65	17.87		16:11	21.55	17.88		21.60	
03/11/2014	23:11	21.79	17.89		04:11	21.62	17.88		21.68	
04/11/2014	23:12	21.88	17.87		05:12	21.69	17.89		21.77	
05/11/2014	00:12	21.87	17.88		17:14	21.74	17.91		21.79	
06/11/2014	00:14	21.86	17.87		20:15	21.33	17.94		21.62	
07/11/2014	00:15	21.35	17.90		18:17	21.12	17.93		21.21	
08/11/2014	23:20	21.73	17.87		08:20	21.21	17.90		21.43	
09/11/2014	23:20	22.04	17.84		15:20	21.65	17.90		21.79	
10/11/2014	15:22	22.28	17.87		00:20	22.09	17.86		22.19	
11/11/2014	00:22	22.14	17.88		20:24	21.48	17.94		21.88	

Date	Maximum Level Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Minimum Level Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Average Level m	Discharge m^3/sn
16/11/2014	23:29	22.54	17.87		00:29	22.31	17.89		22.43	
17/11/2014	06:31	22.56	17.87		18:31	22.40	17.91		22.48	
18/11/2014	23:32	22.42	17.90		15:32	22.33	17.93		22.37	
19/11/2014	10:33	22.51	17.90		18:33	22.38	17.90		22.45	
20/11/2014	00:33	22.41	17.89		05:38	22.28	17.93		22.33	
21/11/2014	23:39	22.51	17.89		05:39	22.31	17.91		22.38	
22/11/2014	12:40	22.59	17.91		23:40	22.10	17.94		22.39	
23/11/2014	00:40	22.08	17.94		18:41	21.89	17.95		21.95	
24/11/2014	23:41	22.01	17.90		10:41	21.86	17.91		21.92	
25/11/2014	23:42	22.47	17.87		08:42	21.99	17.91		22.09	
26/11/2014	23:43	22.65	17.90		00:42	22.52	17.86		22.67	

Level_Daily | Level_Montly | All | Temparature_Daily | Temparature_Montly

6.2.2. Monthly Data Page



N26

MONTLY MIN/MAX LEVEL VALUES

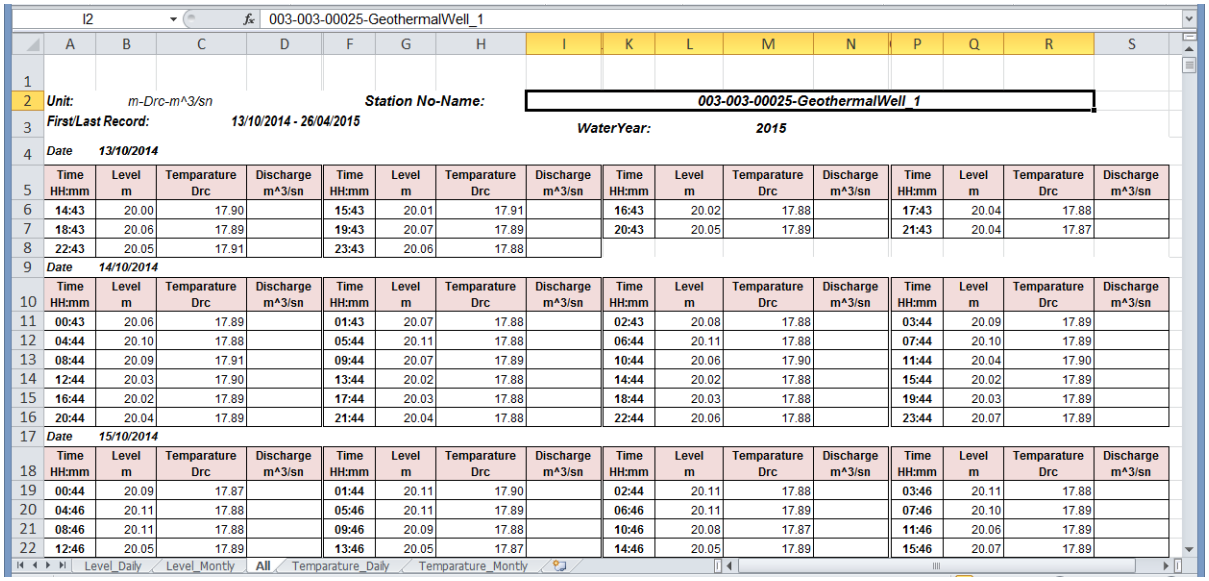
St. No: 003-003-00025 **St. Name:** GeothermalWell_1

Water Year: 2015

Month	Maximum Level Day	Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Minimum Level Day	Time HH:mm	Value m	Temparature Drc	Discharge m^3/sn	Average Level m	Discharge m^3/sn
October	31/10/2014	23:07	21.48	17.87		13/10/2014	14:43	20.00	17.90		20.77	
November	28/11/2014	23:44	22.91	17.88		07/11/2014	18:17	21.12	17.93		22.11	
December	31/12/2014	21:30	23.60	17.92		09/12/2014	17:59	22.70	17.91		23.03	
January	11/01/2015	16:53	27.08	18.01		01/01/2015	03:30	23.54	17.93		25.20	
February	25/02/2015	06:58	29.03	18.10		02/02/2015	16:30	25.02	18.02		27.06	
March												
April												
May												
June												
July												
August												
September												
Annual	**25/02/2015**	**06:58**	**29.03**	**18.10**		**13/10/2014**	**14:43**	**20.00**	**17.90**		**23.63**	

Level_Daily | Level_Montly | All | Temparature_Daily | Temparature_Montly

6.2.3. All Data Page



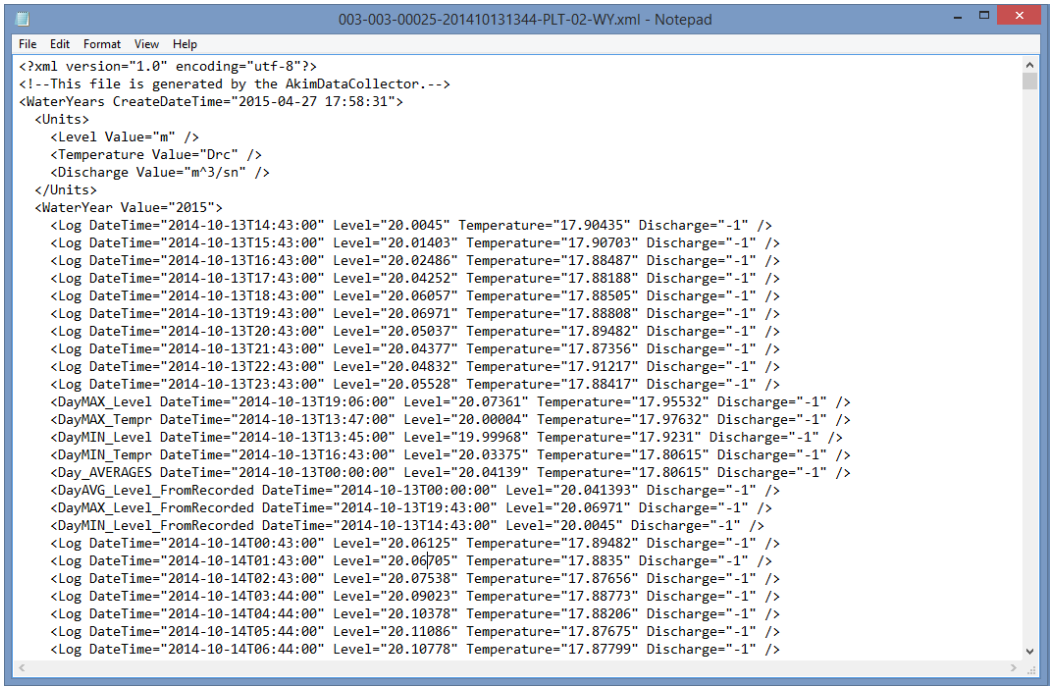
I2 | 003-003-00025-GeothermalWell_1

Unit:	m-Drc-m^3/sn			**Station No-Name:**			003-003-00025-GeothermalWell_1										
First/Last Record:	13/10/2014 - 26/04/2015							**WaterYear:**	2015								
Date	13/10/2014																
Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn		
14:43	20.00	17.90		15:43	20.01	17.91		16:43	20.02	17.88		17:43	20.04	17.88			
18:43	20.06	17.89		19:43	20.07	17.89		20:43	20.05	17.89		21:43	20.04	17.87			
22:43	20.05	17.91		23:43	20.06	17.88											
Date	14/10/2014																
Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn		
00:43	20.06	17.89		01:43	20.07	17.88		02:43	20.08	17.88		03:44	20.09	17.89			
04:44	20.10	17.88		05:44	20.11	17.88		06:44	20.11	17.88		07:44	20.10	17.89			
08:44	20.09	17.91		09:44	20.07	17.89		10:44	20.06	17.90		11:44	20.04	17.90			
12:44	20.03	17.90		13:44	20.02	17.88		14:44	20.02	17.88		15:44	20.02	17.89			
16:44	20.02	17.89		17:44	20.03	17.88		18:44	20.03	17.88		19:44	20.03	17.89			
20:44	20.04	17.89		21:44	20.04	17.88		22:44	20.06	17.88		23:44	20.07	17.89			
Date	15/10/2014																
Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn	Time HH:mm	Level m	Temparature Drc	Discharge m^3/sn		
00:44	20.09	17.87		01:44	20.11	17.90		02:44	20.11	17.88		03:46	20.11	17.88			
04:46	20.11	17.88		05:46	20.11	17.89		06:46	20.11	17.89		07:46	20.10	17.89			
08:46	20.11	17.88		09:46	20.09	17.88		10:46	20.08	17.87		11:46	20.06	17.89			
12:46	20.05	17.89		13:46	20.05	17.87		14:46	20.05	17.89		15:46	20.07	17.89			

Level_Daily | Level_Montly | All | Temparature_Daily | Temparature_Montly

6.2.4. Auxiliary Data Files

6.2.4.1. XML file structure



003-003-00025-201410131344-PLT-02-WY.xml - Notepad

File Edit Format View Help

```
<?xml version="1.0" encoding="utf-8"?>
<!--This file is generated by the AkimDataCollector.-->
<WaterYears CreateDateTime="2015-04-27 17:58:31">
  <Units>
    <Level Value="m" />
    <Temperature Value="Drc" />
    <Discharge Value="m^3/sn" />
  </Units>
  <WaterYear Value="2015">
    <Log DateTime="2014-10-13T14:43:00" Level="20.0045" Temperature="17.90435" Discharge="-1" />
    <Log DateTime="2014-10-13T15:43:00" Level="20.01403" Temperature="17.90703" Discharge="-1" />
    <Log DateTime="2014-10-13T16:43:00" Level="20.02486" Temperature="17.88487" Discharge="-1" />
    <Log DateTime="2014-10-13T17:43:00" Level="20.04252" Temperature="17.88188" Discharge="-1" />
    <Log DateTime="2014-10-13T18:43:00" Level="20.06057" Temperature="17.88505" Discharge="-1" />
    <Log DateTime="2014-10-13T19:43:00" Level="20.06971" Temperature="17.88808" Discharge="-1" />
    <Log DateTime="2014-10-13T20:43:00" Level="20.05037" Temperature="17.89482" Discharge="-1" />
    <Log DateTime="2014-10-13T21:43:00" Level="20.04377" Temperature="17.87356" Discharge="-1" />
    <Log DateTime="2014-10-13T22:43:00" Level="20.04832" Temperature="17.91217" Discharge="-1" />
    <Log DateTime="2014-10-13T23:43:00" Level="20.05528" Temperature="17.88417" Discharge="-1" />
    <DayMAX_Level DateTime="2014-10-13T19:06:00" Level="20.07361" Temperature="17.95532" Discharge="-1" />
    <DayMAX_Tempr DateTime="2014-10-13T13:47:00" Level="20.00004" Temperature="17.97632" Discharge="-1" />
    <DayMIN_Level DateTime="2014-10-13T13:45:00" Level="19.99968" Temperature="17.9231" Discharge="-1" />
    <DayMIN_Tempr DateTime="2014-10-13T16:43:00" Level="20.03375" Temperature="17.80615" Discharge="-1" />
    <Day_AVERAGES DateTime="2014-10-13T00:00:00" Level="20.04139" Temperature="17.80615" Discharge="-1" />
    <DayAVG_Level_FromRecorded DateTime="2014-10-13T00:00:00" Level="20.041393" Discharge="-1" />
    <DayMAX_Level_FromRecorded DateTime="2014-10-13T19:43:00" Level="20.06971" Discharge="-1" />
    <DayMIN_Level_FromRecorded DateTime="2014-10-13T14:43:00" Level="20.0045" Discharge="-1" />
    <Log DateTime="2014-10-14T00:43:00" Level="20.06125" Temperature="17.89482" Discharge="-1" />
    <Log DateTime="2014-10-14T01:43:00" Level="20.06705" Temperature="17.8835" Discharge="-1" />
    <Log DateTime="2014-10-14T02:43:00" Level="20.07538" Temperature="17.87656" Discharge="-1" />
    <Log DateTime="2014-10-14T03:44:00" Level="20.09023" Temperature="17.88773" Discharge="-1" />
    <Log DateTime="2014-10-14T04:44:00" Level="20.10378" Temperature="17.88206" Discharge="-1" />
    <Log DateTime="2014-10-14T05:44:00" Level="20.11086" Temperature="17.87675" Discharge="-1" />
    <Log DateTime="2014-10-14T06:44:00" Level="20.10778" Temperature="17.87799" Discharge="-1" />
```

6.2.4.2. DAT file structure

This file is in Hydro format developed for State Water Organization in MS-Dos.

7. Chart Manager Wizard

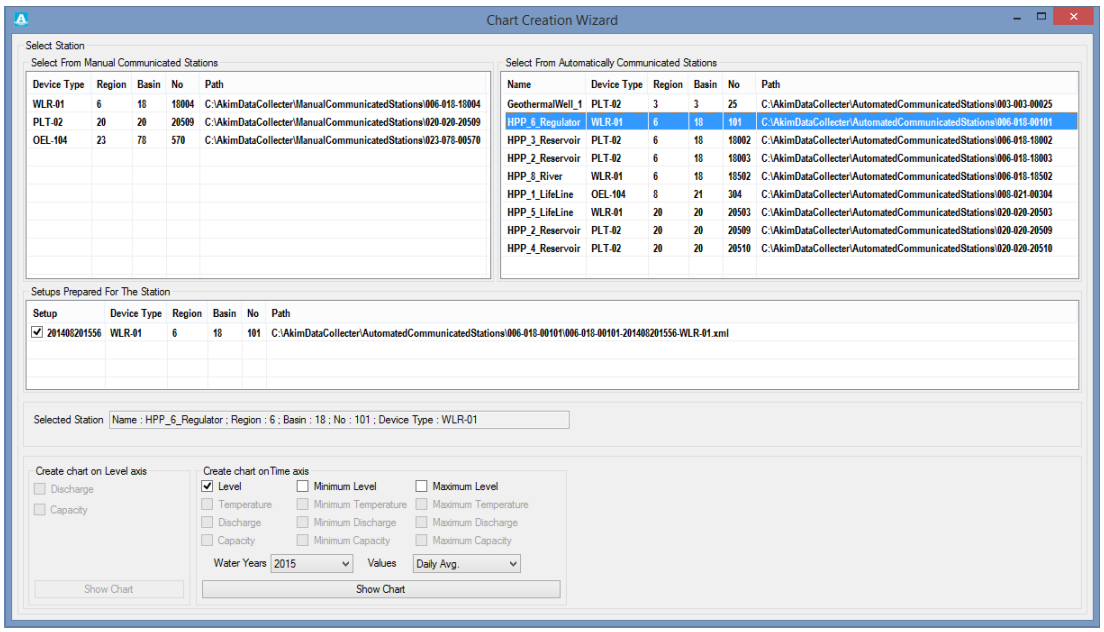
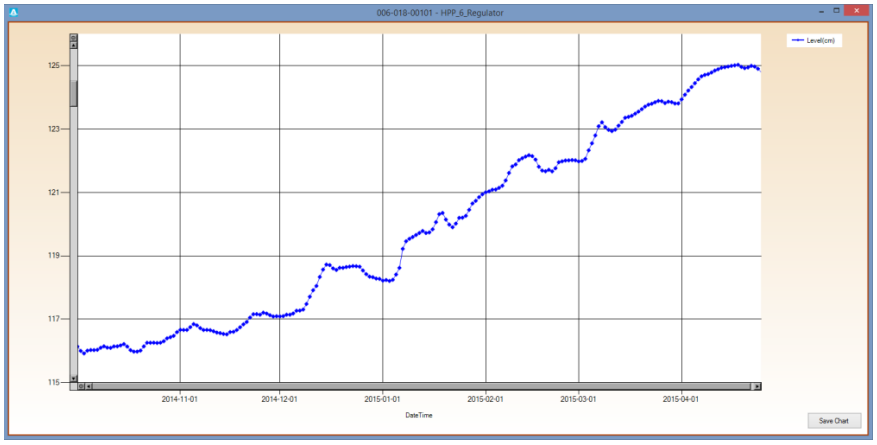
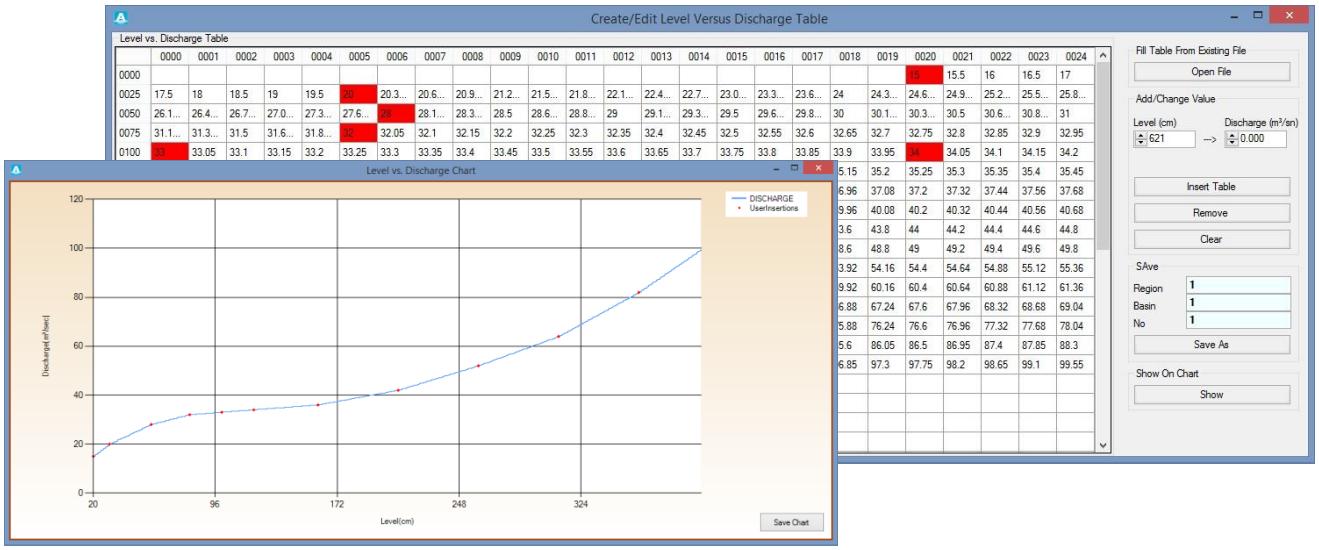


Chart manager wizard file selection is same as File manager wizard. Two types of charts can be generated using the wizard. The first one is the flow/capacity table chart previously created and saved in station folder. If the file is not created, this section will appear blank. The other one is the chart displaying level and temperature levels on time plane based on device type. Selection can be made based on water year and recording type. Minimum and maximum values can also be included in chart series. Chart can be saved in "png" format using the save button on bottom-right.



8. Level-Flow Table Wizard



User may create a level-flow correlation table that shows level flow characteristics for each station. Values corresponding to level obtained by hydrological measurement and calculations between 0 - 1000 cm are added to the table using "Insert Table" button. Values are deleted using "Remove" button. Every time user inserts a value, the gap between entered values are automatically completed in linear form. Inputs are made using control panel on the right side of screen. Values inserted by user can be differed from automatically competed sections by their red tags.

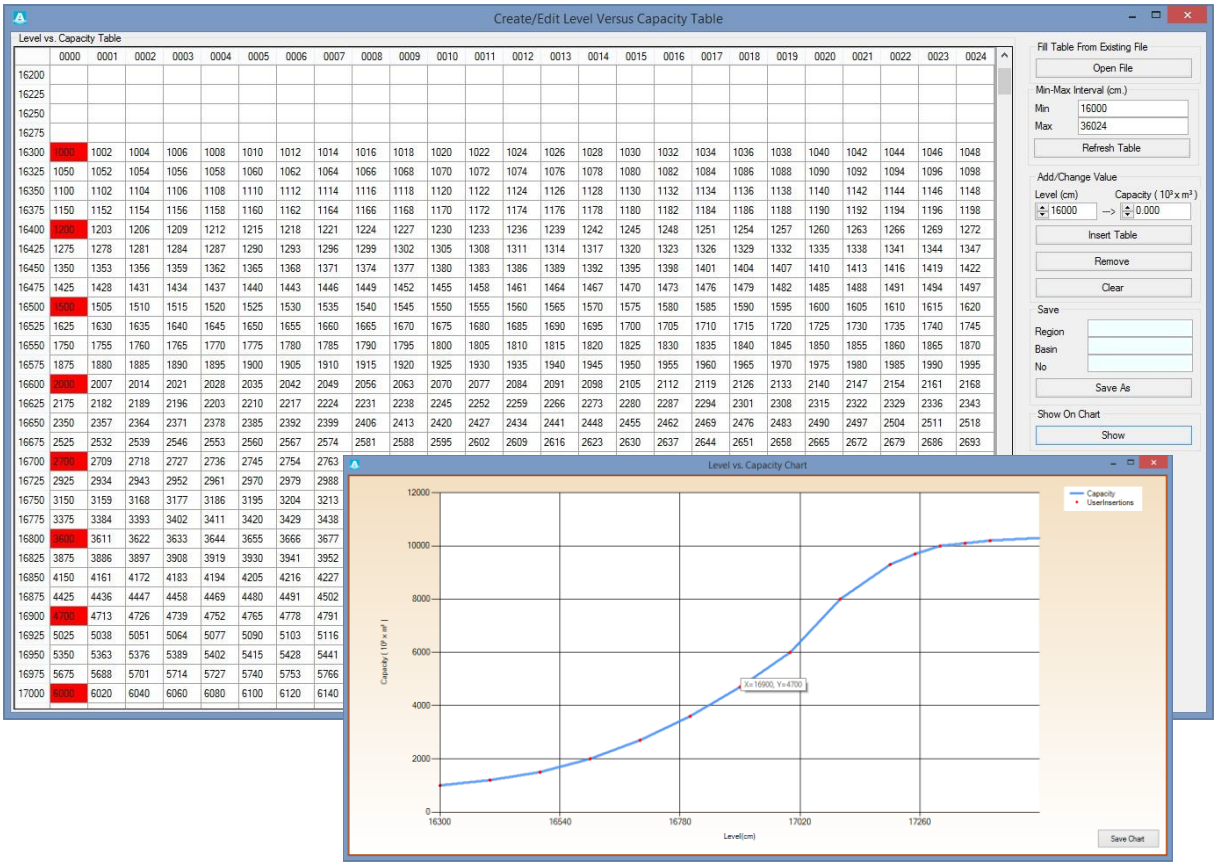
All table data can be cleared using "Clear" button. When creating the table, Chart view is displayed in another screen using "Show" button.

Previously created filed can be opened and edited using "Open file" button.

Using "Save" button, file with ".LvD" extension is saved. When saving the file, it should be saved in relevant station folder taking RBN code into consideration. If there is a file in relevant station folder, the flow values are displayed instantly during instant data transfer, and saved in that file.

In case of wrong saving or in the absence of file, flow values are not displayed.

9. Level-Capacity Table Wizard



Level-Capacity table wizard works similar to level-flow table wizard except for few differences. File extension is ".LvC". Text boxes to enter lake maximum and minimum elevation are provided considering lake capacity records.