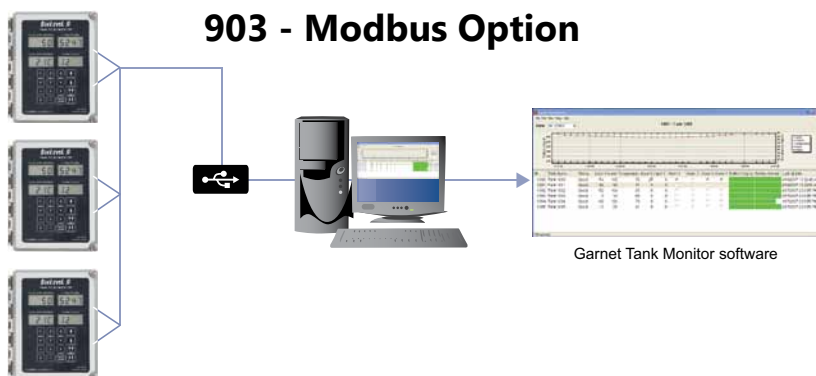
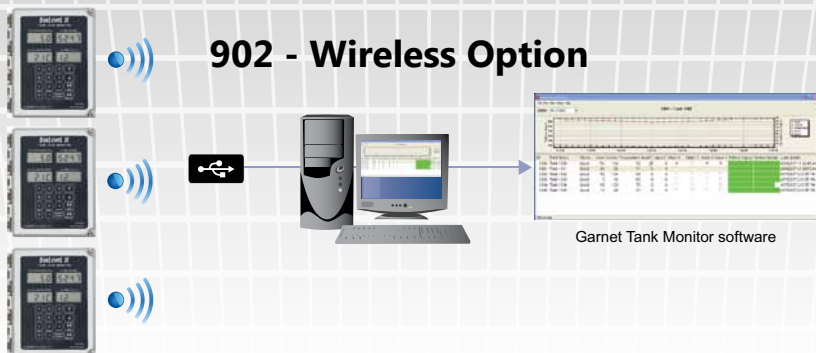


SEELEVEL™

Tank Monitor Software



Tank Monitoring Software Version 2.1.2

MANUAL

Printed in Canada

www.garnetinstruments.com

GARNET

Liquid management solutions, your way.

GARNET
SEELEVEL SPECIAL™
Tank Monitoring Software

Tank Monitoring Software Version 2.1.2 Manual

PC Requirements: Windows XP, Vista, 7 or 8.1

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902-903 TMS_v2.1.2.1 05-Sep-2018

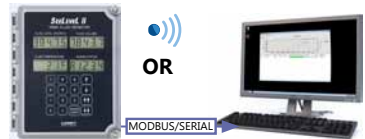
CHAPTER 1 - INTRODUCTION

The purpose of this manual is to ensure your tank monitoring system runs correctly. Before the installation and setup of the software, this manual will first give preliminary requirements for the software. Software functions and uses will also be covered.

The Tank Monitor Software is used for the SeeLevelL 900D6 with 902 & 903 options to:

1. Record Data

The Tank Monitor Software obtains and stores data from the SeeLevelL 900D6 either wirelessly or with a hardwired Modbus 232/485/422 serial connection.



The data transmitted & recorded includes status, level, volume, temperature, fluid interface volume & level, communication type, and display type.

2. View Data

Once stored, the constantly updating data can be viewed in a chart, historically or by monthly average.



3. Publish Data

The stored data can be sent off and published as a print or an automated e-mail.



To effectively use the software, ensure that:

1. Compatible GARNET hardware has been successfully installed.

Ensure that your current hardware setup is correct using the table below. Please see the separate product manuals for specific product installation instructions.

Communication Method	Compatible Display	Required Option	Computer Hardware	Required Driver
Wireless	900D6S 900D6D 900D6Q 900D6I	902 	952 USB XSC 	Obtained from Garnet website, under Software Downloads*
Modbus (Hard-wired)	900D6S 900D6D 900D6Q 900D6I 900D4	903 	953 USB 485 	Obtained from Garnet website, under Software Downloads*

**Or follow the procedures outlined in the following pages.*

2. Install Required Device Driver

A device driver on a computer is a program that controls hardware attached to that computer. The included hardware for your chosen communication method requires a proper driver to integrate with the computer. Please see the table above for where to obtain the proper driver for your setup.

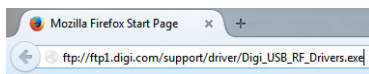
This chapter will show how to obtain, and then install the proper driver for your setup.

Obtaining Wireless USB Driver

(see page 7 for obtaining Modbus USB driver)

Direct Entry Method:

Either enter the link into your address bar on your web browser:

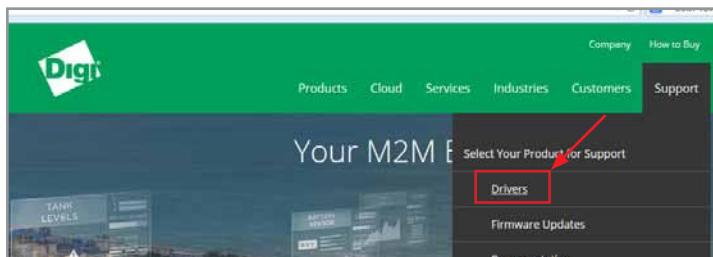


http://ftp1.digi.com/support/driver/Digi_USB_RF_Drivers.exe

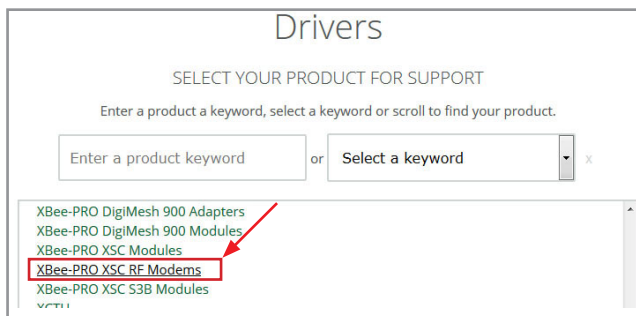
OR

Find it on the web:

1. Go to **www.digi.com**
2. Go to **Support>Drivers**



3. Select **XBee-PRO XSC RF Modules** from the list



4. Select **Drivers Installer for Windows** to start the download.
5. Save or Run the download as desired. See page 8 for help with the driver installation.

XBee-PRO XSC RF

PHONE
U.S. & Canada:
866-765-9885
Worldwide:
+1 801-765-9885

ONLINE
Submit an online support ticket

Product Status: Active
Support Status: Web, Email, Phone
Toggle all

Drivers

General Drivers

[Drivers Installer for Windows \(XP, Vista, 7 and 8\)](#)

USB Drivers are required to use XCTU with the XBIB-U (USB) interface board and the P...

[Linux and Mac OS X Drivers \(provided by FTDI\)](#)
The USB interface boards Digi provides use FTDI chip drivers. Linux and Mac users are a

Note: [Legacy drivers and installation instructions](#) can be found here.

Firmware Updates

Obtaining Modbus USB Driver

Modbus USB Driver: Direct Entry

Either enter the link into your address bar on your web browser:

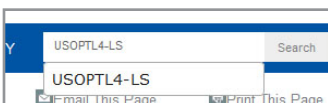
http://www.bb-elec.com/getattachment/c8461811-bebf-456a-8386-6ea1281219b4/USB_Drivers_PKG_v2-08-28.zip.aspx



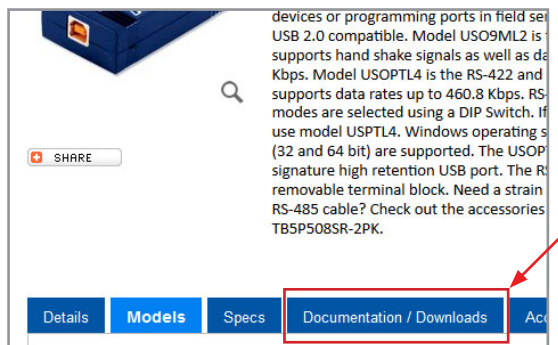
OR

Find it on the web:

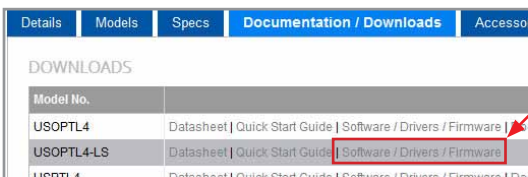
1. Go to **www.bb-elec.com**
2. Search: **USOPTL4-LS**, and select the product.



3. Select **Documentation/Downloads** in the product menu.



4. Download and install the **Software/Drivers/Firmware** for the USOPTL4-LS: (See page 8 for help with the driver installation)

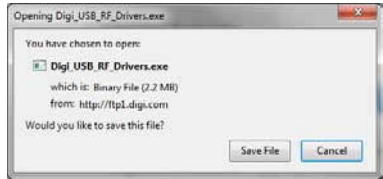


Installing the driver

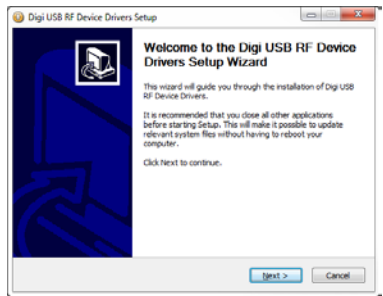
NOTE: The images shown are of the Wireless driver installation

1. A window will prompt you to Save, Run, or Cancel the opening of the driver.

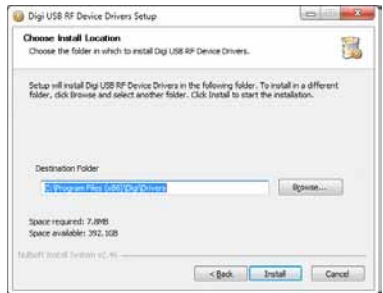
Select **Run**, or **Save** then **Run**, based on your web browser.



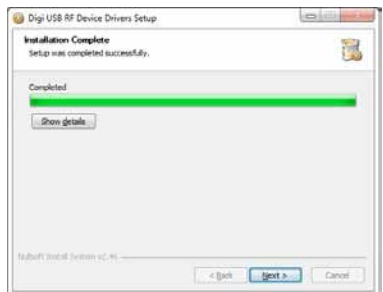
2. Follow on-screen instructions, then select **Next**.



3. Select installation location, then select **Install**.



4. Wait until setup is complete, then select **Next**.



5. Select **Finish**.

It is recommended to reboot the computer after installation is finished.



NOTE: Windows Security may show this window. Select Install if it appears.



6. a. For Wireless Communication:

Plug in the Garnet Instruments Tank Monitor 952-USB XSC box to a USB socket on the computer.



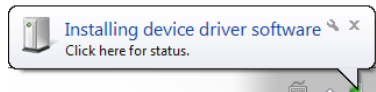
OR

b. For Modbus (Hardlined) Communication:

Plug in the wired USB adapter to a USB socket on the computer.



7. A message should show in the bottom right corner.



It is recommended to reboot the computer after installation is finished.

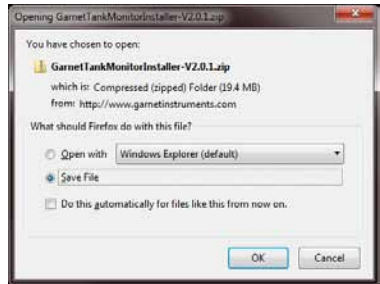
CHAPTER 4 - SOFTWARE INSTALLATION

The software is found on the Garnet Instruments website:
<http://www.garnetinstruments.com/>

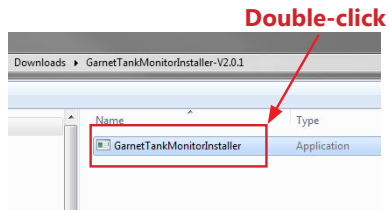
Once the link has been selected:

1. A window will prompt you to Save, Run, or Cancel the opening of the software file.

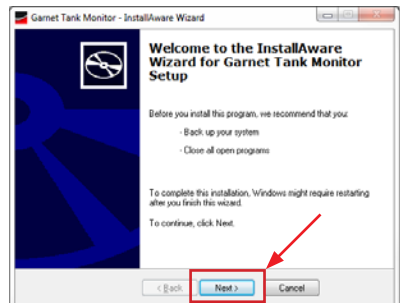
Select **Run**, or **Save** then **Run**, based on your web browser.



2. Select to **Open** the downloaded file, and **double-click** the enclosed application.



3. Follow instructions on the window, then select **Next**.



4. Read the license agreement, then check the **"I Agree"** box, and select **Next**.



5. Enter your name and company then select **Next**.



6. Select **Typical** Setup.

For *Remote* or *Simple* Installation, select **Custom**.
See pg. 13 for information on *Typical*, *Remote*, and *Simple* Installation options.

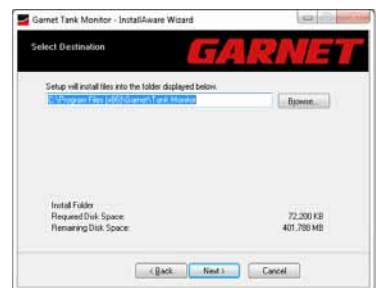
Select **Next**.



7. If **Custom** was selected, select desired items for installation, then select **Next**.

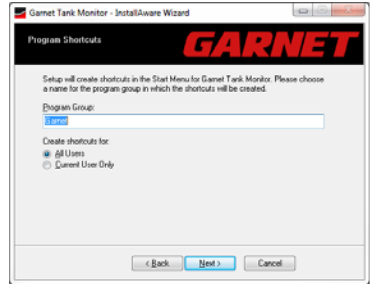


8. Select your install location then select **Next**.



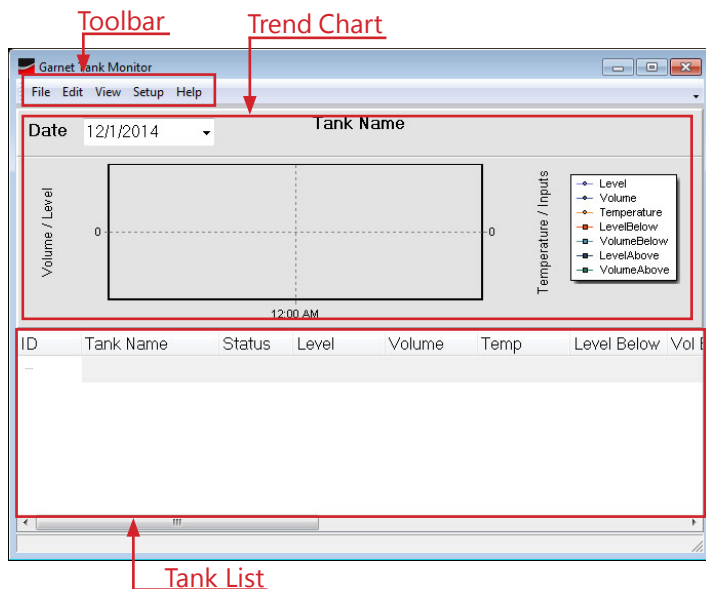
9. Enter the preferred Program Group and which computer users to include on the installation then select **Next**.

It is recommended to reboot the computer after installation is finished.



Software Overview

After opening the software, the program should appear as follows:



Trend Chart - This chart will show the daily measurement trend for the selected tank.

Tank List - This area shows the monitored tanks that are connected to the software, and their current properties.

Toolbar Overview

1. File - for printing of Tank List and selected Trend Chart
2. Edit - To delete/insert tanks from/into the Tank List
3. View* - manage which tank properties are visible in the Tank List, as well as viewing Historical & Monthly Reports
4. Setup - for initiating the communication type, and any e-mail report generation. Also allows for detailed data**
5. Help - shows software version and launches manual

*for more information on different ways to view data, see the View Data section on page 19.

**Detailed Data is a tool used for troubleshooting only.

How It Works



The diagram above is a simplified view of the functioning of the Tank Monitoring Software. A more accurate and technical description of how the program functions is shown below:

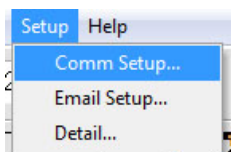
Typical Installation	<p>-Garnet Service running when computer is on. -Client App talks to Garnet Service to get data.</p>
Remote Installation	<p>Connection to Garnet Service on Local Computer is required.</p> <p>-Note that Remote computers only monitor live data, they will <i>NOT</i> be able to view any historic data; only the Local Computer can do this.</p> <p style="text-align: right;">REMOTE COMPUTER</p>
Simple Installation	<p>-The Garnet Service not installed or turned off. -Uses Serial Port from the Application. -Data only records when the Client App is running.</p>

The decision is left to the customer which installation method best suits the specific application.

Initial Setup - Comm Setup

We'll now go through the initial setup for the Tank Monitor Software. Start by making sure the tank monitors can communicate properly with the software by going through **Comm Setup**.

1. Go to **Setup > Comm Setup**.

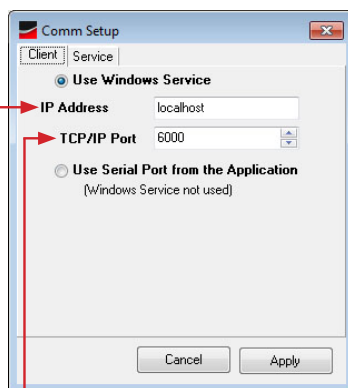


2. Go to **Client** tab.

For *Typical* or *Remote* Installation methods, select **Use Windows Service**.

For the *Simple* Installation method, select **Use Serial Port from the Application**. Ensure that the Garnet Service is not installed or turned off.

See Appendix C for more details on managing the Garnet Service



3. For *Typical* Installations enter: "localhost" for the IP Address, and "6000" for the TCP/IP Port (recommended)

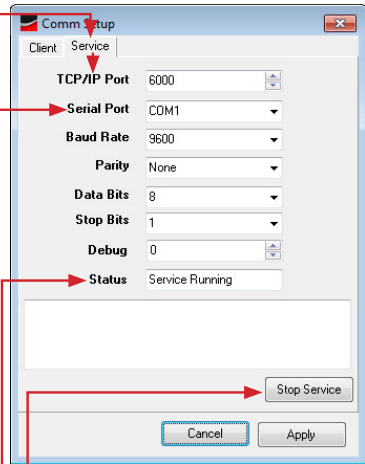
For *Remote* Installations enter: the IP Address of the Local Computer, and a chosen TCP/IP Port. Contact your network administrator if you do not know the IP address of the Local Computer.

4. Under the *Service* tab **enter your TCP/IP port**. A port number 6000 is recommended.

5. Select the **Serial Port** used for the monitor communication.*

6. Ensure:
Baud Rate is **9600**
Parity is **None**
Data Bits is **8**
Stop Bits is **1**
Debug is **0**

7. Ensure that *Status* reads **Service Running**. Select *Start Service* if Service is not running.



Select **Apply**.

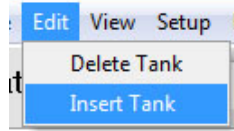
NOTE: If the software is not connecting to the hardware, please check for software running in the background that could be using the COM port.

* see Appendix A to see which COM port is being used by connected devices

Initial Setup - Managing Tanks

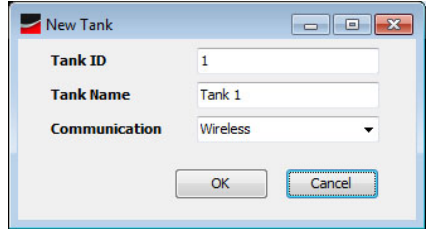
Adding a Tank

1. Go **Edit>Insert Tank**



2. Enter the Tank ID of the tank you want to add to the *Tank List*.

The *Tank ID* must be the same valid **Tank ID** set in the display of the monitored tank you are wanting to add:



Communication Mode	Valid Tank ID
Wireless	0-9999
Modbus	1-255

Note: to view SeeLevel 900D6 gauge tank ID go to the Short User Code (SUC) menu and Press **↑↑ FAST UP** to access the Tank ID menus

3. Name the tank under **Tank Name**. This can be customized to whatever is best for your application.
4. Enter in the **Communication** method used to connect the monitor to the computer.

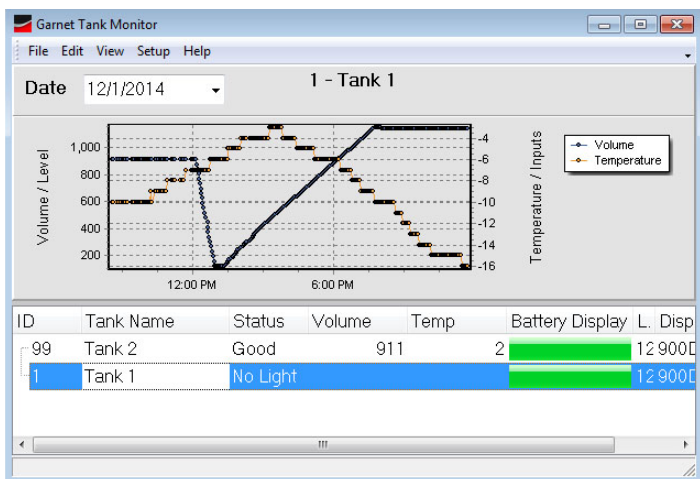
Select **OK**

The tank will show up in the Tank List.

Deleting a Tank

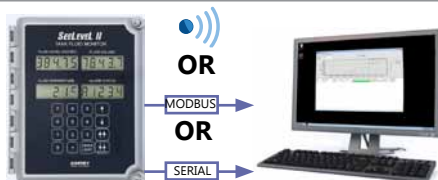
To delete a tank, select it in the Tank List and go **Edit>Delete Tank**

Now that we've added a tank to the Tank List it's time to go over how the software stores the data it obtains from the monitor, different ways you can view this data, and how you can share this data.



Data Storage

In order for data to be stored onto the computer there are two requirements:



1. The communication method (*wireless, modbus, or serial*) must be functioning and
2. For *Typical Installations*: Garnet Service is active
 For *Simple Installations*: Garnet Service is not active, instead it's using the *Serial Port from the Application*

In *Typical Installations* *Garnet Service* runs in the background of any computer that the Tank Monitor Software is installed on, even if the Tank Monitor Software isn't opened up.

* See Appendix C for Managing the Garnet Service

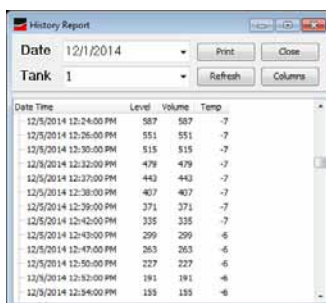
Viewing Data

Once stored, the constantly updating data can be viewed in a chart, historically, or by monthly average via the Tank Monitor Software on the local computer.

1. Historical Report

Shows the data obtained for the selected day. To access the historical report Go **View>Historical Report...**

The date, tank, and data shown can all be changed.

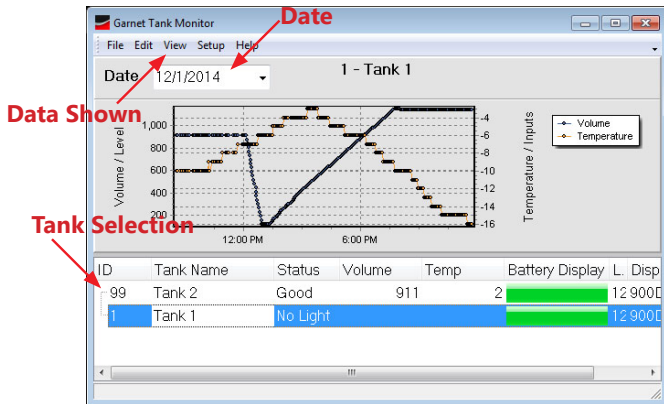


To:

change Date	select the <i>Date</i> drop-down arrow
change Tank	select the <i>Tank</i> drop down arrow
change Data Shown	select the <i>Columns</i> button
Print the Report	select the <i>Print</i> button

2. Chart View

Shows the data obtained for the selected day in chart form.



To:

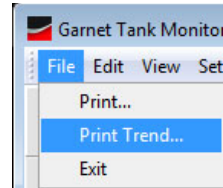
change the Date	select the <i>Date</i> drop-down arrow
change the Tank	select the <i>Tank</i> drop-down arrow
change Data Shown	select <i>View</i> and select/deselect the data types

Data Types:

- Level** - Fluid level
- Volume** - Fluid volume
- Temp** - Fluid temperature
- Level Above & Below** - For 900D6I: indicates fluid level above and below the interface
- Vol Above & Below** - For 900D6I: indicates fluid volume above and below the interface
- Alarms 1, 2, 3 & 4** - indicates the alarm statuses of all alarm points, if applicable
- Battery Display** - indicates the battery status of the display
- Battery Sender** - indicates the battery status of the sender bar
- Com Type** - Communication Method of the selected tank
- Display Type** - Display model that is monitoring the selected tank

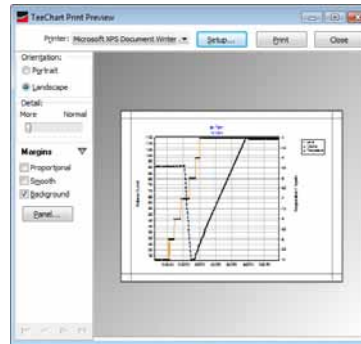
Printing the Chart View:

To print the *Chart Trend*
Go **File > Print Trend...**



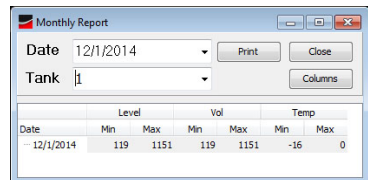
This will bring up the Print Preview window for the Chart Trend.

Desired printing properties can be selected and the chart can then be printed.



3. Monthly Report

Shows the monthly average for the tank. To access the monthly report



Go **View>Monthly Report**

The date, tank, and data shown can all be changed.

change the Date	Select the <i>Date</i> drop-down arrow. The average will be calculated based on the month of the selected date.
change the Tank	Select the <i>Tank</i> drop down arrow
change Data Shown	Select the <i>Columns</i> button

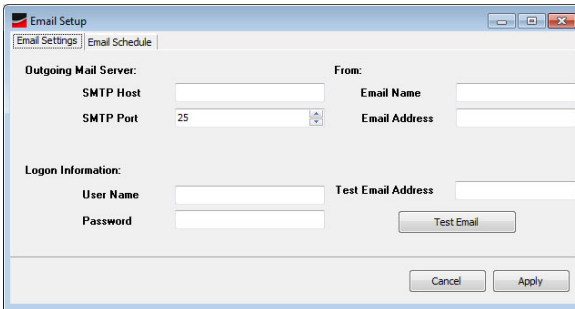
Publish Data

The data can be published by printing it, as described in the previous section, or by e-mail.

E-mail Setup

To initially setup the email system go to **Setup>Email Setup...**

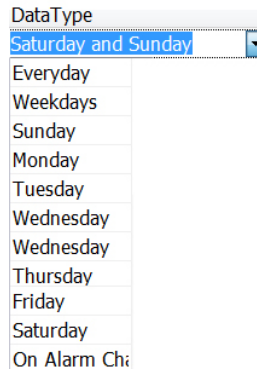
1. Check with your Internet Service Provider to obtain the SMTP Host and Port used by the email software on the computer.



2. Enter the email address you wish to send the email from.

To setup an email schedules and recipients:

1. Go to *Email Schedule*
2. Select *Add*
3. Enter the *email address* of the recipient & *Data Type*: the schedule for sending the data. *Data Type* choices are shown to the right.
4. Select *Apply*



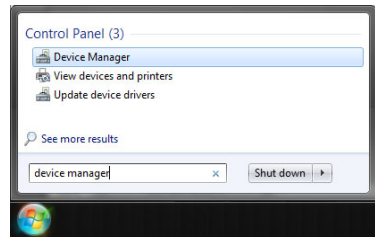
Note: the Data Type "On Alarm Changes" will send an email when an alarm point is hit or changed on Garnet monitoring equipment.

APPENDIX A - COM PORT SETUP

After installing the proper drivers on the computer and connecting the computer with Garnet hardware it may be necessary to check the COM port the Garnet hardware is using on the computer.

1. Click on the windows start button and type "device manager" into the search bar.

Select **Device Manager**



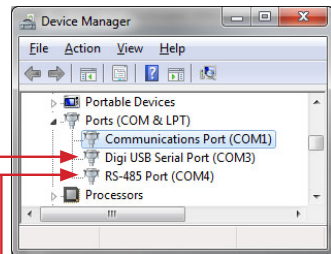
2. Under "Ports" you can see the COM ports currently used on the computer.

In the window it shows:

"Digi USB Serial Port" is using COM3 on the computer, the driver for the Wireless Device

AND

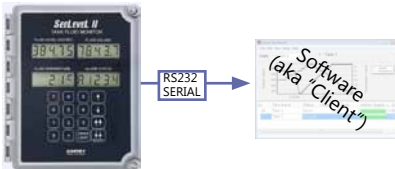
"RS-485 Port" is using COM4 on the computer, the driver for the mod-bus device.



APPENDIX B - MODBUS SERIAL SETUP

Available options for Serial-based communication methods are shown below:

Simple Serial Method (RS232)



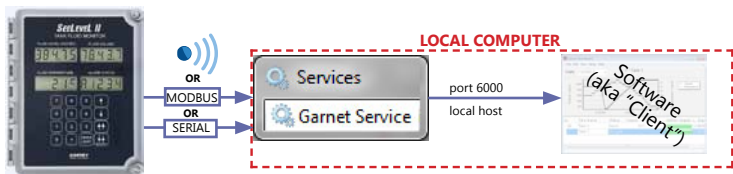
Daisy Chained Serial Method (RS485 or RS422)



Under Comm Setup Select the **Use Serial Port from the Application** instead of **Using Windows Service**.

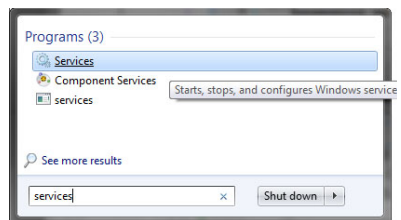


APPENDIX C - GARNET SERVICE

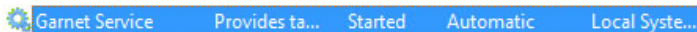


This section will show how to find *Garnet Service* once it has been successfully installed on the computer.

To find *Garnet Service* click on the start button, type "services" and click on the "Services" program.



Garnet Service should appear in the Services window:

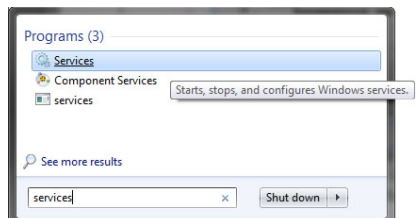


The user may desire to start and stop *Garnet Service* from receiving data or "transmitting" to the Client/Software.

To turn "on" Garnet Service:

1. Click on the Windows Start button and type "services" into the search window.

Select **Services**



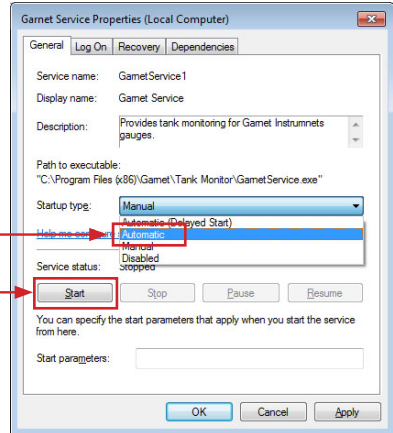
2. Find *Garnet Service* in the window,

Right click on it and select **Properties**



3. Under "General", select **Startup type** as **Automatic**

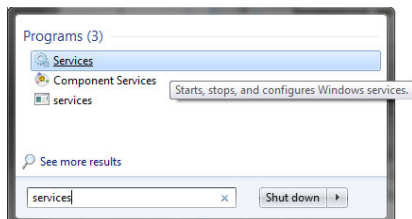
Then select **Start** under "Service status"
Select **OK**.



To Turn "off" the Garnet Service:

1. Click on the Windows Start button and type "services" into the search window.

Select **Services**



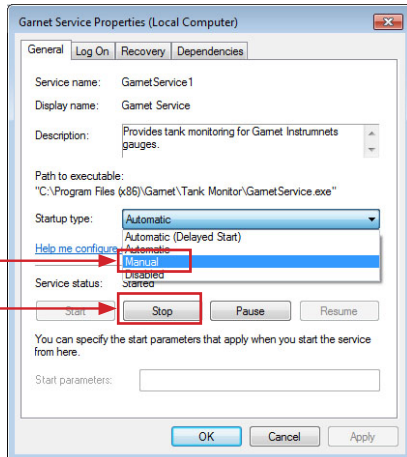
2. Find *Garnet Service* in the window,

Right click on it and select **Properties**.



3. Under "General", select **Startup type** as **Manual**.

Then select **Stop** under "Service status"
Select **OK**.



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CANADA

Garnet Instruments Ltd.
286 Kaska Road
Sherwood Park, AB T8A 4G7
CANADA
email: info@garnetinstruments.com

UNITED STATES

Garnet US Inc.
5360 Granbury Road
Granbury, TX 76049
USA
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CANADA

Garnet Instruments Ltd. P: 780-467-1010
286 Kaska Road F: 780-467-1567
Sherwood Park, AB T8A 4G7 TF: 1-800-617-7384

USA

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