

GUARDIAN²[™] SOFTWARE APPLICATION

Version 1.0.0 for Windows[®]

OPERATION MANUAL

For bluDock[™] Enabled
Digital Handhelds

Wireless Data Transfer



MYRON L[®]
COMPANY
Water Quality Instrumentation
Accuracy • Reliability • Simplicity

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1. BENEFITS AND FEATURES

1.1 GENERAL DESCRIPTION

The Myron L[®] Company Guardian² application allows you to transfer data via Bluetooth[®] wireless technology to the following Myron L[®] Company bluDock[™] enabled instruments:

- Ultrameter II[™]
- Ultrameter III[™]
- POOLPRO[™]
- DIGITAL DIALYSATE METER[™]

1.2 GUARDIAN² APPLICATION PRODUCT HIGHLIGHTS

Guardian² version X.X.X for Microsoft[®] Windows[®] will run on Windows 7[®] or later and allows you to:

- Transfer data wirelessly with accuracy, reliability and simplicity.
- Save data files in a secure, encrypted format (.mlcx).
- Export data files in the following open formats: .csv, .xls, .xlsx and .pdf (without Optical Character Recognition).
- Associate all data from a particular instrument by assigning each instrument a unique name.
- Sort data by up to three, nested sort keys.
- Append new measurements to saved .mlcx-formatted files.
- Set the instrument time and date from your computer.
- Clear measurements stored in the instruments' memory.
- Includes a Demo data file to allow the user to experiment with the software without a connected and active instrument.

NOTE: For further information, please contact the Myron L[®] Company.

2. GENERAL INFORMATION

2.1 LIMITED WARRANTY

All Myron L[®] Company bluDock accessories have a Two Year Limited Warranty. Warranty is limited to the repair or replacement of the bluDock only, at our discretion. The Myron L[®] Company assumes no other responsibility or liability.

2.2 SYSTEM REQUIREMENTS

- Operating System: Microsoft Windows 7 or later.
- Requires Microsoft .NET Framework 4.5 or later.
- Bluetooth wireless technology (Built-in or USB Dongle) (Bluetooth wireless technology 2.0).
- Disk Space: 40MB of free disk space.
- Adobe Reader[®] (required for viewing the onboard Operation Manual).

2.3 GUARDIAN² OPERATION MANUAL

- The Guardian² Operational Manual is optimized for Windows 10.
- Click Guardian² HELP under the HELP menu to open a .pdf file of the Guardian² Operation Manual for your software revision.

NOTE: This manual may have been updated since the release of this version of the Guardian² application.

The most up to date version of this manual can always be found on the Myron L[®] Company website at: www.myronl.com

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Windows is a registered trademark of Microsoft Corp.*

3. START UP

3.1 LAUNCHING THE GUARDIAN² APPLICATION

The Guardian² application can be started several ways:

- By double clicking the application icon in the Guardian² application folder.
- By clicking on a Guardian² shortcut (if you created one) on Windows desktop.
- By clicking on the Guardian² icon in the Task Bar if you pinned it there.
- By double-clicking on any .mlcx formatted file located on your computer.

Splash Screen:

- A splash screen will be displayed on the desktop screen every time the Guardian² application is launched.

NOTE: The first time you install the Guardian² application, your computer might display a Security Warning. If it does, follow the instructions in the illustration below by clicking “More info” in Step 1 and “Run anyway” in Step 2.

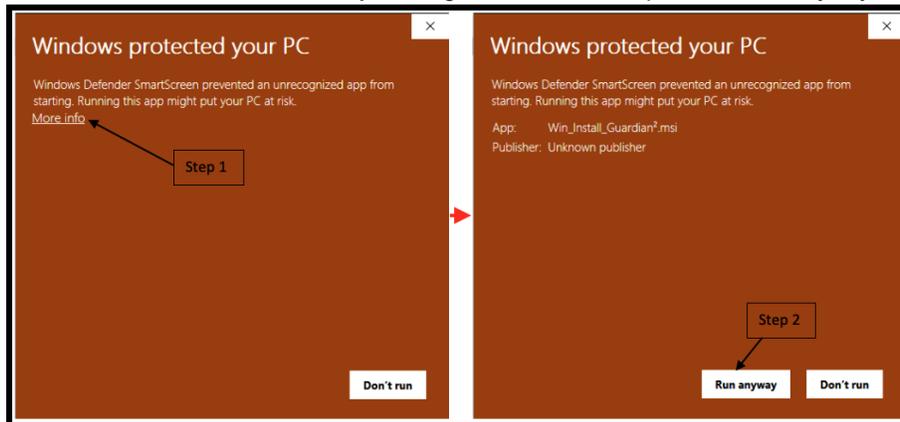


Figure 1

3.2 QUITTING THE GUARDIAN² APPLICATION

To quit the Guardian² application:

- Type CTRL +Q
- Click the "X" button on the Tool Panel Title Bar
- Close via the Windows 10 Task Bar
 - Mouse-over the Guardian² Icon on the Windows Task Bar
 - Right Click on “Guardian² Tools” on the pop-up menu
 - Select “Close Guardian²” from the pop-up submenu

4. GUARDIAN² MENUS AND COMMANDS

4.1 SUMMARY AND WORK AREA LAYOUT

The Guardian² application work area (Figure 2 and Figure 10) includes:

- Tool Panel and;
- A Data Window. A separate window will open for each saved file. Each window will include:
 - Window Control Menu (Figure 6)
 - Window Control Buttons (Figure 4 and Figure 5)
 - File Control Menu (Figure 7)
 - The Command Ribbon, which includes:
 - Guardian² Home Menu (Figure 8)
 - Guardian² Instrument Menu (Figure 9)
 - A Data Tab
 - A Reference Info Field and a Footer

4.2 TOOL PANEL

The Guardian² Tool Panel contains dedicated buttons for activating various functions and features. The Panel may be displayed Vertically (Figure 2) or Horizontally (Default) (Figure 3). The following brief descriptions give a general sense of each button's function. More detailed information can be found in Sections 7 and 8 of this manual.

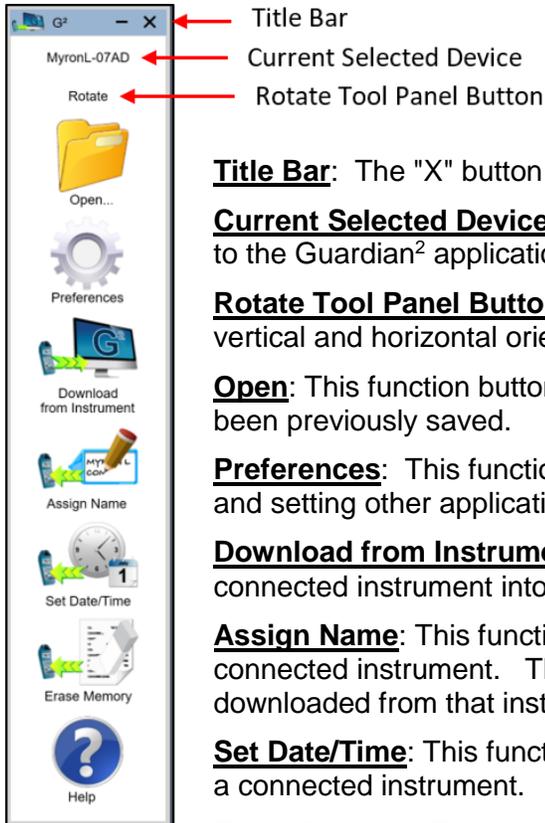


Figure 2

Title Bar: The "X" button closes all windows and quits the Guardian² application.

Current Selected Device: This field shows which instrument is currently connected to the Guardian² application.

Rotate Tool Panel Button: Click on this button to toggle the Tool Panel between vertical and horizontal orientation.

Open: This function button allows the user to open .mlcx formatted files that have been previously saved.

Preferences: This function button opens a window for selecting the active device and setting other application preferences.

Download from Instrument: This function button starts the transfer of data from a connected instrument into the Guardian² application environment.

Assign Name: This function button allows you to assign or change the name of a connected instrument. The instrument name is always associated with data downloaded from that instrument.

Set Date/Time: This function button allows you to set the internal date and time for a connected instrument.

Erase Memory: This function button allows you to erase the measurement data stored in the memory of a connected Instrument.

Help: This button opens a menu from which the user can view an electronic copy of the Operation Manual, other documents from the website, the Myron L[®] Company's website, and the About page for the application.



Figure 3

4.3 GUARDIAN² DATA WINDOW MENUS, CONTROLS, AND SHORTCUTS

The following menus and controls will become available after you open a Guardian² Data Window by either downloading data from a Myron L[®] Company instrument, or opening a previously saved .mlcx file.

- Window Control Buttons (Figure 4)
- Window Control Menu (Figure 6)
- File Control Menu (Figure 7)
- The Command Ribbon, which includes:
 - Guardian² Home Menu (Figure 8)
 - Guardian² Instrument Menu (Figure 9)

Table 1: Data Window – Internal Menus and Commands

MENU	COMMAND	KEYBOARD SHORTCUT	MAIN TOOL PANEL BUTTON	NOTES:
GENERAL CONTROLS	QUIT GUARDIAN ² TM	CTRL + Q		Closes all windows and quits the Guardian ² TM application.
	MINIMIZE TOOL PANEL			Minimizes the Tool Panel. To restore the tool panel, mouse over the Guardian ² TM icon in the Windows Task Bar and select Guardian ² TM Tool Panel from the pop-up menu.
	ROTATE TOOL PANEL			Toggles the Tool Panel between Vertical and Horizontal orientation.
WINDOW CONTROL MENU 	RESTORE			Appears but is not applicable to the Guardian ² TM Data Window.
	MOVE			
	SIZE			
	MINIMIZE			Minimizes the active Guardian ² TM Data Window.
	MAXIMIZE			Maximizes the active Guardian ² TM Data Window.
	CLOSE	CTRL + W		Closes the active Data Window. This Button DOES NOT quit the Guardian ² TM application.
FILE CONTROL MENU 	DOWNLOAD FROM INSTRUMENT	CTRL + N		Initiates transfer of data from an instrument.
	OPEN	CTRL + O	YES	Opens and displays data from a saved .mlcx file.
	SAVE	CTRL + S		Saves the active Data Window in encrypted .mlcx file format.
	SAVE AS	↑ + CTRL + S		Saves the active Data Window as an .mlcx, .xls, .xlsx, or .csv formatted file.
	PRINT	CTRL + P		Allows the user to either Print or Print to .pdf the contents of an active Data Window.
	ABOUT GUARDIAN ² TM			Opens a window that shows revision level of Guardian ² TM application.
	PREFERENCES 		YES	Button in lower right corner. Opens a window for selecting the Available Device and setting other application preferences.
	EXIT 			Button in lower right corner. Closes all windows and quits the Guardian ² TM application.
Control Ribbon Menus				
GUARDIAN²TM HOME MENU	DOWNLOAD FROM INSTRUMENT	CTRL + N		Initiates transfer of data from an instrument.
	SORT ASSISTANT	CTRL + T		Allows user to sort the data by up to 3 sort keys.
	REFERENCE INFO			Toggle to Show and Hide the "REFERENCE INFO" field at the bottom of the Data Window.
GUARDIAN²TM INSTRUMENT MENU	DOWNLOAD FROM INSTRUMENT	CTRL + N	YES	Initiates transfer of data from an instrument.
	ASSIGN NAME		YES	Changes the name stored in the connected instrument's memory.
	SET DATE / TIME		YES	Edits the connected instrument's Time and Date settings.
	ERASE MEMORY		YES	Erases all measurement data stored in the connected instrument.
KEY: ↑ This symbol indicates the SHIFT key.				

4.4 GUARDIAN² MENUS AND CONTROL LOCATIONS

The following are located in the upper left corner of **each** Guardian² Data Window. See Table 1 on page 6 for a brief description of their function.

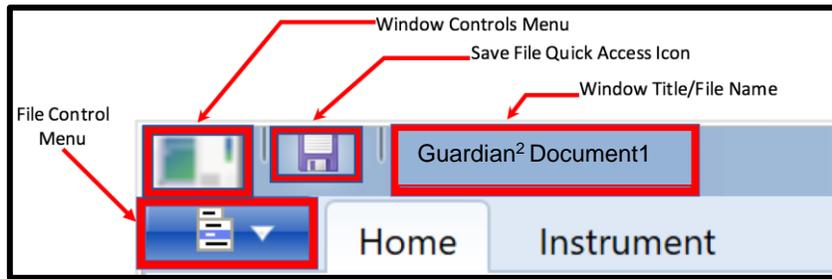


Figure 4

The following are located in the upper right corner of **each** Guardian² Data Window. See Table 1 on page 6 for a brief description of their function.

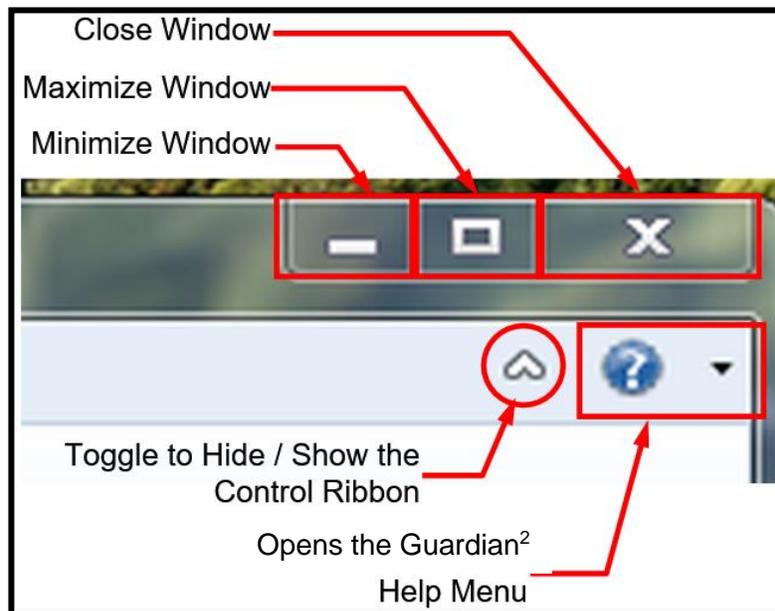


Figure 5

The HELP Menu includes:

- Guardian² HELP: Displays a .pdf version of the Guardian² Operating Manual.
- A link to the Myron L[®] Company website.
- ABOUT Guardian²: Brief description of the Guardian² and revision number.

4.5 WINDOW CONTROL MENU

- This menu contains standard Microsoft Windows commands for opening, closing, maximizing and minimizing the Data Window.
- See Table 1 on page 6 for a brief description of these commands.

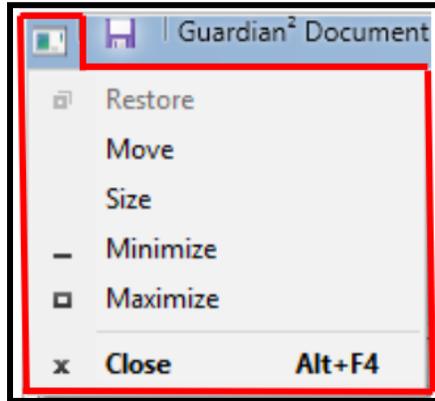


Figure 6

4.6 FILE CONTROL MENU

- This menu contains commands for downloading or appending new data, opening saved .mlcx files, saving, exporting (Save As) and printing.
- See Table 1 on page 6 for a brief description of these commands.

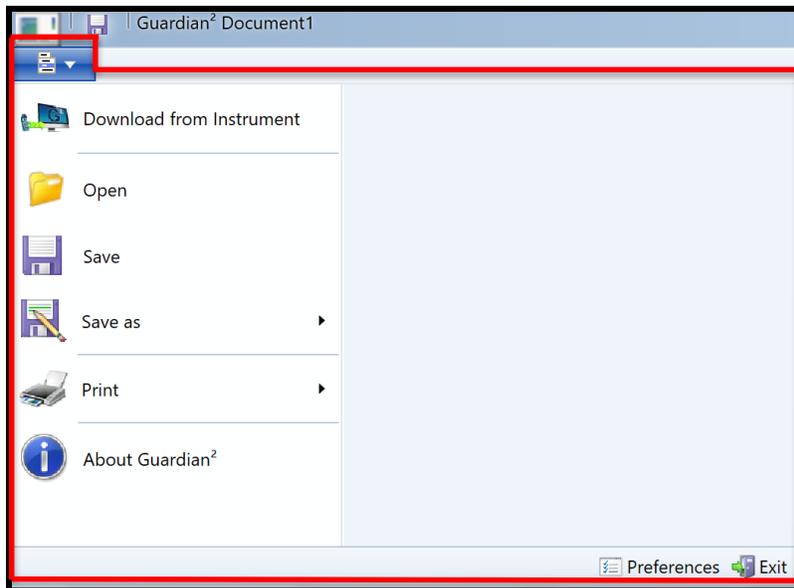


Figure 7

4.7 DATA WINDOW COMMAND RIBBON

HOME Menu:

- See Table 1 on page 6 for a brief description of these buttons.

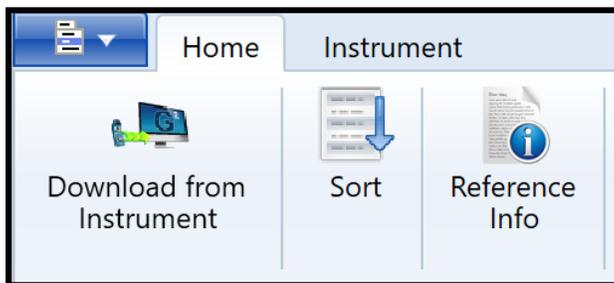


Figure 8

Guardian² INSTRUMENT COMMANDS Menu

- See Table 1 on page 6 for a brief description of these commands.

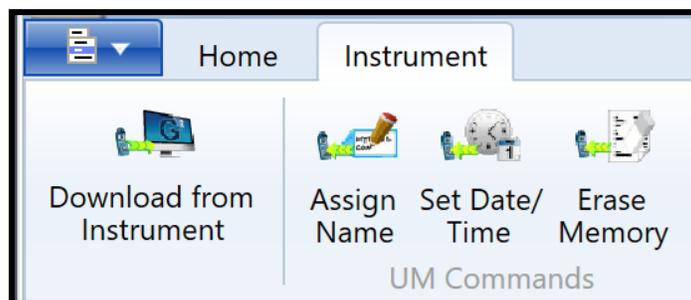


Figure 9

5. GUARDIAN² DATA WINDOW

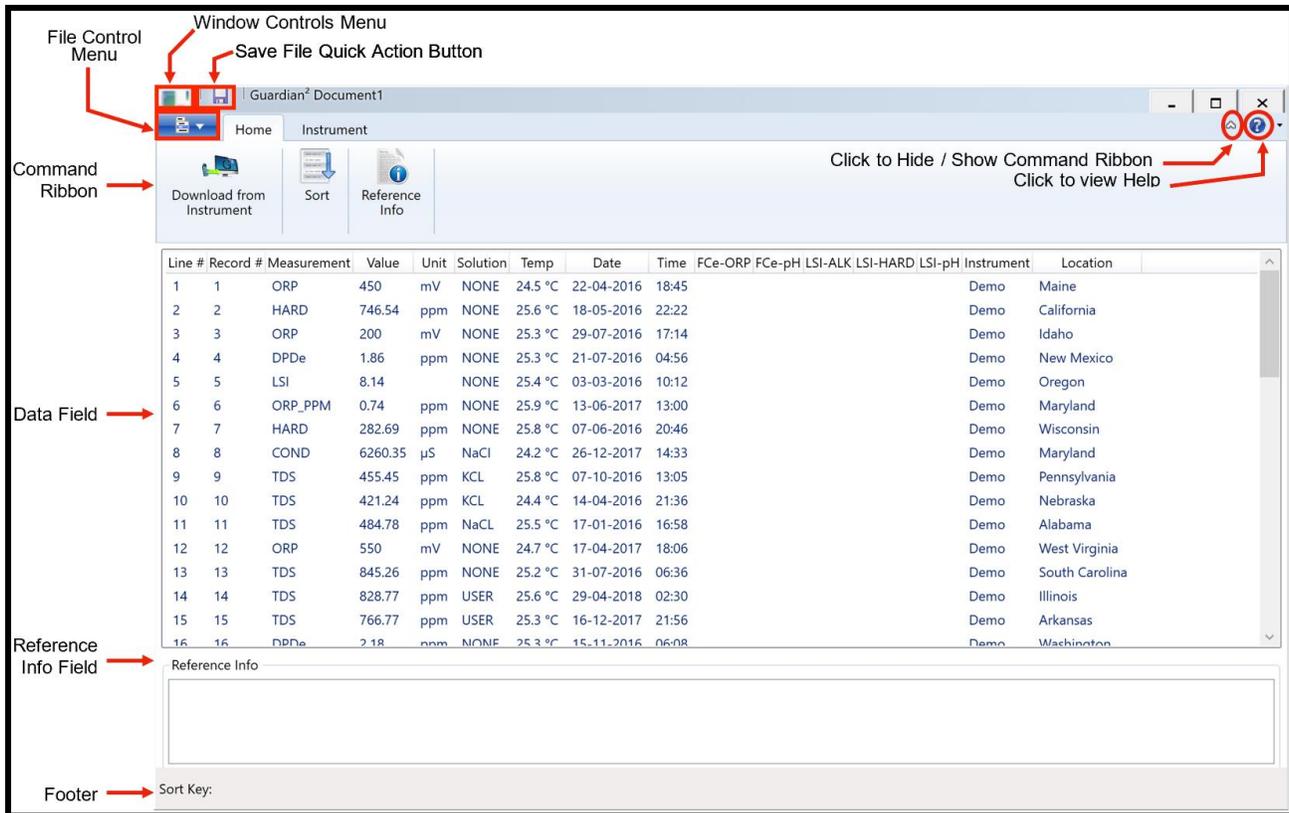


Figure 10

5.1 DATA WINDOW LAYOUT

Data that is either downloaded from a Myron L[®] Company instrument or loaded from an .mlcx formatted data file is displayed in a Data Window. (Figure 10) This window includes:

INTERNAL WINDOW MENUS: See Sections 4.3 through 4.7 (inclusive).

THE DATA FIELD: This field displays the data in a tabular format with individual records organized in rows and the individual data fields of each record organized in columns.

- The information displayed in these columns and rows is secure and cannot be edited or changed.

REFERENCE INFORMATION FIELD: This is an editable field which allows the user to add general notes or supplementary information about the data (see Section 8.6).

FOOTER: The following information will appear at the bottom of the Data Window:

- The current setting for the multiple key SORT feature:
 - This will list the current sort keys and whether they are set for ascending vs descending order.
 - The space following the phrase "Sort Key:" located at the footer of the Data Window will be blank until the Sort function is used.

5.2 DATA TAB – COLUMN DEFINITIONS

COLUMN FORMATTING:

- The width of the various columns of the Data Tab maybe resized by placing the cursor over the dividing line between column headings then clicking and grabbing the line, then sliding it left or right.
- The order of columns can be changed by placing the cursor anywhere inside the column heading, then grabbing and sliding the column left or right until it is in the desired position.

COLUMN DEFINITIONS

Line #: This is the number for the row in the Data Window. It is not part of the data that is downloaded from the instrument. It will not change or move when the data is sorted.

Record #: This is the memory location where the data for this measurement was stored in the source instrument's memory. It will move with the data row when the data is sorted.

- Since the data in each of the instrument's memory locations can be over-written, the record number is not always in chronological order.
- If the data in a specific instrument's memory location has been cleared, it is not included in the downloaded data and therefore will not appear in the Guardian² window.

Measurement: This field shows the type of measurement that was made, such as Conductivity (COND), Resistivity (RES), Total Dissolved Solids (TDS), MIN/SALT (Salinity), pH, ORP, FC^ETM (Fr. Cl), Hardness (HARD), Alkalinity (ALK), DPD^E (DPDe) or LSI.

- Temperature is recorded in a separate column.
- When downloading data from a D6 or some legacy instruments, FC^E is reported as "ORP-PPM" in the measurement column.

Value: This field contains the measured value of the reading.

Units: This field displays the units of measure for that measurement.

Solution: This field shows the temperature compensation mode setting of the instrument when the measurement was taken.

- Some Myron L[®] Company instruments can make certain measurements using more than one type of temperature compensation modes, each of which corresponds to the particular solution type (e.g. NaCl, KCl, 442TM, etc.).
- For measurement types where there is only one or no temperature compensation curve, such as FC^E, ORP, pH, LSI etc., this field displays "NONE".

Temp: This field displays the temperature of the solution being measured at the time of the measurement.

Date: This field displays the date of the measurement.

Time: This field displays the time of the measurement.

FC^E-Columns: Myron L[®] Company FC^E (Free Chlorine Equivalent) ppm measurements are calculated based on the ORP value and pH value of the solution.

- **FC^E-ORP:** This field displays the solution's ORP mV value when the FC^E measurement was made.
- **FC^E-pH:** This field displays the solution's pH value when the FC^E measurement was made.

LSI-Columns: These columns display the base values that were used to calculate the value that is displayed in the Measurement column for LSI readings.

- **LSI-ALK:** This field displays the Alkalinity value used to calculate the LSI value.
- **LSI-HARD:** This field displays the Hardness value used to calculate the LSI value.
- **LSI-pH:** This field displays the pH value used to calculate the LSI value.

Instrument: This field contains the name given to the instrument with which the measurement was made (see ASSIGN NAME).

- If the instrument has not been assigned a name, this field will be blank.

Location: Not applicable to the current desktop version of the Guardian² application; however, it is displayed as an example in the Demo Data.

6. PAIRING TO AND UNPAIRING FROM AN INSTRUMENT

6.1 GENERAL INFORMATION

If your computer does not have a built in Bluetooth wireless technology transceiver:

- Plug an external Bluetooth wireless technology dongle into a USB port on your computer.
- If you don't have a Bluetooth dongle, one can be purchased from a local electronics store or online.

NOTES:

- The pin for ALL Myron L[®] Company bluDock enabled devices is "**1234**".
- **ALWAYS** write down the Bluetooth ID assigned to each instrument. It should look something like this example: "**MyronL-07AD**" (The four characters "07AD" after the dash can vary with instruments.)

6.2 TURNING ON THE MYRON L[®] COMPANY INSTRUMENT'S PC MODE

1) Turn on the PC mode for your Myron L[®] Company instrument:

a. Press any measurement function key on the instrument (e.g. COND, pH, ORP, etc.).

b. Press and hold the down arrow key  until the "**PC OFF**" appears on the instrument's display.



Figure 11

c. Press and release the CAL button .
- The display will briefly change to read "**PC Ini**".

d. Wait until the LCD changes to read "**PC ON**".



Figure 12

2) IMMEDIATELY proceed to *Pairing to a Myron L[®] Company Instrument* (see Section 6.3).

6.3 PAIRING TO A MYRON L[®] COMPANY INSTRUMENT

NOTE:

If the Myron L[®] Company instrument times out at any time during this process, restart it and turn on the "PC ON" mode (see Section 6.2).
Generally, you may return to the pairing process where you left off without restarting.

To pair to a Myron L[®] Company instrument using Windows 10:

- 1) Click on the Bluetooth wireless technology icon

If you don't see the Bluetooth icon  on your computer desktop anywhere, click on the "Show Hidden Icons" button located at the right side of the Task Bar.



Figure 13

- 2) Click on the Bluetooth wireless technology logo.



Figure 14

- 3) Select: "Add Device" or "Add a Bluetooth Device" from the Bluetooth dialogue box.

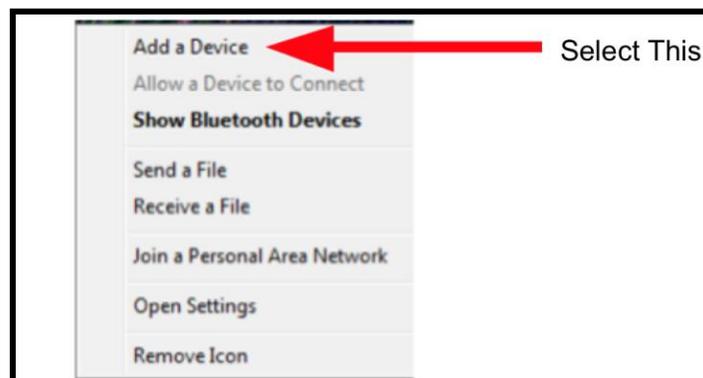


Figure 15

- a. The Myron L[®] Company instrument will appear as an available device as shown (Figure 16). It may take a moment to show up in the list.
- 4) Click on the instrument name to pair the device with your computer.

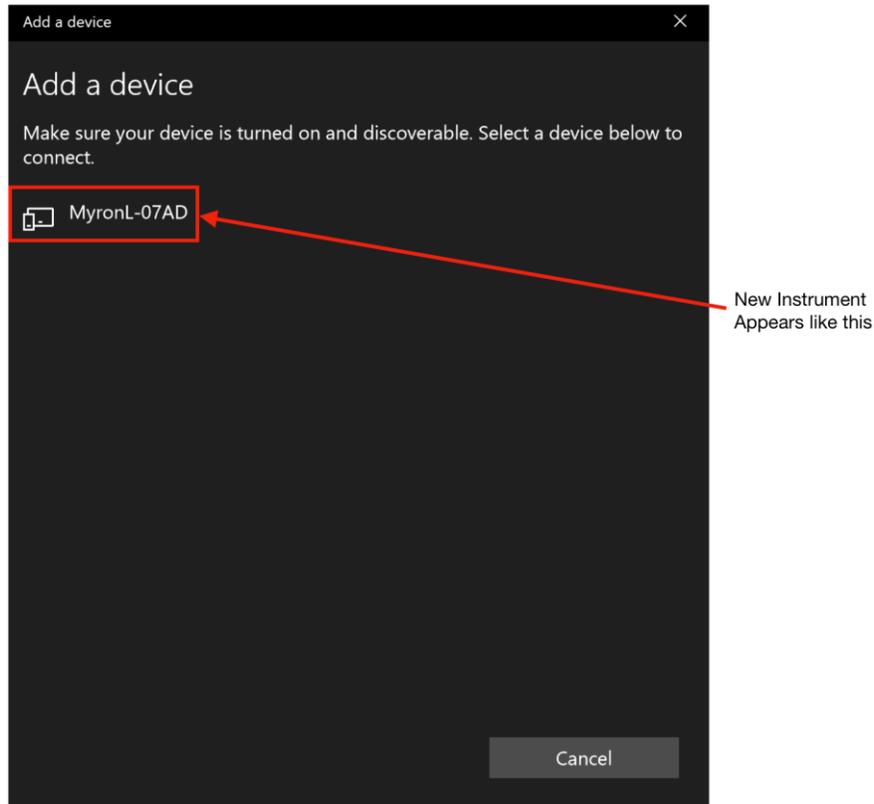


Figure 16

- 5) Under "Enter the PIN for MyronL-XXXX". Enter the PIN '1234', and click "Connect" once the button becomes active.

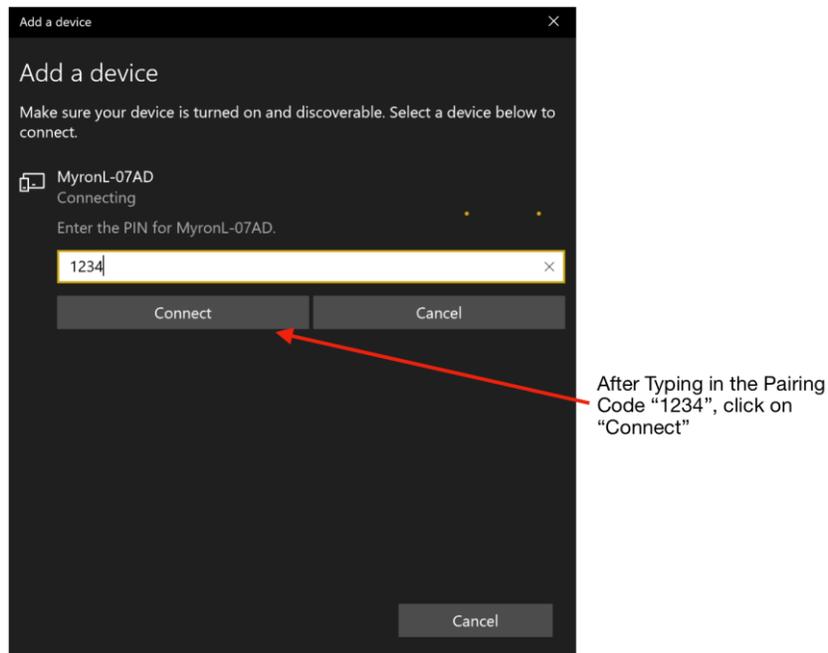


Figure 17

6) If the pairing was successful, you should see a message similar to image below (Figure 18).

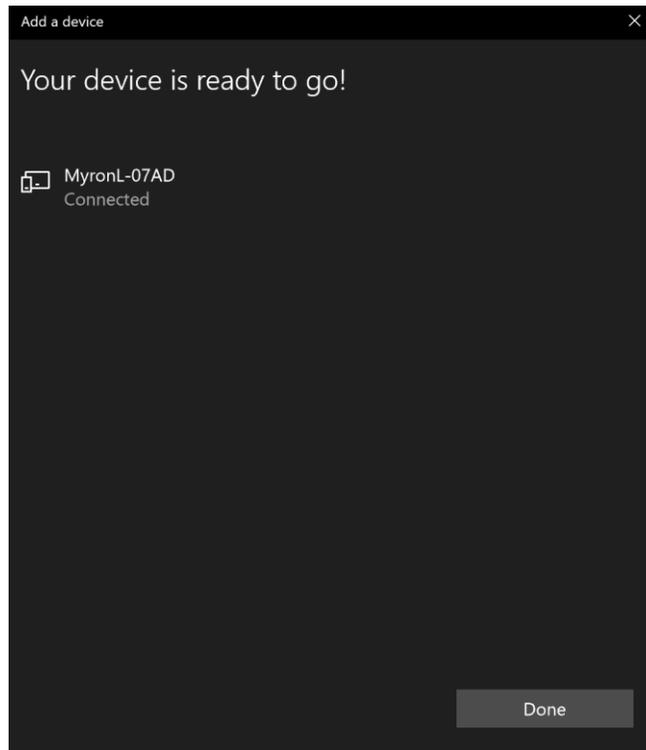


Figure 18

NOTE: At some point during this process the instrument's Bluetooth ID will appear next to the icon. In the above example this is, "**MyronL-07AD.**" Record this Bluetooth ID for later use.

6.4 UN-PAIRING AN INSTRUMENT

To completely remove an instrument from your computer.

- 1) Click on the Bluetooth icon on your desktop, or click on the Windows icon on the bottom left of the screen, and go to Settings/Devices/Bluetooth.
- 2) When the Bluetooth Device Window opens, click on the instrument you wish to un-pair.
- 3) Click on the "Remove Device" link at the bottom of the dialogue box (Figure 19).

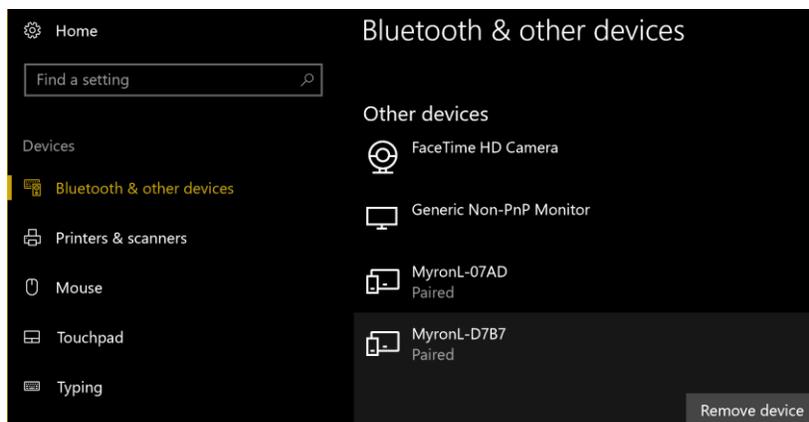


Figure 19

- 4) The instrument will disappear from the Device Window.

7. GUARDIAN² INSTRUMENT FUNCTIONS

7.1 GENERAL NOTES ON INSTRUMENT FUNCTIONS

WARNING!

Do Not press any of the buttons on the keypad of the instrument once the Guardian² related function has started. This will cause the PC mode to turn OFF.

If the PC mode is turned OFF or the instrument times out while the Guardian² function is in process, the Guardian² application will show connection ERROR.

Before launching any of the functions described in this section make sure that:

- The Instrument's "Auto Off" feature is set to **75** seconds.
- The instrument is awake and that the PC mode is set to "**ON**" (see Section 6.2).
- The instrument is paired to your computer and the connection is active (see Section 6.3).

An Error message will appear, similar to the example shown (Figure 20), if:

- The instrument is asleep or its PC Mode is "**OFF**";
- The computer Bluetooth is turned "OFF";
- The wrong device is selected in the Guardian² Preference/Available Devices drop down menu;
- The instrument's Bluetooth signal is too weak.
 - Try moving the instrument closer to the host computer.
 - Replace the battery (even if the "Lo Batt" indicator is not lit on the instrument display, the battery may be too weak to broadcast a strong signal).

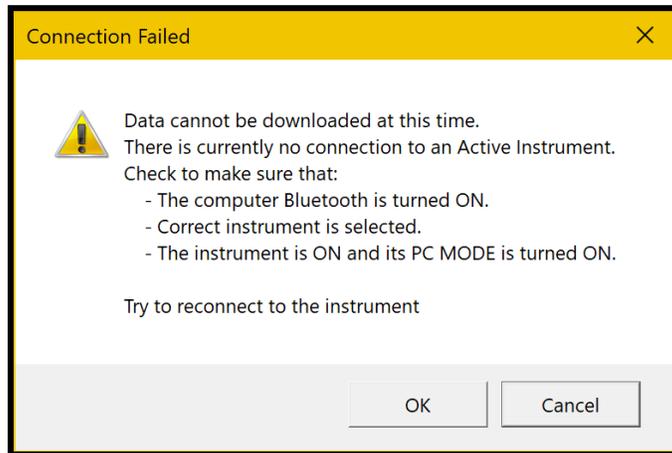


Figure 20

Once the issue is corrected:

- Click the "**OK**" button to proceed, or;
- Click the "**Cancel**" button to abort the process.

NOTE

To prolong the battery life of your Myron L[®] Company instrument, turn the instrument's PC mode "OFF" as soon as you have finished interacting with the Guardian² application.

7.2 SELECTING AVAILABLE DEVICES

1) Open the Preferences/Available Devices drop down menu by clicking on the **"PREFERENCES"** button on the Tool Panel (Figure 21).



Figure 21

2) Select the **"Available Devices"** drop down menu (Figure 22).

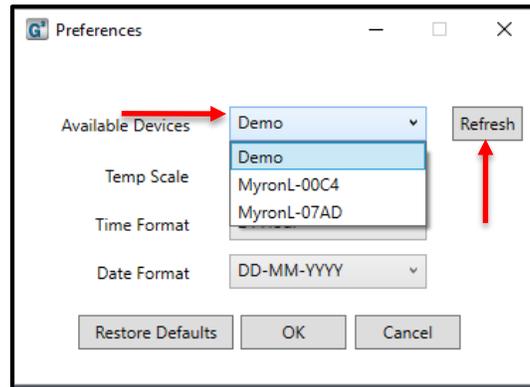


Figure 22

- a. Find the device designation assigned to your instrument during the pairing process (see Section 6 above).
- 3) Click the **"OK"** button to complete the selection and close the Preferences Window.
- The Selected Device will be displayed on the Tool Panel, just below the Title Bar.
 - If you add/remove any devices after the Guardian² application has been opened, click on the "Refresh" button to refresh the list of Available Devices. This will add/remove the device from the list of Available Devices.
 - Click the "Cancel" button to abort the process.

NOTES:

- The Available Device default setting is **"DEMO"**. When **"DEMO"** is selected, the Guardian² application will download a set of demonstration data and allows you to explore the functionality of the Guardian² application without being connected to an instrument.
- Once selected, a Device will stay selected until you either:
 - Select another Device.
 - Restore the Preferences settings to their defaults.
- If you accidentally add demo data to your data file, close the window without saving it and start over.

7.3 DOWNLOADING DATA

WARNING!

DO NOT press any of the buttons on the keypad of the instrument once the Guardian² related function has started. This will cause the PC mode to turn "OFF".

If the PC mode is turned "OFF" or the instrument times out while the Guardian² function is in process, The Guardian² application will show connection Error (see Section 9, Troubleshooting).

Before launching the Download process make sure that:

- The instrument is awake and that the PC mode is set to "ON" (see Section 6.2).
- The correct Device is selected in the Guardian² Preference/Available Devices drop down menu (See Sections 6.3 and 7.1).

An Error message will appear, similar to the example shown in Figure 23 if:

- The instrument is asleep or its PC Mode is "OFF";
- The computer Bluetooth is turned "OFF";
- The wrong Device is selected in the "Preference Available Devices" drop down menu.
- The instrument's Bluetooth signal is too weak.
 - Try moving the instrument closer to the host computer.
 - Replace the battery (even if the "Lo Batt" indicator is not lit on the instrument's display, the battery may be too weak to broadcast a strong signal).

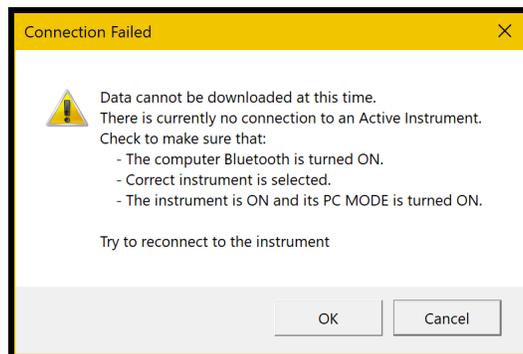


Figure 23

- Once the issue is corrected:
 - Click the "OK" button to proceed, or;
 - Click the "Cancel" button to abort the process.



Figure 24

To start the download process, click on the "Download from Instrument" button in the Tool Panel (Figure 24).

- As the instrument is downloading a progress bar will appear.
- When the download is complete, the Guardian² application will open a new Data Window and display the data.

The download processes can also be accessed via the Instrument Menu in the Data Window Command Ribbon (see Section 4.7).

7.4 APPENDING NEW DATA TO AN EXISTING DATA WINDOW / FILE

You may append data from multiple instruments into an existing Data Window / file:

- 1) If it is not already, open the data file to which you wish to add data (See Section 8).
- 2) Launch the **"DOWNLOAD"** process (see section 7.3).
- 3) Guardian² will display a window (Figure 25) with the following choices:

- **OPEN NEW WINDOW:** Click this button to open a new Data Window and download the data there.
- **CANCEL:** Click this button to halt the download process and leave any open Data Window unchanged.
- **OK:** Click this button to download data into this Window / File.
 - The new data will appear at the bottom of the window.

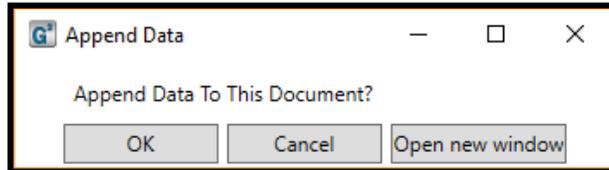


Figure 25

7.5 ASSIGNING A NAME TO AN INSTRUMENT

You can assign a name to an instrument so that the instrument name is always associated with data downloaded from that instrument.

- The name will appear in the "Instrument" column of the Data Window.

To assign a name to an instrument:

- 1) Make sure that:
 - The instrument is awake and that the PC mode is set to **"ON"** (see Section 6.2).
 - The instrument is paired to your computer and the connection is active (see Section 6.3).
- 2) Click on the "ASSIGN NAME" button in the Tool Panel (Figure 26).
- 3) Type the desired name into the dialogue box that appears. (Figure 27)
 - Maximum length is 8 characters.



Figure 26

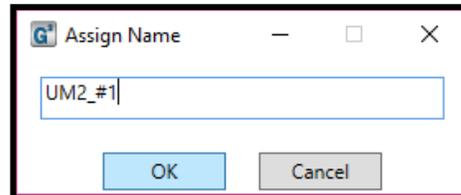


Figure 27

- 4) Click the **"OK"** button to store the name in the instrument's memory.
 - This will overwrite any name already given the instrument.
 - To undo this action, you must rename the instrument using the old name.

7.6 SETTING THE INSTRUMENT'S DATE AND TIME

You can update or change the date and time settings for your Myron L[®] Company instrument via the Guardian² application.

To set the internal Date or Time of an instrument:

1) Make sure that:

- The instrument is awake and that the **PC mode** is set to **ON** (see Section 6.2).
- The instrument is paired to your computer and the connection is active (see Section 6.3).

2) Click on the "**SET DATE / TIME**" button in the Tool Panel (Figure 28).



Figure 28

a. The following dialogue box will appear (Figure 29):

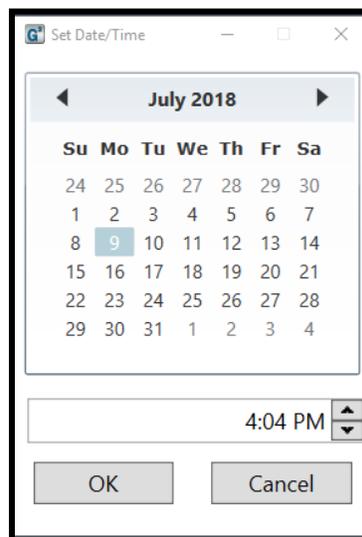


Figure 29

- The default settings should match your computer's current Date and Time settings.
 - *ALWAYS* check to make sure that they do.
- 3) You may use the controls in this window to correct the Date and Time if the default settings are not correct.
- 4) Click the "**OK**" button to change the instrument's date and time setting to match those displayed in the window.
- This will overwrite the current date and time settings for the instrument.
 - If you have changed the date and time using the Guardian² window controls, this WILL NOT reset your computer's date and time.

7.7 ERASING MEASUREMENT DATA FROM AN INSTRUMENT

WARNING!
This action cannot be undone.

You may use the Guardian² application to erase the recorded readings stored in your Myron L[®] Company instrument.

- This function erases all of the recorded readings stored in the instrument's memory.
- It does not erase calibration constants, preference settings, date and time settings, etc.

To start the ERASE MEMORY Process:

1) Make sure that:

- The instrument is awake and that the PC mode is set to "**ON**" (see Section 6.2).
- The instrument is paired to your computer and the connection is active (see Section 6.3).

2) Click on the "**ERASE MEMORY**" button in the Tool Panel (Figure 30).

- a. A dialogue box will appear that asks you to confirm the Erase Memory command (Figure 31).



Figure 30

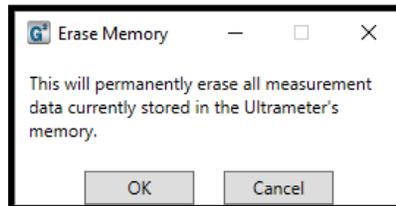


Figure 31

3) Click the "**OK**" button to proceed.

- Click the "**Cancel**" button to abort the erase operation and leave the instrument's memory unchanged.

The Erase Data feature can also be accessed via the Data Window Instrument Menu (see Section 4.7).

8. GUARDIAN² FEATURES

8.1 LOADING A SAVED .mlcx FILE

Once a file has been saved as an encrypted .mlcx formatted file it can be reloaded into the Guardian² application to append, sort, etc...

To LOAD a previously saved .mlcx data file use one of the following methods:

1) Click on the "**OPEN**" button on the Tool Panel (Figure 32).

- A standard Windows browse window will appear.
- Select the .mlcx file you wish to open. (Only .mlcx formatted files may be selected.)
- Click on the "Open" button on the bottom of the window.

2) Double click on the .mlcx file.



Figure 32

NOTE: Data exported using the "SAVE AS" command in other formats (.xls, .xlsx, and .csv) cannot be re-loaded into the Guardian² application.

8.2 SAVING DATA IN ENCRYPTED .MLCX FORMAT

The Guardian² application is designed to keep your data secure and unadulterated. The **SAVE** command automatically exports the contents of the currently active Data Window to an encrypted .mlcx file format that cannot be read or edited by other types of software.

To save the data in a new or updated Data Window:

- 1) Click the Quick Access "**SAVE**" button at the top left corner of the active Data Window (Figure 33).
- OR -
- 2) Select the "**SAVE**" command under active Data Window's File Control Menu (Figure 33).

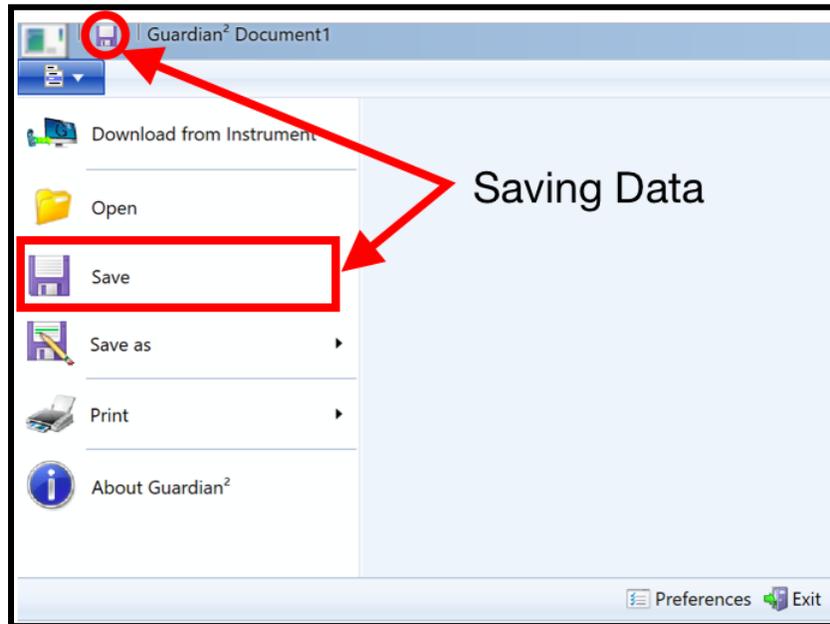


Figure 33

8.3 CLOSE THE WINDOW OR QUIT THE APPLICATION

If the document has been changed, a standard Microsoft Windows Save dialogue box will open that allows you to (Figure 34):

- Close and Save the file.
- Close the window without Saving the file.
- Cancel the operation.

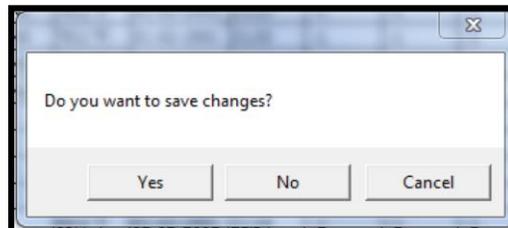


Figure 34

NOTES:

- The "Save" command automatically exports the data as an encrypted .mlcx-formatted file.
- Only files saved as .mlcx formatted files can be reopened by the Guardian² application.

8.4 EXPORTING DATA IN AN OPEN FORMAT (SAVE AS)

The Guardian² application also allows you to export data so that it is useable by other programs.

To export data from an open Guardian² Data Window:

- 1) Select the "**SAVE AS**" command under the active Data Window's File Control Menu (Figure 35).

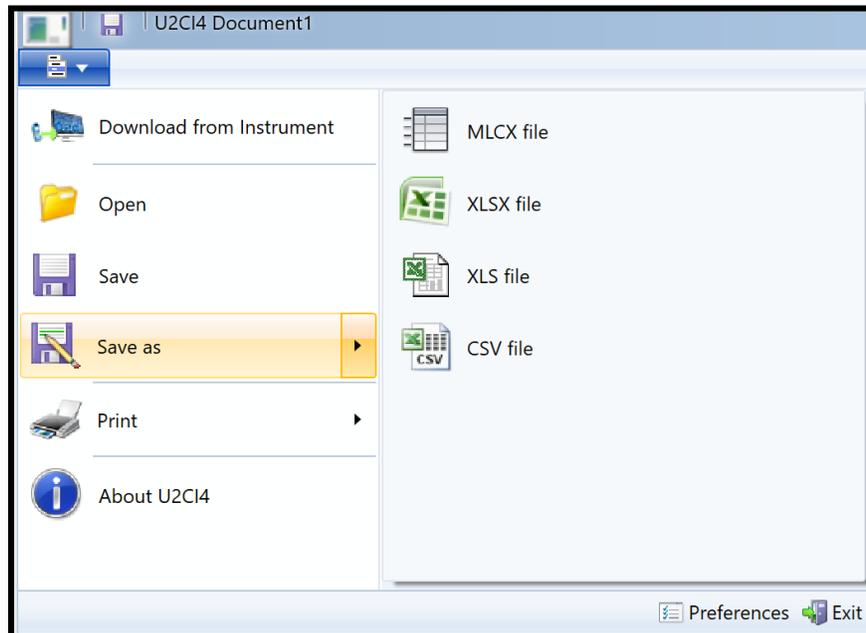


Figure 35

- 2) Select the file format:
 - Choose one of the following file formats for the exported data:
 - Microsoft Excel[®] 97-2004 (.xls).
 - Microsoft Excel[®] 2007 and later (.xlsx).
 - Comma Separated Values format (.csv).
- 3) A standard Windows Save dialogue box will open that allows you to:
 - Select the save location.
 - Give the file a name.
- 4) Complete the process by either:
 - Clicking "SAVE" to proceed with the export process or;
 - Click "Cancel" to halt the operation.

NOTES:

- The formats listed above are not encrypted.
- You will not be able to reopen the exported copies of the data using the Guardian² application.
- Unlike the "Save As" operation of other Windows applications, the Guardian² application does not rename the open .mlcx file or convert it to the chosen format;
 - Instead it creates a copy of the data, in the chosen format, at the location specified in the Save As Dialogue Box.

8.5 PRINTING, SAVE AS PDF, AND PRINT PREVIEW

Guardian² data can be printed using the “Page Setup” and “Print” commands. These files can be printed in either Portrait or Landscape orientations (Located in the Printer Settings). Portrait is the Default mode. When printed:

- The Data tab will print on top.
- The contents of the Reference Info Field will appear at the bottom of the last page of the data printout.

PRINTING:

- 1) Open the print dialogue box:
 - a. Select the "**Print**" command under the File Control menu.
 - b. Select "**Print**" from the choices in the pop up menu.

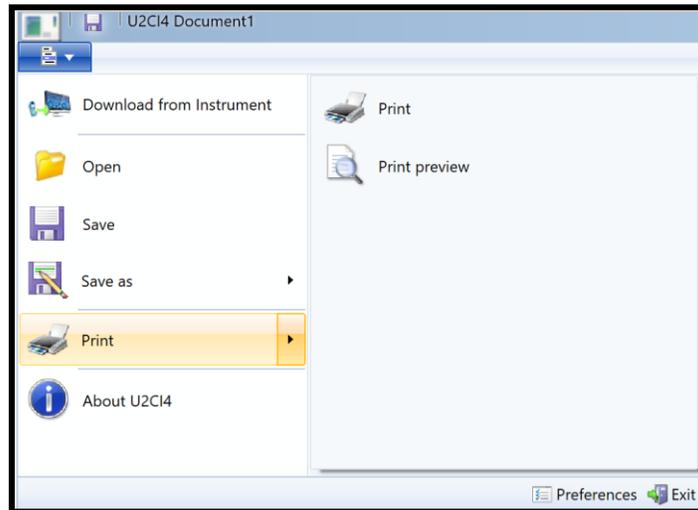


Figure 36

- 2) A print dialogue box will appear:
 - The exact layout and content of this dialogue box will be dependent on the specific printer drivers installed on your system as well as the operating system.
 - Page Setup preferences are available in the print dialogue box.
- 3) Click the “Print” button.

SAVE AS PDF:

- 1) Open the Print dialogue box:
 - a. Select the "**Print**" command under the File Control menu.
 - b. Select "**Print**" from the choices in the pop up menu.
- 2) Choose “Microsoft® Print to PDF” or similar “Print to PDF” option available on your computer.

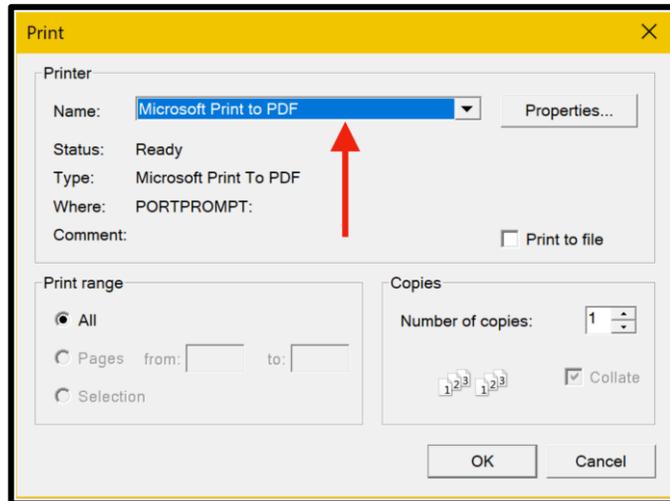


Figure 37

- 3) Tap "OK".
- 4) A "Save Print Output As" or similar window will pop up. Follow normal procedure to name and save the PDF file to the location of your choice.

PRINT PREVIEW:

- 1) Open the Print dialogue box:
 - a. Select the "**Print**" command under the File Control menu.
 - b. Select "**Print Preview**" from the choices in the pop up menu.

Selecting the "Print Preview" option will open a separate window that allows you to view each page of the prospective printout (Figure 38).

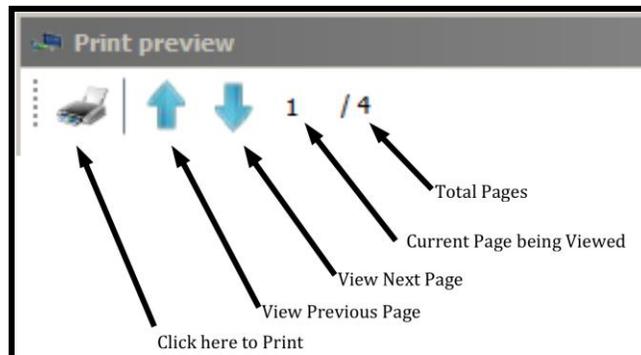


Figure 38

8.6 ADDING REFERENCE INFORMATION

Each Data Window includes a Reference Info Field that is an editable field that appears at the bottom of the Data Window where the user can add general notes or supplementary information about the data.

You can Show or Hide this field by clicking the "**REFERENCE INFO**" button in the active Data Window's Home Menu (Figure 39).

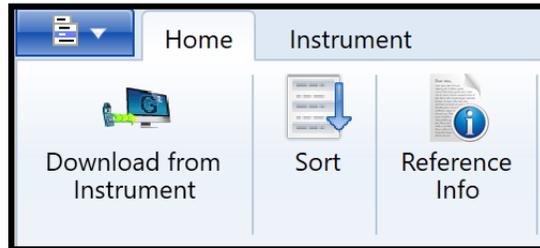


Figure 39

Place the cursor anywhere within the Reference Info Field at the bottom of the Data Window and click:

- A blinking text cursor (a vertical line) will appear. You may now begin entering information.
- Once you have completed entering or editing the reference information, Use the standard "**Save**" command to retain the information.

NOTES:

- Clicking the "Reference Info" button will toggle between showing and hiding the Reference Information Field.
- The Reference Info Field will accept all standard alpha numeric characters available in the Ariel font set including manual line breaks (Return key).
- If the contents exceed the vertical size of the window a vertical scroll bar will appear.
- The Reference Info Field has a 500 character count limit.
- Once you have completed entering or editing the reference information, Use the "Save" command to preserve the information in this data file / window.

REFERENCE FIELD SHORT CUT KEYS

The following keyboard shortcuts can be used when editing the Reference Info Field:

- (CTRL +X): Cuts selected text from the Reference Info Field.
- (CTRL +C): Copy's text from the Reference Info Field.
- (CTRL +V): Pastes text into the Reference Info Field.
- (CTRL +A): Selects all text in the Reference Info Field.

8.7 SORTING DATA

QUICK SORT:

- 1) Click the column heading of any column (except the "Line #" column) to sort the entire data file according to its contents:
 - The first time you click a column it will sort the file in ascending order according to that column.
 - Each time you click the same column the application will alternate between ascending and descending order.

Table 2 – Data Field Sorting Styles

Column	Data type	Sorting method
Line #	N/A	This column includes the line number within the data table and is not sortable.
Record #	Value Field	Numeric Sorting
Measurement	Text Field	Alphabetic Sorting – Not case sensitive
Value	Value Field	Numeric Sorting
Unit	Text Field	Alphabetic Sorting – Not case sensitive
Solution	Text Field	Alphabetic Sorting – Not case sensitive
Temp	Value Field	Numeric Sorting
Date	Date Field	Date Sorting: Numeric sorting by Year 1st, Month 2nd; Day 3rd.
Time	Time Field	Time Sorting: Numeric sorting by Hours 1st, Minutes 2nd, Seconds 3rd.
FCe-ORP	Value Field	Numeric Sorting
FCe-pH	Value Field	Numeric Sorting
LSI-ALK	Value Field	Numeric Sorting
LSI-HARD	Value Field	Numeric Sorting
LSI-pH	Value Field	Numeric Sorting
Instrument	Text Field	Alphabetic Sorting – Not case sensitive
Location	Text Field	Not Applicable

NOTES:

- Numeric Sorting: Numeric Fields are sorted as numbers. Ascending order would be: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 20, 21, ... 30,31 ...
- Alphabetic Sorting: Text Fields are sorted alphabetically. Numbers are treated like words, NOT numbers, (with each numeral considered to be a separate letter) Ascending order would be: 1, 10, 11, ... 2, 20, 21, ... 3, 30, 31 (space) ! " # \$ % & () * , . / : ; ? @ [\] ^ _ ` { | } ~ + < = > A B C D E F G H I J K L M N O P Q R S T U V W X Y Z.

MULTI-KEY SORTING

You can do up to 3-level nested sorting by:

- 1) Clicking the **"SORT"** button in Data Window's Home Menu (Figure 40).

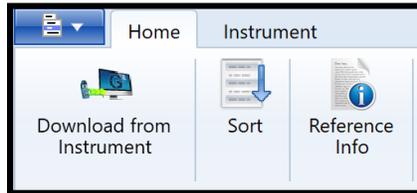


Figure 40

- 2) The following dialogue box will appear (Figure 41).

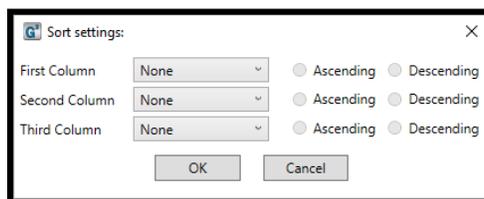


Figure 41

- 3) For each of the nested sort keys:

- Use the drop down menus from this window to select a data column for each of the desired sort keys. (Figure 42).
 - The default setting for each KEY is **"None"**.
 - Choosing **"None"** deactivates that key.
- Select whether to sort in ascending or descending order.

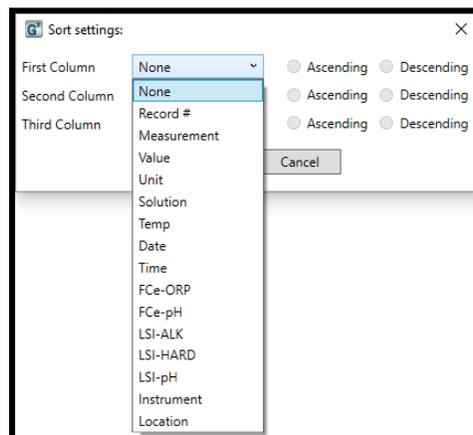


Figure 42

- 4) Click the **"OK"** button to proceed.
 - Click the **"Cancel"** button to abort the operation.

NOTE: Setting all three keys to "None" will reset the contents of the Data Window to their original download order.

8.8 PREFERENCES

The Guardian² Preference dialogue box allows the user to:

- Select from Available Devices and therefore which instrument the Guardian² application will be interacting with.
- Change the manner in which the following data is displayed:
 - Temperature Scale
 - Time Format
 - Date Format
- These display format settings effect all tabs in the open Data Window.

To view and/or change the Guardian² Preferences:

- 1) Open the **Preference** dialogue box by clicking the "**PREFERENCES**" button on the Tool Panel (Figure 43).



Figure 43

The following dialogue box will appear (Figure 44). (This may take several seconds while the preference data is loaded.)

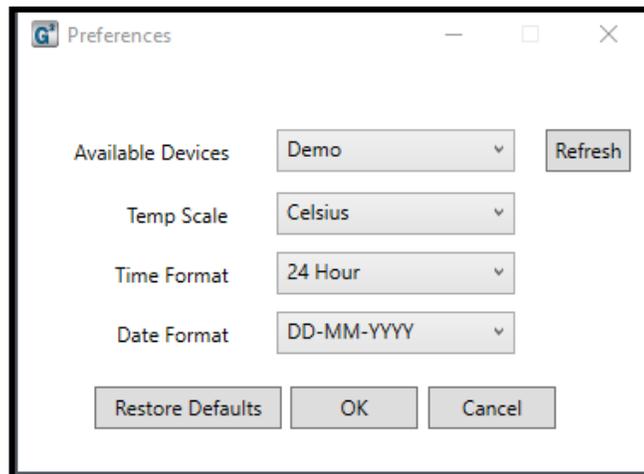


Figure 44

- **Available Devices:** This drop down menu lists the currently available Myron L[®] Company instruments that have been paired to the Guardian² (see Section 6).
- **Temp Scale:** This drop down menu allows you to choose between displaying temperature data in degrees Celsius (°C) or degree Fahrenheit (°F).
- **Time Format:** This drop down menu allows you to choose between displaying time as either 12-hour **AM / PM** format or in a **24-hour** format (e.g. 4:00PM = 16:00)
- **Date Format:** This drop down menu allows you to choose between displaying dates in either:
 - **Day First** Format (DD-MM-YYYY).
 - **Month First** format (MM/DD/YY).
 - **Year First** Format (YYYY-MM-DD).

NOTE: Format choice does not affect the sort order for dates.

- 2) Once you have made your selections:

- Click "**OK**" to save the chosen/reset preferences and close the dialogue box.
- Click "**CANCEL**" to close the dialogue box without saving changes to the preference settings.
- Click "**RESTORE DEFAULTS**" to reset all of the preference settings to their default selections.

9. TROUBLESHOOTING

9.1 ERROR MESSAGES

General Error Messages

At various times during operation the Guardian² application may issue an Error message. The most common place this can occur is if the user attempts to perform any action that requires the Guardian² application to communicate with a Myron L[®] Company instrument, but one of the following exists:

- The instrument is asleep.
- The instrument is awake but the PC mode is "OFF".
- The Bluetooth on the user's computer is not enabled.
- The Bluetooth preference window indicates that the device connection is closed.

If this is the case the Guardian² application will display an Error message.

EXAMPLE: The user clicks the "Download from Instrument" button in the Tool Panel Window while the currently paired and connected Ultrameter is asleep, the following message will appear (Figure 45):

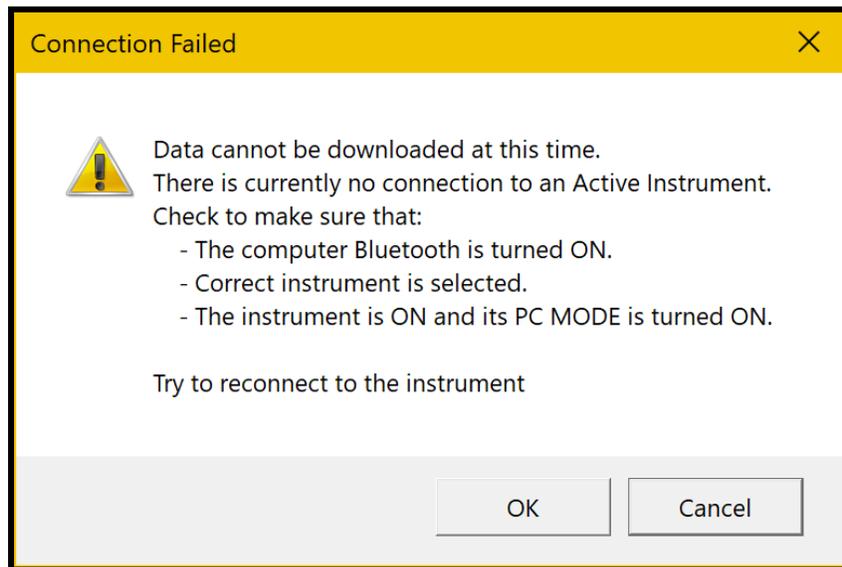


Figure 45

- Click the "**CANCEL**" button to stop the process, or;
- Correct the underlying connection issue by following the instructions of Pairing and Connecting to an Instrument (Section 6), then Click the "**OK**" button to continue.

The functions for which this type of Error message can appear are:

- DOWNLOAD FROM INSTRUMENT
- ASSIGN NAME
- SET DATE TIME
- ERASE MEMORY

Corrupt Data Warning Window

For previous firmware versions, when the user saves data on their instrument as Conductivity (COND) in USER mode, Resistivity (RES) in USER mode, Total Dissolved Solids (TDS) in USER mode, and Free Chlorine Equivalence (FC^E), Guardian² will not be able to show the data properly. Therefore, it will show a pop-up warning window when it detects such data is being downloaded (See Figure 46). The Data Window will show all the non-corrupted data properly, but for the data that is corrupted, it will display an “ ** ” in the Value column of the Data Window (see Figure 47).

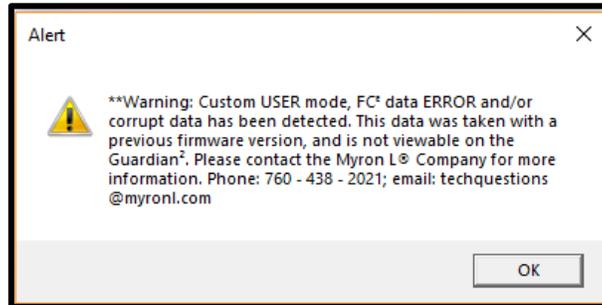


Figure 46

The screenshot shows the Guardian² software interface. At the top, there are tabs for "Home" and "Instrument". Below the tabs are icons for "Download from Instrument", "Sort", and "Reference Info". The main area is a data table with the following columns: Line #, Record #, Measurement, Value, Unit, Solution, Temp, Date, Time, FCe-ORP, FCe-pH, LSI-ALK, LSI-HARD, LSI-pH, Instrument, and Location. The table contains 18 rows of data. In the "Value" column, several entries are marked with double asterisks (**), indicating corrupted data. A red arrow points to the value "**" in the "Value" column of the 10th row (Line # 10, Record # 10, Measurement Fr Chl). Other rows with corrupted values include Line # 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, and 18. The "Unit" column for these rows shows "ppm", "KΩ", "μS", or "NONE".

Line #	Record #	Measurement	Value	Unit	Solution	Temp	Date	Time	FCe-ORP	FCe-pH	LSI-ALK	LSI-HARD	LSI-pH	Instrument	Location
1	1	Fr Chl	**	ppm	NONE	23.5 °C	23-09-2000	03:37	389	3.50				Hello!@#	
2	2	RES	**	KΩ	USER[RATIO0.20/TC0.39%]	24.2 °C	23-09-2000	06:08						Hello!@#	
3	3	RES	**	KΩ	USER[RATIO0.20/TC0.39%]	24.2 °C	23-09-2000	06:08						Hello!@#	
4	4	RES	**	KΩ	USER[RATIO0.20/TC0.39%]	24.2 °C	23-09-2000	06:08						Hello!@#	
5	5	TDS	**	ppm	USER[RATIO0.20/TC0.39%]	24.2 °C	23-09-2000	06:08						Hello!@#	
6	6	TDS	**	ppm	USER[RATIO0.20/TC0.39%]	24.2 °C	23-09-2000	06:08						Hello!@#	
7	7	TDS	**	ppm	USER[RATIO0.20/TC0.39%]	24.2 °C	23-09-2000	06:08						Hello!@#	
8	8	TDS	**	ppm	USER[RATIO0.20/TC0.39%]	24.2 °C	23-09-2000	06:08						Hello!@#	
9	9	Fr Chl	**	ppm	NONE	24.2 °C	23-09-2000	06:08	347	3.50				Hello!@#	
10	10	Fr Chl	**	ppm	NONE	24.2 °C	23-09-2000	06:08	347	3.50				Hello!@#	
11	11	Fr Chl	**	ppm	NONE	24.2 °C	23-09-2000	06:08	347	3.50				Hello!@#	
12	12	COND	**	μS	USER[RATIO0.20/TC0.39%]	23.6 °C	27-09-2000	02:18						Hello!@#	
13	13	COND	0.00	μS	442	23.7 °C	27-09-2000	02:19						Hello!@#	
14	14	COND	0.00	μS	442	23.7 °C	27-09-2000	02:19						Hello!@#	
15	15	RES	**	KΩ	USER[RATIO0.20/TC0.39%]	23.7 °C	27-09-2000	02:19						Hello!@#	
16	16	RES	--	KΩ	442	23.7 °C	27-09-2000	02:19						Hello!@#	
17	17	RES	--	KΩ	442	23.7 °C	27-09-2000	02:19						Hello!@#	
18	18	TDS	0.00	ppm	442	23.7 °C	27-09-2000	02:19						Hello!@#	

Figure 47

Bluetooth Not Available Warning Window

Bluetooth is required for the Guardian² to communicate with a Myron L[®] Company instrument. If Bluetooth is turned "OFF" on your computer, only offline features will function. A warning window will pop up when the Guardian² application is opened (see Figure 48).

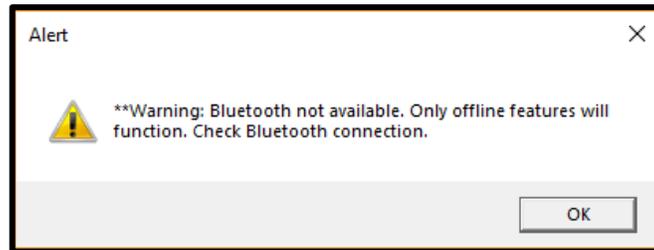


Figure 48

Offline functions include:

- Opening/manipulating previously saved .mlcx files
 - Sorting
 - Adding/modifying Reference Info
 - Formatting data (temperature, time, and date formats)
 - Printing
 - Saving
 - Exporting data (Save As)
- Demo Mode:
 - Demo mode allows the Guardian² application to download a set of demonstration data and allows you to explore the functionality of the Guardian² application without being connected to an instrument.

NOTE: While Bluetooth is turned off, the only available device on the Preference pull down menu will be Demo.

9.2 ADDITIONAL TROUBLESHOOTING TIPS

SYMPTOM: The Reference Info Window is missing from the bottom of the Data Window

CAUSE: The Reference Info Window has been hidden.

SOLUTION: Unhide it by clicking the "**REFERENCE INFO**" button under the Data Window Home Menu (Figure 49).

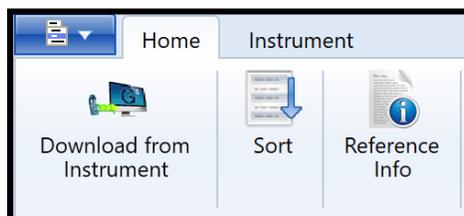


Figure 49

SYMPTOM: "**Cannot Connect**" Error message appears repeatedly during one of the following operations:

- DOWNLOADING FROM INSTRUMENT
- ASSIGNING A NAME
- SETTING THE DATE AND TIME
- ERASING MEMORY

CAUSE: The instrument and the Guardian² application are having trouble communicating.

SOLUTION:

- Check the following and correct it so:
 - The correct Device is selected in the Guardian² Preference Window (see Section 7.2).
 - The instrument is awake and that the PC mode is set to "ON" (see Section 6.2).
 - The instrument is paired to your computer and the connection is active (see Sections 6.3).
- The Instrument's Bluetooth signal is too weak:
 - Try moving the instrument closer to the host computer.
 - Check to see if the Bluetooth is turned ON, on user's computer.
 - Replace the battery (even if the "Lo Batt" indicator is not lit on the instrument display, the battery may be too weak to broadcast a strong signal).

SYMPTOM: The wrong icons appear for the .mlcx files on the desktop, task bar, and folders.

CAUSE: This occurs sometimes because the .mlcx extension is not recognized by the operating system to be a Guardian² associated file.

- This is a rare event that can be caused by Microsoft Windows behaviors external to the Guardian² application.

SOLUTION:

To correct this issue and reset Guardian² icons:

- 1) Right click on any .mlcx.
- 2) Select properties from the pop up menu.
- 3) Find the "Opens With" field and click the "CHANGE" button.
- 4) The "Opens With" dialogue box will open.
- 5) If "Guardian²" is presented as one of the choices, select it.
- 6) If "Guardian²" is NOT presented as one of the choices, select "Browse" and find the Guardian² application.
 - It will be in the "Program files (x86) folder.
- 7) Open the Guardian² folder and select Guardian².exe
- 8) If it is not already checked, check "Always use the selected program to open this kind of file".
 - this option may not be enabled on some systems.
- 9) Click the "OK" button in the "Opens With" dialogue box.
- 10) Click "Apply" in the window with current file properties.
- 11) If file icons have not changed - reboot computer.

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