

Operation Manual

ULTRAPENTM PTBTxTM with iOS APP

MYRON L[®]
COMPANY
Water Quality Instrumentation
Accuracy • Reliability • Simplicity
. . . Since 1957

PLEASE NOTE:

Because of our commitment to product improvement, the substance and style of this manual may change. When changes are made, the updated manual is posted for download in PDF format from the Myron L[®] Company Website: www.myronl.com

TABLE OF CONTENTS

INTRODUCTION	1	DATA RECORDS.....	27
ULTRAPEN FEATURES AND SPECIFICATIONS.....	2	27. Creating and Displaying Data Records.....	27
1. PTBT1 Layout and Features.....	2	28. Adding a Note to a Data Record	29
2. PTBT2 Layout and Features.....	3	29. Replacing the Data in a Record	30
3. Main Measurement Screen	4	30. Editing the Record List.....	31
4. Feature Navigation Bar	5	31. Clearing / Deleting Data Records	32
5. Specification Tables.....	7	32. Sorting the Data Records List	34
PAIRING TO AND UNPAIRING FROM AN ULTRAPEN	9	33. Filtering the Data Records List.....	36
6. Displaying the ULTRAPEN Connect screen.	9	34. Exporting Data Records	37
7. Pairing the ULTRAPEN to the Mobile Device.....	10	ULTRAPEN CALIBRATION	38
8. Unpairing the ULTRAPEN.....	10	35. General Calibration Information	38
9. Deleting ULTRAPEN's from the Paired List	11	36. Calibration Preparation:	39
ULTRAPEN MEASUREMENTS.....	12	37. Wet Calibration - Single Point Calibration PTBT1 ..	40
10. Operating modes	12	38. Wet Calibration - Single Point Calibration PTBT2 ..	41
11. Making Measurements – General.....	12	39. Wet Calibration - Multipoint PTBT2.....	42
12. Making Measurements – Hold Mode.....	13	40. Factory CAL.....	44
13. Making Measurements in LIVE Mode	13	41. Calibration Records.....	45
14. Using the Scoop	14	MAINTENANCE AND CLEANING.....	47
ULTRAPEN SETTINGS.....	15	42. Battery Replacement	47
15. General	15	43. Routine Maintenance PTBT1	48
16. ULTRAPEN Name:	16	44. Routine Maintenance PTBT2	48
17. PTBT1 Solution Mode Selection	17	45. pH Sensor Replacement.....	48
18. Live Mode Activation.....	18	46. Accessories	48
ULTRAPEN APP PREFERENCES	19	LICENSES AGREEMENTS	I
19. Screen Lock Switch.....	19	47. End User License Agreement.....	i
20. Locations.....	20	48. Data Use Liability Agreement	iii
21. Email Format.....	23		
22. Date and Time Format.....	24		
23. The Demo ULTRAPEN.....	25		
24. Temperature Units.....	26		
25. Help Link	26		
26. About	26		

INTRODUCTION

The Myron L® Company ULTRAPEN™ PTBTx™, Bluetooth® enabled, test pens, when paired with a mobile device, are designed to be extremely accurate, fast and simple to use in diverse water quality applications when paired with a mobile device. A free App provide easy-to-read displays and user-intuitive, graphical User Interface (GUI). The Bluetooth wireless connection means that there are no bothersome wires getting in the way when moving quickly between samples and that the paired mobile device can be located safely away from liquids.

Advanced features include: Automatic temperature compensation; stable microprocessor-based circuitry and a rugged, waterproof housing.

Available models:

- PTBT1 - Conductivity, Total Dissolved Solids (TDS), Salinity, and Temperature measurement with three, selectable solution modes that model the most commonly encountered water types.
- PTBT2 – pH and Temperature measurement with 1, 2, and 3 point calibration options.
- Coming Soon:
 - PTBT3 - ORP & Temperature measurement.
 - PTBT4 - Free Chlorine Equivalent (FCE™) & Temperature measurement.

Using the mobile device's touch screen:

- Each ULTRAPEN PTBTx can be given a unique name so it is easily identifiable no matter what mobile device is used with it.
- Measurement locations can be programmed as:
 - GPS locations that are automatically selected when the user is close to a specific measurement local, or;
 - Non-GPS locations for applications where test sites are too close together for the GPS to differentiate.
- Measurements can be saved to the mobile device's memory including measurement data, ULTRAPEN settings, sample temperature, ULTRAPEN name and measurement location.
- Records can be exported via the mobile device's email function as either .csv, .xls, .xlsx formatted files or using Myron L Company's .mlc, proprietary, encrypted format (requires Myron L Company U2CI software to read).
- Recorded measurements can be sorted or; filtered and then emailed or deleted without affecting other records stored in memory.

Minimum System requirements:

Apple iOS 6 or iOS 7 mobile device (Android™ compatible App. coming soon).

To Download the mobile App:

- Go to the App Store on your mobile device.
- Search for the iPhone App "ULTRAPEN™ PTBTx™".
- Open the FREE button
- Tap the INSTALL APP button.

ULTRAPEN FEATURES and SPECIFICATIONS

This section describes:

- Basic Features and Layout of the ULTRAPEN and the PTBTX mobile app.
- Set up of Preferences and Settings.

1. PTBT1 Layout and Features

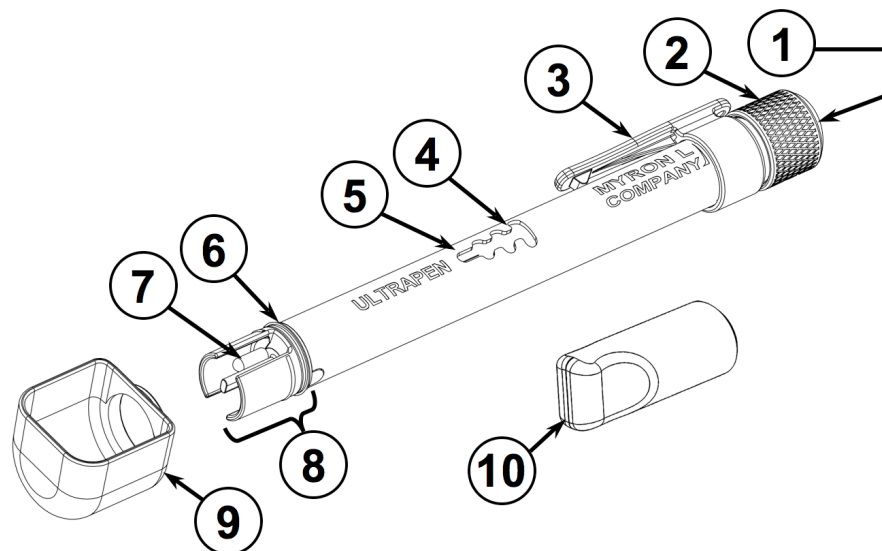


Figure 1

ULTRAPEN PTBT1 (Conductivity) Features (see Figure 1).

1. **Push Button** – turns instrument on; selects mode and unit preferences.
2. **Battery Cap** – provides access to battery for replacement.
3. **Clip** – holds ULTRAPEN to pocket for secure storage.
4. **Wireless Transceiver Window** — Bluetooth antenna is located here.
5. **LED Indicator** – Cues the user when to dip and swirl the ULTRAPEN during measurements and when instrument is in Configuration / Calibration Mode.
6. **Cap Stop** – Shows how far to push the protective cap when putting it on the PTBT1. DO NOT push Protective Cap (not shown) past this point.
7. **Electrodes** – measure electric current of solution.
8. **Cell** –contains flux field in defined area for accurate current measurement.
9. **Scoop** – contains sample solution for measurement when sampling from a vertical stream. Refer to Using the Scoop.

10. **Protective Cap** – Protects Cell from damage and dirt when ULTRAPEN PTBT1 is not in use.

2. PTBT2 Layout and Features

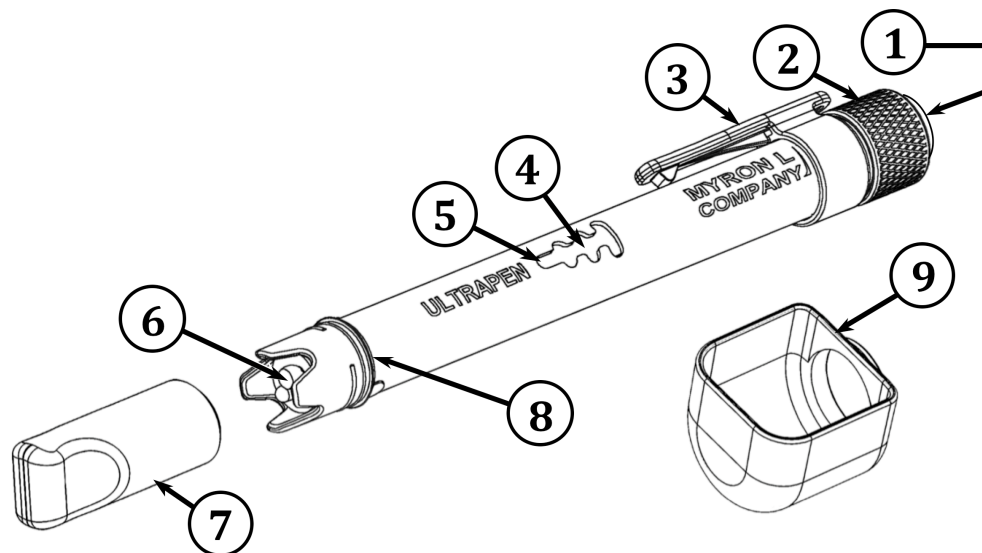


Figure 2

ULTRAPEN PTBT2 (pH) Features (see Figure 2).

1. **Push Button**- turns PTBT1 on; enters calibration mode, opens preference menus.
 2. **Battery Cap** - provides access to battery for replacement.
 3. **Pocket Clip** - holds ULTRAPEN to shirt pocket for secure storage.
 4. **Wireless Transceiver Window** — Bluetooth antenna is located here.
 5. **LED Indicator Light** - Tells the user when to dip & swirl PTBT2 during measurements and calibration. Indicates PTBT2 is in Configuration mode.
 6. **pH Sensor** - measures hydrogen ion concentration of solution.
 7. **Soaker Cap** - Contains pH Sensor Storage Solution to maintain sensor hydration. To remove, twist the cap while pulling off. Use caution not to spill solution. To replace, fill the cap half full **ONLY** with storage solution. Twist the cap while pushing on. Be careful, excess solution may squirt out
- CAUTION: Do NOT push the soaker cap beyond the Cap Stop as sensor damage WILL occur.
- NOTE: The formation of KCl crystals around the soaker cap is normal and will not affect the sensor life, performance, or accuracy provided they are rinsed off with water prior to a test.
8. **Cap Stop** - Shows how far to push the soaker cap when putting it on the PTBT2
 9. **Scoop** - contains sample solution for measurement when sampling from a vertical stream. Refer to Using the Scoop.

3. Main Measurement Screen

This is the main screen that displays upon initial startup and whenever the application is actively displaying measurements made by an ULTRAPEN (Figure 3)

1. **Mobile Device Status Bar** — standard Status Bar for your mobile device.
2. **Measurement Value Field** — displays the measured value of the solution. When the ULTRAPEN turns off, displays the message "ULTRAPEN is Offline" and the values gray out.
3. **Units of Measure** — displays correct units for chosen measurement type.
4. **ULTRAPEN Battery Level** — Displays the current charge level of the ULTRAPEN Instrument's battery.
 - Flashes RED when ULTRAPEN battery is $\leq 25\%$
5. **Solution Temperature** — measured temperature of the solution.
6. **Memory Store Button (MS)**— tap here to record the measurement in the App's database.
7. **Memory Replace Button (MS Replace)** — tap here to replace a previously stored measurement with data from a new measurement.
8. **Feature Navigation Bar** — these buttons activate various App features.



Figure 3



Figure 4

NOTE: The Measurement screen can also be viewed in Landscape mode (see Figure 4)

4. Feature Navigation Bar

This bar appears at the bottom of all screens. The buttons in this bar are used to navigate between the various main functional sections of the application.

- The graphic of the button corresponding to the currently displayed section of the App is in colored a BLUE.





Figure 5

The Feature Navigation Bar (Figure 5) contains the following buttons:

- **Measurement**: Tapping this button returns the application to the main Measurement Screen.
 - This is the Home screen for the App.
- **Memory Recall (MR)**: Tapping this button opens displays a list of all data records previously stored:
 - This list may be sorted or filtered to highlight specific sets of records. (see Sorting the Data Records)
 - Retrieving individual data records.
 - Adding notes to data records.
 - Data export (see Exporting Data).

Calibration (CAL): Tapping this button opens the Calibration sub-section (see ULTRAPEN CALIBRATION) of the App and allows you to:


- Calibrate a PTBTx instrument using calibration reference solutions.
 - Calibration constants derived from these calibrations are stored in the ULTRAPEN's memory and are applied to subsequent measurements.
- Use the FAC CAL feature to return an ULTRAPEN to its original Factory Calibration settings.
- **Connect / Disconnect**: Tapping this button takes you to a screen that facilitates:
 - Pairing and connecting to an ULTRAPEN (see PAIRING TO AND UNPAIRING FROM AN ULTRAPEN).
 - This is a context sensitive button. Whenever an ULTRAPEN is currently paired to the mobile device via the PTBT Application:
 - The button name changes to Disconnect.

- The Button symbol changes from  to 


- **Preferences** Tapping this button opens the main Settings section of the App where the user is able to:
 - Change settings for the currently paired ULTRAPEN instrument including:
 - Renaming it.
 - Select a Solution mode (only applies to PTBT1).
 - Select a Live or Hold measurement modes (only applies to PTBT2).
 - Displays the ULTRAPEN firmware revision
 - Set application preferences, including;
 - Temporarily deactivated the mobile device's screen lock or sleep mode.
 - Program measurement locations.
 - Select a file format for emailing / exporting data.
 - Select date and time formats.
 - Chose which version of the PTBTx you wish the Demo Pen feature to emulate
 - Choose between displaying Temperature data as either °C or °F.
 - Access Help files.
 - Access the About Page

5. Specification Tables

ULTRAPEN PTBT1 (Conductivity, TDS, Salinity)

Measurement Range:	1 - 9999 μ S or ppm (0.0010 - 9.999 ppt salinity)
Accuracy (After Wet Calibration):	$\pm 1\%$ of reading
Repeatability:	< 1000 μ S or ppm ± 1 Count $\geq 1000 \mu$ S or ppm $\pm 0.3\%$ of reading
Resolution:	Conductivity and TDS: 0.1 for 1.0 - 99.9 μ S or ppm; 1 for 100 - 9999 μ S or ppm Salinity: 0.0001 for 0.0010 - 0.0999 ppt; 0.001 for 0.100 - 9.999 ppt Temperature: 0.1 $^{\circ}$ C or $^{\circ}$ F
Time to Reading Stabilization:	10 - 20 seconds
Power Consumption:	Active Mode : 30 - 140 mA: Sleep Mode 2 μ A
Temperature Measurement Range:	0 - 71 $^{\circ}$ C or 32 - 160 $^{\circ}$ F
Temperature Accuracy Displayed	: ± 0.1 $^{\circ}$ C or ± 0.1 $^{\circ}$ F
Temperature Compensation Method:	Automatic to 25 $^{\circ}$ C
Physical	Dimensions: 17.15 cm L x 1.59 cm D or 6.75 in. L x .625 in. D Weight: 54 g or 1.94 oz
Case Material:	Anodized Aluminum with Protective Coating
Battery Type:	N type, Alkaline
Battery Voltage:	1.5 V (N-Type Battery)
Calibration Solution Point:	1800 μ S KCl; 3000 ppm 442 TM (2027 ppm NaCl)
Operating/Storage Temperature:	0 - 55 $^{\circ}$ C or 32 - 131 $^{\circ}$ F
Water Resistance:	IP67 and NEMA 6
 EN61236-1: 2006 - Annex A: 2008 1999/5/EC Annex III	Electrostatic discharge to case of instrument may cause PTBT1 to spontaneously power on. In this case, the PTBT1 will power off after several seconds
FCC ID: T7VPAN17	The Bluetooth transceiver device meets the requirements for modular transmitter approval as detailed in FCC public Notice DA00-1407.
Canada (IC), license: IC: 216Q-PAN17	The Bluetooth transceiver device meets the requirements for modular transmitter approval as detailed in RSS-GEN.

ULTRAPEN PTBT2 (pH)

Measurement Range:	00.00 – 14.00 pH;
Accuracy (After Wet Calibration):	± 0.01 pH
Repeatability:	± 0.01 pH
Resolution:	± 0.01 pH
Time to Reading Stabilization:	10 - 30 seconds
Power Consumption:	Active Mode : 30-140 mA: Sleep Mode 2 µA
Temperature Measurement Range:	0 - 71° C or 32 - 160° F
Temperature Accuracy	: ± 0.1 °C or ± 0.1 °F
Temperature Resolution	: ± 0.1 °C or ± 0.1 °F
Temperature Repeatability	: ± 0.1 °C or ± 0.1 °F
Temperature Compensation Method:	Automatic to 25°C
Physical	Dimensions: 17.15 cm L x 1.59 cm D or 6.75 in. L x .625 in. D Weight: 54 g or 1.94 oz
Case Material:	Anodized Aluminum with Protective Coating
Battery Type:	N type, Alkaline
Battery Voltage:	1.5 V (N-Type Battery)
Calibration Solution Point:	4.0 pH, 7.0 pH and 10.0 pH
Operating/Storage Temperature:	0 - 55°C or 32 - 131°F
Water Resistance:	IP67 and NEMA 6
 EN61236-1: 2006 - Annex A: 2008 1999/5/EC Annex III	Electrostatic discharge to case of instrument may cause PTBT2 to spontaneously power on. In this case, the PTBT2 will power off after several seconds
FCC ID: T7VPAN17	The Bluetooth transceiver device meets the requirements for modular transmitter approval as detailed in FCC public Notice DA00-1407.
Canada (IC), license: IC: 216Q-PAN17	The Bluetooth transceiver device meets the requirements for modular transmitter approval as detailed in RSS-GEN.

PAIRING TO AND UNPAIRING FROM AN ULTRAPEN

6. Displaying the ULTRAPEN Connect screen.

To pair to and connect the instrument to you mobile device:

1. Open the PTBTx App.
2. Tap the Connect Button in the Feature Navigation Bar.
3. Press the push button on the end of the ULTRAPEN.
4. When the ULTRAPEN's name appears on the Connect Screen, tap that line.

The Connect/Disconnect screen will appear (see Figure 6).

- This screen will list ULTRAPEN's that :
 - Have been previously paired top this mobile device.
 - Are awake and within broadcast range will appear on the list.
 - If a ULTRAPEN stops broadcasting or goes out of range it will disappear from the list.
- Each ULTRAPEN on the list will appear with:
 - Its Name: The default name for all ULTRAPEN PTBT1's is, "MLC-PTBTx."
 - This name can be edited (see ULTRAPEN Name:).
 - Its model type.
 - If it is awake and broadcasting, a GREEN glow dot will appear to the left of the name.
 - ULTRAPEN goes in and out of sleep mode to conserve battery power. If the green dot does not appear next to the Paired ULTRAPEN, press the button on the end of the ULTRAPEN.
- If no ULTRAPEN is currently paired to the mobile device, there will be no checkmark or Unpair button.
- Once an ULTRAPEN has been paired to the App, it will remain on the list even if it is not the currently paired ULTRAPEN or awake and within broadcast range.
 - Even if it is not awake or if it is not within broadcast range, the currently paired ULTRAPEN will:
 - Always be at the top of the list.
 - Have a checkmark and a RED Unpair button will appear next to it's name.
 - If it is not awake or if it is not within broadcast range, it will not have a GREEN glow dot.

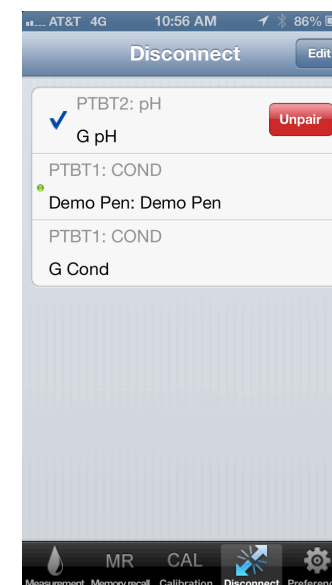


Figure 6

7. Pairing the ULTRAPEN to the Mobile Device

- Refer Figure 6 as a reference for the following instruction.
- Once successfully paired with an instrument, the application stays paired with it until it is manually unpaired by the user.

If there is no currently paired ULTRAPEN:

1. Tap the line on which the ULTRAPEN you wish to connect to is listed.
 - The checkmark and a RED Unpair button will appear next to it's name.

If there is a currently paired ULTRAPEN other than the one you wish to use.

1. Tap the line on which the ULTRAPEN you wish to connect to is listed.
2. The App will display a message warning that, "This action will break the current connection. Continue?"
 - Tap Cancel. to leave the connection as is.
 - Tap Disconnect to unpair the current ULTRAPEN and continue.
3. The App will automatically pair and connect to the new ULTRAPEN.

8. Unpairing the ULTRAPEN

To unpair to an ULTRAPEN without pairing to another ULTRAPEN:

1. Tap Unpair button on the line on which the ULTRAPEN you wish to unpair and disconnect to is listed.
2. The App will display a message warning that, "This action will break the current connection. Continue?"
 - Tap Cancel to leave the connection as is.
 - Tap Disconnect to unpair the current ULTRAPEN and continue.

NOTE: **ALWAYS** unpair a specific ULTRAPEN from its currently connected mobile devise **BEFORE** pairing it with different device.

- Each ULTRAPEN should only be paired with one mobile device at a time.
- It is NOT necessary to delete the ULTRAPEN from the paired history list (see Section 9),

9. Deleting ULTRAPEN's from the Paired List

If you wish to remove a ULTRAPEN from the paired list:

1. Tap the Edit button in the upper right corner of the Connect screen.
2. A RED circle containing a - symbol at the left edge of each ULTRAPEN name.
 - The Edit button will change to say Done.
3. Tap the RED circle next to any ULTRAPEN name.
 - The RED Circle will rotate 90°.
 - A RED Delete button will appear in the key field.
4. Tap the Delete button.
 - The ULTRAPEN will disappear from the list.
 - The next time the ULTRAPEN is active and within broadcast range it will reappear on the list.
6. Tap the Done button to exit the edit mode.
 - You will not be able to pair with another PTBTx ULTRAPEN until you exit the edit mode.

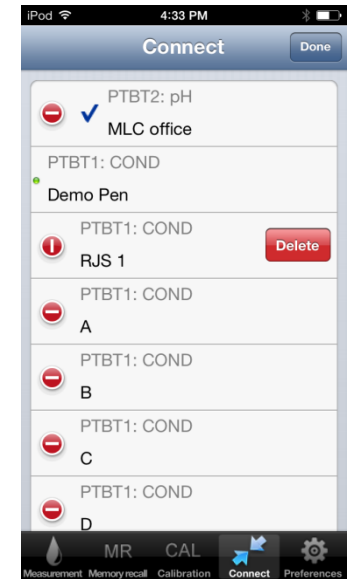


Figure 7

ULTRAPEN MEASUREMENTS

10. Operating modes

Measurement mode

This is the standard mode for the application when it is paired with an actively measuring ULTRAPEN instrument.

Stand alone mode

- This operating mode allows you to access the previous measurement data stored in mobile device when:
 - The application not currently paired with an instrument.
 - The currently paired instrument is asleep or out of broadcast range.
- **At startup.** When the application starts up and is already paired to an ULTRAPEN instrument that is currently inactive:
 - If the App **is not** paired to an ULTRAPEN the main Measurement screen will display, "No Paired ULTRAPEN".
 - If the App **is** paired to an ULTRAPEN the main Measurement screen will display, "Paired ULTRAPEN is offline."
- **Continuing use.** Once the application has been operating and has received measurements from an active ULTRAPEN that is currently inactive, the Stand Alone screen will:
 - Display "Paired ULTRAPEN is Offline" in the Measurement display area.
 - Display the most recent measured value taken with the currently paired ULTRAPEN.
 - This measurement values are dimmed / grayed out and remains on the display until the application is closed or new data is received from an ULTRAPEN.
 - The message, "Pen is Offline." will appear to the upper right of the measurement value.
 - Tapping the Memory Store button will create data record using the currently grayed out measurement values.
 - Date/time stamp for the record will be the date and time that the measurement was made.

11. Making Measurements – General

Before you take a reading, make sure the ULTRAPEN is clean, calibrated in the appropriate measurement mode and connected to the App..

- The sample solution must also be within the specified measurement range. Keep all foreign material away from the sample to avoid contamination.

NOTE: If you cannot dip the ULTRAPEN in the sample solution, pour the sample into a clean container. If you don't have a sample container and need to test a vertical stream of solution, use the scoop (see Using the Scoop).

- To measure solution at the extremes of the specified temperature range, allow the ULTRAPEN to equilibrate by submerging the cell in the sample solution for 1 minute prior to taking a measurement.

12. Making Measurements – Hold Mode

In Hold Mode, during the measurement process the LED on the ULTRAPEN will flash at different rates. The following table explains what the LED Indicator signals mean and gives the duration of each signal.

LED Indicator Signal	Meaning	Duration
Rapid Flashing	Dip ULTRAPEN in solution	6 sec
Slow Flashing	Swirl ULTRAPEN. Measurement in process	10-20 sec
Solid ON Light	Measurement Completed and measurement value appears on App screen.	6 sec

- Rinse the sensor by swirling it around in fresh sample solution.
 - Alternatively, 30 seconds under a stream or of swirling in a body of water is sufficient to prepare the sensor for the measurement.
- Open the PTBTx App. If it does not open to the Measurement screen, tap the Measurement button in the Feature Navigation Bar. The Measurement screen will say, "Paired ULTRAPEN is Offline."
- Grasp the ULTRAPEN near the battery cap to avoid sample contaminating the sample.
- Remove ULTRAPEN from the rinse solution, then press and release the ULTRAPEN's push button.
- When the LED flashes rapidly, IMMEDIATELY dip the ULTRAPEN in fresh sample solution so that the cell is completely submerged.
 - If you do not submerge the cell in solution before the flashing slows, allow the ULTRAPEN to power off. Retake the reading.
- When the LED flashes slowly, swirl the ULTRAPEN around to remove bubbles, keeping the cell submerged.
 - Keep the ULTRAPEN at least 1 inch (2½ cm) away from sides/bottom of container, if possible.
- When the LED turns Solid ON, remove the ULTRAPEN from solution.
 - The App display will show the measurement and temperature values.
- The ULTRAPEN will turn off once the measurement is completed.
- The value will be held on the App Measurement Screen
 - The value will be grayed out,
 - "Pen is Offline" will appear to the upper right of the measured value.

13. Making Measurements in LIVE Mode

Some ULTRAPEN models, such as the ULTRAPEN PTBT2 have a Live Mode measurement available (see Live Mode Activation). In Live Mode, during the measurement process the LED on the ULTRAPEN will flash at different rates. The following table explains what the LED Indicator signals mean and gives the duration of each signal.

LED Indicator Signal	Meaning	Duration
Rapid Flashing	Dip ULTRAPEN in solution	6 sec
Slow Flashing	Swirl ULTRAPEN. Measurement in process. Live measurement values appear on App screen.	10-30 sec in Hold mode 5 minutes in Live mode ¹
Solid ON Light	Measurement Completed	6 sec

¹ Five minutes is the Live Mode period for the ULTRAPEN PTBT2. Length of live mode period may differ for other ULTRAPEN models.

1. Rinse the cell 3 times by swirling it around in fresh sample solution.
 - Alternatively, 30 seconds under a stream or of swirling in a body of water is sufficient to prepare the sensor for the measurement.

Open the PTBTx App. If it does not open to the Measurement screen, tap the Measurement button in the Feature Navigation Bar. The Measurement screen will say, "Paired ULTRAPEN is Offline."

3. Grasp the ULTRAPEN near the ULTRAPEN cap to avoid sample contamination.
4. Remove ULTRAPEN from the rinse solution, then press and release the ULTRAPEN's push button.
5. When the LED flashes rapidly, IMMEDIATELY dip the ULTRAPEN in fresh sample solution so that the cell is completely submerged.
 - If you do not submerge the cell in solution before the flashing slows, allow the ULTRAPEN to power off and retake the reading.
6. When the LED flashes slowly, swirl the ULTRAPEN around to remove bubbles, keeping the cell submerged.
 - Keep the ULTRAPEN at least 1 inch (2½ cm) away from sides/bottom of container, if possible.
 - Allow the ULTRAPEN to remain in solution while the LED flashes slowly.
 - The App display will show a live reading for the measurement and temperature.
 - LIVE measurement will time out.
 - Alternatively, push and release the ULTRAPEN's push button to power the ULTRAPEN off at any time during LIVE measurement.
7. When the LED turns solid ON, remove the ULTRAPEN from solution.
 - The App display will show the last measurement and temperature values.
8. The ULTRAPEN will turn off once the measurement is completed.
9. The value will be held on the App Measurement Screen.
 - The value will be grayed out.
 - "Pen is Offline" will be displayed next to the measured value.

14. Using the Scoop

To use the scoop:

- Slide open end of scoop over bottom of ULTRAPEN shifting from side-to-side until the neck of the scoop is flush with the top of the cell.
- Hold scoop under stream and perform the measurement as normal. Avoid bubbles.
- We recommend calibrating the ULTRAPEN using the scoop to retain ±1% accuracy,
- To remove, pull the scoop off while shifting side-to-side.
 - If the sensor is not fully seated in the PTBT4, reinstall per pH Sensor Replacement (see pH Sensor Replacement)

)

ULTRAPEN SETTINGS

15. General

To access the Settings And Preferences Menus

1. Tap on the Preferences button.
2. The Main Preferences Screen will appear. There will be 4 selections:

- **ULTRAPEN SETTINGS** (See Figure 8): This section contains:
 - **ULTRAPEN Name:** View and edit the Name by which an ULTRAPEN appears in data records and on the Connect Screen list.
 - **Measurement Settings:** Some ULTRAPEN's have preferences and setting related to their measurement function such as:
 - **PTBT1: Solution Mode** – Allows you to select a Temperature Compensation model.
 - **Pen Mode:** Sets the ULTRAPEN for Hold or Live Mode.
 - **Hold** modes waits for the ULTRAPEN to stabilize then reports a single reading.
 - **Live** (PTBT2 only) mode allows the ULTRAPEN to takes continuous readings for a short period of time but requires more power and shortens battery life.
 - **ULTRAPEN Revision number:** The revision of the ULTRAPEN firmware is displayed here.
- **APPLICATION PREFERENCES** (See Figure 9): This section contains:
 - **Screen lock:** Allows you to temporarily turn OFF the mobile device's Screen Lock / Auto Off feature.
 - **Location:** Allows you to program and use a list of locations that can be associated with data records.
 - **Email format:** Opens a list of the allowed email formats when exporting data records.
 - **Date & Time format:** Displays Date and Time display options.
 - **Demo ULTRAPEN Mode:** The app includes a simulated ULTRAPEN that can be used for training or to explore the features and functions of the app without having an actual ULTRAPEN available and awake.
 - This Settings section allows you to choose which type of ULTRAPEN the Demo ULTRAPEN will emulate.
 - **Temperature units:** Allows user to switch between Celsius and Fahrenheit temperature scales.
 - **HELP:** This selection will open the mobile devices browser and take you to the Myron L Company website where you can find various manuals and downloadable application notes.
 - **ABOUT:** Allows user to view Application's Software revision with warning message about file formats.

NOTE: Most of the Settings and Preference screen have a context sensitive button in the upper left corner that will return you to the previous screen.

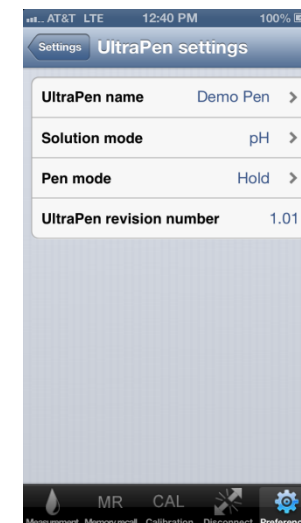


Figure 8

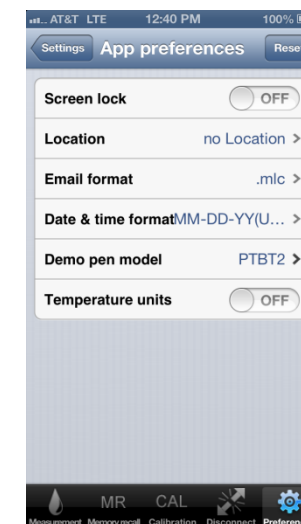


Figure 9

16. ULTRAPEN Name:

To Upload a new name into an ULTRAPEN:

1. Tap the Preferences button on the Feature Navigation Bar.
2. Tap the ULTRAPEN Settings line on the Settings screen.
 - The App screen will Display, "Paired ULTRAPEN is Offline".
3. Press and release the button on the end of the ULTRAPEN.
 - The App screen will Display, "Press and Hold button on ULTRAPEN to Enter Preferences "
4. Press and Hold the push button on the ULTRAPEN.
 - The App screen will display the ULTRAPEN Settings screen (See Figure 8).
5. Tap the ULTRAPEN Name line on the ULTRAPEN Settings Screen.
 - The ULTRAPEN Name Access screen will appear (See Figure 10).
 - The Name field will contain the current name of the ULTRAPEN.
6. Tap the Name field.
 - A cursor and keypad will appear.
7. Type the new name for the ULTRAPEN.
 - The ULTRAPEN name must be **≤ 14 characters**.
8. Tap the Save button in the upper right corner of the Name screen.
 - The App will now upload the new name to the ULTRAPEN.
 - ULTRAPEN will disconnect and reconnect to the app as it receives and saves the new name.
 - The display may QUICKLY cycle through the following screens:
 - "Paired ULTRAPEN is Offline"
 - "Press and Hold button on ULTRAPEN to Enter Preferences"
 - **DO NOT press the ULTRAPEN button during this operation.**
 - The App will return to main ULTRAPEN Settings screen when done.



Figure 10

17. PTBT1 Solution Mode Selection

1. Tap the Preferences Button on the Feature Navigation Bar.
2. Tap the ULTRAPEN Settings line on the Settings screen.
 - The App screen will display, "Paired ULTRAPEN is Offline".
3. Press and release the button on the end of the ULTRAPEN.
 - The App screen will display, "Press and hold button on ULTRAPEN to enter Preferences "
4. Press and Hold the push button on the ULTRAPEN.
 - The App screen will display the ULTRAPEN Settings screen (See Figure 8).
3. Tap the Solution Mode line on the ULTRAPEN Settings screen.
4. The Main Solutions screen will appear showing the current Solution Mode setting.
 - The Default setting is Conductivity KCl.
5. Tap the Solution Mode line.
6. Tap the Solution Name field.
7. The PTBT1 Solution Mode picker will appear (Figure 11) with the following choices:
 - Conductivity – KCl
 - TDS – 442
 - TDS – NaCl
 - Salinity – 442
 - Salinity – NaCl
8. Scroll the picker up and down to verify it includes the following choices.
9. Tap the Apply button.
 - Tap the Cancel button to leave the Solution Mode unchanged.
19. The Solution Name screen will reappear showing the new Solution Mode.

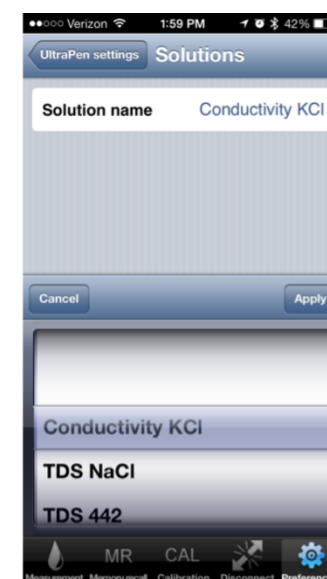


Figure 11

Mode	Parameter	Solution Model	Units
Cond KCl	Conductivity	potassium chloride	microSiemens (μ S)
TDS 442	Total Dissolved Solids (TDS)	442™ MYRON L® Natural Water Standard	parts per million (ppm)
TDS NaCl	TDS	sodium chloride	parts per million (ppm)
Salinity 442	Salinity	442™ MYRON L® Natural Water Standard	parts per thousand (ppt)
Salinity NaCl	Salinity	sodium chloride	parts per million (ppm)

18. Live Mode Activation

Some ULTRAPEN's, like the PTBT2 pH ULTRAPEN, have a Live mode available. When the Live mode is activated the ULTRAPEN reports continuous, live readings. In the case of the PTBT2 this Live measurement period lasts for 5 minutes before the ULTRAPEN automatically shuts off.

To activate the Live mode:

1. Tap the Preferences Button on the Feature Navigation Bar.
2. Tap the ULTRAPEN settings line on the Settings screen.
 - The App screen will display, "Paired ULTRAPEN is Offline".
3. Press and release the button on the end of the ULTRAPEN.
 - The App screen will display, "Press and Hold button on ULTRAPEN to Enter Preferences".
4. Press and hold the button on the end of the ULTRAPEN.
 - The App screen will display the ULTRAPEN Settings screen (See Figure 8).
5. Tap the ULTRAPEN Mode line.
 - The ULTRAPEN Mode Screen will appear.
6. Tap the ULTRAPEN Mode Field
 - A picker wheel will appear showing two choices (see Figure 12):
 - Hold (default).
 - Live.
7. Select Live.
8. Tap Apply.
9. Tap the Measurement button on the Feature Navigation Bar to return to the Measurement Screen and begin taking live measurements.

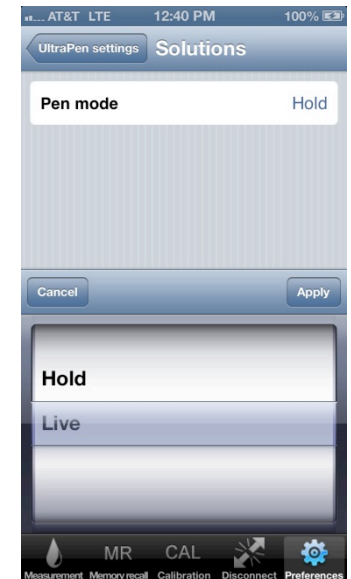


Figure 12

ULTRAPEN APP PREFERENCES

19. Screen Lock Switch

This feature causes the ULTRAPEN App to continue running without interruption, without requiring you to constantly turn On/Off the mobile device's native Screen Lock or Auto Off feature.

- When set to **OFF** whatever Screen Lock or Auto Lock feature is present in the mobile device's is temporarily turned **OFF** and the ULTRAPEN App will stay active on the mobile device until manually closed by the user. The mobile device's display will not dim or go dark.
 - This is the default setting.
 - NOTE: This feature is internal to the ULTRAPEN app only and does not affect the mobile devices own settings or preferences in any way.
- When set to **ON**, whatever Screen Lock or Auto Lock feature is present in the mobile device's will behave according to it's own settings,
 - If the device's Screen Lock or Auto Lock is set to **ON**, it will activate as normal; dimming and darkening the device's screen after the appropriate time out period.
 - This does not Activate the devices Screen Lock or Auto Lock if it is set to OFF in the device's own preferences.

To access this Switch:

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
3. Slide the Screen Lock switch (see Figure 9) to:
 - ON to allow the mobile device's Screen Lock or Auto Off feature to activate according to it's own settings.
 - OFF to turn Off the mobile device's Screen Lock or Auto Off feature so that the ULTRAPEN App can be used without interruption.

20. Locations

The ULTRAPEN App includes a feature that allows you to include the location of measurements in stored data records.

- These locations can be associated with a set of Latitude & Longitude coordinate as reported by the phone's GPS Services.
 - To use the GPS version of this feature, the mobile device's Location Service must be turned on.
 - If your device's OS requires location services be set for each app go to the device's preferences and set ULTRAPEN to ON.
- Locations can also be created independent of any GPS location. This is particularly useful in cases where one might have several testing location that are too close together (such as 2 water tanks setting side-by-side in a testing lab or 3 aquariums setting side-by-side on a store shelf).

Adding a GPS Location

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
 - The currently selected location will appear in the Location line of data records.
 - If no location is selected, "No Location" will appear on this line.
3. Tap the Location line on the App Preferences Screen.
 - The Location screen will appear.
4. If it is not already set as such, slide GPS switch to ON.
 - If you get a dialogue box asking for permission to use your current location, select OK.
 - If you get an error message, make sure that Location Services is set to ON for this mobile device and if required for this specific App.
5. Tap the Edit button.
6. Tap the + button in the upper left corner of the screen.
7. The Enter Location screen will appear (see Figure 13).
 - The current Latitude and Longitude coordinates will appear in the data entry field
8. Tap the Location name field.
 - A keypad will appear.
9. Edit the Location name.
10. Tap the Save button.
 - Tap the Cancel button to leave the location name unchanged .
11. The App will save the location name and return to the Location screen.
 - There will be a check mark next to the name.
12. Tap the Done button to leave Edit mode.



Figure 13

NOTE: GPS locations must be separated by a certain distance. The exact distance is dependent upon the accuracy and resolution of your device's GPS circuitry. If you are unable to enter a new location because you are still too close to an already entered GPS location, enter the location as a Non-GPS location.

Adding a NON-GPS Location

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
 - The currently selected location will appear in the Location line of data record.
 - If no location is selected, "No Location" will appear on this line.
3. Tap the Location line on the App Preferences Screen.
 - The Location screen will appear.
4. If it is not already set as such, slide GPS switch to OFF
5. Tap the Edit button.
6. Tap the + button in the upper left corner of the screen.
7. The Enter Location screen will appear.
 - "Location without GPS" will appear in the name field.
8. Tap the Location name field
 - A keypad will appear.
9. Edit the Location name
10. Tap the Save button.
 - Tap the Cancel button to leave the location name unchanged .
11. The App will save the location name and return to the Location screen.
 - There will be a check mark next to the name.
12. Tap the Done button to leave Edit mode.

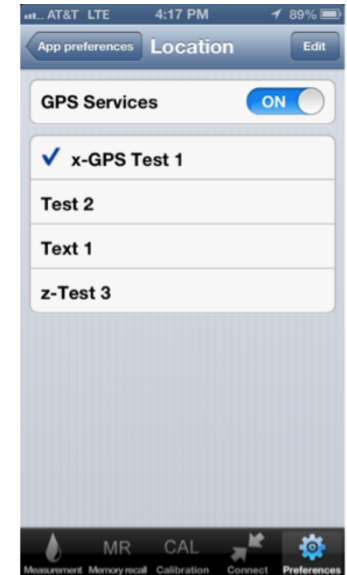


Figure 14

LOCATION LIST SORTING

Once you have loaded several location names into the list they will be sorted as follows (see Figure 14):

- GPS ON:
 - All GPS location will appear at the top of the list, sorted closest to farthest.
 - All Non-GPS locations will appear beneath the farthest GPS location sorted in ascending alphabetical order.
- GPS OFF:
 - All locations sorted in ascending alphabetical order.
- Regardless of whether the GPS Switch is set to ON or OFF, the acronym GPS will always appear next to locations associated with latitude and longitude coordinates.

SELECTING A LOCATION:

With GPS set to ON:

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
 - The currently selected location will appear in the Location line of the App Preferences screen..
 - If no location is selected, "No Location" will appear on this line.
3. Tap the Location line on the App Preferences Screen.
4. The Location screen will appear showing the list of programmed locations.
 - If you are at a GPS location that location will automatically be selected.
 - A check mark will appear at the left of the location name.
 - To select a location other than that one, switch GPS to OFF:

With GPS set to OFF:

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
 - The currently selected location will appear in the Location line of data records.
 - If no location is selected, "No Location" will appear on this line.
 - There will be no check marks next to any location unless one has previously been selected.
3. Tap the Location line on the App Preferences Screen.
1. Tap the line of the location you want.
 - A check mark will appear.

Deleting a Location from the List.

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
3. Tap the Location line on the App Preferences Screen.
4. Tap the Edit button.
 - There will be red circle with a white dash at the left edge of the location field (see Figure 15).
5. Tap the Red Circle.
 - The RED circle will rotate 90°.
 - A RED Delete button will appear.
6. Tap the Delete button.
7. The location will disappear from the list.
8. Tap the Done button to leave Edit mode.

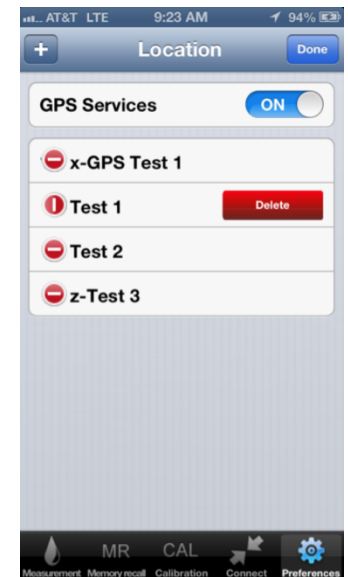


Figure 15

21. Email Format

Data records may be exported from the ULTRAPEN App via email (see Exporting Data Records in anyone of the following file formats.

- .mlc: This is a secure, encrypted format that is designed to be downloaded into the Myron L Company U2CI desktop application.
 - If you do not have this application it can be downloaded from the Myron L Company website at http://www.myronl.com/main/U2CI_Application_DL.htm
 - This is the default setting.
- .xlsx: File format for MS Office 2007 and later
- .xls: File format for MS older ME Office versions
- .csv: Comma Separated Values format. This file format should work with any spreadsheet application.

NOTE, .Xlsx, .Xls, and .csv file formats are not encrypted. Once data has been exported using one of these format and loaded in a spreadsheet application they may be altered or adulterated and can not be considered secure.

To select an email format:

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
 - The current email format will appear in the Email Format line of the App Preferences screen.
3. Tap the Email Format line.
 - The Email Format Screen will appear showing the currently selected format type.
4. Tap the Email format line.
5. Choose the desired format type from the picker wheel (Figure 16).
6. Tap the Apply button.
 - Tap the Cancel button to leave the format type unchanged.
7. Depending on which format type was chosen, one of several warning message will appear. These messages are accompanied by:
 - A Cancel button: Use this to leave the format type unchanged.
 - An OK Button. Tap this to change the format type.



Figure 16

22. Date and Time Format

Time values can be displayed as either:

- 12 hour values with AM/PM. (default)
- 24 hour format.

Date values can be displayed as either:

- DD-MM-YYYY: standard international format.
- MM-DD-YY: commonly used in the USA (default).
- YYYY-MM-DD: also an international date format.

To select a Time format.

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
3. Tap the Date & Time Format line on the App Preferences screen.
 - The Date & Time screen will open.
4. Slide the 24 Hour slide switch to ON to display time values as 24 hour values.

To select a Date format.

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
3. Tap the Date & Time Format line on the App Preferences screen.
 - The Date & Time screen will open.
4. Use the date format picker wheel to select the desired date format.
5. Tap the Apply button.
 - Tap the Cancel button to leave the format type unchanged.

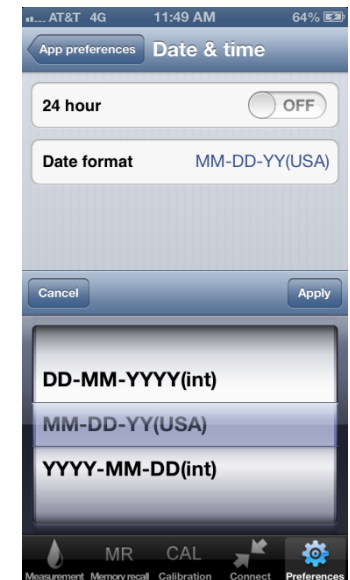


Figure 17

23. The Demo ULTRAPEN.

The iOS App includes a simulated ULTRAPEN that can be used to explore the features and functions of the App without having an actual ULTRAPEN available and awake. To use this simulated ULTRAPEN, select the Demo ULTRAPEN shown in Connect list.

Selecting the Demo ULTRAPEN Type

The Demo ULTRAPEN feature can emulate any one of the following Myron L Company ULTRAPEN instruments.

- PTBT1 – Conductivity ULTRAPEN.
- PTBT2 – pH ULTRAPEN
- PTBT3 – Oxidation Reduction, Potential (ORP) ULTRAPEN
- PTBT4 – Free Chlorine Equivalent (FC^E) ULTRAPEN

To select the type of ULTRAPEN to be emulated:

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
 - The current Demo ULTRAPEN Type will be displayed in the will appear in the Demo ULTRAPEN Mode field.
3. Tap the Demo ULTRAPEN Mode line.
4. Tap the Demo ULTRAPEN Mode field.
5. Select the ULTRAPEN type you wish the Demo ULTRAPEN to emulate.
6. Tap Apply.



Figure 18

Connecting to the Demo ULTRAPEN

To activate the Demo ULTRAPEN feature follow the instructions in PAIRING TO AND UNPAIRING FROM AN ULTRAPEN and chose the line that says "Demo ULTRAPEN".

- Once you connect to the Demo ULTRAPEN, a button labeled Demo Button will appear at the upper right corner of any screen where you would normally use the ULTRAPEN instrument (see Figure 19).
- Tap the Demo Button, in lieu of using the pushbutton on the back of an ULTRAPEN instrument.

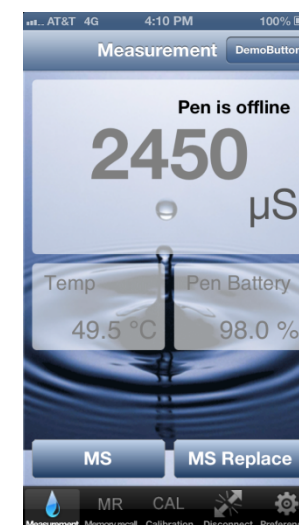


Figure 19

24. Temperature Units

Temperature values can be displayed as either °C or °F:

To select a Temperature units

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen (see Figure 20).
4. Slide the Temperature Units slide switch on the App Preferences screen to show either °C (default) or °F.

25. Help Link

The main Preference / Settings screen include a link that will take you to the Myron L Company website where you can download / view the most recent version of the full PTBTx Operator's manual.

1. Tap Preferences Button on the Feature Navigation Bar.
2. Tap the Application Preferences line on the Settings screen.
3. Tap the Help' line on the App Preferences screen.

26. About

The main Preference / Settings screen include a link that will take you to the Myron L Company website where you can download / view the most recent version of the full PTBTx Operator's manual.

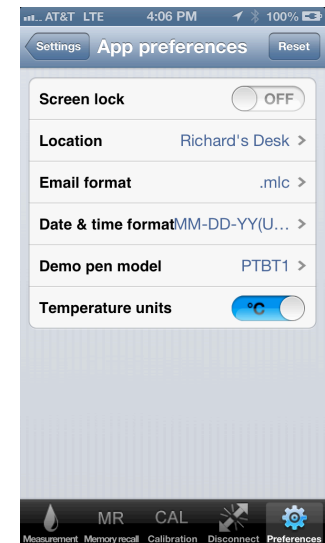


Figure 20

DATA RECORDS

27. Creating and Displaying Data Records

Create record (memory store)

To create a data record of a measurement:

1. Take the measurement as you normally would.
2. Whenever a measurement value is displayed on the screen, tap the MS (Memory Store) button.
 - In Hold mode this is when the measurement is completed and the ULTRAPEN has turned Off.
 - In Live mode you may press the MS button at any time a valid reading is being displayed.
3. The App will display a screen showing all of the data for this measurement including (see Figure 21):
 - ULTRAPEN Model and Measurement mode(s) (if applicable to that model ULTRAPEN).
 - ULTRAPEN Name.
 - The Measurement value and units of measure.
 - Temperature value and units of measure.
 - Location ("No Location" will appear here if none has been set).
 - A Notes field for entering remarks or other additional information about the measurement.
4. Add remarks or additional information to the Notes field (see Adding a Note to a Data Record).
5. To save this data tap the Save button in the upper right corner of the screen.
6. The App will return to the Measurement screen. The measurement will still be displayed.

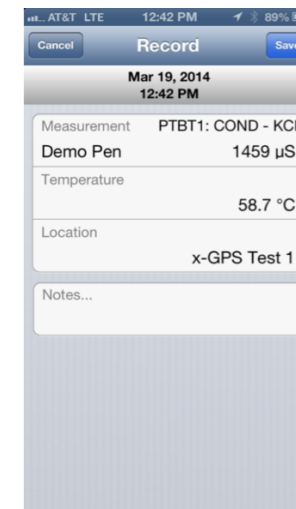


Figure 21

View Record List

You can view a list of stored records.

1. Tap the MR (Memory Recall) button on the Feature Navigation Bar.
2. The App will switch to the All Records screen (see Figure 22) which shows a synopsis of each record including:
 - The Data Record number.
 - The Date and Time the measurement was taken.
 - ULTRAPEN Model.
 - The Measurement value and units of measure.

NOTE: Swipe up / down on list to move it.

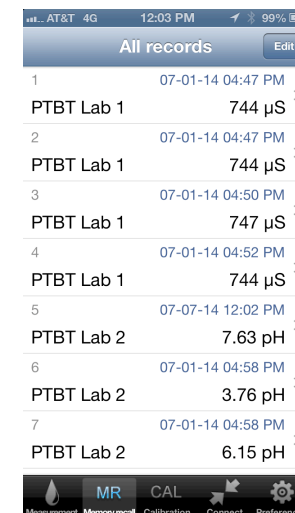


Figure 22

View the Contents of a Record

1. Tap the MR (Memory Recall) button on the Feature Navigation Bar.
2. Scroll up and down the record list to find the desired record.
3. Tap the line of the desired record.
4. The Single Record Display screen will appear. It includes the following fields and control (see Figure 23).
 - All Records button in upper left side of the record title bar. Tap this button to return to the record list.
 - Title Bar showing the Record Number.
 - Date Time Bar. This includes:
 - The date and time the measurement stored in the record was taken.
 - A BLACK, leftward pointing triangle at the left edge of the Date Time Bar.
 - Tap this button to move the previous record in the list.
 - It is Grayed out if you are viewing record #1.
 - A BLACK, rightward pointing triangle at the right edge of the Date Time Bar.
 - Tap this button to move the next record in the list.
 - It is grayed out if you are viewing record the last record on the list.
 - Measurement Field, including:
 - Pen Type and Measurement Modes settings (If applicable for the ULTRAPEN type) in the upper right side of the Measurement field.
 - Measured value in the right side of the Measurement field in the lower right of the field.
 - Pen Name in the lower left of the field.
 - Temperature Value field.
 - Correct units of measure next to Temperature value.
 - Location field.
 - NOTE: field: Enter remarks or other additional information about the measurement here.
 - A BLUE Clear button in the bottom left of the record display.
 - Clears the data fields of the record but the empty record continues to be listed in the record list.
 - A RED Delete button on the bottom right of the display.
 - Completely deletes the record from the list.

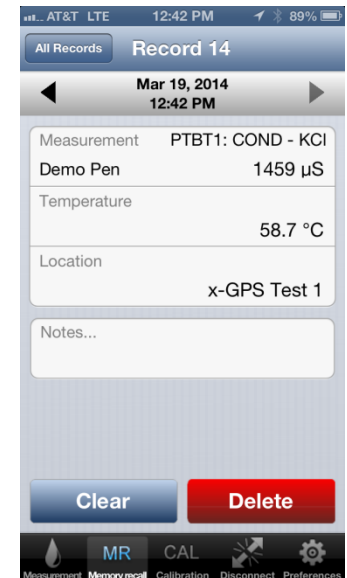


Figure 23

28. Adding a Note to a Data Record

You can add notes, remarks, or any kind of additional data to a record. This can be done:

- During the original save process, or:
- After the record is saved and stored in memory.

Adding a Note During the Save Process

1. Take the measurement as you normally would.
2. When the measurement is completed, tap the MS (Memory Store) button.
3. The App will display a screen showing all of the data for this measurement (see Figure 21).
4. Tap the Notes Field.
 - A cursor will appear in the Notes field and a keypad will appear.
5. Type the note.
6. Tap the Done button in the to close keypad and end the text entry.
7. Tap the Save button in the upper right corner of the screen.
6. The App will return to the Measurement screen. The measurement will still be displayed.

Adding a Note to an Existing Record

1. Tap the MR (Memory Recall) button on the Feature Navigation Bar.
2. Tap the record on the list to which you wish to add the note.
3. Tap the Note field.
 - A cursor will appear in the Notes field and a keypad will appear (see Figure 24).
4. Type the note.
5. Tap the Save button in the upper right corner of the screen.
 - The keypad will disappear leaving the record including the note.
6. Tap the All Records Button to return to the main record list or any button in the Feature Navigation Bar.

NOTE: Existing notes can be edited using this same procedure.

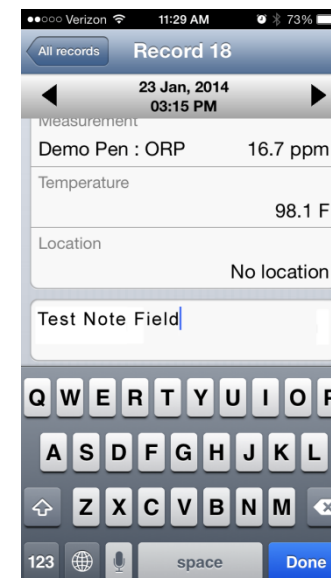


Figure 24

29. Replacing the Data in a Record

You can replace the data in a specific Record Location with data from a new reading.

- **WARNING!** This operation will completely erase the original data in that record location:
 1. Take a measurement as you normally would.
 2. Tap the MS Replace button.
 - The Record List will appear.
 3. Tap the record on the list to which you wish to replace data.
 4. A Warning dialogue box will appear stating that:
 - *This operation will overwrite the data of the selected record. This Action is irreversible! Are you sure you want to continue?*
 - The dialogue box will include:
 - A CANCEL button.
 - A REPLACE button.
 5. Tap the REPLACE button to continue with the replace operation.
 - Tap Cancel to leave the record contents unchanged.
 6. The data from the new measurement will appear in the data record fields.
 - In Figure 22 the original data in Record 5 has been replaced with data from later measurement.

30. Editing the Record List.

The Edit Record list feature allows you to:

- Clear a record.
 - The contents of the chosen record(s) will be completely erased, but the empty record will continue to be listed in the All Records
- Deleting a Record:
 - The chosen record(s) will be completely removed from the list.
 - If all records are deleted, the record number counter is reset to Record 1.
- Export Record (s):
 - The chosen record(s) can be exported via the mobile devices email.

To activate the record list edit features:

1. Tap the MR button on the Feature Navigation Bar.
2. When the Record list appears, tap the Edit button in the upper right corner:
 - A Send button will appear in the upper left corner of the list screen.
 - A Done button will appear in the upper right corner of the list screen.
 - The following additional buttons will appear at the bottom of the list display (see Figure 25):
 - Select All: Selects all of the records appearing on the list.
 - If the list has been filtered to only show those records stored on a specific date (Sorting the Data Records) appear in the list, the Select All button only selects those records.
 - Delete: Deletes any selected records. Deleted records are completely removed from the list.
 - Sort / Filter button: Opens a screen for setting up sorting of the records or filtering the list so only certain records appear.
 - Clear: Erases the data from the record without deleting it.

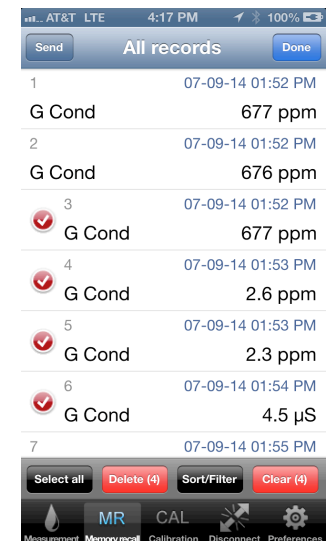


Figure 25

31. Clearing / Deleting Data Records

Once a record has been saved it can be cleared while viewing its contents.

Clearing a Multiple Records

1. While viewing a single record, tap the Clear button at the bottom left of the record display.
2. A Dialogue box will open (see Figure 26) stating:
 - Do you want to clear the record? This will completely erase recorded data. This action is irreversible. Are you sure you want to continue?
 - The dialogue box will include.
 - A Clear button will appear.
 - A Cancel button will appear.
3. Tap the Clear button to proceed with clearing the record.
 - Tap the Cancel button.
4. All the fields in the records will be cleared and replaced by dashes.

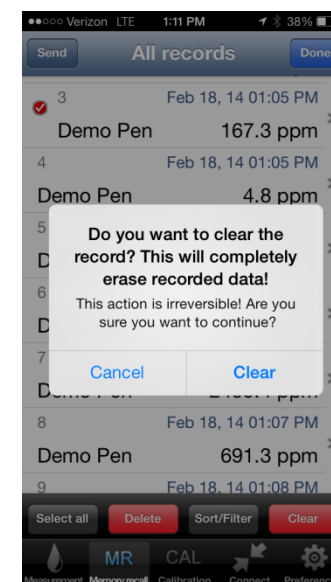


Figure 26

Clearing a Multiple Records

From the All Record List

1. Tap the Edit button.
2. Select the records to be cleared.
 - They do not have to be sequential records.
 - A RED check mark circle will appear next to each record.
 - The label on the RED Clear button will update will update to show the number of records that have been selected(see Figure 25).
3. Tap the Clear button at the bottom of the screen.
4. The Clear Record warning dialogue box will appear.
3. Tap the Clear button to proceed with clearing the record.
 - Tap the Cancel button.
4. All the fields in the selected records will be cleared and replaced by dashes.
5. Tap the Done button to close the Edit List screen.

Deleting a Single Record

1. While viewing a single record tap the Delete button at the bottom left of the record display.
2. A Dialogue box will open (see Figure 27) stating:
 - *Do you want to delete the record? This action is irreversible. Are you sure you want to continue?*
 - The dialogue box will include.
 - A DELETE button.
 - A CANCEL button.
3. Tap the Delete button to proceed with deleting the record.
 - Tap the Cancel button to leave the record unchanged.
4. The record will be deleted from the list.
5. The Display will show the previous or next record on the list (depending on your location on the record list).
6. Tap the DONE button to return to the record list.
 - The record list will no longer show a record for that record number.

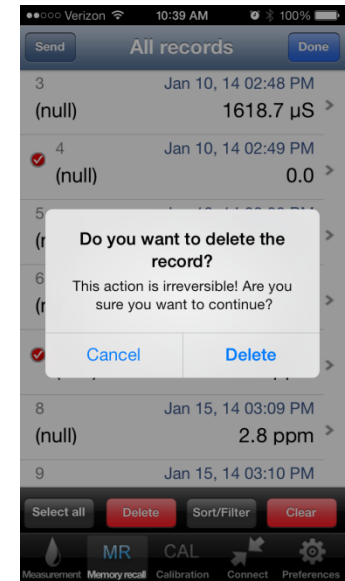


Figure 27

Deleting a Multiple Records

From the All Record List

1. Tap the Edit button.
2. Select the records to be deleted.
 - They do not have to be sequential records.
 - A RED, check mark circle will appear next to each record.
 - The label on the RED Delete button will update will update to show the number of records that have been selected(see Figure 25).
3. Tap the Delete button at the bottom of the screen.
4. The Delete Record warning dialogue box will appear.
3. Tap the Delete button to proceed with deleting the record.
 - Tap the Cancel button, to leave the record unchanged.
4. All of the selected records will be deleted.
5. Tap the Done button to close the Edit List screen.
 - The record list will no longer show a records for those record numbers.

32. Sorting the Data Records List

The records on the All Record list can be sorted.

- Sorting can be by several levels of nested keys.
- All Sorting is in Ascending order.
- Sorting and filtering can be done according to the following criteria:
 - Measurement Type
 - Date
 - ULTRAPEN Name
 - Location

Adding Sort Keys

From the All Record List display.

1. Tap the Edit button.
2. Tap the Sort/Filter button. The Arrange screen will appear.
3. Tap the + button
4. Select the desired sort criteria from the picker wheel that appears.
5. Tap the Apply Button.
 - To add an additional sort key, tap the + and repeat the previous steps.
6. Once you have set the sort keys you desire, tap the Done button in the upper left corner of the screen. The Arrange screen will reappear.
9. Tap the All Records button in the upper left corner to return to the All Record List.
 - The records will be sorted in ascending order using the keys you have select.

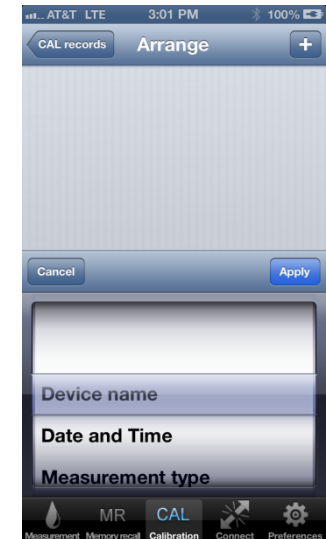


Figure 28

Arranging Sort Keys

If you have selected multiple sort keys the records they will act as a nested sort where the key appearing at the top of the Arrange screen list is the primary sort key, the 2nd key from the top is the secondary sort key and so on. To change the order of the sort keys without deleting and reading them:

1. On the Arrange screen, tap the Edit button at the bottom of the screen.
2. Tap the sort key you wish to move to the top of the list.
3. Repeat this until the keys are in the desired order.

Removing Sort Keys

From the Arrange Screen

1. Tap the large Edit button at the bottom of the screen.
2. A RED circle containing a - symbol at the left edge of each criteria field.
 - The Edit button will change to say Reset.
3. Tap the RED circle next to any key.
 - The RED Circle will rotate 90°.
 - A RED Delete button will appear in the key field (see Figure 29).
4. Tap the Delete button.
 - That key will disappear.

NOTE: Tapping the Reset button will remove the entire list of sort keys.

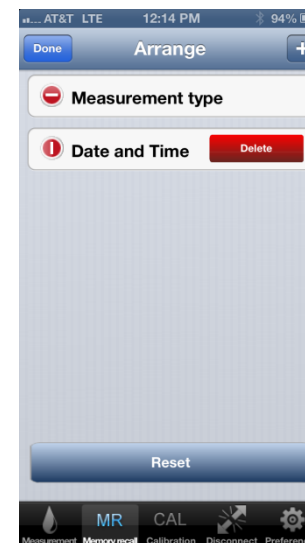


Figure 29

33. Filtering the Data Records List

Filtering Records

The filter feature allows you to modify the All Records list so that it ONLY shows certain records. Similar to sorting, filtering records.

- Can be by several nested levels of the following Categories.
 - Measurement Type
 - Date
 - ULTRAPEN Name
 - Location
- Records that are excluded by the Filter Keys are not gone and will appear when the Filter keys are removed.
- When Exporting, Deleting or when Clearing records, the Select All button only affect those records that are currently being displayed via filtering.
 - Records that are hidden by the current filter keys will not be cleared or deleted.

Adding Filtering Criteria

From the arrange screen:

1. Tap the + button.
2. Select a filter category and when the picker wheel appears.
3. Tap the Apply Button. The main Arrange screen will reappear with the selected filter category listed.
4. Tap the category field. A selection screen will appear
 - This screen includes all of the available filter criteria for that category.
 - It is context sensitive and will only show those criteria that are present in the currently stored data records.
 - EXAMPLE, if there have been no records made of TDS measurements, TDS will not appear as an available option under the Measurement Type category (see Figure 30).
 - You can only pick one criteria under each category.
5. Tap the desired criteria.
 - A checkmark will appear next to it.
5. Tap the Arrange button in the upper left to return to the main arrange screen.
 - To add a criteria, from another category, tap the + button and repeat the previous steps.

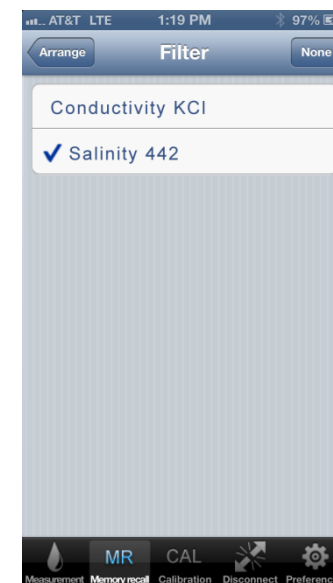


Figure 30

Once you have set the sort keys you desire, tap the MR button on the Feature Navigation Bar to return to the All Record List.

- The records will be sorted in ascending order using the keys you have select.
- Only those readings that include the criteria chosen will appear on the list.
- The records will also be sorted according o the categories chosen.

Removing Filter Keys

From the Arrange Screen

1. Tap the large Edit button at the bottom of the screen.
2. A RED circle containing a - symbol at the left edge of each criteria field.
 - The Edit button will change to say Reset.
3. Tap the RED circle next to the any key.
 - The RED circle will rotate 90°.
 - A RED Delete button will appear in the key field.
4. Tap the Delete button.
 - That key will disappear.

NOTES:

- Tapping the Reset button will remove the entire list of sort / filter keys.
- Also, there is a None button inside criteria selection screens that will remove the chosen criteria without having to delete the category so that it can still function as a sort key.

34. Exporting Data Records

You can export one or more data records from the record list by emailing them from the ULTRAPEN App.

- The records will be exported in whatever the currently chosen format is: .mlc, .xls, .xlsx or .csv (see Email Format)

To export records:

1. Tap the MR button on the Feature Navigation Bar.
2. When the Record list appears, tap the Edit button in the upper right corner:
 - You can use the Filter Records option to limit the list to only certain records, such as the records made on a certain day or at a certain place (see Sorting the Data Records).
3. Tap the records to be Exported. They do not need to be sequential.
 - A Red circle and checkmark will appear next to each one.
 - Use the Select All button to select all of the records currently showing on the list.
4. Tap the Send button in the upper left corner of the screen.
5. A standard email screen for your device will appear.
 - The selected records will be automatically added to the email as an attachment.
 - You can add cover letter and email addresses as normal for sending an email on your device type.
6. Once the email has been sent, the App will return to the Edit Record List screen.

NOTES:

- Measurement and temperature values are truncated and rounded to a resolution that matches the accuracy spec of the PTBT1.
- Exported values will be in their original, non-truncated, non-rounded state.

ULTRAPEN CALIBRATION

35. General Calibration Information

The Myron L Company recommends calibrating twice a month. However, you should check the calibration whenever measurements are not as expected.

- **NOTE:** Small bubbles trapped in the sensor may give a false calibration.
- **NOTE:** If at any point during calibration, you do not submerge the sensor in solution before the flashing slows, allow the ULTRAPEN to power off and start over.

Calibration Errors

If calibration was not successful (e.g. the measured value is too far from the expected calibration value or the Bluetooth connection with the instrument is lost):

- The Message screen changes to read, "Error: Check sensor - Check Solution".
- The CAL Mode, Reference Solution and the Last CAL values will all be dashed out.

Calibration Types

- **Wet Calibration:** A calibration performed using Standard Reference Solutions that results in the ULTRAPEN storing a calibration constants based on the measurements made that will be applied to future measurements.
 - This is an automatic calibration and does not require manual adjustment.
 - **Single Point Calibration:** Some types of ULTRAPEN instruments such as the PTBT1 Conductivity ULTRAPEN, only require calibration at a single point to establish an offset.
 - **Multiple Point Calibration:** Some types of ULTRAPEN instruments such as the PTBT2 pH ULTRAPEN, require calibration at several points in order to establish offset as well as a gain factor.
- **FAC CAL.** Resets the ULTRAPEN's internal calibration constants to the original factory settings and erases all previously stored Wet Calibration data.
 - If you do not have the proper calibration solution use the FAC CAL function.
 - Once reset to FAC CAL settings, the measurements will not reflect the current state of the sensor and measurement cell.
- **Cal Records:** A record is automatically made for each Wet Calibration (see Calibration Records).

Main Calibration Display

During and immediately after any calibration is performed the App's screen will display the following (see Figure 31).

- CAL button: Starts a wet calibration.
- FAC CAL button: Starts a FAC CAL reset.
- Cal Value Field: This field displays prompts, messages during calibration as well as the before and after calibration values.
 - **CAL Mode** data field displays: The Measurement Mode setting(s) for the ULTRAPEN.
 - **Reference Solution** field displays: The reference solution used for the calibration.
 - **Last Cal** field displays: The Date and Time the calibration was last of this type for this ULTRAPEN was performed.
- A Done Button: Used to end the calibration and turn off the ULTRAPEN.
- A Show All button: Tap this button to display a list of Calibration Records

During a Multipoint Calibration there will also be:

- A Continue button: Used to signal the ULTRAPEN that you are ready to proceed to the next cal point.

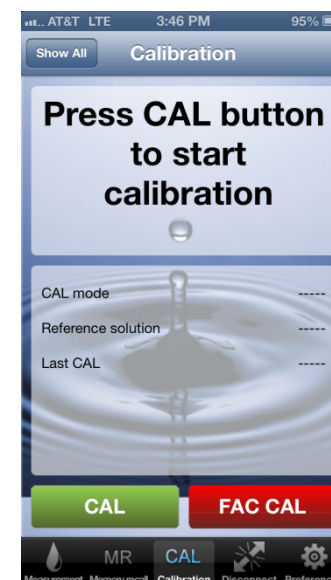


Figure 31

36. Calibration Preparation:

- Ensure the sensor is clean and free of debris.
- For maximum accuracy, fill 2 clean containers with each pH buffer or reference solution you will be using. Arrange them in such a way that you can clearly remember which is the rinse solution and which is the calibration buffer. Always rinse the pH sensor between buffer solutions.
 - **NOTE:** If you don't have enough buffer / reference solution, you can use 1 container of each buffer / solution for calibration and 1 container of clean water for all rinsing.

Calibration Reference Buffers and Solutions

ULTRAPEN Model	Mode	Parameter	Reference Solution Model	Displays As
PTBT1	Cond KCl	Conductivity	1800 μ S KCl	1800 μ S
	TDS 442	Total Dissolved Solids (TDS)	442-3000 ppm™ Myron L Company Natural Water Standard	3000 ppm
	TDS NaCl	Total Dissolved Solids (TDS)		2027 ppm
	Salinity 442	Salinity		3.000 ppt
	Salinity NaCl	Salinity		2.027 ppt
PTBT2	Multipoint pH Calibration ¹	pH	4.0, 7.0 and 10.0 pH	4.00 pH, 7.00 pH and/or 10.00 pH
PTBT2	Single Point pH Calibration ¹	pH	4.0, 7.0 and 10.0 pH	4.00 pH or 10.00 pH

¹ pH Calibration mode is automatically selected based on the buffer used for the initial calibration point.

37. Wet Calibration - Single Point Calibration PTBT1

1. Prepare the rinse and reference solutions as described in Section 36.
2. Rinse the sensor swirling it in fresh pH buffer of the same type as you will use during the calibration.
2. Tap the CAL Button in the Feature Navigation Bar.
 - The Initial Calibration screen will appear.
 - If the paired instrument is offline the screen will display the message. "Paired ULTRAPEN is Offline."
3. Press and release the button on the ULTRAPEN.
 - The LED on the ULTRAPEN will begin to blink rapidly.
4. When the ULTRAPEN comes on line the message will change to, "Press and Hold the button on the ULTRAPEN to Enter CAL mode."
5. **IMMEDIATELY** Press and hold the button on the ULTRAPEN while the LED is still blinking.
6. The ULTRAPEN will enter Configuration mode.
 - The LED on the ULTRAPEN will stop blinking and stay on.
 - The Initial Calibration Screen will appear with the message (see Figure 31), "Press the CAL button to start calibration".
7. Tap the GREEN CAL button.
8. The ULTRAPEN LED will start blinking rapidly.
9. **IMMEDIATELY** dip the ULTRAPEN in reference solution so that the cell is completely submerged.
10. When the LED on the ULTRAPEN begins to flash slowly, swirl the ULTRAPEN in the references solution.
 - The message on the app Calibration screen will display, "Calibrating [Solution type] ...".
 - For the PTBT1 the Solution Type is set in ULTRAPEN Settings (see PTBT1 Solution Mode Selection).
 - Keep the cell submerged and at least 1 inch (2½ cm) away from sides/bottom of the container.
11. When the LED on the ULTRAPEN stops flashing and stays **ON** the calibration is completed.
 - On the APP (see Figure 32):
 - Cal Value Field will display the message, "**CAL Saved**" along with :
 - The Calibration Value: The value to which the instrument was adjusted.
 - Value Before CAL: The value that measured BEFORE the CAL adjustment.
 - CAL Mode, Reference Solution and Last Cal fields are all updated.
12. Tap the Done button to end the Calibration.
 - A record of the calibration is automatically created.

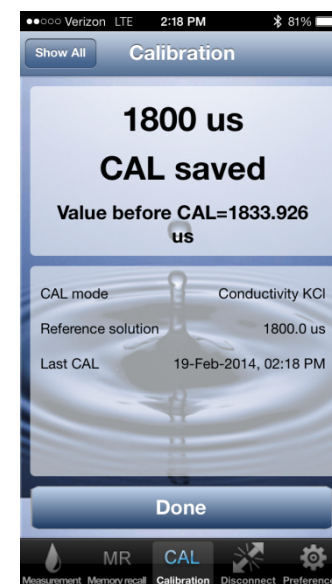


Figure 32

38. Wet Calibration - Single Point Calibration PTBT2

1. Prepare the rinse and reference solutions as described in Section 36. For Single Point pH Calibration use either 4.0pH or 10.0 pH reference buffer.
2. Rinse the sensor swirling it in fresh pH buffer of the same type as you will use during the calibration.
3. Tap the CAL Button in the Feature Navigation Bar.
 - The Initial Calibration screen will appear.
 - If the paired instrument is offline the screen will display the message. *"Paired ULTRAPEN is Offline."*
4. Press and release the button on end of the ULTRAPEN.
 - The LED on the ULTRAPEN will begin to blink rapidly.
5. When the ULTRAPEN comes on line the message will change to, *"Press and Hold the button on the ULTRAPEN to Enter CAL mode."*
6. **IMMEDIATELY** Press and hold the button on the ULTRAPEN while the LED is still blinking.
7. The ULTRAPEN will enter Configuration mode.
 - The LED on the ULTRAPEN will Stop blinking and stay on.
 - The Initial Calibration Screen will appear with the message (see Figure 31), *"Press the CAL button to start calibration"*.
8. Tap the GREEN CAL button.
9. The ULTRAPEN LED will start blinking rapidly.
10. **IMMEDIATELY** dip the ULTRAPEN in reference buffer so that the sensor is completely submerged.
11. When the LED on the ULTRAPEN begins to flash slowly, swirl the ULTRAPEN in the references solution.
 - The message on the app Calibration screen will display, **"Calibrating pH ..."**
 - Keep the sensor submerged and at least 1 inch (2½ cm) away from sides/bottom of the container.
 - After a few seconds the App display will change to read, **"Calibrating XX.0 pH ..."**
12. When the LED on the ULTRAPEN stops flashing and stays **ON** the calibration is completed.
 - On the APP (see Figure 33):
 - Cal Value Field will display the message, **"XX.0 Ph CAL Saved"**.
 - This message is contact sensitive and will change based on which solution, 4.0 pH or 10.0 pH, you are using.
 - Value Before CAL: The value that measured before the CAL adjustment.
 - CAL Mode, Reference Solution and Last Cal fields are all updated.
13. Tap the Done button to end the Calibration.
 - A record of the calibration is automatically created.

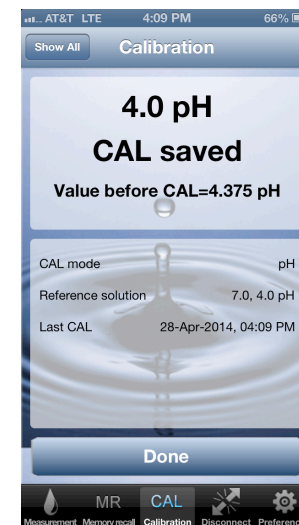


Figure 33

39. Wet Calibration - Multipoint PTBT2.

This calibration mode allows the user to calibrate at 1, 2 or 3 points, always starting with the center point (7.0 pH).

- The following instructions use the PTBT2 pH ULTRAPEN.
- Other ULTRAPEN's that include multipoint calibration will behave identically except for minor differences in some messages.

INITIAL POINT

1. Prepare the rinse and reference solutions as described in Section 36. For multipoint pH calibration the initial calibration point requires 7.0 pH reference solution.
2. Rinse the sensor by swirling it the 7.0 pH solution rinse solution.
1. Tap the CAL Button in the Feature Navigation Bar.
 - The Initial Calibration screen will appear.
 - If the paired instrument is offline the screen will display the message. *"Paired ULTRAPEN is Offline."*
2. Press and release the button on the ULTRAPEN.
 - The LED on the ULTRAPEN will begin to blink rapidly.
3. When the ULTRAPEN comes on line the message will change to, *"Press and Hold the button on the ULTRAPEN to Enter CAL mode."*
4. **IMMEDIATELY** Press and hold the button on the ULTRAPEN while the LED is still blinking.
5. The ULTRAPEN will enter Configuration mode
 - The LED on the ULTRAPEN will stop blinking and stay on.
 - The Initial Calibration Screen will appear with the message (see Figure 31), *"Press the CAL button to start calibration"*.
6. Tap the GREEN CAL button.
7. The ULTRAPEN LED will start blinking rapidly.
8. **IMMEDIATELY** dip the ULTRAPEN in 7.0 calibration buffer so that the sensor is completely submerged.
10. When the LED on the ULTRAPEN begins to flash slowly, swirl the ULTRAPEN in the references buffer.
 - The message on the app Calibration screen will display, PTBT2: **"Calibrating pH..."**
 - Keep the cell submerged and at least 1 inch (2½ cm) away from sides/bottom of the container.
 - After a few seconds the App display will change to read, **"Calibrating 7.0 pH..."**
11. When the LED on the ULTRAPEN stops flashing and stays **ON** the calibration of this point is complete.
 - On the APP:
 - Cal Value Field will display the message, **"7.0 pH CAL Saved"** (See Figure 34) along with:
 - The Calibration Value: The value to which the instrument was adjusted.
 - Value Before CAL: The value that measured BEFORE the CAL adjustment.
 - CAL Mode, Reference Solution and Last Cal fields are all updated.

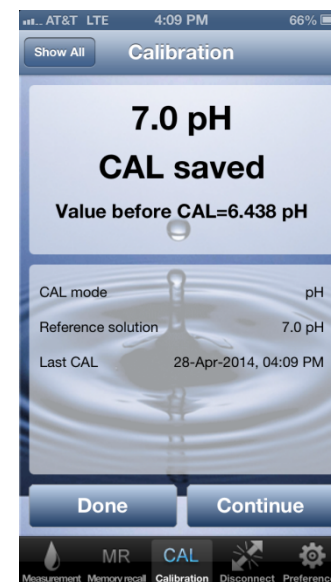


Figure 34

12. Proceed to calibration of the next point.

- **NOTE:** Tapping the Done button at this time will stop the calibration after the initial point (offset point) is completed.
 - A cal record will be created.
 - The ULTRAPEN will turn off and the App screen will show, "Paired ULTRAPEN is Offline" message.

ADDITIONAL POINTS

The additional calibration points determine the gain adjustment. The PTBT2 requires either 4.0 pH (-Gain) or 10.0 pH (+Gain) reference solution.

- These can be done in either order.
 - The ULTRAPEN will automatically detect which point is being calibrated based on its initial measurement of the solution.
1. Rinse the ULTRAPEN sensor in fresh 4.0 pH or 10.0 pH reference buffer (not the same container to be used when performing the calibration).
 2. Tap the Continue button to proceed to the next Calibration point.
 3. The ULTRAPEN LED will start blinking rapidly.
 4. **IMMEDIATELY** dip the ULTRAPEN in calibration buffer so that the sensor is completely submerged.
 5. When the LED on the ULTRAPEN begins to flash slowly, swirl the ULTRAPEN in the reference buffer.
 - The message on the app Calibration screen will display, PTBT2: "**Calibrating pH...**"
 - Keep the cell submerged and at least 1 inch (2½ cm) away from sides/bottom of the container.
 - After a few seconds the App display will change to read "**Calibrating XX.0 pH...**",
 - This message is context sensitive and will change based on which solution, 4.0 pH or 10.0 pH, you are using.
 6. When the LED on the ULTRAPEN stops flashing and stays **ON** the calibration of this point is complete.
 - On the APP:
 - Cal Value Field will display the message, "**XX.0 Ph CAL Saved**".
 - This message is contact sensitive and will change based on which solution, 4.0 pH or 10.0 pH, you are using.
 - Also displayed will be:
 - The Calibration Value: The value to which the instrument was adjusted.
 - Value Before CAL: The value that measured BEFORE the CAL adjustment.
 - CAL Mode, Reference Solution and Last Cal fields are all updated.
 7. If you are continuing with the final calibration point, repeat steps 1 through 6.
 - **NOTE:** Tapping the Done button at this time will stop the calibration after the second point is completed.
 - A calibration record will be created automatically.
 - The ULTRAPEN will turn off and the App screen will show, "*Paired ULTRAPEN is Offline.*"

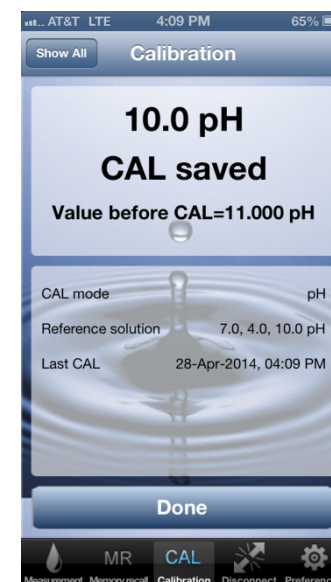


Figure 35

8. Once the last calibration point is completed, tap the Done button (see Figure 35) to return to the initial Calibration screen.

40. Factory CAL

CAUTION: **FAC CAL** resets the ULTRAPEN's internal calibration constants erases all previously stored Wet Calibration data. Future measurements will not reflect the current state of the sensor and measurement cell.

To initiate a FAC CAL reset.

1. Tap the CAL Button in the Feature Navigation Bar.
 - The Initial Calibration screen will appear.
 - If the paired instrument is offline the screen will display the message. *"Paired ULTRAPEN is Offline."*
2. Press and release the button on the ULTRAPEN.
 - The LED on the ULTRAPEN will begin to blink rapidly.
3. When the ULTRAPEN comes on line the message will change to, *"Press and Hold the button on the ULTRAPEN to Enter CAL mode."*
4. **IMMEDIATELY** Press and hold the button on the ULTRAPEN while the LED is still blinking.
5. The ULTRAPEN will enter Configuration mode.
 - The LED on the ULTRAPEN will stop blinking and stay on.
 - The Initial Calibration Screen will appear with the message (see Figure 31), "Press the CAL button to start calibration".
7. Tap the RED FAC CAL button.
 - A dialogue box will appear with the following message:
 - *"FAC CAL is not a substitute for calibration with reference solutions and does not account for the current condition of the sensor. YOU CAN NOT UNDO this action."*
 - There will be a CANCEL button.
 - There will be an OK button.
8. Tap the OK button.
 - Tap the Cancel button to abort the FAC CAL reset.
9. The App display will update to show (see Figure 36):
 - "FAC CAL Reset" will appear in the Message portion of the calibration screen.
 - The CAL Mode data field will say "- - - -"
 - The Reference Solution data field will say "FAC CAL".
 - The Last Cal Data Field will show the current Date and Time.
 - A Done button will appear at the bottom of the page replacing the GREEN CAL button and the RED FAC CAL buttons.
10. Tap the Done button to return to the initial Calibration screen.



Figure 36

41. Calibration Records

A Record of each calibration performed is automatically stored in the mobile devices memory.

Accessing Calibration Records.

To access calibration records:

1. Tap the CAL button in the Feature Navigation Bar.
2. Tap the Show All button in the upper right of the initial Calibration screen.
3. A record list will appear similar to the data record list (see DATA RECORDS).
4. Swipe up / down on list to review records off screen.
 - CAL Records button in upper left side of the Record Title Bar. Tap this button when you want to return to the CAL record list.
5. Tap any record in the list. The App will display the Calibration Record, including:
 - Title Bar showing the Record Number.
 - Date Time Ba containing:
 - The Date and Time the measurement stored in the record was taken.
 - A BLACK, leftward pointing triangle at the left edge of the Date Time Bar.
 - Tap this button to move the previous record in the list.
 - It is Grayed out if you are viewing record #1.
 - A BLACK, rightward pointing triangle at the right edge of the Date Time Bar.
 - Tap this button to move the next record in the list.
 - It is Grayed out if you are viewing record the last record on the list.
 - Pen Field :
 - Pen Type and Measurement Modes settings (If applicable for the ULTRAPEN type) in the upper right side of the Measurement field.
 - Pen Name in the lower left of the field.
 - CAL Value field: Shows the adjusted calibration values after the calibration is complete.
 - Or Multipoint Calibrations all completed Cal Points will be listed.
 - Value Before CAL: shows the value measured by the ULTRAPEN BEFORE the calibration adjustment was made. Correct units of measure next to Temperature value.
 - Or Multipoint Calibrations all completed Cal Points will be listed.
 - Solution Mode field: Shows the type of measurement that was made during the calibration:
 - For the PTBT1 this will show the Measurement / Solution mode setting.
 - For the PTBT2 this will Shoe pH.
- A RED Delete button on the bottom right of the display.
 - Completely deletes the record from the list.

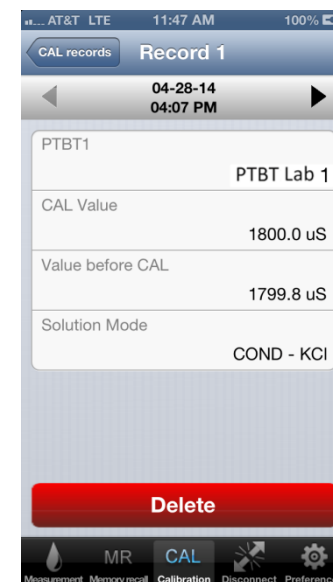


Figure 37

Clearing Calibration Records

- Calibrations may not be cleared.

Deleting a Single CAL Record

1. While viewing a single CAL record tap the Delete button at the bottom of the record display.
2. A Dialogue box will open stating *"Do you want to delete the record? This action is irreversible. Are you sure you want to continue?"*
 - The dialogue box will include.
 - A DELETE button will appear.
 - A CANCEL button will appear.
3. Tap the Delete button to proceed with deleting the record.
 - Tap the Cancel button to leave the record unchanged.
4. The record will be deleted from the list.
5. The Display will show the previous or next record on the list (depending on your location on the record list).
6. Tap the CAL Records button to return to the record list.
 - The record list will no longer show a CAL record for that record number.

Deleting a Multiple CAL Records

From the CAL Record List

1. Tap the Edit button.
2. Select the records to be deleted.
 - They do not have to be sequential records.
 - A RED, check mark circle will appear next to each record.
 - The label on the RED Delete button will update will update to show the number of to show the number of records that have been selected (see Figure 25).
3. Tap the Delete button at the bottom of the screen.
4. The Delete Record warning dialogue box will appear.
3. Tap the Delete button to proceed with deleting the record.
 - Tap the Cancel button.
4. All of the selected records will be deleted.
5. Tap the Done button to close the Edit List screen.
 - The list will no longer show records for those Record Numbers.

Maintenance and Cleaning

42. Battery Replacement

The PTBTx App display has an indicator that depicts the ULTRAPEN battery's charge level.

- When the charge level falls below 25%, the indicator will flash RED. Replace the battery with an N type battery.

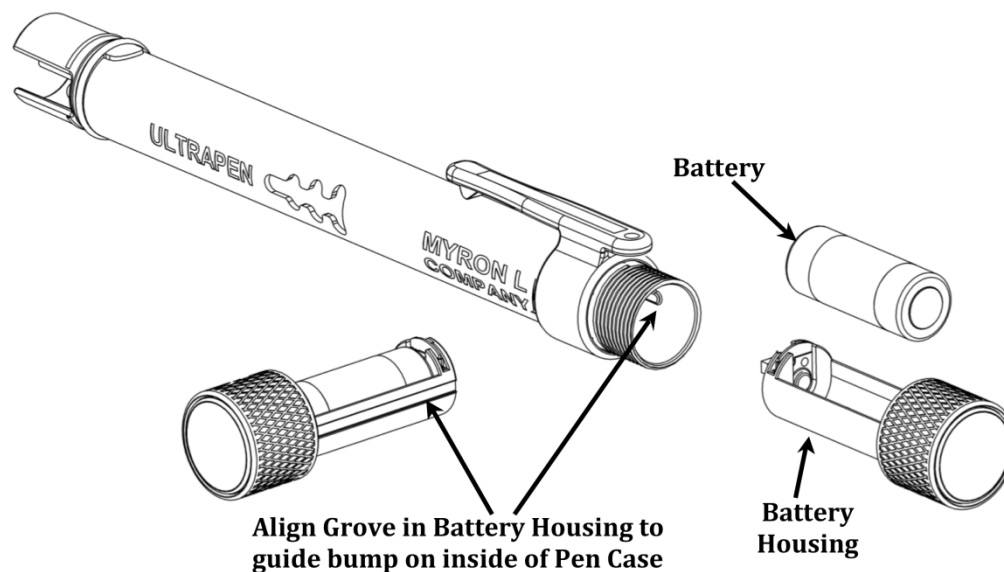


Figure 38

1. In a CLEAN DRY place unscrew the ULTRAPEN cap in a counter-clockwise motion (see Figure 38).
2. Slide the cap and battery housing out of the ULTRAPEN.
3. Remove the depleted battery from its housing.
4. Insert a new battery into the battery housing oriented with the negative end touching the spring.
5. Align the groove along the battery housing with the guide bump inside the ULTRAPEN case and slide the battery housing back in.
6. Screw the ULTRAPEN cap back on in a clockwise direction. Do not over tighten.

43. Routine Maintenance PTBT1

- Always rinse the cell and electrodes with clean water after each use.
- If the electrodes develop scaling or become dirty, clean the cell by submerging the probe end in a 1:1 solution of Lime-A-Way® and water for 5 minutes. Then rinse thoroughly with clean water.
- Do not drop, throw or otherwise strike the ULTRAPEN. **This voids the warranty.**
- Do not store the ULTRAPEN in a location where the ambient temperatures exceed its specified Operating/Storage Temperature limits.

44. Routine Maintenance PTBT2

- ALWAYS rinse the pH sensor with clean water after each use.
- ALWAYS replace the soaker cap half filled with pH Sensor Storage Solution to prevent the sensor from drying out after each use.
- If the sensor becomes dirty, clean the sensor surface with an isopropyl soaked cotton swab. Then rinse thoroughly with clean water.
- Do not drop, throw or otherwise strike the ULTRAPEN. **This voids the warranty.**
- Do not store the ULTRAPEN in a location where the ambient temperatures exceed its specified Operating/Storage Temperature limits.

45. pH Sensor Replacement

(Follow the instructions that come with your Replacement Sensor.) **CAUTION:** Only Remove/Replace the pH sensor in a CLEAN and DRY environment!

To remove the pH sensor:

1. Remove the soaker cap; make sure the PT2 (including the pH sensor) is clean and dry. Loosen the battery tray (to allow pressure equalization).
2. Then firmly grasp the pH sensor body and slowly pull the pH sensor out.

To install a new pH sensor:

1. Line up the alignment tabs on the pH sensor with the alignment slots on the PT2 unit.
2. Gently push the pH sensor into position, then screw the ULTRAPEN cap back on in a

46. Accessories

- The ULTRAPEN™ PTBT1 uses the following solutions for wet calibration.
 - Order Model#s: KCL-1800, 442-3000 (2027 ppm NaCl).
- The ULTRAPEN™ PT2 requires pH 4, pH 7, and pH 10 buffer solutions for wet calibration and pH Sensor Storage Solution for proper storage.
 - Order Model#s: PH4, PH7, PH10, and PHSS
- Replacement pH Sensor (with instructions).
 - Order Model#s: RPT2

LICENSES AGREEMENTS

47. End User License Agreement

IMPORTANT - READ CAREFULLY

- This Myron L[®] Company End-User License Agreement (EULA) is a legal agreement between you (either an Individual person or a company, who will be referred to in this EULA as "User") and the Myron L[®] Company for the Myron L[®] Company product that accompanies this EULA, or that is subsequently provided to the User pursuant to further order, including any associated media, printed materials and electronic documentation (collectively, the "ULTRAPEN PTBTx Mobile Application"). By installing, copying, downloading, accessing or otherwise using the ULTRAPEN PTBTx Mobile Application, User agrees to be bound by the terms of this EULA. If User does not accept and agree to the terms and conditions of this EULA, Myron L[®] Company is unwilling to allow the use of the ULTRAPEN PTBTx Mobile Application contained herein to User. In that case do not install, access or use the ULTRAPEN PTBTx Mobile Application; instead delete the ULTRAPEN PTBTx Mobile Application from your device in whatever form(s) it exists.

Meaning of words used in this EULA

- Myron L[®] Company: refers to "The Myron L[®] Company"
- User: the individual person or company that is Deemed to be the end-user of the ULTRAPEN PTBTx Mobile Application under the terms of this EULA.
- ULTRAPEN PTBTx Mobile Application: means the Myron L[®] Company Software Application that accompanies this EULA, including any associated media, printed materials and electronic documentation. This also includes any updates, version upgrades, configuration upgrades, add-on components, web services and/or supplements that Myron L[®] Company may provide to User or make available to User after the date the User obtains the initial copy of the ULTRAPEN PTBTx Mobile Application, to the extent that such items are not accompanied by a separate EULA or terms of use.

Ownership and grant of usage:

- The ULTRAPEN PTBTx Mobile Application is not sold, but comes bundled with the Myron L[®] Company ULTRAPEN PTBTx Instrument. The ULTRAPEN PTBTx Mobile Application is the sole property of Myron L[®] Company and is protected by all applicable intellectual property and contract laws, including but not limited to laws relating to patent, copyright and trademark laws, and by applicable international treaties and trade provisions. Any breach of Myron L[®] Company's rights as the sole owner of the ULTRAPEN PTBTx Mobile Application and all intellectual property rights contained therein and in the ULTRAPEN PTBTx Mobile Application may subject the offender to civil and criminal penalties, including fine and/or imprisonment.
- This EULA grants User the right to: install and use The ULTRAPEN PTBTx Mobile Application on any computer the individual or company will be using with the ULTRAPEN PTBTx instrument. In no event, however, shall User be permitted to redistribute the

ULTRAPEN PTBTx Mobile Application, whether for commercial gain or for no gain. Any use in violation of the license shall constitute not only breach of this EULA, but a violation of national and international copyright laws.

Prohibitions:

- User may not distribute the ULTRAPEN PTBTx Mobile Application. User may Not modify, translate, or make derivative works of the ULTRAPEN PTBTx Mobile Application..

WARRANTIES AND WARRANTY DISCLAIMERS; LIMITATION OF LIABILITY:

- The PTBTx Mobile Application is provided entirely "as is". Myron L[®] Company expressly disclaims any and all warranties, express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, and any implied or express warranties of title.
- To the maximum extent permitted under law, under no circumstances will Myron L[®] Company be liable to user for any damages whatsoever, including but not limited to any loss of profits, interruption to business, loss of information or any other incidental or consequential damages arising out of the supply to or user's use of or inability to use the PTBTx Mobile Application, whether Myron L[®] Company has been informed of the possibility of the same or not, and whether styled as a claim in contract, tort or other legal theory.
- User acknowledges that no promise, representation, warranty or undertaking has been made by Myron L[®] Company to any person or company on user's behalf as to the profitability or any other consequences or benefits to be obtained from delivery to user of the PTBTx Mobile Application.
- To the extent applicable law does not permit a complete limitation of damages as set forth herein, user agrees that its damages shall be limited to one dollar (USA). Nothing herein shall be construed as attempting to enforce rights against user beyond those permitted by applicable law.

48. Data Use Liability Agreement

IMPORTANT - READ CAREFULLY

- This Myron L[®] Company Data Use Liability Agreement ("DULA") is a legal agreement between the User and the Myron L[®] Company for the Myron L[®] Company product that accompanies this DULA, or that is subsequently provided to the User pursuant to further order, including any associated media, printed materials and electronic documentation (collectively, the "ULTRAPEN PTBTx Mobile Application").
- By installing, copying, downloading, accessing or otherwise using the ULTRAPEN PTBTx Mobile Application, the User agrees to be bound by the terms of this DULA. If the User does not accept and agree to the terms and conditions of this DULA, Myron L[®] Company is unwilling to allow the use of the ULTRAPEN PTBTx Mobile Application contained herein to the User. In that case do not install, access or use the ULTRAPEN PTBTx Mobile Application; instead delete the ULTRAPEN PTBTx Mobile Application from your computer or network in whatever form(s) it exists.

MEANING OF WORDS USED IN THIS DULA

- Instrument: Any Myron L[®] Company product from which data is transferred and received by the ULTRAPEN PTBTx Mobile Application.
- Myron L[®] Company: refers to "The Myron L[®] Company".
- ELUA - End users License Agreement.
- ULTRAPEN PTBTx Mobile Application: means the Myron L[®] Company Software Application that accompanies this DULA, including any associated media, printed materials and electronic documentation. This also includes any updates, version upgrades, configuration upgrades, add-on components, web services and/or supplements that Myron L[®] Company may provide to User or make available to User after the date the User obtains the initial copy of the ULTRAPEN PTBTx Mobile Application, to the extent that such items are not accompanied by a separate DULA or terms of use.
- User: The individual person or company that is Deemed to be the end-user of the ULTRAPEN PTBTx Mobile Application under the terms of this DULA.

DATA USE PROVISIONS:

- In addition to ALL of the provisions stated in the EULA by agreeing to this DULA, the user acknowledges that the data transferred from the ULTRAPEN PTBTx Mobile Application is for record-keeping purposes only and is not intended for use in making critical or key decisions the outcome of which might result in a loss of profits; interruption to business; loss of information; damage to or loss of use of equipment or property; creation of a health hazard, injury, or death of a person or persons or; any other incidental or consequential damages.
- Users of Myron L[®] Company medical device Instruments specifically acknowledge that data transferred to any computer from the ULTRAPEN PTBTx Mobile Application is not intended for use in making treatment or diagnostic decisions.

- Users of the ULTRAPEN PTBTx product further acknowledge that export of data from the ULTRAPEN PTBTx Mobile Application in an editable format on any computer shall mean that the saved data may be altered or adulterated and can not be considered secure or inviolate.

MYRON L[®] COMPANY
2450 Impala Drive
Carlsbad, CA 92010-7226
USA

Tel: +1-760-438-2021
Fax: +1-760-931-9189

E-Mail: info@myronl.com
techquestions@myronl.com

www.myronl.com
Made In USA