

PROBEWELL CONNECT

USER GUIDE FOR XT SERIES



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Contact Information

If you have any questions about this Agreement, please contact us.

Last updated: 2020-06-15

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Limited Warranty

Your XT series site tester comes with a two-year hardware warranty. Probewell Lab Inc. (Probewell) warrants XT series site tester against defects in material and workmanship for a period of two (2) years from the date of purchase from Probewell. This warranty applies only to the original purchaser of the XT series site tester and is not transferable.

For additional information regarding your tester warranty, please refer to the related XT series site tester user's guide.

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Features and specifications are subject to change without notice.

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List of Abbreviations

Abbreviation	Complete Term	Abbreviation	Complete Term
A	Ampere	PPI	Pore per inch
Amp	Ampere	Rev	Revolution, number of revolutions
AC	Alternating Current	RMS	Root mean square
AP	Access Point	TA	Test Ampere
ATK	Accuracy Testing Kit	THD	Total Harmonic Distortion
CFM	Cubic feet per minute	V	Volt
CL	Class	VA	Volt-Ampere
CSV	Comma Separated Value	VAC	Volt Alternating Current
CT	Current Transformer	VARh	VARhour (Volt Ampere Reactive Hour)
DSP	Digital Signal Processor	Vdc	Voltage direct current
HL	High Load (Full Load)	VT	Voltage Transformer
Kh	Watthour constant. The number of watthours represented by one revolution of the disk. Also, called disk constant.	W	Watt(s)
Kt	Test constant. For electronic (no disk) meter, the amount of energy represented by each calibrated pulse of the LED.	Wh	Watt hour
kW	Kilowatt	Wi-Fi	Wireless Fidelity
Lb	Pound	WLAN	Wireless Local Area Network
LL	Light Load	WWW	World Wide Web
NIST	National Institute of Standard and Technology	μWh	Micro-Watt hour
PF	Power Factor	μVARh	Micro-VARhour
PQ:	Power Quality		

Introduction

Probewell Connect is the official companion application for ST-3/XT3 wireless transformer rated site testers. It allows the user to perform various types of CT/PT instrument-rated installation tests, review test report data and change the XT series testers' operation parameters. The application is available free of charge for iOS, Android and Windows.

The following document outlines the scope of the application, its capabilities and how it enables complete control over the XT series testers.

Getting the app

The Probewell Connect application is available on all major platforms as stated above and is continually updated to ensure the best user experience. To download the application, follow the instructions for your mobile device operating system:



On your iOS device, launch the App Store and search for the Probewell Connect application.

The application supports all devices running iOS 11 and above.



On your Android device, launch the Google Play Store and search for the Probewell Connect application.

The application supports all devices running Android 7.0 and above.



The application supports all PCs running Windows 10. Older versions of Windows are not actively tested by Probewell Lab.

Please note that the installer requires administrator privileges.

Install from the provided USB key

The Probewell Connect application installer is included on the USB key provided with the order of a XT series tester. Browse to the USB drive with Windows Explorer. Launch the installer and follow the on-screen instructions.

Install from the website

The latest version of Probewell Connect for Windows is downloadable from the Probewell website at the following link:

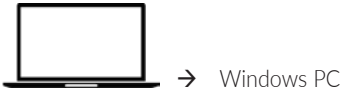
<https://probewell.com/pw-connect/>

To download the application installer (.exe file), click on "**Download on Windows**". Once the download is complete, launch the installer and follow the on-screen instructions.



Features

Operating system

The Probewell Connect application has a different feature set depending on the mobile device operating system (OS). Throughout this document, the following icons help identify which features are available for a specific operating system:



A quick rundown of the available features per operating system is given below.

	 iOS/Android	 Windows
GPS coordinates	Yes	No
Barcode scanner	Yes	No
Export CSV / PDF	No	Yes
Offline mode	No	Yes
Accuracy Validation	No	Yes


Online/Offline mode

Some features are also only accessible when the Probewell Connect application is in online mode (connected to a XT series tester). The icons for indicating these are:



System Mode

The Probewell Connect application offers a different set of features depending on the selected system mode (configurable in the Settings tab of the app). The icons for indicating these are:

-  → Feature available for all system modes
-  → Feature available for Standard and Expert system modes
-  → Feature available for Expert system mode

Operation

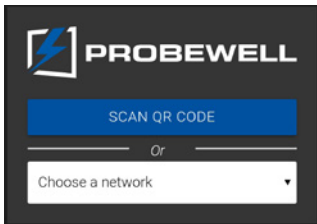


Connecting to the XT series tester

In order to use the XT series tester, the user must first connect their mobile device to the unit.

iOS and Android

The connection process is done from within the Probewell Connect application itself. Follow these steps to connect to the XT series tester:



1. Connect the XT tester to a Transformer rated meter base.
2. Power up the XT tester by setting the Power switch to the ON position.
3. Launch the Probewell Connect application on your mobile device.
4. Press on the “SCAN QR CODE” button.
If prompted, allow the app to use the device camera.
5. Point the camera at the QR code located on the front of the XT tester unit.
6. Once connected, the unit emits a beeping sound.

If the XT series has already been connected to the mobile device, it may also be selected from the “Choose a network” instead.

Windows

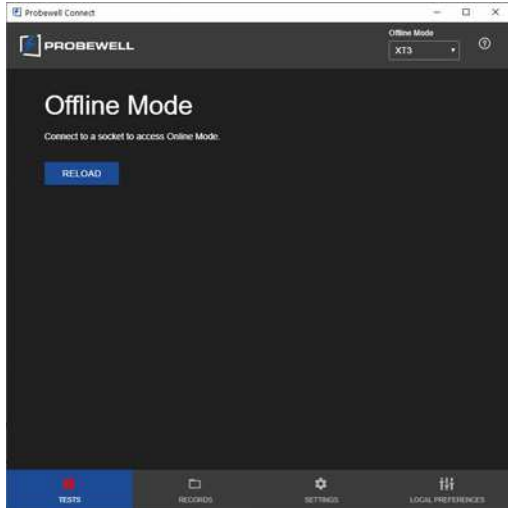
To connect to the XT series tester with a Windows PC, follow these steps:

1. Connect the XT tester to a Transformer rated meter base.
2. Power up the XT tester by setting the Power switch to the ON position.
3. In the Windows Taskbar (bottom of the screen), click on the networking icon.
4. Scroll down to the end of the list, select **Hidden Network**.
5. Enter the XT series unit network SSID. The SSID is printed on a sticker on the front of the device and has the following nomenclature:
PW-XT3-{serial Number}-AP.
6. Once connected, the unit emits a beeping sound.
7. You can now start the Probewell Connect for Windows application.

If the XT series has already been connected to the PC, it may also be selected directly from the known networks list.



Windows offline mode



When the Windows application is started without a valid connection to a XT series site tester, the application starts in Offline mode. In offline mode, the user can perform some management operations (such as editing, importing and exporting settings profiles) and cannot run any tests.




Main View

The Main View of the application is always available to the user. It gives access to basic system information and handles basic navigation within the application.

Header

The Header is located at the top of the window. It shows the Probewell company logo and quick access buttons for basic control. The quick access buttons are located on the right-hand side of the Header.



 Information button

Clicking on this button displays all system information, including:

1. Socket information:

- Site ID
- Tester model
- Meter base form
- Meter base wiring

2. System information:

- Storage usage
- Lifetime test groups
- Lifetime tests

3. I/O:

- Accessories information

4. App:

- Build number
- Software version
- Firmware version

Additional information includes:

- Probewell website
- Support contact (e-mail and phone number)

The *Disconnect* button (at the bottom) disconnects the mobile device from the unit and brings the user back to the device connection view.

Footer

The Footer is located at the bottom of the window. It allows basic navigation within the application.



Mobile Footer



Tests

The Test view lists all available test modes. Some test modes are only available when certain accessories are connected and under certain system operation modes. A summary of available test modes and their minimal conditions is available in the Tests section of this document.

Records

The Records view lists all test reports.

Settings

The Settings view shows all available tests and device settings.



Windows Footer



Tests

When the test icon is red, tests are not available because the app is in offline mode.

If the icon is green, the PC is connected to a XT series tester and tests are available.

Records

The Records view lists all test reports.

Settings

The Settings view shows all available tests and device settings. Settings profiles can be loaded from an external file and programmed onto the XT tester.

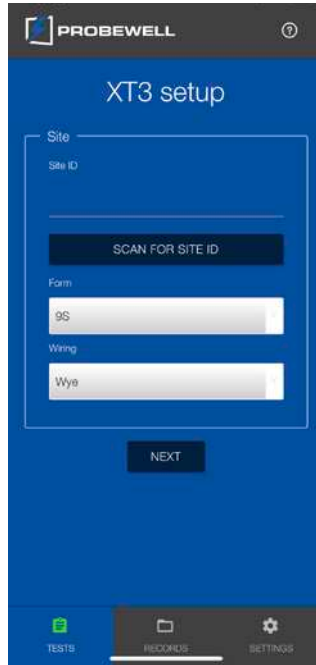
Local Preferences (Windows only)

To set the local directory for CSV reports and company information for PDF reports.



Site Setup

The Site Setup view lets the user set basic parameters for the installation to be tested. These parameters are used by the XT series tester to properly calculate test results.



Site Setup parameters are:

Site ID: unique identifier for the service to be tested.

Form: meter base form of the installation.

For single phase installations, the compatible meter base forms are: 3S and 4S.

For polyphase installations, the compatible meter base forms are: 6S, 8S, 9S and also 5S, 35S and 45S when using the adapter included.

Wiring: wiring scheme of the installation

For single phase installations, the available wiring scheme is: Single Phase.

For polyphase installations, the available wiring scheme is: Wye and Delta.



Barcode Scanner

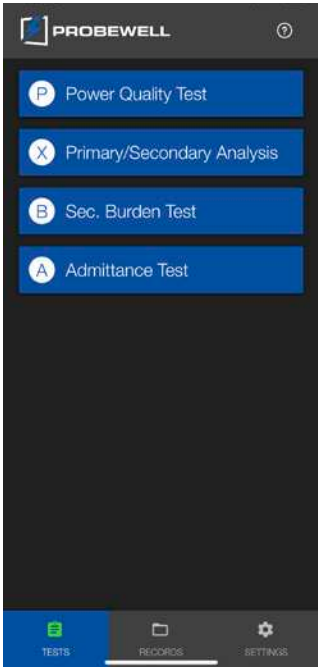
On a mobile device (iOS and Android), the site ID may be automatically imported by scanning a custom, user created barcode located on or near the meter base.

Once parameters are correctly entered, press NEXT to complete the site setup.



Tests

The Tests View shows a list of all available test modes for the site. A short and full description of all test modes follows.



Note

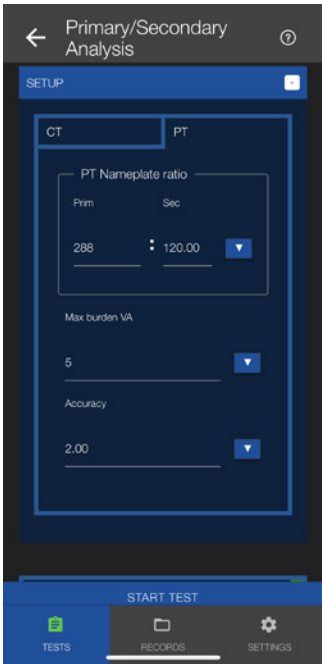
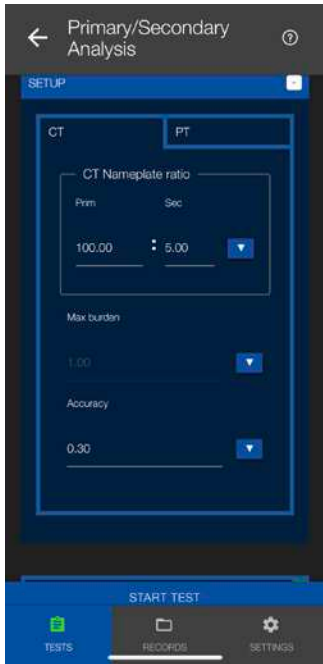
The test modes available in the Tests View is dependent on both the type of accessories currently connected to the XT series tester and the System Operating Mode (which can be changed in the Settings tab).

Summary of test modes and availability

Test mode	Accessories	System Mode
Power Quality	Any or None	Basic, Standard or Expert
Primary/Secondary Analysis	At least one accessory connected	Basic, Standard or Expert
Secondary Burden	Any or None	Basic, Standard or Expert
Admittance	Any or None	Basic, Standard or Expert
Accuracy Validation*	Any or None	Expert only

*Windows only

CT and PT Setup



Before starting a test
The CT and PT must be setup prior to starting any of the following test:

- Power Quality Test
- Primary/Secondary Analysis
- Sec. Burden Test



Power Quality

Prerequisites

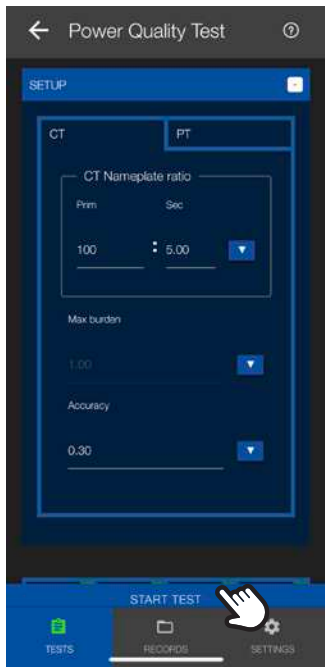
There are no prerequisites for running the Power Quality test.

Description

The Power Quality test is the most useful type of test to fully assess the quality of the service installation on the secondary side, at the meter base.

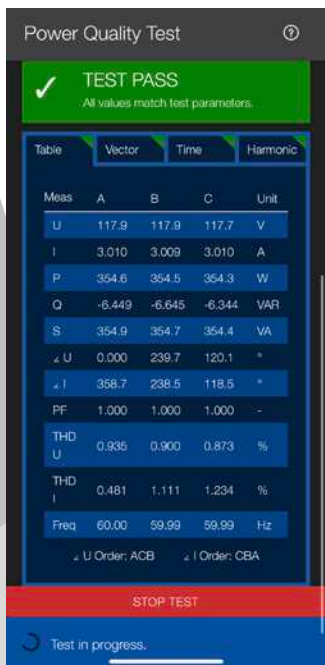
In this test mode, the XT series tester acquires real time measurements for secondary voltage and current on all connected phases. The test runs continuously until the user opts to Stop it and save the test data into the non-volatile memory of the device

Operation



Step 1: Start Test

Press the **Start Test** button to begin real-time acquisition.



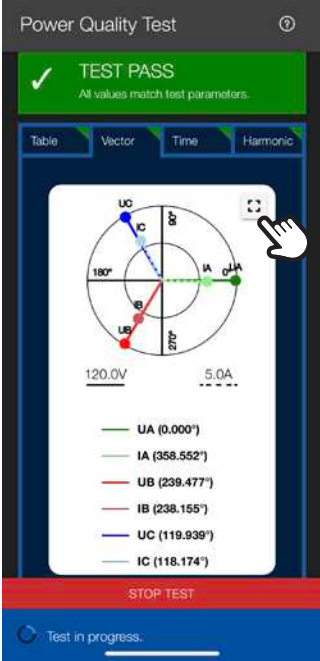
Step 2: Observe

During the test execution, the user interface and measurement displays are updated to match the latest readings from the device. The Power Quality user interface is divided in four tabs.

Table

The measurements table gives a raw display of the device readings for each line:

- U: RMS voltage
- I: RMS current
- P: Resistive power (watt/hour)
- Q: Reactive power (VAR)
- S: Total power (VA)
- ∠U: Phase angle between line voltage A and this line voltage
- ∠I: Voltage-Current angle for this line
- PF: Power Factor
- THDU: Voltage line total harmonic distortion
- THDI: Current line total harmonic distortion
- Freq: line frequency
- Phase order : .. should ABC or CBA (phase order of the lines, counter clockwise)



Vector

The Vector tab shows a complete phasor diagram of the installation. The plot automatically scales itself with the real time measurements. A color-coded legend for the diagram is also displayed.

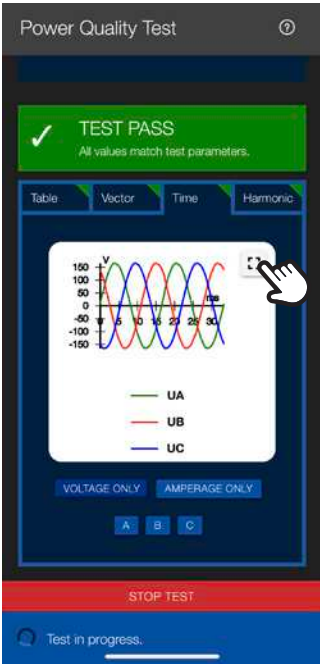
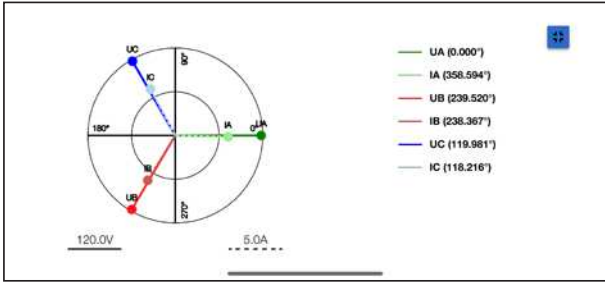
Voltage

The voltage vectors are shown as a full line. The diagram scale for voltage is displayed at the bottom left.

Current

The current vectors are shown as a dotted line. The diagram scale for current is displayed at the bottom right.

Full screen mode:

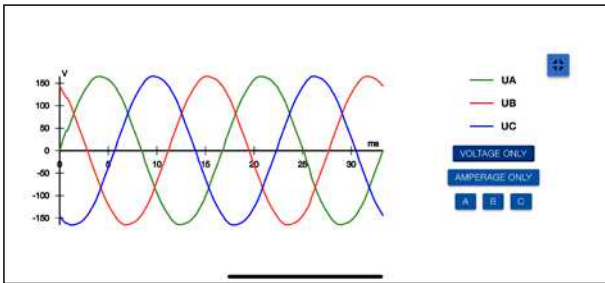


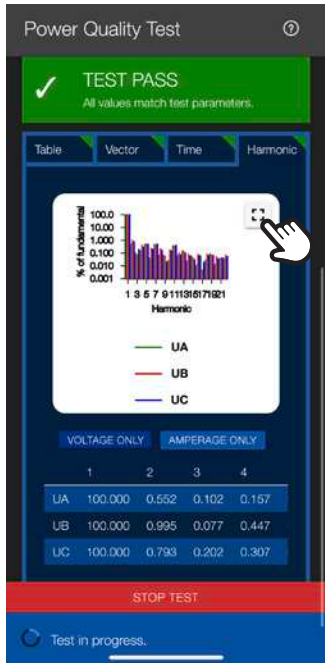
Time

The Time tab shows a data plot of line cycle measurements for voltage and current. The plot automatically scales itself with the real time measurements. A color-coded legend for the line cycle plot is also displayed. The following display options are available:

- Voltage only: displays the voltage line cycles for all lines on the same plot
- Current only: displays the current line cycles for all lines on the same plot
- A: displays voltage and current line cycles for line A on the same plot
- B: displays voltage and current line cycles for line B on the same plot
- C: displays voltage and current line cycles for line C on the same plot

Full screen mode:





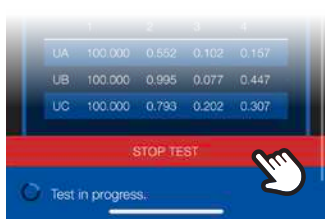
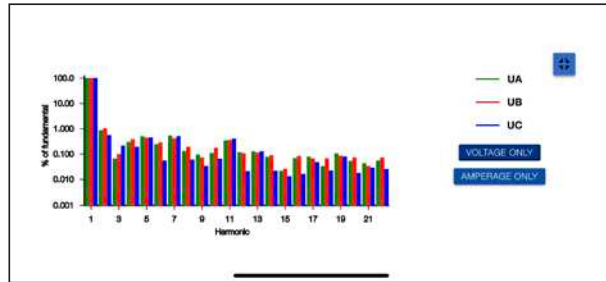
Harmonics

The harmonic tab shows the harmonic composition of all acquired line cycle measurements. The harmonic content is displayed as a percentage of the fundamental harmonic (in this case, the 60Hz component of the signal). The system computes harmonics up to the 22nd order.

The following display options are available:

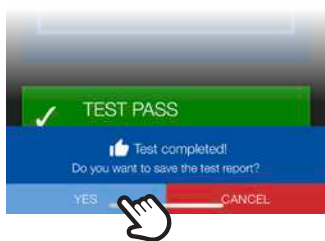
- Voltage only: displays the voltage harmonics for all lines on the same plot
- Current only: displays the current harmonics for all lines on the same plot
- A complete table of the harmonic values is also displayed.

Full screen mode:

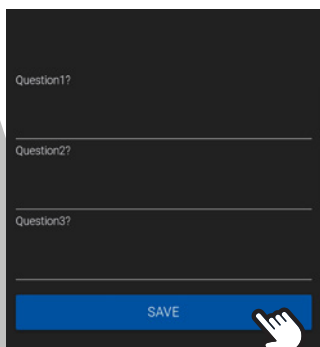


Step 3: Stop Test

To stop the Power Quality test, press on the **Stop** button at the bottom of the screen. The test data is kept into the device until the test is either saved or discarded.



To save the test results, click on the **Yes** button at the bottom of the screen.



Step 4: User Questions

Up to 8 user defined questions can be programmed in the **Settings** tab.

Answer each question and click on the **Save** button to save the test report in the device memory.



Primary/Secondary Analysis

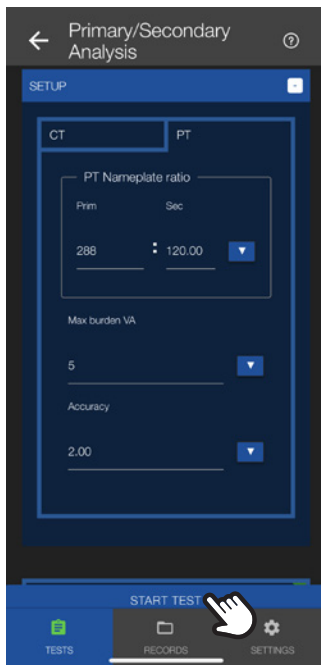
Prerequisites

At least one accessory (CT or PT measurement probe) must be connected to the front panel of the XT series tester.

Description

The Primary Secondary Analysis test performs transformer ratio analysis on the instrument transformers using the customer load. The secondary voltage or current reading is done directly at the meter base while the primary reading is done using the accessories. With both measurements, the real transformer ratio can be calculated and compared to the nameplate ratio. The test runs continuously until the user opts to Stop it and save the test data into the non-volatile memory of the device.

Operation



Step 1: Start Test

Enter CT/PT specifications into the CT/PT Setup interface at the top of the screen. Press the **Start Test** button to begin real time acquisition.



Step 2: Observe

During the test execution, the user interface and measurement displays are updated to match the latest readings from the device. The Primary Secondary Analysis user interface is divided in two measurements tables:

PT Table

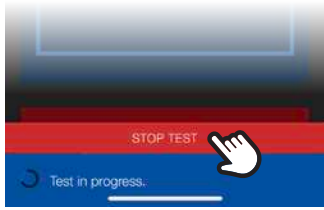
The measurements table gives a raw display of the device readings for each line:

- U_{prim}: RMS primary voltage
- U_{sec}: RMS secondary voltage
- PT Ratio : transformer ratio of the PT calculated from primary and secondary measurements
- PT Ratio error : error percentage on the measurement ratio compared to the nameplate ratio

CT Table

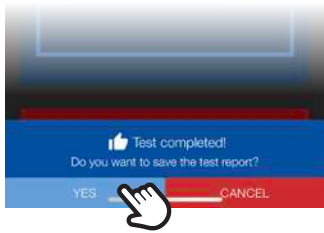
The measurements table gives a raw display of the device readings for each line:

- I_{prim}: RMS primary current
- I_{sec}: RMS secondary current
- CT Ratio: transformer ratio of the CT calculated from primary and secondary measurements
- CT Ratio error: error percentage on the measurement ratio compared to the nameplate ratio.

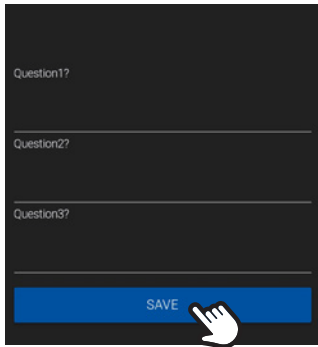


Step 3: Stop Test End

To stop the Primary Secondary Analysis test, press on the **Stop** button at the bottom of the screen. The test data is kept into the device until the test is either saved or discarded.



To save the test results, press the **Yes** button located at the bottom of the screen.



Step 4: User Questions

Up to 8 user defined questions can be programmed in the **Settings** tab.

Answer each question and click on the **Save** button to save the test report in the device memory.

Secondary Burden



Prerequisites

There are no prerequisites for running the Secondary Burden test.

Description

The Secondary Burden test is used to analyze the effect of a resistive burden on the behaviour of the CT. Within the ST-3/XT3 is an array of high accuracy resistors that can be, with the use of electromechanical relays, added to the secondary path of the CT to cause burden.

The available burden values are:

- 0.0 Ω
- 0.1 Ω
- 0.2 Ω
- 0.5 Ω
- 1.0 Ω
- 2.0 Ω
- 4.0 Ω

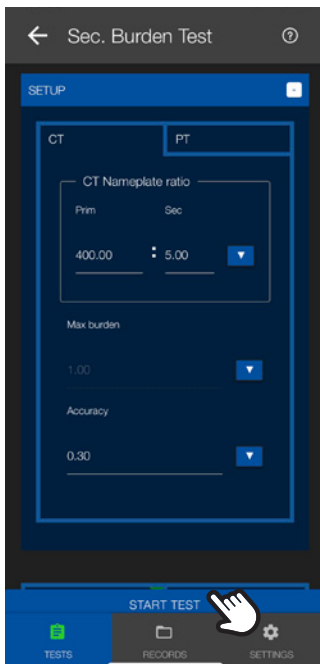
The Secondary Burden test steps through the available burden values and measures the primary (if an accessory is connected) and secondary current values. This process is repeated for each of the service lines (A, B and C).

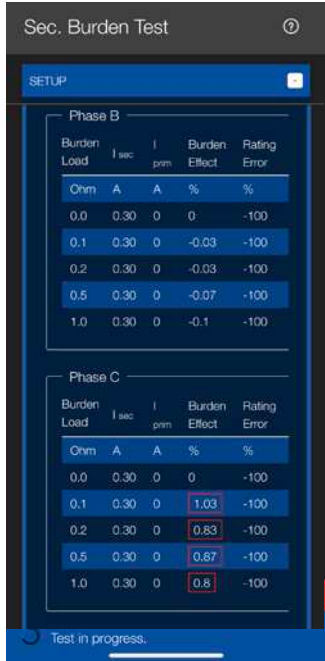
The test automatically stops when it reaches the maximum burden value that can be applied on the CT, as configured in the CT setup interface prior to starting the test. The user may then save the test data into the non-volatile memory of the device.

Operation

Step 1: Start Test

Enter CT specifications into the CT Setup interface at the top of the screen. Press the **Start Test** button to begin test sequence.





Step 2: Test Execution

During the test execution, the user interface and measurement displays are updated to match the latest readings from the device. The Primary Secondary Analysis user interface holds a separate measurement table for each service line.

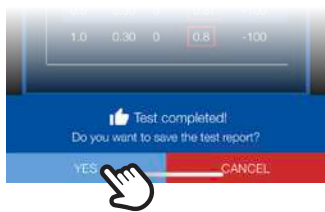
Burden Table

Iprim: RMS primary current
 Isec: RMS secondary current

Burden Effect: percentage difference between secondary current at 0 Ω and secondary current at specific burden value

Available with CT accessory only

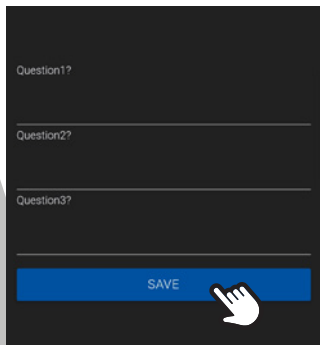
- Rating Error: percentage difference between calculated CT ratio at 0 Ω and CT ratio at specific burden value
- Phase Error: phase difference between the primary and secondary currents at specific burden value, expressed in minutes and seconds of arc.



Step 3: Test End

When the sequence has run for all applicable service lines, the test ends automatically and the results are displayed.

To save the test result, click on the **Yes** button at the bottom of the screen.



Step 4: User Questions

Up to 8 user defined questions can be programmed in the **Settings** tab.

Answer each question and click on the **Save** button to save the test report in the device memory.

Admittance test



Prerequisites

The secondary current on all lines must be below 0.5 A in order to run the admittance test. If the current is over 0.5 A, please consider running the Secondary burden test instead.

Description

The admittance test is used to characterize the ability of the CT (and attached conductors) to allow a current flow. This measurement is called the admittance of the system and it is measured in siemens units (S). The test is done sequentially for each phase and the results may then be saved into the non-volatile memory of the device. For additional information on the working theory behind the admittance test, please refer to the XT3 user guide.

Operation

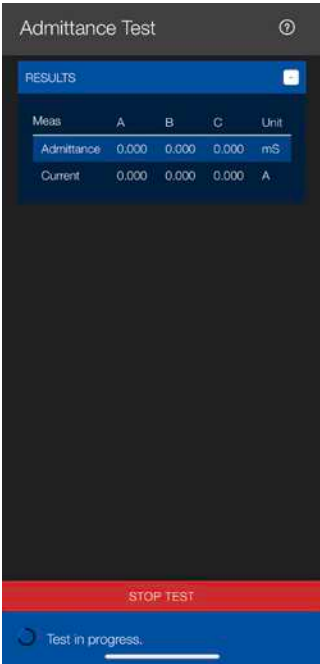
Step 1: Start Test

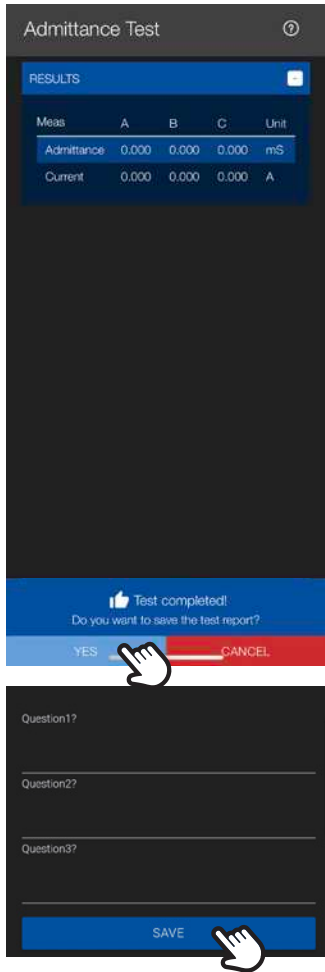
Press the **Start Test** button to begin test sequence.



Step 2: Test Execution

During the test execution, the user interface and measurement displays are updated to match the latest readings from the device. The same measurement procedure is run sequentially on each of the available lines.





Step 3: Test End

When the sequence has run for all applicable service lines, the test ends automatically and the results are displayed.

To save the test results, click on the **Yes button** at the bottom of the screen.

Step 4: User Questions

Up to 8 user defined questions can be programmed in the Settings tab.

Answer each question and click on the **Save button** to save the test report in the device memory.

Interpreting test results

The measured values for the system admittance may range from close to 0.1 milli Siemens up to a few hundred milli Siemens. Very high values may indicate a short circuit (SC) and very low values may indicate an open circuit (OC). The admittance value for an installation may vary in time with normal wear on the system.

Accuracy Validation



Prerequisites

The accuracy validation is only available on the Windows version of Probewell Connect.

Equipment Required:

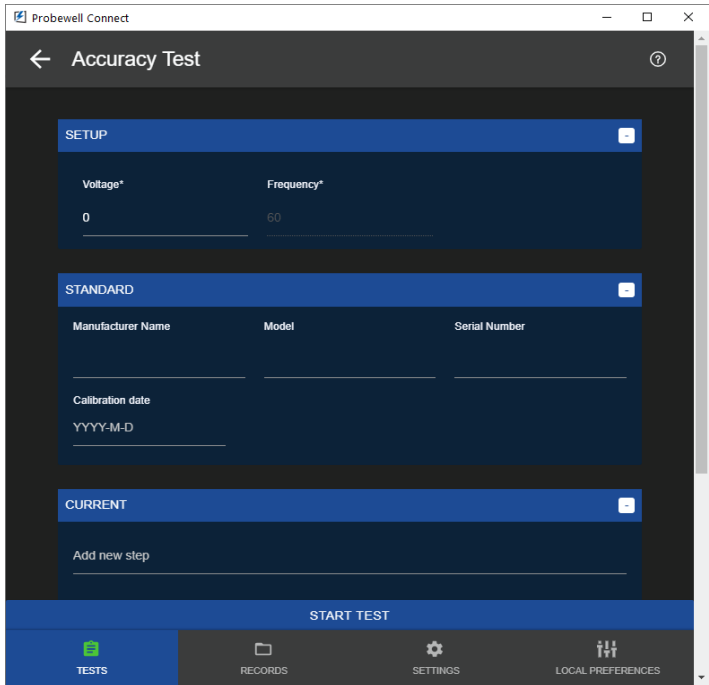
- ST-3/XT3 unit
- NIST traceable polyphase test board or standard that can supply from 120 to 480 V and 0 to 50 A on each line
- Voltage, Amps and phase angles fully programmable for each line
- Computer (with Windows 10)

Description

The ST-3/XT3 provides a built-in test mode that aims at validating the accuracy of the device by comparing it to a high-accuracy, NIST-traceable polyphase test board or standard. This test is meant to be done in a lab environment and at a rate of one or twice per year, depending on the customer's guidelines for equipment validation. At the end of the sequence, a complete accuracy validation report can be saved in PDF and CSV file format on the host computer. The test voltage and current test points are all fully configurable.

For additional information on how to set up the XT3 site tester for accuracy validation, please refer to the XT3 user guide.

Operation



Step 1: Initial configuration

Fill in the following information :

Setup

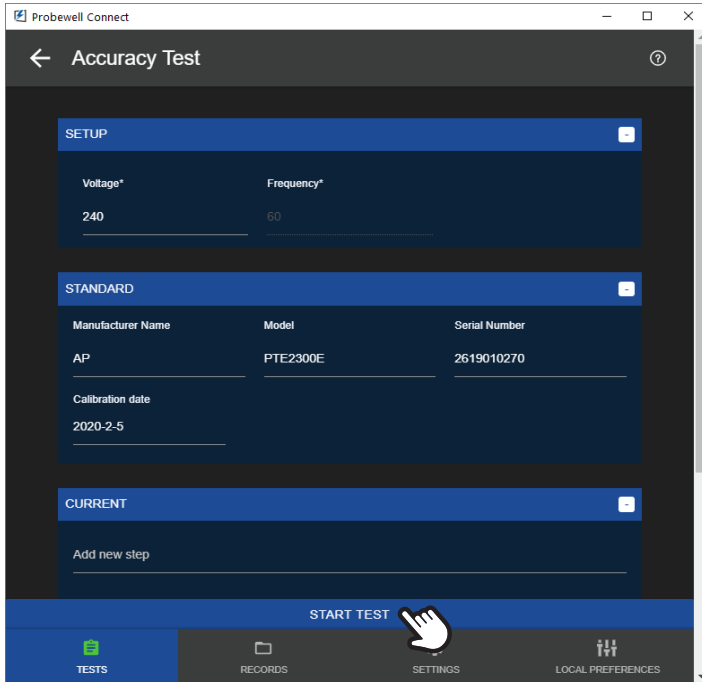
- Voltage : supply voltage (between 120 and 480 VAC)

Standard

- Manufacturer Name: name of manufacturer of the test board
- Model: model name of the test board
- Serial number: unique serial number of the test board
- Calibration date: date at which the latest calibration was done on the test board

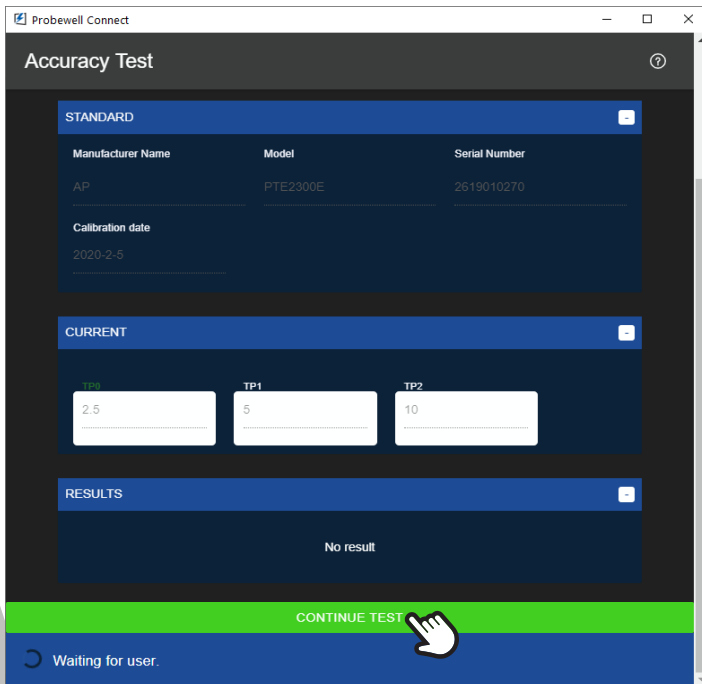
Current

- Enter all current (in amps) values at which the XT3 unit should be tested.



Step 2: Start Test

Press the **Start Test button** to begin the test sequence. When prompted, configure the test board to supply the current value in amps associated with the first test point in the sequence and click Continue.



Step 3: Test Execution

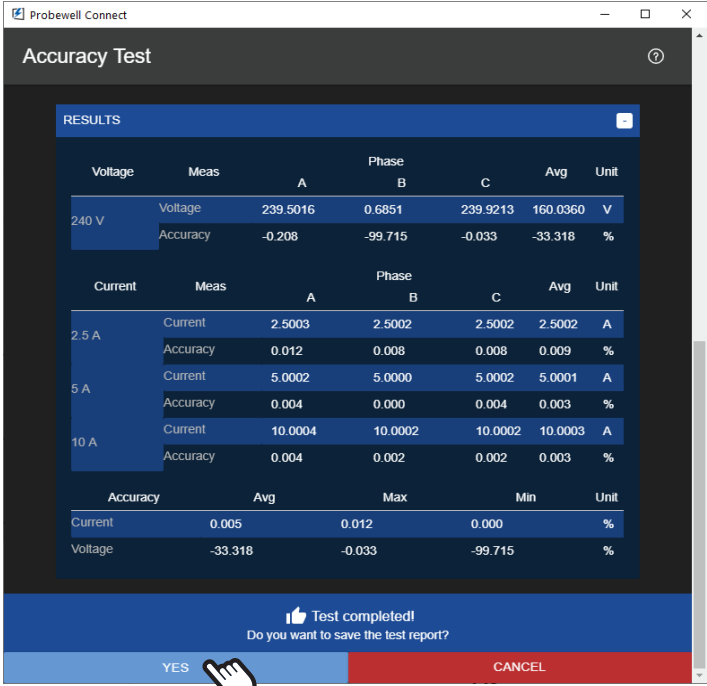
During the test execution, the user interface and measurement displays are updated to match the latest readings from the device. The measurements are done in parallel for all lines.

When prompted (waiting for user), configure the test board to supply the next current value and **click on Continue**.

For each configured test point, the application acquires a set of 50 measurements and provides an error percentage by comparing with the nominal values provided by the test board.

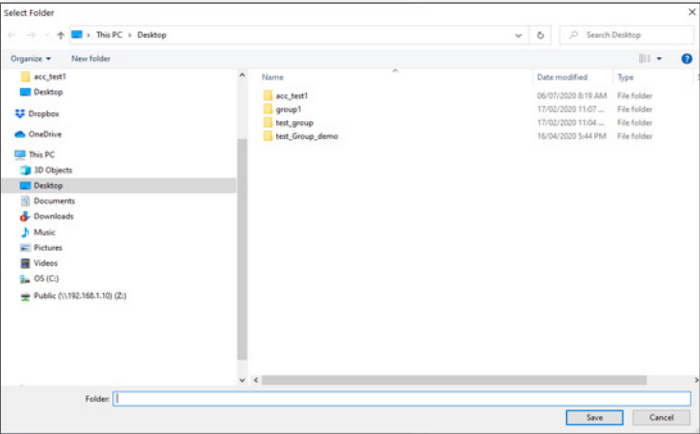
The app displays the following information :

- Voltage reading (for first step)
- Voltage accuracy (for first step)
- Current reading (for each step)
- Current accuracy (for each step)
- Average, min and max values for accuracy



Step 4: Test End

- When the sequence has run for each configured test point the test ends automatically and the results are displayed.
- If the device should appear to fall out of its specified accuracy range, please contact Probewell Lab's support (support@probewell.com).



Step 5: Save Report Data

- The user may then opt to save the accuracy report data as a PDF and CSV file (simultaneously) on the host computer. When prompted, select a folder to save the test report. The file names are generated automatically according to the device name and test date.



Records



The XT series tester's embedded non-volatile memory can hold up to 8 MB of test report data. As a rule of thumb, the memory should hold around 1000 test reports. A test record is created when the operator opts to save the data of a completed test. Test modes that support data logging are:

- Power Quality
- Primary Secondary Analysis
- Secondary Burden
- Admittance

The test results can be accessed by clicking on the Records tab at the bottom of the screen.

Note

The maximum number of test reports that can be held into the non-volatile memory of the ST-3/XT3 depends on the test type and number of test groups created. In any case, the amount of memory should be enough to hold well over a month's worth of test data.

Note

When there is no more space in the memory of the system, the device will display a system error when trying to save the data. The device does NOT automatically overwrite test data. At this point, the user must transfer test reports to a computer and delete data from the tester before running additional tests.

Group list viewer

BASIC

STANDARD

EXPERT



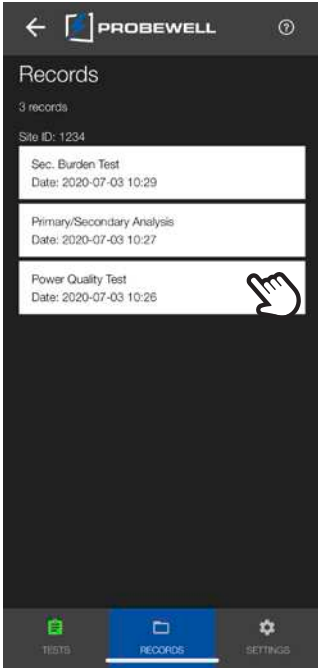
The group list viewer lists all available test groups stored on the XT series tester. A test group can contain one or multiple test reports. A new test group is created each time the ST-3/XT3 unit is powered on and it can be identified by its Site ID and date/time.

The test groups are sorted by date; newer groups being first in the list. Each group entry shows the following information:

- Date
- Site ID
- Number of tests in the group

To see a group's contents, click on the **group entry** in the list.

Each group entry has its own Delete button. Pressing this button will delete the group and all its reports from the XT series tester non-volatile memory. Please ensure that test data has been properly exported to a Windows computer before deleting a test group. This procedure is defined in the Export section of this document.



Single Group viewer

The single group viewer lists all test reports within a group. The records are sorted by date; newer tests being the first in the list. The test report list shows the following basic information for each report:

- Test type
- Date

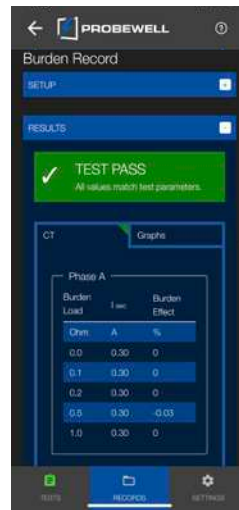
To see a test report's content, **click on its entry** in the list.

Each test report entry has its own **delete button**. Pressing this button will delete the report from the XT series tester non-volatile memory. Please ensure that test data has been properly exported to a Windows computer before deleting a test group. This procedure is defined in the Export section of this document.



Report viewer

The test report viewer is composed of 4 distinct sections:



Setup

- This section displays all the information associated with the site installation, the current and voltage transformers and the accessories used (if applicable).

Results

- This section displays data that is specific to the test mode. The measurements, graphics and diagrams match their respective counterparts in the real time test modes.

Questions

- If applicable, this section displays the user defined questions and their corresponding answers filled in at the end of the test.

Misc.

- If available, this section displays the GPS coordinates.
- If the test has associated GPS data, the See on Map button is available. Clicking on this button launched Google Map (if installed on device) and shows the test location on a 2D map. This functionality requires that the mobile device have internet access.

Deleting all reports



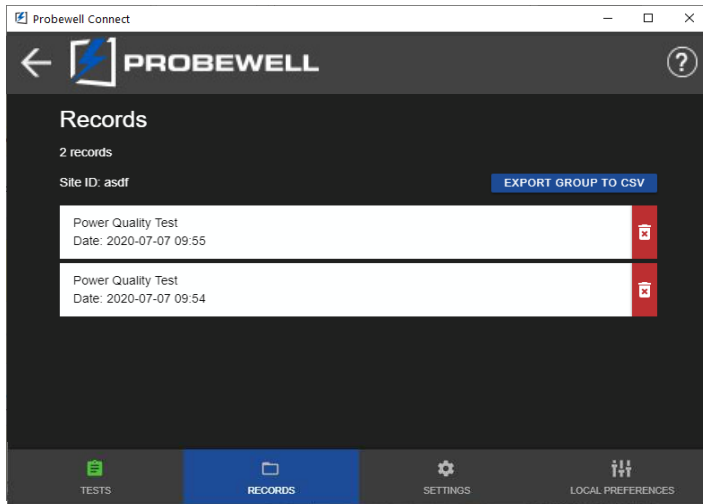
The Delete All button can be found at the very top of the Group List section (main report view). Pressing this button will delete ALL test reports from the XT series tester non-volatile memory.



Please ensure that test data has been properly exported to a Windows computer before deleting a test group. This procedure is defined in the Export section of this document.



Export



The Probewell Connect application offers two data exports formats for XT series test reports: PDF and CSV. In both cases, test data is extracted from the XT tester's non-volatile memory and saved on a local drive on a Windows computer.

PDF

The PDF report format is a human readable, non-modifiable representation of the test data.

CSV

The CSV report format shows the test data in a row-column text file that can be viewed with a basic text editor or Microsoft Excel.

Initial setup

For information on how to do the initial configuration of the Probewell Connect app for test report generation, refer to section Local Preferences of this document.

Export all test reports to CSV

1. Power up the XT series tester.
2. On a Windows PC, connect to the XT series tester's wireless network. Complete procedure on how to do this is outlined in section Connecting to the XT series tester of this document.
3. Start the Probewell Connect application.
4. Go to the Records tab.
5. Click on the Export all to CSV button. All test reports present on the XT tester's memory are exported to the CSV report file path (configurable in the Local Preferences tab). Each individual test report is saved to a single CSV file and a new folder is created for each test group.

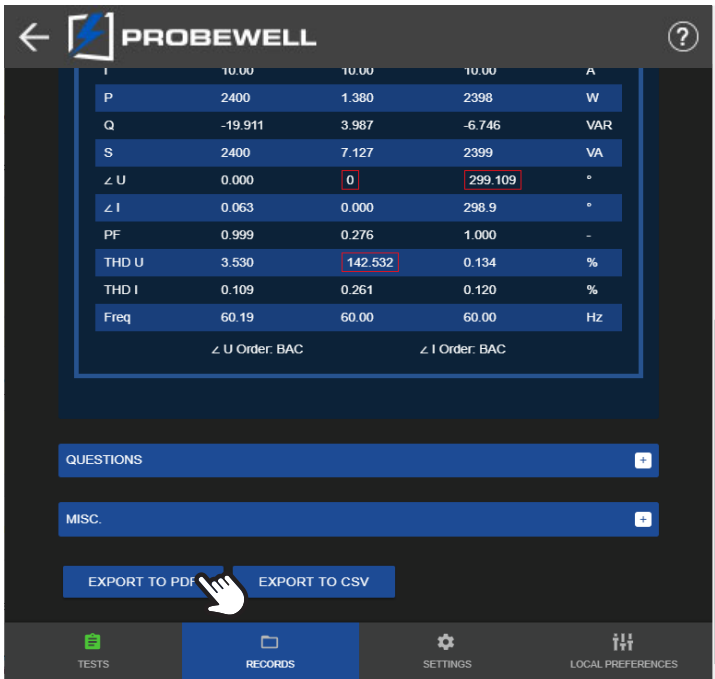
Export a test group to CSV

1. Power up the XT series tester.
2. On a Windows PC, connect to the XT series tester's wireless network. Complete procedure on how to do this is outlined in section Connecting to the XT series tester of this document.
3. Start the Probewell Connect application.
4. Go to the Records tab.
5. Enter the test group by pressing on its entry in the list.
6. Click on the Export group to CSV button. When prompted, select a folder to save the tests.

All test reports present on the XT tester's memory are exported to the selected path. Each individual test report is saved to a single CSV file in that folder.

Export a single test to CSV or PDF

1. Power up the XT series tester.
2. On a Windows PC, connect to the XT series tester's wireless network. Complete procedure on how to do this is outlined in section Connecting to the XT series tester of this document.
3. Start the Probewell Connect application.
4. Go to the Records tab.
5. Enter the test group by pressing on its entry in the list.
6. Enter the test report by pressing on its entry in the list.
7. Click on the Export to CSV or Export to PDF button. When prompted, select a folder to save the test. The default file name includes the device serial number, the test ID and test date and is meant to be unique.



Export single test report to PDF

1. Power up the XT series tester.
2. On a Windows PC, connect to the XT series tester's wireless network. Complete procedure on how to do this is outlined in section Connecting to the XT series tester of this document.
3. Start the Probewell Connect application.
4. Go to the Records tab.
5. Click on a report entry.
6. Click on the Export to PDF button.
7. A file Save As prompt is displayed. Select where to save the file on the Windows computer and click on the Save button.

Settings



Mobile Footer



Windows Footer



The XT series tester's come with factory default settings that are suitable for most operations. The device settings can be easily changed to suit the operator's needs by using the Settings tab in the app. The device settings are stored in the non-volatile memory of the unit.

Custom Questions

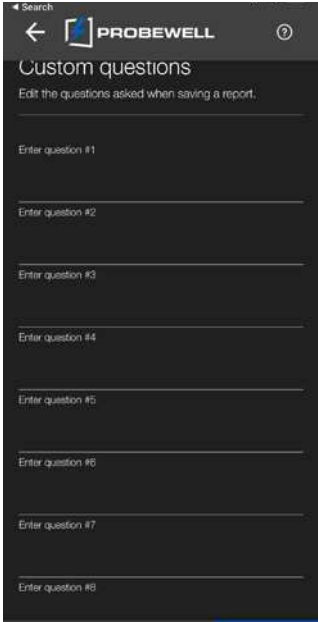
The custom questions are used to allow user specific data logging for each test. The system allows up to 8 custom questions and each can be up to 32 characters long.

To reach the Custom Questions edit view, press on the **Edit Custom Questions** in the Settings tab.



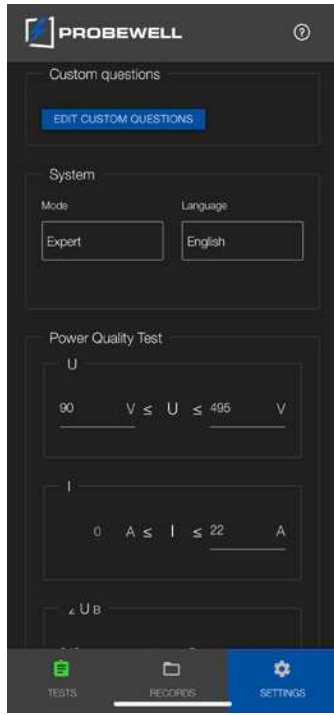
Edit the questions as needed. Up to 8 custom questions can be defined.

Press on Save to store the questions in the non-volatile memory of the unit or Delete All to reset all questions.



System Settings

System Settings are used to configure how the XT series tester performs tests and contains various basic usability settings.



Mode

Selects the system mode. Some modes allow more configuration over the XT tester.

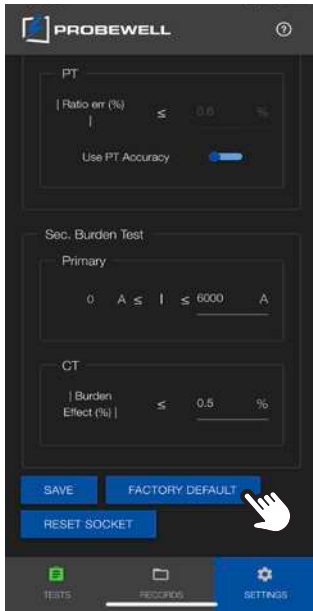
- **Basic Mode (default):** basic operation for most users, minimal configuration
- **Standard Mode**
- **Expert Mode:** full configuration of all settings

Language

Language selection.

- **English (default)**
- **Spanish**
- **French**

Other functions



SAVE

Saves the configured settings to the XT series tester's non-volatile memory. The device immediately holds the new settings and they are also retained the next time the device is booted up.

FACTORY DEFAULT

Resets the settings of the XT series tester to the factory default values. Previously saved configurations are erased.

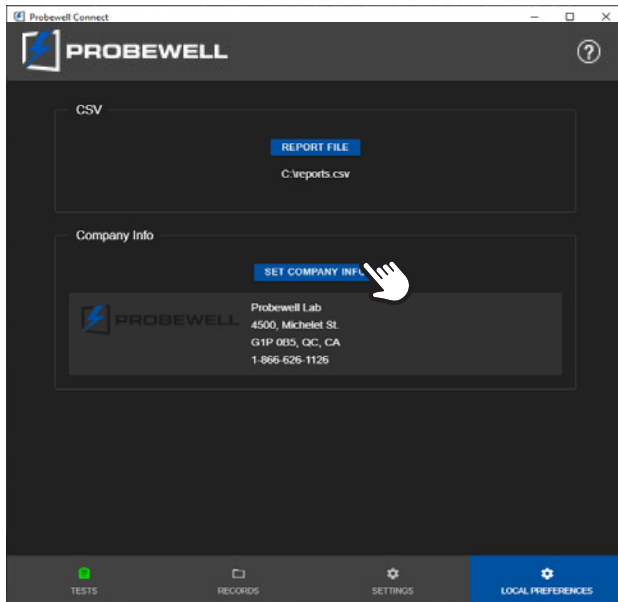
Local Preferences



In the Local Preferences tab, the user can configure parameters that are specific to the Windows version of the Probewell Connect application. These parameters are stored locally and are kept when the application is closed and restarted.

Note :

The Local Preferences can only be modified when the System mode is set to Expert. This can be done from the Settings section of the app, in Online or Offline mode.

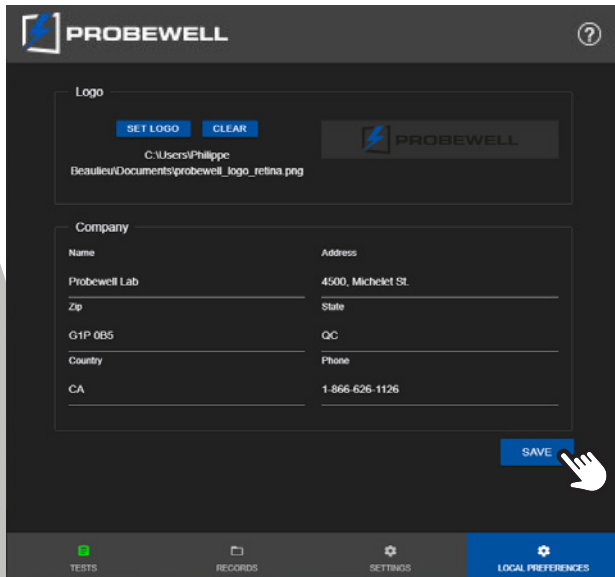


CSV

Local file path to save exported test data. The file format is comma-separated values (CSV).

Company Info

Company contact information. Used to generate the top-left portion of the header in PDF reports. Click on *Set Company Info* to edit.



Company Info (continued)

Set Logo

Opens a file selector prompt for the company logo.

Clear

Clears the company logo.

Company contact fields

Enter company contact information.

Click on the **Save** button to save the information into the local settings of the app.

Firmware Update



In order to benefit from all the latest features and bug fixes, Probewell Lab suggests that firmware updates on XT series testers be done periodically. The latest firmware for XT series products is always available on the Probewell website at the following link: <https://probewell.com/support/>.

Setup

The firmware update for the XT series testers is done with a proprietary USB update Cable and the Probewell Connect software for Windows.

To download and install Probewell Connect for Windows, please follow the directions in the Getting the app section of this document.

Note

The Windows computer does not need to be connected to the wireless network of the XT series tester to perform the firmware update. The update process is done over a physical connection with the USB Update Cable.

USB driver installation

This driver supports the Windows 10 operating system.

1. Check that your PC is connected to the internet.
2. Connect the Update Cable to a vacant USB port on your PC.
3. A notification should appear in the system tray. It should indicate that the driver software is installing.
4. Wait for the driver to download and install. This should take a few minutes at most.

If the automatic installation of the driver is not successful, please contact Probewell Support at the following e-mail address: support@probewell.com.

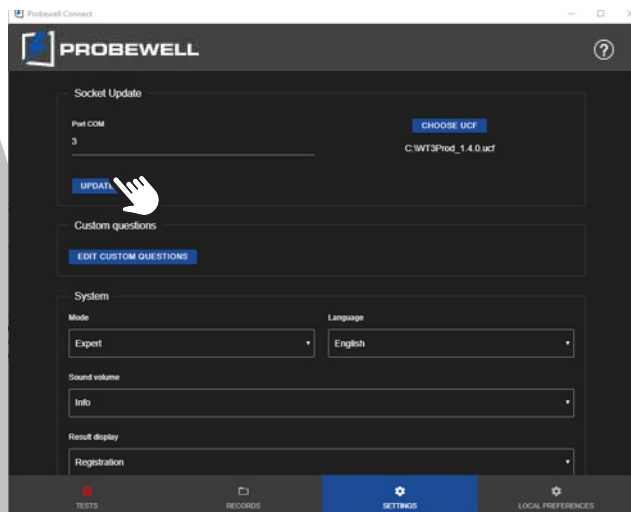
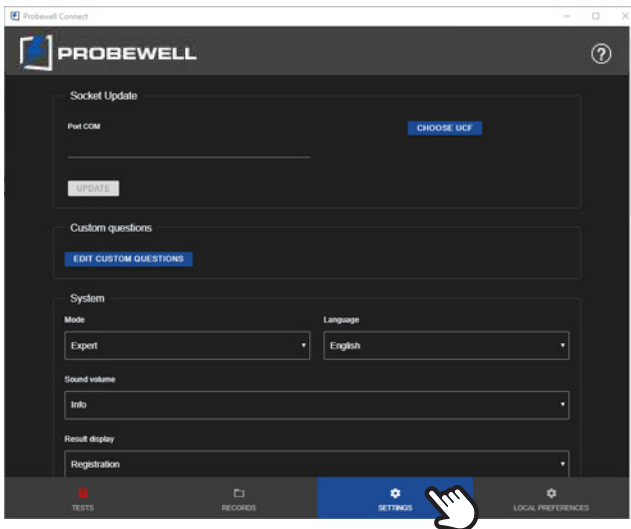
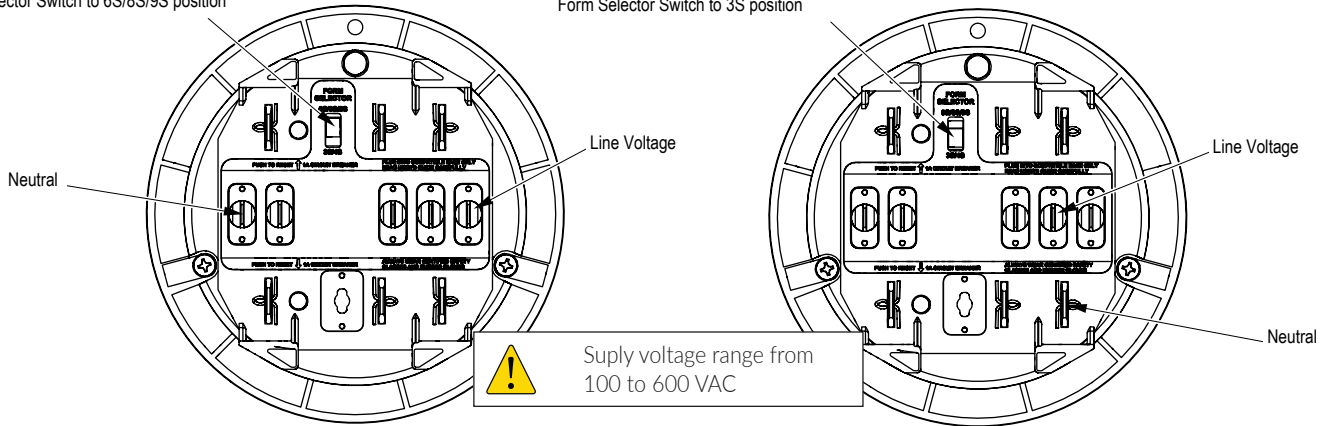
Update

Power unit as a form 9S

Power unit as a form 3S/4S

Form Selector Switch to 6S/8S/9S position

Form Selector Switch to 3S position



1. Connect the ST-3/XT3 to an AC power source as shown above.
2. Connect the update cable to a USB port on your computer and connect the RJ11 connector to the I/O port of the ST-3/XT3.
3. Launch the Probewell Connect application. A shortcut is always available in the Windows start menu and may also be on the desktop if the option was selected at the installation.
4. In the bottom menu bar **click on Settings**, select Expert in the System Mode dropdown list.
5. Select the COM port associated with the USB Update cable. The Windows Device Manager can be used to determine which COM port is used by the USB Update cable.
6. Select the firmware file by browsing on your PC. Firmware files for XT series testers have the *.ucf extension.
7. **Click on Update.**
8. You will then be prompted to turn on the XT series tester with the Power switch on the side of the unit. If the tester is already powered on, cycle the power.
9. The update will take a few minutes to complete. Upon completion, the application will automatically return to the Settings view. When done, you may close the application window and disconnect the Update Cable from the unit.

Appendix A

Troubleshooting

Under specific circumstances, the Probewell Connect app may display a warning or error message requiring further action from the user. A list of the most common troubleshooting topics is included below. If any problem persists, please contact Probewell Lab Inc. Technical Services.

FAULT	DESCRIPTION	• FIX
CANNOT PAIR WITH DEVICE	The application cannot connect to the XT series tester wireless network.	<ul style="list-style-type: none"> • Make sure the XT series tester is turned on. • Check if the fan inside the unit is spinning. • Scan the QR code that is located on the directly on the tester. If using a QR code printed on the included plastic card, please validate that the serial number written on the card matches the serial number of the unit.
FIRMWARE VERSION WARNING	The application gives a warning about the XT series tester firmware version not matching the application version.	<ul style="list-style-type: none"> • Follow the Firmware Update section of this document to update the firmware of the XT series tester

To find the exact meaning of an error code, please visit: <https://probewell.com/support/>

Appendix B

Customer Service

If your XT series site tester becomes defective while under warranty (two years after the original date of purchase) Probewell Lab Inc. will repair or replace it. If the unit becomes defective after the warranty has expired, Probewell Lab. Inc. will repair it charging the cost of labor and spare parts.

Please do not return your tester without contacting customer service at 1866-626-1126 or send an e-mail at info@probewell.com. Detailed delivery procedure will be provided to you.

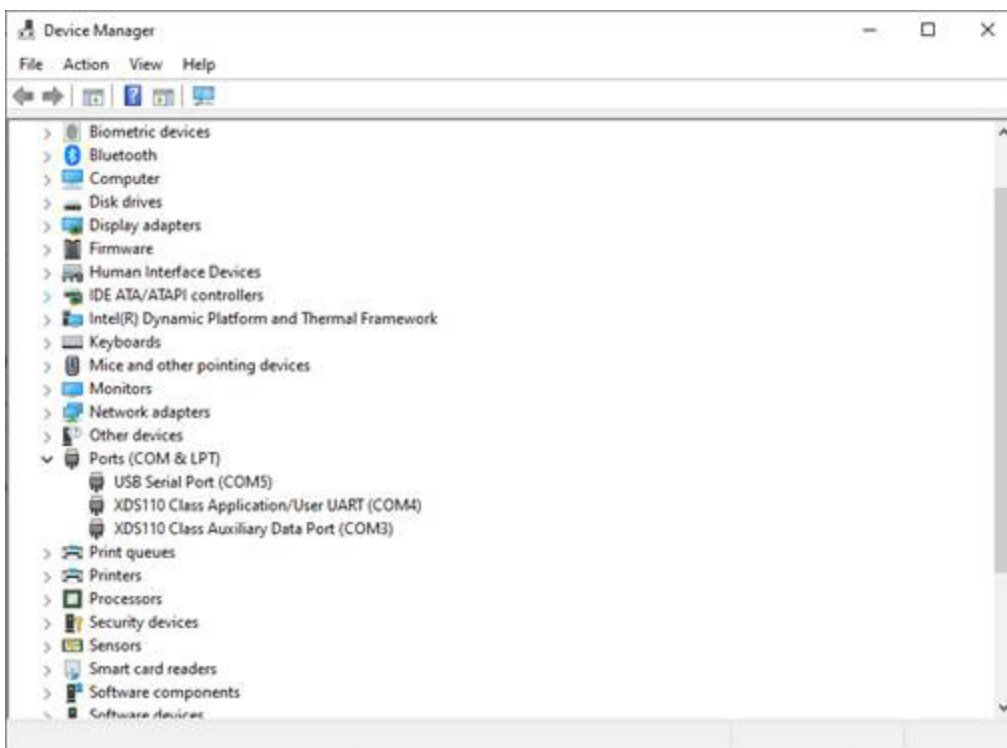
Your comments or suggestions are always welcome and will be taken into consideration when designing the next generation of our product. If you have a technical question regarding the Probewell Connect application or XT series tester or need any further assistance, please contact our technical support at 1-866-626-1126 or send an e-mail to support@probewell.com.

Appendix C

USB Update cable COM port

In order to upgrade the firmware of the XT series tester, the COM port number of the USB Update cable must first be determined. The following procedure outlines the required steps:

1. On the Windows PC, open the Device Manager. This can be done by searching for it in the Windows search bar or by going through: Control Panel -> Hardware and Sound -> Devices and Printers -> Device Manager.
2. Expand the Ports (COM & LPT) section. The USB Update cable is identified as USB Serial Port (COMX), where X is a number. If many similar devices are already present in the list, try disconnecting the USB Update cable to see which one is removed from the list.



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We believe that field testers should be easy to use, portable and safe.

Generating added value for utilities and their customers by means of innovative products that provide accurate data driven insight as well as flexibility and efficiency.

Through our expertise and continuous innovation, we develop cutting edge field-testing technologies that delivers a premier solution for utilities when it comes to quality, ease of use, sturdiness and customer satisfaction.

Probewell Lab Inc.

Phone: **1-866-626-1126**

Fax: **418-626-1424**

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