

Digi-Pas[®]

**PC SYCN PROFESSIONAL SOFTWARE
DWL-8500XY and DWL-9000XY**

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1. GENERAL OVERVIEW



1.1. Interface Overview











Table 1. PC Sync Home Page

Sync Option	To select the synchronization mode (via USB or Bluetooth)
Function Toolbar	Contains buttons with different functions.
Screen Display	To display the graphic user interface.

1.2. Software Features

 <p>Single Angle Meter</p>	<p>Single Angle Meter This feature allows user to view single-axis angle/levelling measurement in numerical and graphical display i.e. arcsec and mm/M units concurrently on PC monitor via USB or wireless Bluetooth connectivity.</p>
 <p>Smart Bull's Eyes</p>	<p>Smart Bull's Eye This feature allows user to view and record dual-axis angle/levelling measurement simultaneously in graphical "Bull's eye", line graphs, Numeric format on arcsec and mm/M units. User may define several parameters for data capturing. The numerical data can be saved in Excel format for further analysis.</p>

 <p>Single Angle Graph</p>	<p>Single Angle Graph This feature allows user to view, track and record real-time single-axis angle/levelling measurement readings in numerical and graphical forms (i.e. arcsec and mm/M). User may define parameters for numerical data capturing.</p>
 <p>Dual Angle Graph</p>	<p>Dual Angle Graph This feature allows user to view, track and record real-time 2-axis angle measurement (i.e. a plane or set of coordinates) angle/levelling measurement readings in numerical and graphical forms (i.e. arcsec and mm/M). User may define parameters for numerical data capturing.</p>
 <p>VibroMeter</p>	<p>VibroMeter This feature allows user to monitor low frequency vibration patterns in line graph. User may define several parameters for capturing vibration data. Vibration monitoring on precision machine/equipment/instrument and also their surrounding floor condition to identify vibration magnitude/pattern that affects accuracy performance influencing production yield, scraps reduction and sharp-quality image capturing.</p>
 <p>3D Surface Geometry Graph</p>	<p>3D Surface Geometry Graph This feature allows user to perform 3D surface flatness geometry measurement, profiling and characterization. The 3D visual graph and its corresponding 3D numeric data can be saved and stored in Excel file for further analysis & record.</p>
 <p>Commission Report</p>	<p>Commission Report Numerical and graphical data can be collected and stored in PC in the form of Commissioning Report files especially useful for accountability purpose and references as historical records for each machine/equipment installation, setup and preventive maintenance requirements. Multiple machines characteristics for levelling and vibration conditions can be stored and used for comparison in next planned preventive maintenance activity.</p>
 <p>Help</p>	<p>Help To open the Instruction Manual for the device and its Instruction manual.</p>
 <p>About</p>	<p>About This feature allows user to check the current PC Sync version and the firmware version of the device in sync.</p>

 <p>Deactivate License</p>	<p>Deactivate License This feature allows user to check the current PC Sync version and the firmware version of the device in sync. Note: only available for redemption Version Only</p>

2. SYSTEM REQUIREMENTS

Recommended System Configuration:

- At least 1 GB of RAM
- At least 100MB of free disk space available in your hard disk
- Best view in 1024 × 768 screen resolution
- USB Ports

Note: Software performance may vary depends on PC system configuration.

Recommended Operating System:

- Windows 10
- Windows 11

Digi-Pas® PC Sync software can be configured in 32bit or 64 bit Microsoft Windows Operating Systems.

Required Third-Party Software:

- Microsoft .Net Framework 3.5 for 32bit Windows Operating System
- Microsoft .Net Framework 4.0 for 64bit Windows Operating System
- Microsoft Excel 2020 or above
- Acrobat Reader 6 or above

Note:

Certain function of the software requires internet connection to operate.

3. GETTING STARTED

3.1. Installation of DWL8500XY / DWL9000XY PC Sync

1. Download and run the installer provided from digipas websites. Welcome screen appears. Click “ Next “ to proceed the installation

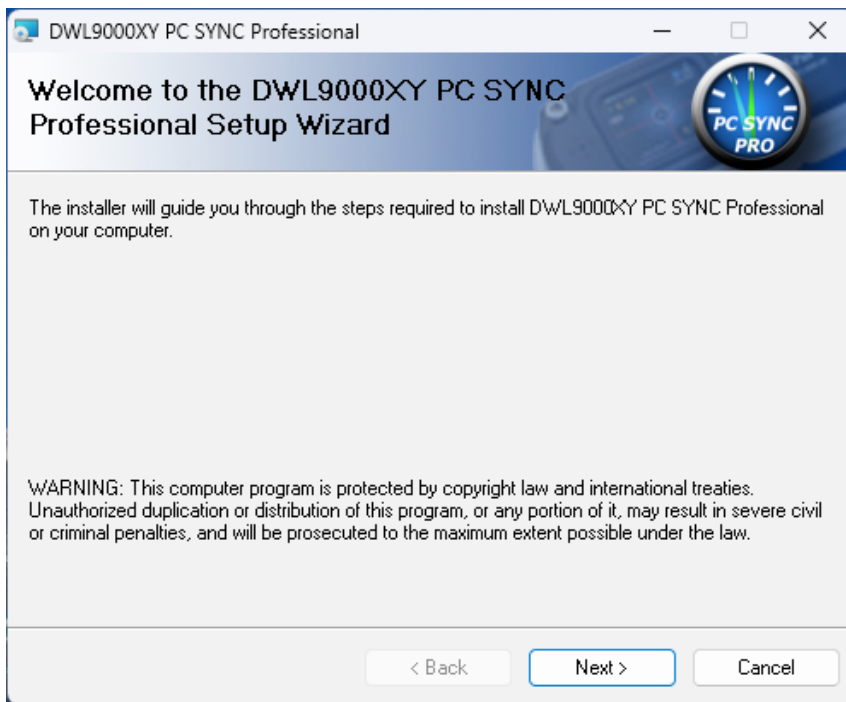


Figure 1. Installation Steps 1

2. License Agreement screen appears. Click “I Agree” after reading through and accepting the agreement and then click “ Next “ to proceed the installation.

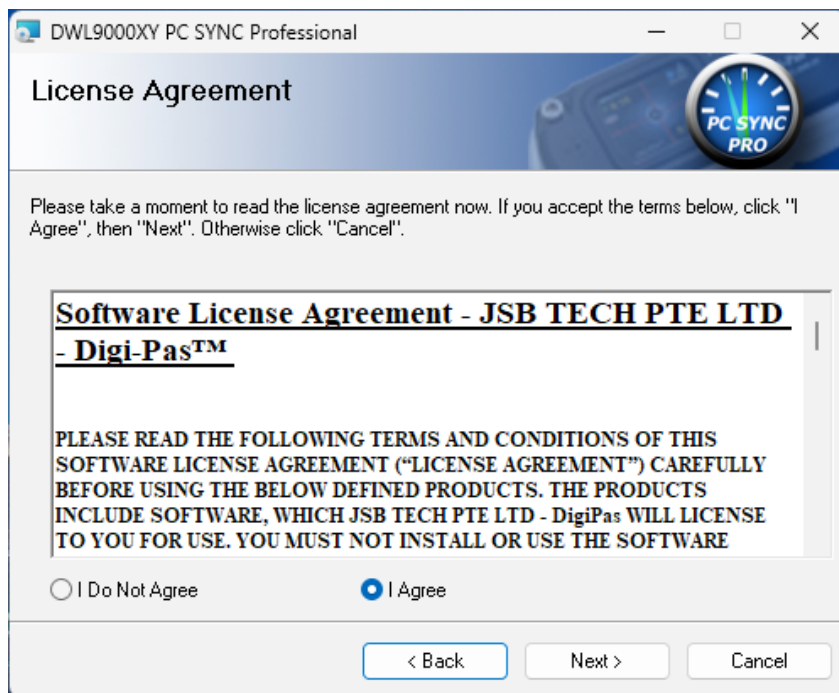


Figure 2. Installation Steps 2

3. Installation folder screen appears. Use the installation folder as default unless you want to change the location. Click “Next” to proceed the installation.

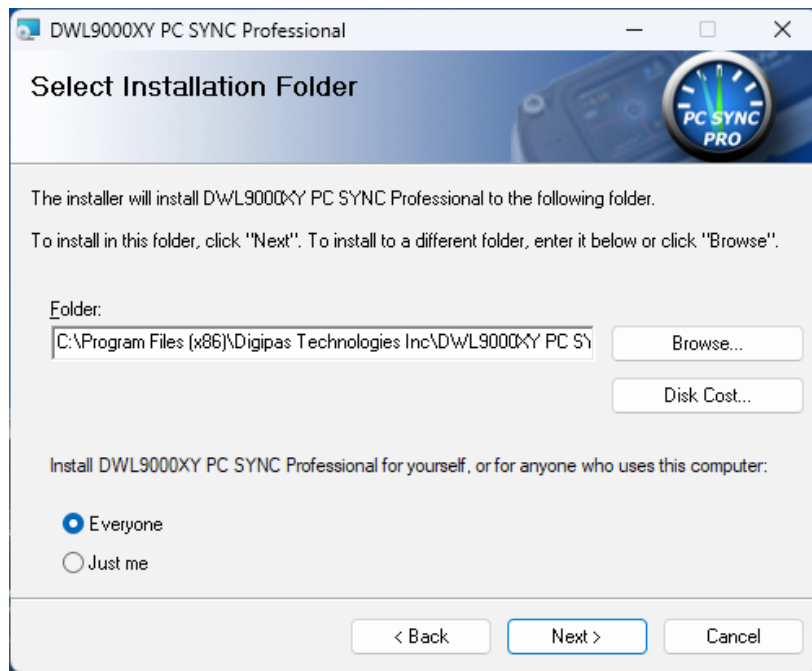


Figure 3. Installation Steps 3

4. Confirm Installation screen appears. Click "Next" to proceed the installation.

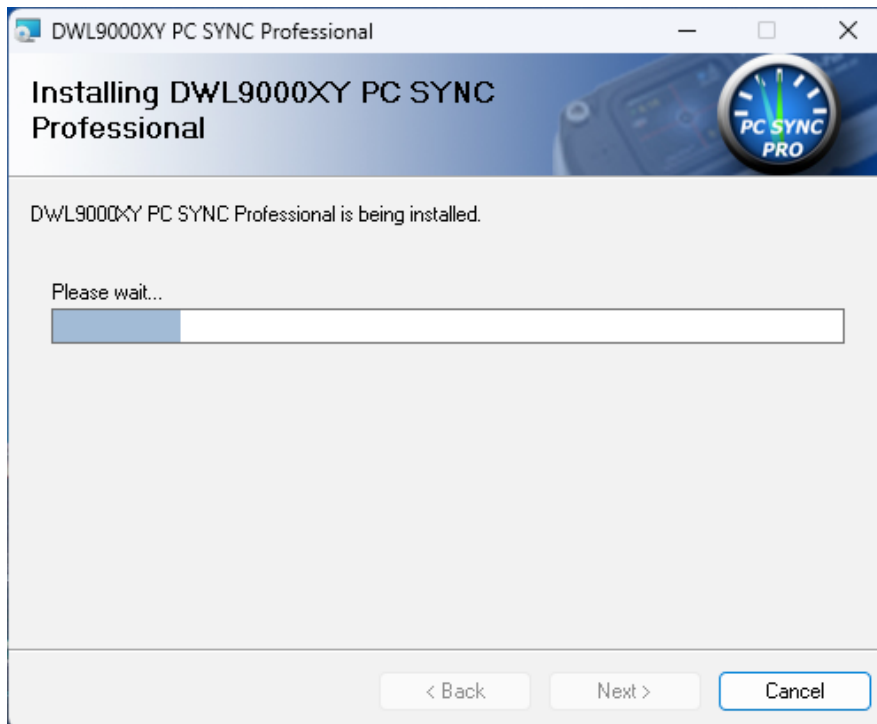


Figure 4. Installation Steps 4

5. Installation Complete screen appears. Click "Close" to complete the installation.

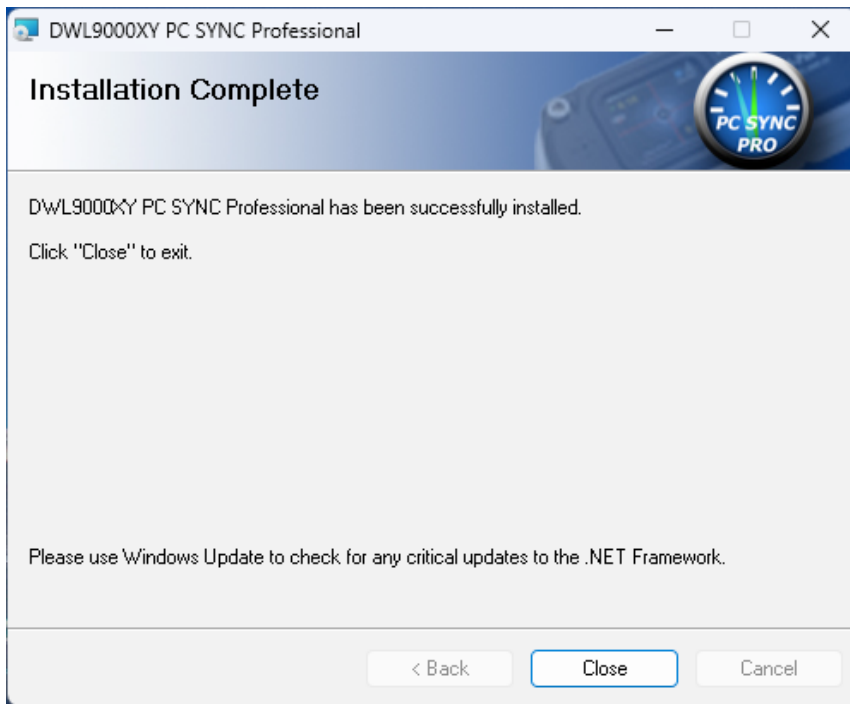


Figure 5. Installation Steps 5

3.2. Software Activation Guide

This guide explains how to activate the software

To activate and use the PC Sync software, use the following redemption steps:
Run the PC Sync software. The following pop-up message will appear. Click Yes to continue.

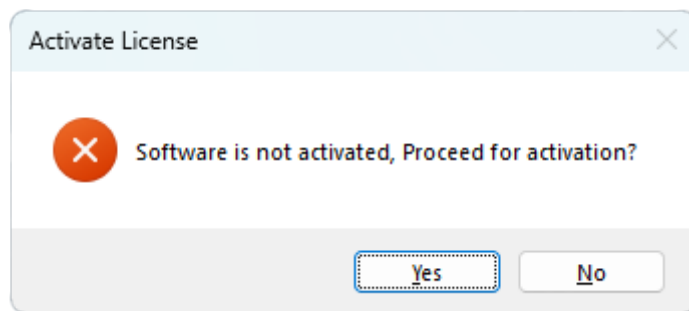


Figure 6. Activate License Dialog

A User Account Control (UAC) prompt will then appear. Click Yes again to allow the software to proceed.

DWL-9000XY PC SYNC ACTIVATION

Digi-Pas DWL-9000XY PC-SYNC ACTIVATION

Company:

Email:

Product Key:

 - - -

Scratch off the panel behind the redemption card and enter 16-digit product key to unlock the full professional version.

[How to find product key?](#)

Activate Cancel

Figure 7. PC Sync Activation Form

In the PC Sync Activation Form, enter your company name, email address, and 16-digit product key. Then, click Activate to complete the activation.

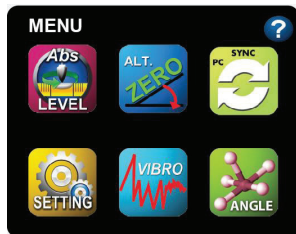
4. CONNECTING THE PC SYNC SOFTWARE

4.1. Synchronization by Using USB Connectivity

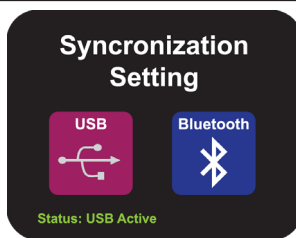
1. Check the DWL8500XY/DWL9000XY Bluetooth device synchronization mode. By default, device setting is set to USB mode. To check or change the mode setting:
2. Double click the PC Sync icon on the desktop and connect DWL8500XY/DWL9000XY device with your computer via USB cable.
3. Select the Sync Option with USB and click "SELECT" button. All function toolbar buttons are turned on. The DWL8500XY/DWL9000XY PC Sync is now ready for use.

4.2. Synchronization by Using Bluetooth Connectivity

1. Check the DWL8500XY/DWL9000XY Bluetooth device synchronization mode. By default, device setting is set to USB mode. To check or change the mode setting:



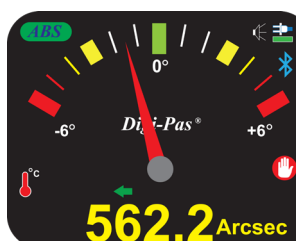
Press "MODE" button and select "PC SYNC" icon to access the Synchronization Setting page.



Select Bluetooth icon then press "Mode" button to activate it. Note: Status indicates the device is in USB or Bluetooth mode.



After selecting Bluetooth synchronization mode, click Yes when prompted to reinitialize the device. The selected setting will be applied, and the device will restart automatically.



Bluetooth logo appears on the device screen (at top-right corner). The device setting is now completed. User can proceed to synchronise the DWL8500XY/DWL9000XY device with the PC Sync software.

2. Activate your computer's Bluetooth and run the PC Sync Software to the computer.
3. Select the Sync Option with BLUETOOTH (i.e. located at top-right corner of your PC monitor) and click "SELECT" button.

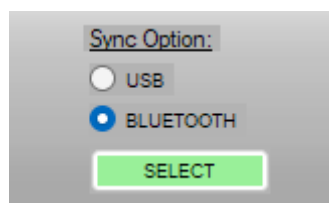


Figure 8. Sync options "Bluetooth" Selected

4. Click the Discovery button to search for nearby Bluetooth devices. The software will detect compatible device names, such as DWL-9000XY or DWL-8500XY, depending on the PC Sync software version, and display the detected devices in the table.

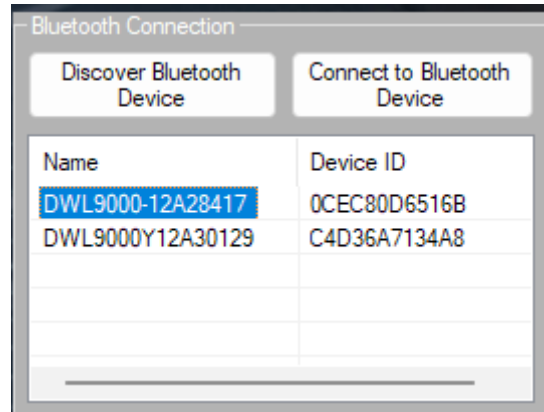


Figure 9. Discovered Bluetooth Device List

5. Select the device from the list, then click Connect to Bluetooth Device to pair and connect the device to the PC Sync software.

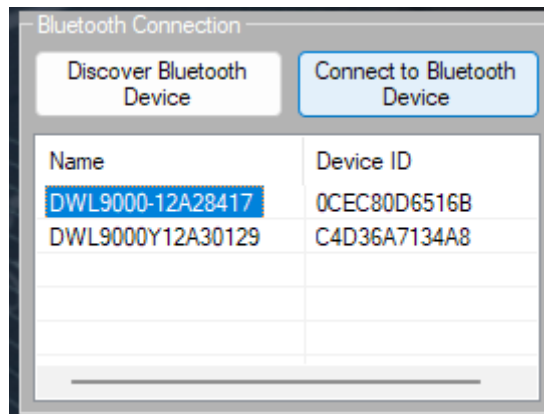


Figure 10. Select & Connect Bluetooth Device

Note:

For first-time pairing, Windows may display an additional permission prompt to pair the device. Click Yes or Allow to continue.

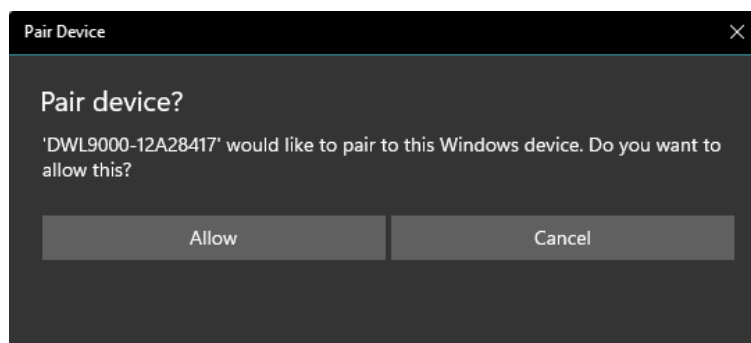


Figure 11. Window Bluetooth Pairing Dialog

6. When the connection is established successfully, all function toolbar buttons are turned on. The DWL8500XY/DWL9000XY PC Sync is now connected to the Device and ready for use.

5. FEATURES INTERFACE AND SETTING

5.1. Single Angle Meter

This feature allows user to view single-axis angle/levelling measurement in numerical and graphical display in °(Degree), mm/M & In/Ft units concurrently on PC monitor via USB Link or wireless Bluetooth link (optional).

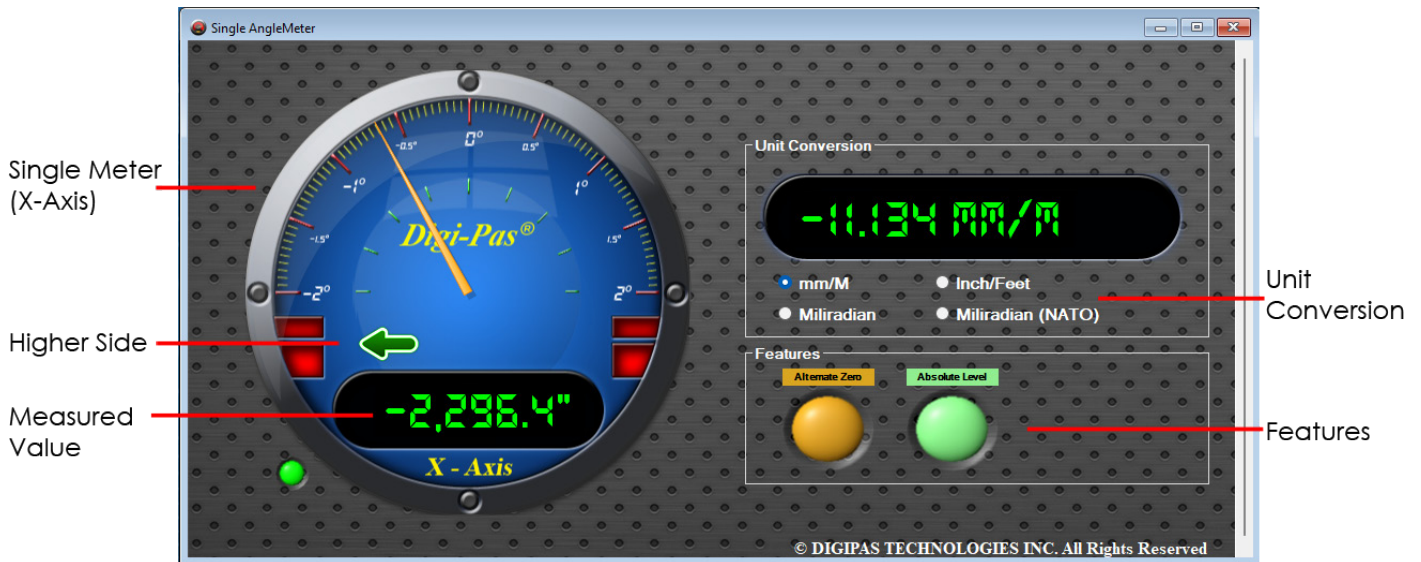


Figure 12. Single Angle Meter

Unit Conversion	Change the unit (mm/M, in/feet, mil, mrad) measurement
Alternate Zero	Enable user to measure relative angles at a common plane with respect to a reference angle. set any angle to 0" as a reference.
Absolute Level	Enable user to ensure each measurement reading is in accordance to maximum device accuracy specified.

Table 2. Single Axis Function & Features

5.2. Single Angle Graph

This feature allows user to view and record single-axis angle/levelling measurement in line graph and numerical readings in °(Degree), mm/M & In/Ft. User may define several parameters for data capturing. The numerical data can be saved in Excel format for analysis.

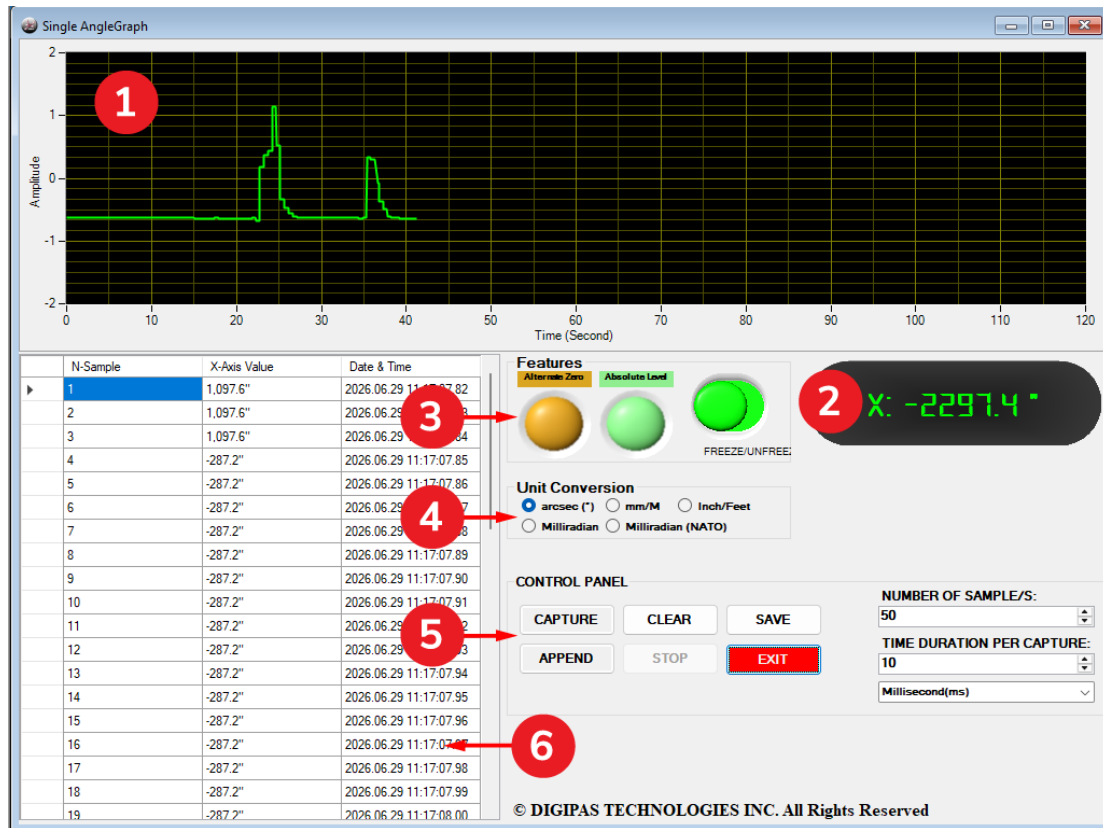


Figure 13. Single Angle Graph Function

1. Real-Time Angle Graph

The graph displays the live angle measurement from the connected device over time.

- The horizontal axis shows the time in seconds.
- The vertical axis shows the measurement amplitude.
- The green waveform represents the real-time X-Axis angle movement of the device.

2. Real-Time Measurement Display

This display shows the current live X-axis measurement value from the connected device. The value updates continuously while the device is connected and active.

3. Zero Reference Feature

Alternate Zero: Click the Alternate Zero button to start the feature. Reference angle appears and button blinks once

Absolute Level: Click the Absolute Level button to start the feature. Follow the instructions shows on the screen. Absolute Level symbol appears and button blinks once activated.

4. Unit Conversion

This section allows users to select the preferred measurement unit.

Available units include: **arcsec (")**, **mm/M**, **Inch/Feet**, **Miliradian**, **Milliradian (NATO)**

The displayed measurement values will be converted according to the selected unit.

5. Data Logging Control Panel

To start data logging, select the unit of time (second / millisecond). Next, select the number of samples, and time duration per capture by pressing the up down arrow accordingly. Click CAPTURE / APPEND button to initiate data logging. Click STOP button to halt data logging and click CLEAR button to erase or click

6. Measurement Data Table

The table lists the captured measurement samples.

The table includes:

- **N-Samples:** The sample number.
- **X-Axis Value:** The captured X-axis measurement value.
- **Y-Axis Value:** The captured Y-axis measurement value.
- **Date & Time:** The date and time when the sample was captured.

5.3. Smart Bull's Eyes

This feature allows user to view and record 2-axis angle/levelling measurement simultaneously in graphical "Bull's eye" (with auto range feature) and numeric formats - Arcsecond ("), mm/M & In/Ft units. User may define parameters for data capturing and saved in Excel format for further analysis.

The remote USB cable/Wireless Bluetooth and 2-Axis simultaneous measuring capabilities provide advantages that traditional spirit level is unable to match. Effectively, only one person is required to speedily level/align a machine in 2-Axis concurrently (i.e. completely eliminate trial-and-error - one axis at a time, experienced when using conventional single axis levels!) with quality and productive works.

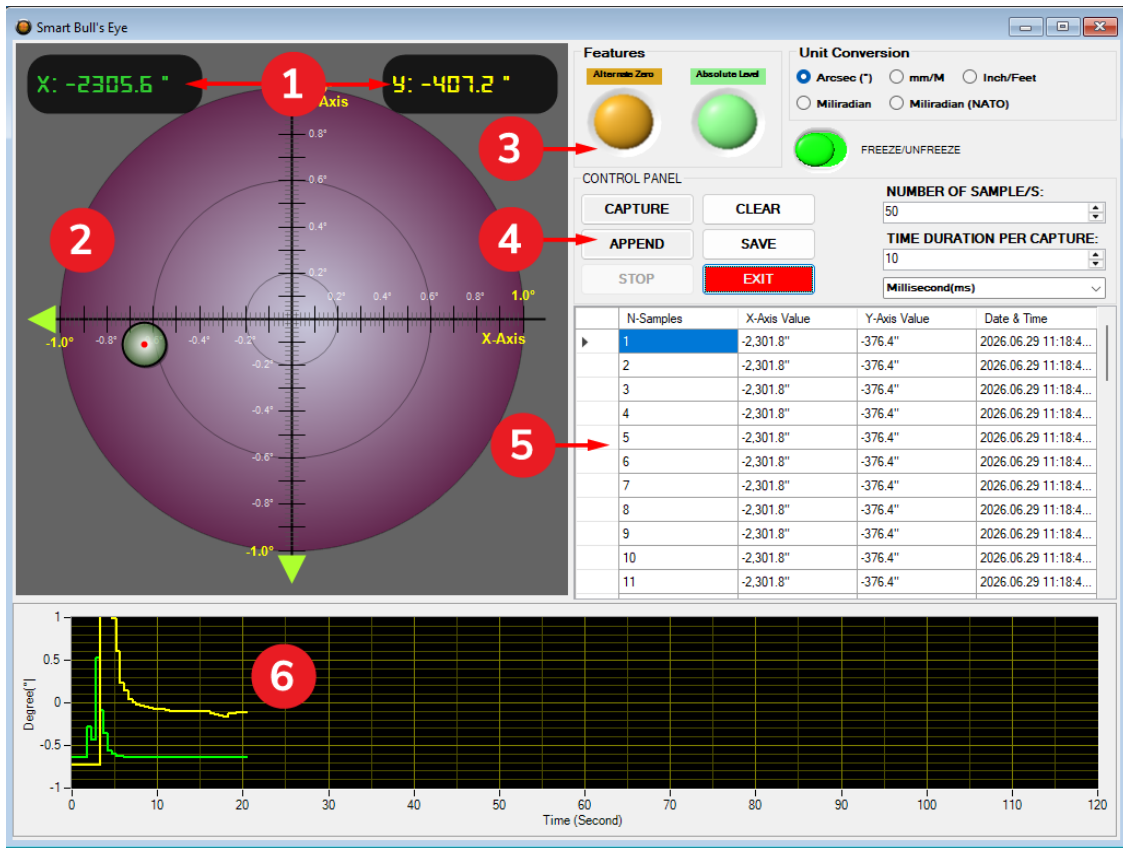


Figure 14. Smart Bull's Eyes Interface

1. Real-Time X-Axis and Y-Axis Display

This section shows the current live measurement values for both axes.

- **X:** Displays the real-time X-axis measurement value.
- **Y:** Displays the real-time Y-axis measurement value.

The values update continuously while the device is connected and active.

2. Bull's Eye Level Display

The Bull's Eye display provides a visual representation of the device level position.

- The bubble position indicates the current tilt direction.
- The horizontal scale represents the X-axis.
- The vertical scale represents the Y-axis.
- The circular rings help users observe the level position and movement more easily.

When the bubble moves away from the center, it indicates that the device is tilted from the level reference point.

3. Zero Reference Features

Alternate Zero: Click the Alternate Zero button to start the feature. Reference angle appears and button blinks once

Absolute Level: Click the Absolute Level button to start the feature. Follow the instructions shows on the screen. Absolute Level symbol appears and button blinks once activated.

4. Data Logging Control Panel

To start data logging, select the unit of time (second / millisecond). Next, select the number of samples, and time duration per capture by pressing the up down arrow accordingly. Click CAPTURE / APPEND button to initiate data logging. Click STOP button to halt data logging and click CLEAR button to erase or click

5. Unit Conversion

This section allows users to select the preferred measurement unit.

Available units include: **Arcsec (")**, **mm/M**, **Inch/Feet**, **Miliradian**, **Milliradian (NATO)**

The displayed measurement values will be converted according to the selected unit.

The Freeze/Unfreeze function allows users to hold or resume the live measurement display.

6. Measurement Data Table

The table lists the captured measurement samples.

The table includes:

- **N-Samples:** The sample number.
- **X-Axis Value:** The captured X-axis measurement value.
- **Y-Axis Value:** The captured Y-axis measurement value.
- **Date & Time:** The date and time when the sample was captured.

7. Real-Time Angle Graph

The graph at the bottom displays the live measurement trend over time.

- The horizontal axis shows the time in seconds.
- The vertical axis shows the measurement value in the selected unit.
- The plotted lines represent the real-time X-axis (Green) and Y-axis (Yellow) movement.

5.4. Dual Angle Graph

This feature allows user to view and record 2-axis angle/levelling measurement simultaneously in graphs and numerical readings, define parameters for data capturing and saved in Excel format for further analysis.

User can monitor and record machine's leveling-status change and also their surrounding floor condition i.e. topographic changes over an extended period of time, to identify variation/change pattern and analysis (e.g. due to seasonal temperature & low-scale earthquake) that affect precision component/part production yield, reduce scraps in precision engineering & metrology applications.

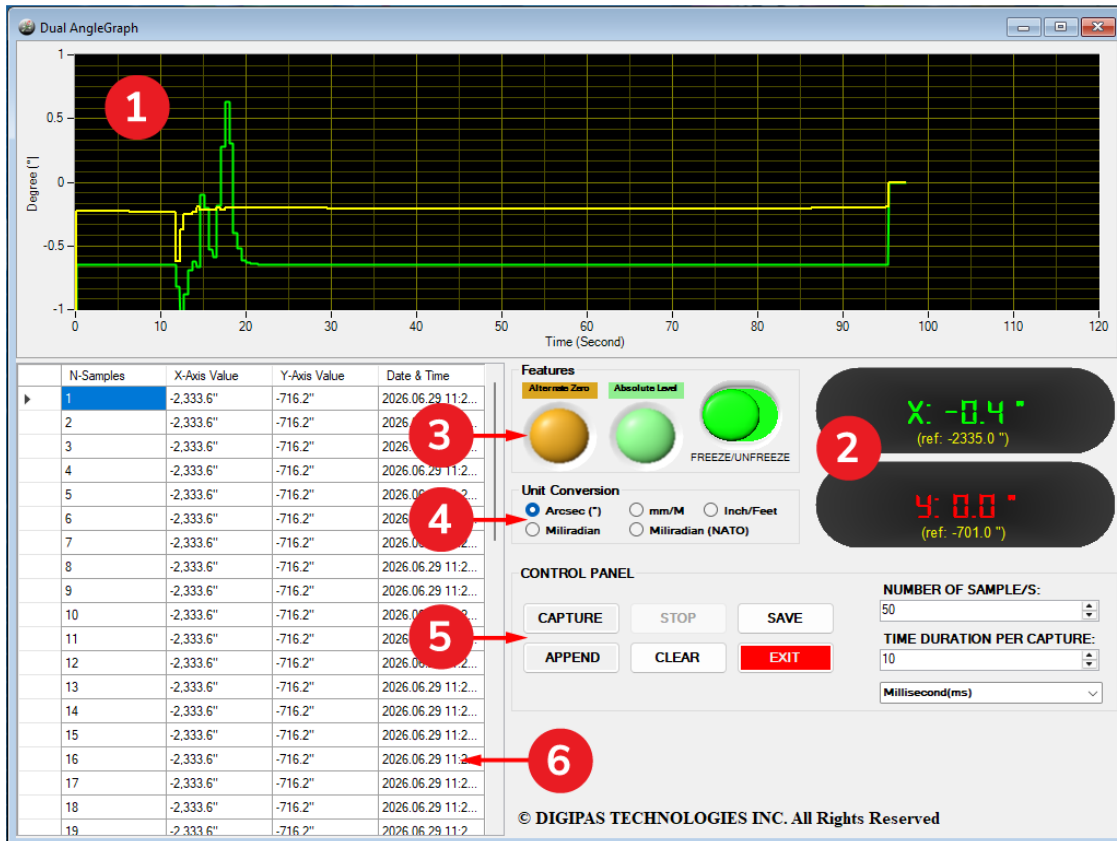


Figure 15. Smart Bull's Eyes Interface

1. Real-Time Angle Graph

The graph at the bottom displays the live measurement trend over time.

- The horizontal axis shows the time in seconds.
- The vertical axis shows the measurement value in the selected unit.
- The plotted lines represent the real-time X-axis (Green) and Y-axis (Yellow) movement.

2. Real-Time X-Axis and Y-Axis Display

This section shows the current live measurement values for both axes.

- **X:** Displays the real-time X-axis measurement value.
- **Y:** Displays the real-time Y-axis measurement value.

The values update continuously while the device is connected and active.

3. Zero Reference Feature

Alternate Zero: Click the Alternate Zero button to start the feature. Reference angle appears and button blinks once

Absolute Level: Click the Absolute Level button to start the feature. Follow the instructions shows on the screen. Absolute Level symbol appears and button blinks once activated.

4. Unit Conversion

This section allows users to select the preferred measurement unit.

Available units include: **Arcsec (")**, **mm/M**, **Inch/Feet**, **Milradian**, **Milliradian (NATO)**

The displayed measurement values will be converted according to the selected unit.

The Freeze/Unfreeze function allows users to hold or resume the live measurement display.

5. Data Logging Control Panel

To start data logging, select the unit of time (second / millisecond). Next, select the number of samples, and time duration per capture by pressing the up down arrow accordingly. Click CAPTURE / APPEND button to initiate data logging. Click STOP button to halt data logging and click CLEAR button to erase or click.

6. Measurement Data Table

The table lists the captured measurement samples.

The table includes:

- N-Samples: The sample number.
- X-Axis Value: The captured X-axis measurement value.
- Y-Axis Value: The captured Y-axis measurement value.
- Date & Time: The date and time when the sample was captured.

5.5. VibroMeter

This feature allows user to monitor & record vibration patterns in numeric and graphic forms.

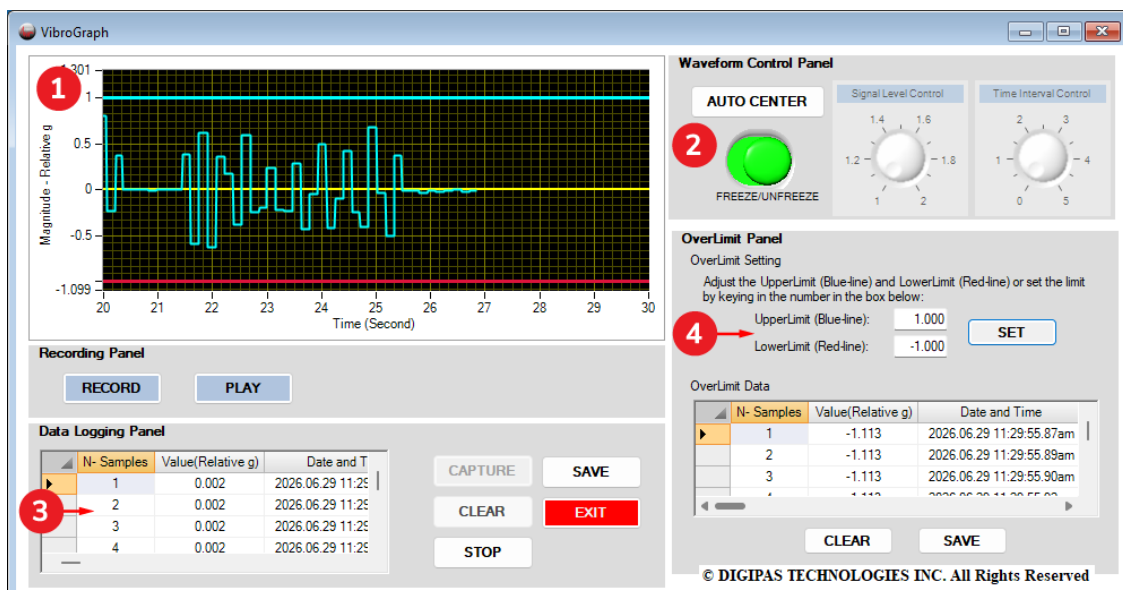


Figure 16. Vibrometer Interface

1. Vibration Graph

The graph at the bottom displays the live measurement trend over time.

- The horizontal axis shows the time in seconds.
- The vertical axis shows the measurement value in the selected unit.
- The plotted lines represent the real-time Vibrometer movement.

2. Waveform Control Panel

provides control settings for the waveform graph. in this panel contain the following control:

a. Auto Center Button

To auto adjust the vertical scale of the graph and set the zero relative gravity at the center of the graph.

b. Freeze/Unfreeze toggle

Freeze or unfreeze live data reading.

c. Time Interval control

To adjust the time interval (Horizontal Scale) for the vibration graph.

Scale 0: 10 seconds (default)

Scale 5: 5 seconds.

d. Signal Level Control

To amplify the measured magnitude of vibration.

Scale 1: Original measured vibration value

Scale 2: Double the measured vibration value

3. Data Logging Control Panel

To start data logging, select the unit of time (second / millisecond). Next, select the number of samples and time duration per capture by pressing the up down arrow accordingly. Click CAPTURE button to initiate data logging. Click STOP button to halt data logging and click CLEAR button to erase or click SAVE button to store the data. EXIT button is used to quit the VibroMeter window.

4. Over Limit Control Panel

The OverLimit Panel is used to set the upper and lower vibration limit values for waveform monitoring. Users can enter the UpperLimit value, indicated by the blue line, and the LowerLimit value, indicated by the red line. After entering the required limit values, press the SET button to apply the limit settings to the waveform graph.

The OverLimit Data table records any vibration reading that exceeds the configured upper or lower limit. Each recorded entry includes the sample number, measured value in Relative g, and the date and time when the over-limit event occurred.

The CLEAR button is used to remove the recorded over-limit data from the table. The SAVE button is used to save the over-limit records for future review or reporting.

5.6. 3D Surface Geometry Profile Graph

This feature allows users to perform 3D surface flatness geometry measurement, profiling and characterization. The 3D visual graph and its corresponding 3D numeric data can be saved and stored in Excel file for further analysis & record.

The 2-axis simultaneous display of angles effectively simplifies the surface flatness profiling task to one-half the time required when using a traditional 'single-axis' digital level that takes readings one axis at a time. No costly need for owning 2 units of single-axis digital levels to do the same task.

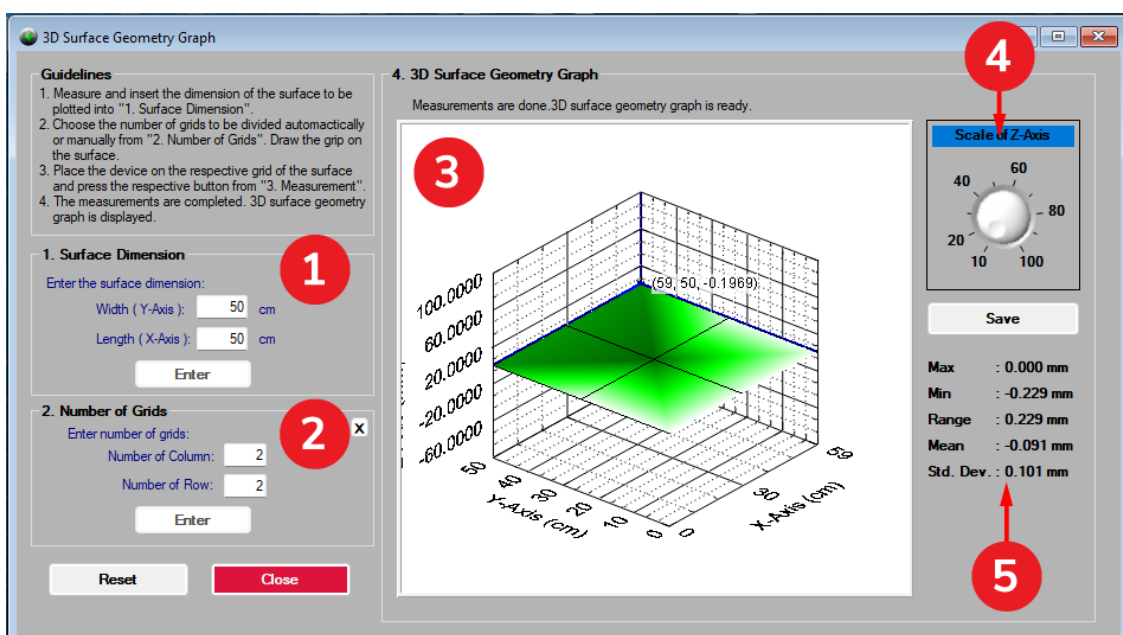


Figure 17. 3D Graph Interface

1. Surface Dimension

Measure the dimension (width & length) of the surface. Insert the measured value into the column and click enter.

2. Number of Grids

Choose the surface to be divided into small grids automatically or manually. Draw the grids on the surface.

3. Measurement

Put the device in dual axis mode. Place the device on the grid and press the respective button. Repeat this step until all the grid are measured. after the grid are measured the 3D Surface Geometry Graph will appear.

4. Scale of Z-Axis & Save Report button

Tune the knob to adjust the scale of Z axis.

Click save button to save the graph and numerical data into excel file.

5. Measurement Statistics Summary

Displays the calculated statistical values from the recorded measurement data. It shows the maximum value, minimum value, measurement range, average value, and standard deviation in millimeters. This output helps users quickly review the overall variation and stability of the measured data.