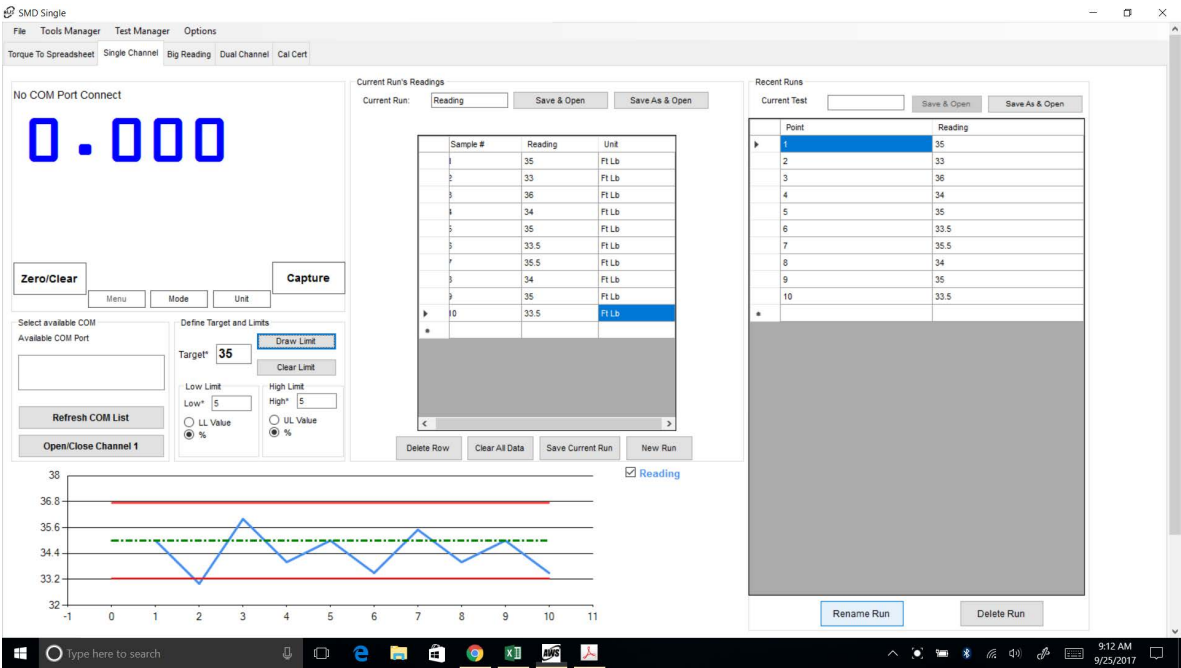


SMD-Torque To Spreadsheet

Software Manual, September 2017



Software Developer

Huy Huynh

SOFTWARE DESCRIPTION

Torque to Spreadsheet is an intuitive application that allows users to quickly connect to torque test stands or digital transducers through a serial or USB Cable. This application facilitates the display, collection, archiving and processing of torque readings. For data export TTS can launch Excel for further data analysis, reporting and archiving.

Platform Requirements

- Windows 7/8/10.
- Microsoft Excel is required for Exporting Readings and Graphing Function.

Installation

1. Installing the software.

Application is installed by simply running the Torque To Spreadsheet.msi file that is provided. Please read the **Readme** file before extracting and running.

Follow instructions on screen to finish installing.

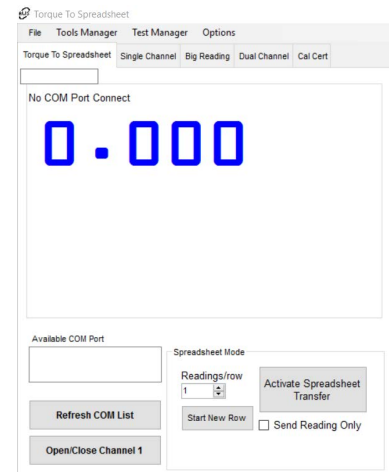
The Driver for Cables can be installed by running CDM21216_Setup.exe.

Please note: ONLY install the Driver for USB Cable if the software fails to recognize the cable.

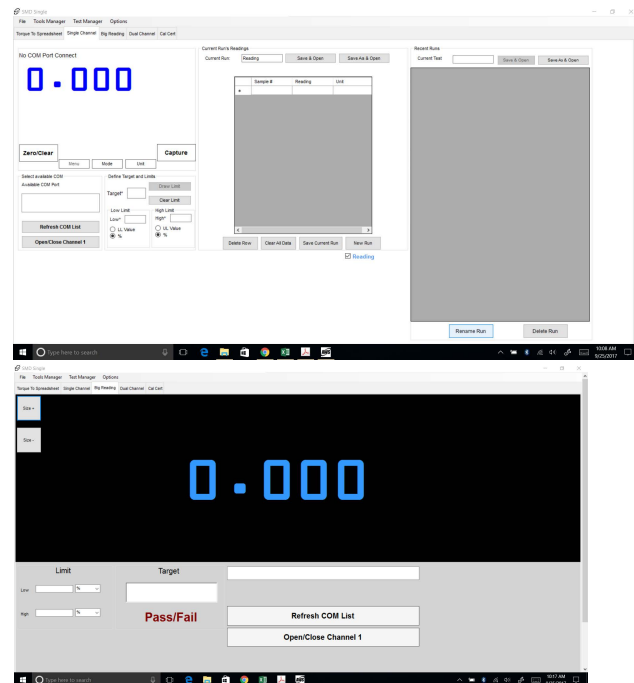
Application Components

2. Software Modules - choose the module by selecting the desired TAB

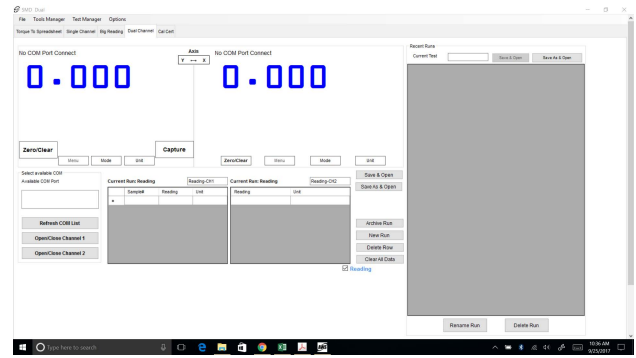
- a. **Torque To Spreadsheet TAB:** This module allows the user to export the reading from testers directly into an Excel file (works as a terminal emulator). User clicks on "Activate Spreadsheet Mode". User opens an excel file and places mouse cursor on any cell of Excel Spreadsheet. Each reading will be exported into the Excel file where the cursor is located.
- Please note:** This feature currently does not work with digital transducers.



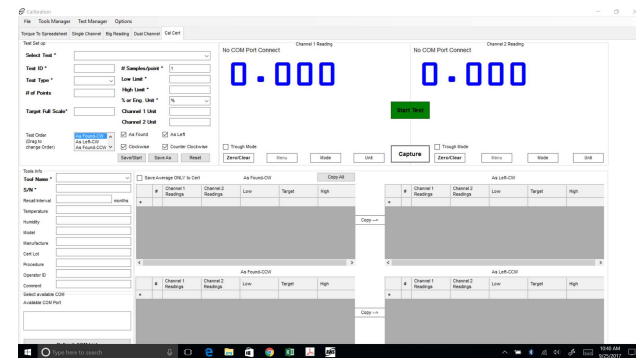
- b. **Single Channel TAB:** This module allows the user to take readings from one channel. User can set Target, Low Limit and High Limit, as a percentage or absolute value. Single Channel Mode also features live graphing and exporting of all data along with the graph into an Excel Spreadsheet. (User does not have to place cursor into a cell)
- c. **Big Reading TAB:** This module displays large readings for easy viewing in Single Channel mode.



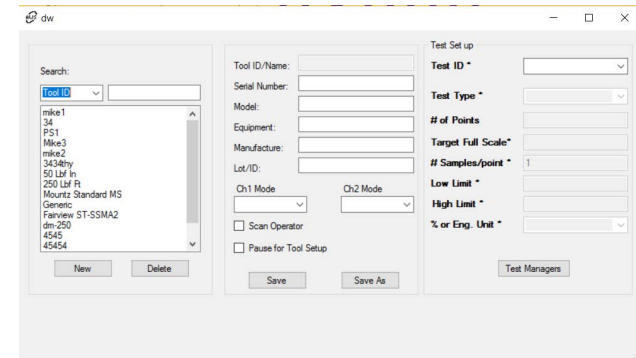
- d. **Dual Channel TAB:** This module has the same features of the Single Channel mode and allows the user to monitor and graph two channels almost simultaneously. Facilitates torque vs torque and torque vs pressures graphs.



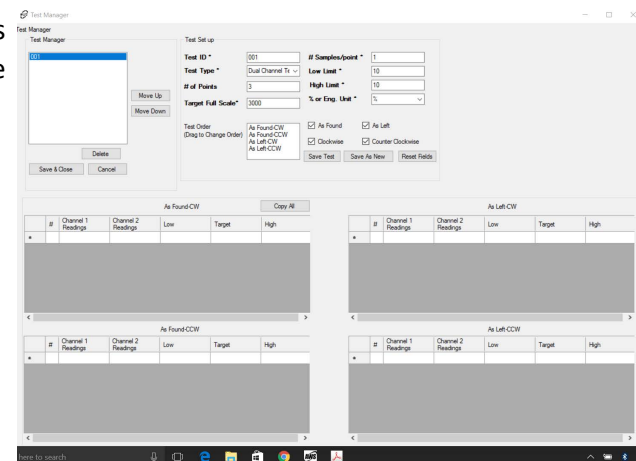
- e. **Calibration TAB:** Calibration module allows setting up Multiple Target Points for either Single or Dual Channel Test. Export the Test To Excel or Cert Manager for creating Certification.



- f. **Tools Manager TAB:** This module allows the user to create or select tool files.



- g. **Test Manager TAB:** This module allows the user to create or select Tests to be used to perform calibrations.



Software Manual

File Tools Manager Test Manager Options				
Torque To Spreadsheet		Single Channel	Big Reading	Dual Channel Cal Cert

No COM Port Connect

0.000

Available COM Port

Refresh COM List

Open/Close Channel 1

Spreadsheet Mode

Readings/row

1

Start New Row

Activate Spreadsheet Transfer

☐ Send Reading Only

Torque To Spreadsheet Application Tab and Options

File Tab

- ❖ **Open:** Opens pop up window for selecting directory and files.
- ❖ **Restart App:** restart application. All Current Readings will be lost.
- ❖ **Define Quick Export Path:** Define a Folder to Export Excel. This folder applies for Single Channel Quick Export, Dual Channel Quick Export and Calibration Excel Export.
- ❖ **About:** Copyright, version and contact information.
- ❖ **Exit:** exits the application

Options Tab

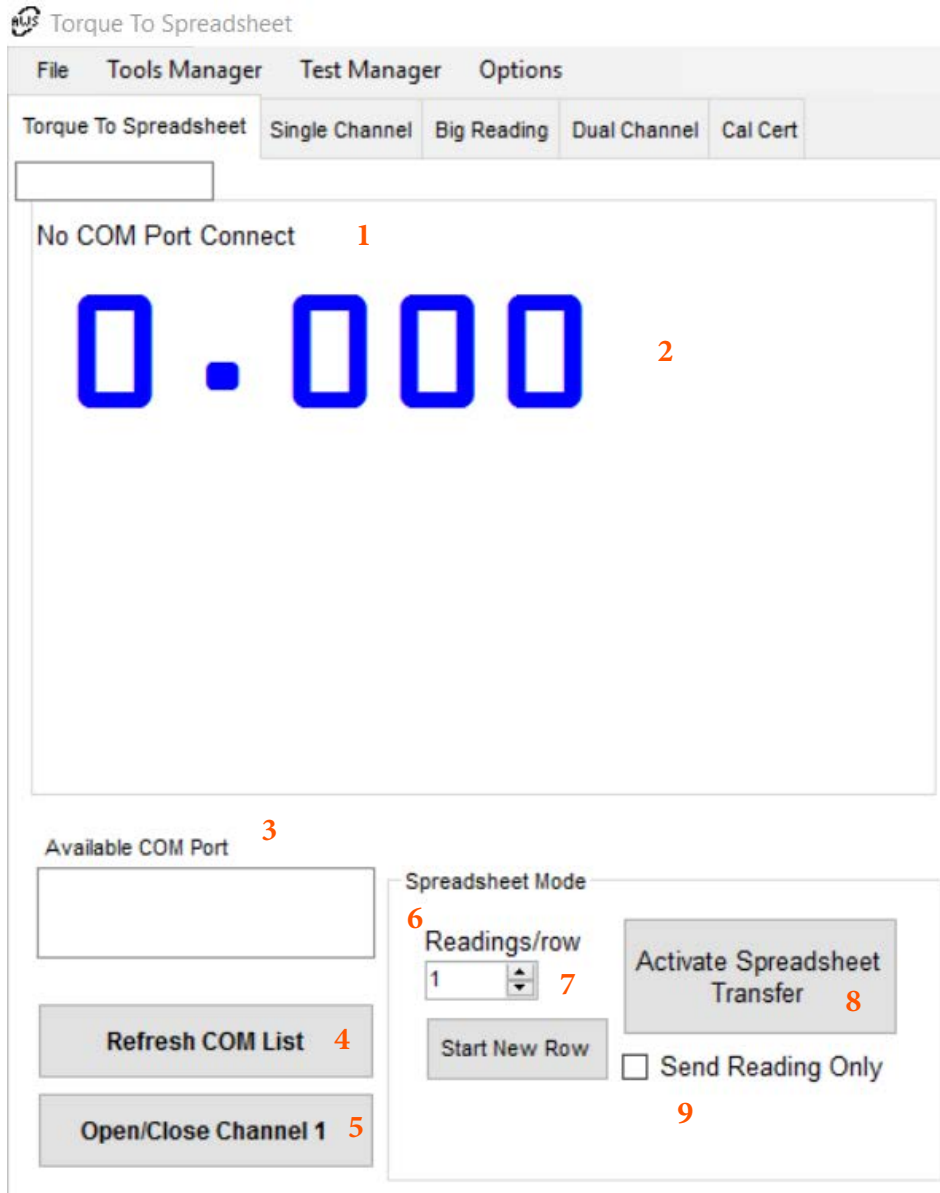
- ❖ **Always on Top:** Keep this Application on Top of other Applications.
- ❖ **Time Date Stamp:** Include Time and Date along with the Readings-only works in Torque to Spreadsheet.
- ❖ **Show ALL COM available:** only turn on this Option if the software is unable to find the connected device.
- ❖ **Enable Live Reading:** Turn on by Default. This Option shows the Reading of the Tester that is connected to the software.
- ❖ **Overwrite Data at Cursor:** only applies for Single Channel and Dual Channel mode. Turning on this option will record Reading to the Row that user is currently selecting on Grid View.
- ❖ **Force Auto-clear:** Forces the device to AutoCLR captured reading.
- ❖ **Auto Update:** If application is connected to the internet and company IT department allows the application will automatically update.
- ❖ **Check for Update:** If connected to the internet sends a query to our system for any updates.

Torque To Spreadsheet

I. Overview

This is the most basic application module that allows user make use of SPREADSHEET MODE (see Software Mode Page 3)

II. Instruction



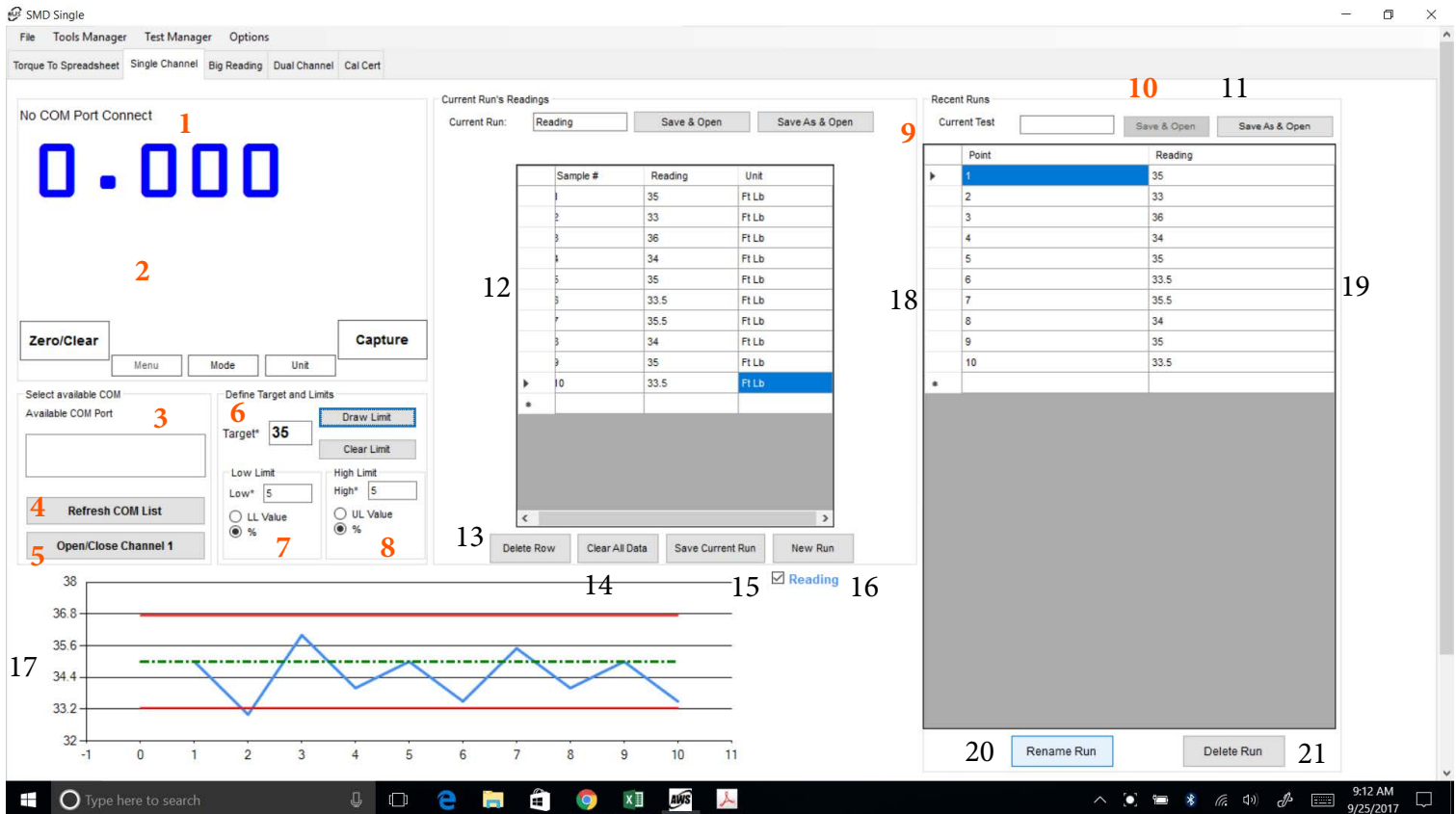
- 1:** Show the current COM Port Connected and Full Scale of Tester that is connected
- 2:** Shows Live Reading and Measurement Units of the Tester Connected.
- 3:** Shows List of Available Testers that can be connected to the TTS Application. To connect to non Intellect Tester, go to Options → Turn on “Show All COM Available”.
- 4:** Refresh available COM list.
- 5:** Open or Close Channel 1.
- 6:** Select how many sets of Readings (per row) before the cursor moves to next row in Excel Spreadsheet.
- 7:** Reset the Count for Readings per row.
- 8:** Start or Stop Spreadsheet Mode that parses data from Tester to an Excel Spreadsheet.
- 9:** Send Reading Only Torque To Spreadsheet User can select Reading only or Memory Location, Reading, Engineering Unit, Date and Time if available to Excel.

Single Channel

I. Overview

This TTS module allows the user to define Target, Low Limit, and High Limit. This option populates captured Readings into the graph using the defined Target and Limits. Exporting to Excel will also place the graph into the spreadsheet.

II. Instruction



- 1: Shows the current COM Port Connected and Full Scale of Tester that is connected.
- 2: Shows Live Reading and Measurement Units of the Tester Connected. If connected to Intellect Tester, user can also control Tester using the TTS application. Sending parameter setup commands to the Tester - Unit, Mode, Menu, Zero/Clear
- 3: Shows List of Available Testers that can be connected to TTS application. To connect to non Intellect Tester, go to Options → Turn on "Show All COM Available".
- 4: Refresh available COM List.
- 5: Open/Close Channel 1 Connect or Disconnect the Tester.

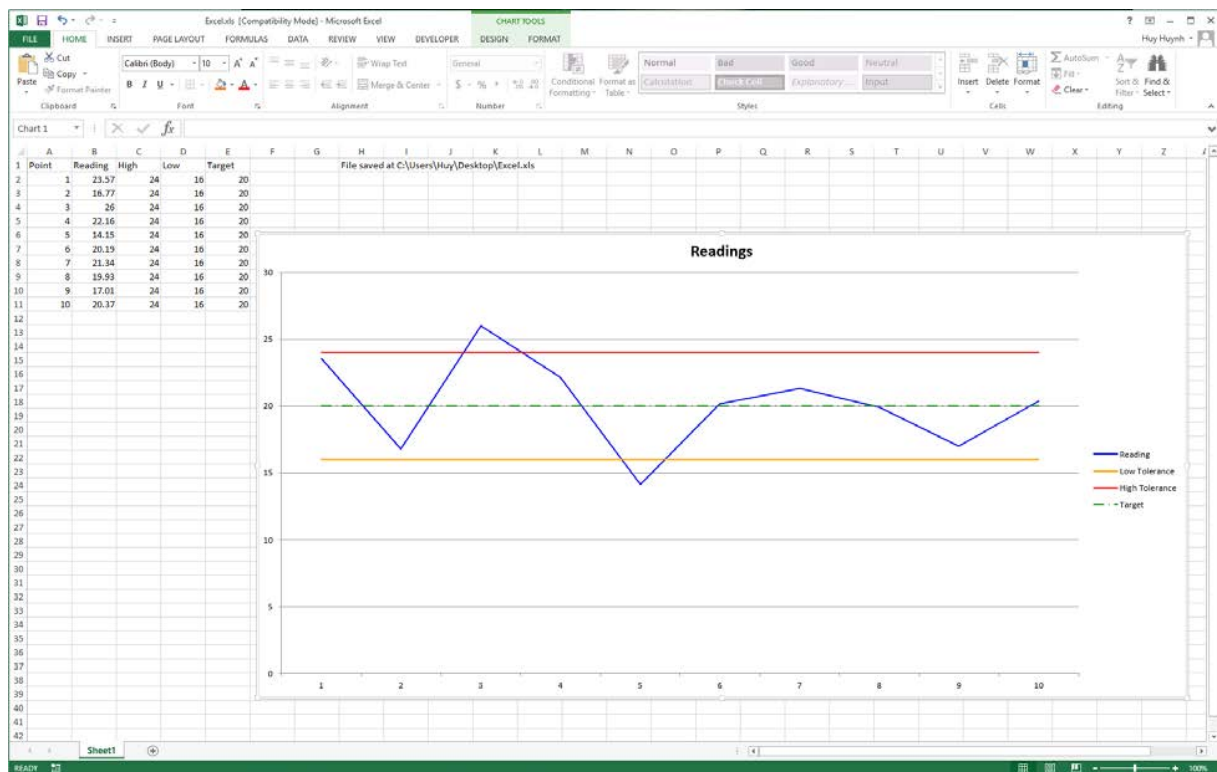
6: Define a Target. This Target applies to all Readings taken in this module.

7: Define Low Limit, select from % of Target or Absolute Limit Value. This Limit applies to all Readings taken in this Mode.

8: Define High Limit, select from % of Target or Absolute Limit Value. This Limit applies to all Readings taken in this Mode.

9: Show the Name of Current Run. User can also change the Current Run Name from here.

10: Save & Open or Save As and Open Exports the Current Run Readings to Excel. Excel File will be saved under The Quick Export Path or destination of User's choice (See File → Define Quick Export Path). See pic:



11: Export the Current Run Readings to Excel. This option allows user to choose the specific path to Save, instead of Default to Quick Export Path.

12: This Grid View shows the recorded Readings for current Run.

13: Delete the current Row that user is selecting on current Run's Grid View.

14: Clear All the Data in Current Run's Grid View.

15: Save the Current Run Reading into Recent Run's Grid View on the right.

16: New Run Save Current Run into Recent Run Grid view and start new current Run.

17: Show the live Graph, along with Target, Low and High Limit (Dotted Green and Solid Red Horizontal Line).

18: Similar to functions described in points 9, 10 and 11; but applies for the complete Test (which includes all the Saved Runs and Current Run).

19: Show the Readings for all Saved Runs.

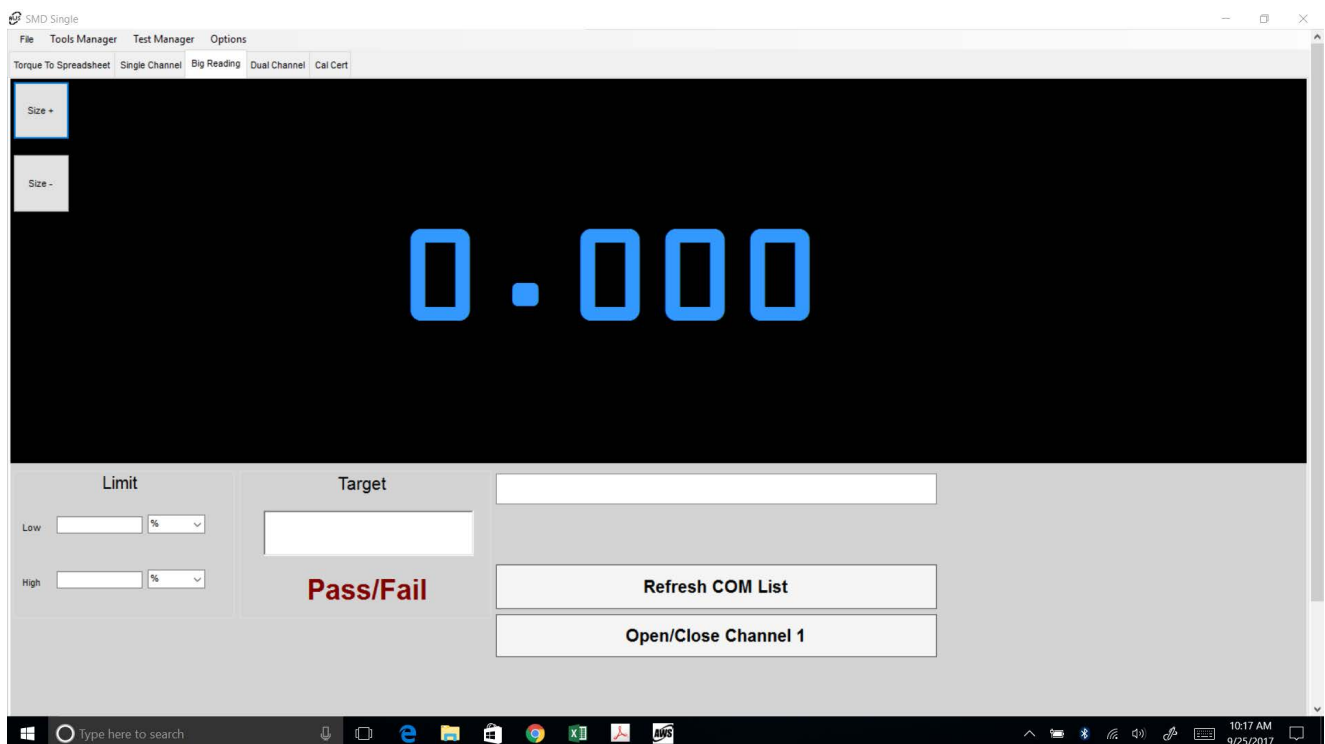
20: Allow user to change the names of all Saved Runs.

21: Allow user to Delete all the Saved Run (Current Run cannot be deleted. Use Clear All Data button under Current run table to clear.

Big Reading

I. Overview

This TTS module changes the display so that User's can easily see readings and Pass/Fail when conducting a test in Channel 1. There are multiple "buttons" for Size +, Size -, Low Limit, High Limit and Target. The display has Pass/Fail and Refresh COM List and Open/Close Channel 1 to facilitate communication.



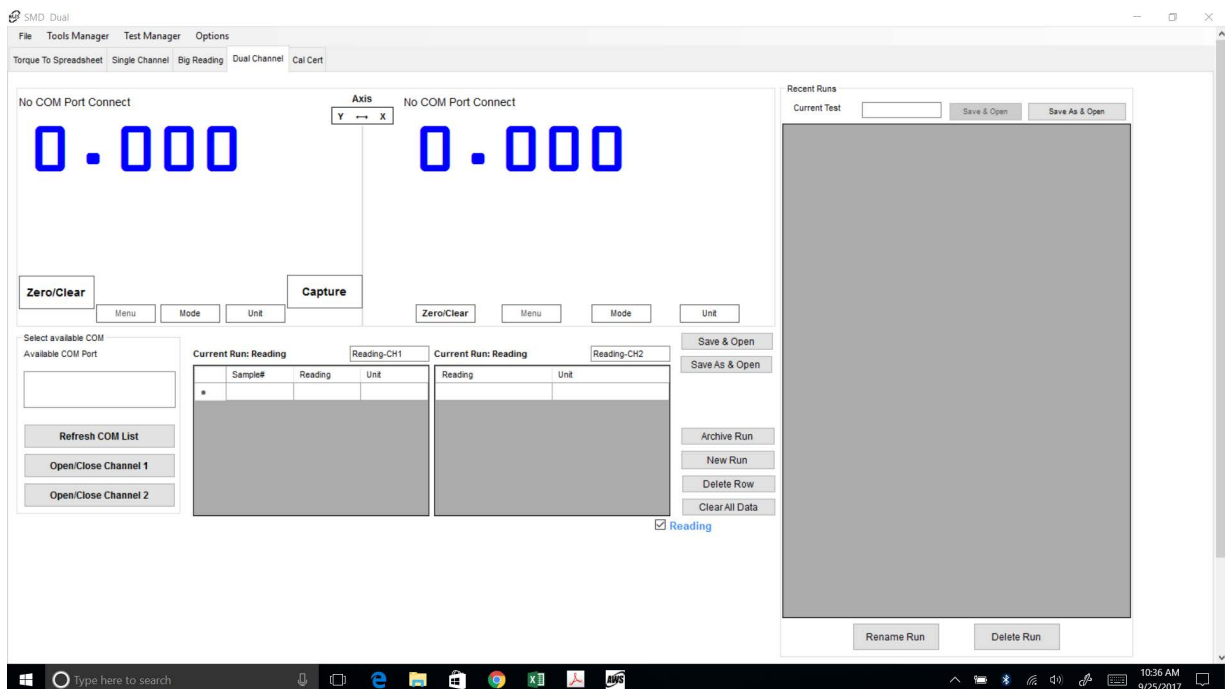
Dual Channel

I. Overview

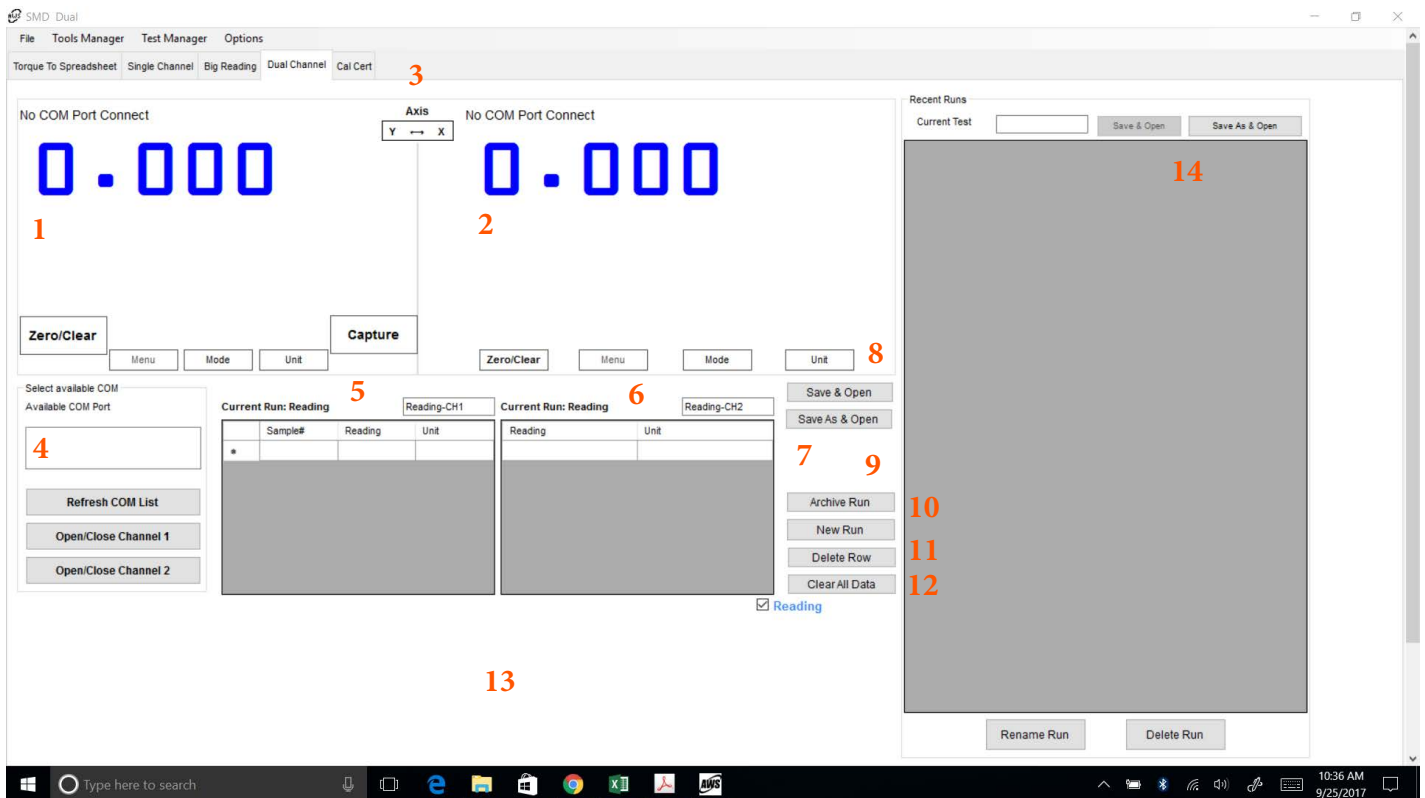
This TTS module allows user to define Target, Low Limit, and High Limit in the spreadsheet just like previous module, but user can connect up to two inputs. This option populates captured Readings into the graph using the defined Target and Limits. Exporting to Excel will also place the graph onto the spreadsheet.

*Note:

1. When both Channels are connected, pressing Enter or Capture on Channel 1 will also capture Channel 2.
2. To capture Channel 2 without having to connect a Tester to Channel 1, simply type in a new Reading for CH1 Grid View.
3. Each Test can consist of many Runs. The default Name for first Run is: Reading.
4. Each Run consists of Channel 1 Readings and Channel 2 Readings. The default names for them are: Reading-CH1, Reading-CH2.



II. Instruction



- 1: Shows Information of Tester/Transducer and Live Reading that is currently connected to Channel 1.
- 2: Show Information of Tester/Transducer and Live Reading that is currently connected to Channel 2.
- 3: Switch which Channel is graphed as X axis and Y axis. This setting cannot be changed after saving the first Run.
- 4: Show Available Testers/Transducers that can be connected.
- 5: Show Current Run Reading for Channel 1, as long as the Current Run Name is selected.
- 6: Show Reading of Current Run for Channel 2, as long as the Current Run Name is selected.
- 7: Export the Current Run Readings to Excel. This option allows user to choose the specific path to Save, instead of Default to Quick Export Path.
- 8: Export the Current Run Readings to Excel. Excel File will be saved under The Quick Export Path (See File → Define Quick Export Path).
- 9: Save the Current Run Readings into Recent Run's Grid View on the right.
- 10: Save "Archive" Current Run into Recent Run Grid view and start new current Run.
- 11: Delete the current Row that user is selecting on current Run's Grid View.
- 12: Clear All the Data in Current Run's Grid View.
- 13: Show the live Graph for all Runs.
- 14: Show Readings of all Saved Runs, along with option to Export all Runs into Excel Spreadsheet.

Cal Cert Tab

I. Overview

Calibration module allows user to create a New Test or to select an existing Test in the Test Set Up window.

User can enter the Test ID, Test Type, # Points, Target Fullscale, Test Order, (As Left CW, As Found CW, As Found CCW, As Left CCW), # Samples/point, Low Limit, High Limit, % or Eng. Unit, Channel 1 Unit, Channel 2 Unit sequences with multiple Targets, Low and High Limits. After selecting or identifying a test, user can Run Test and Export Data to Excel or to Cert Manager Application (also included if purchased with SMD-Dual package)

User can also select or create Tool information. The information includes **Tool Name**, **S/N**, Recall Interval, Temperature, Humidity, Model, Manufacture, Cert Lot, Procedure, **Operator ID** and includes a Comment field. Fields in **Bold** are required to be filled in.

Calibration

File Tools Manager Test Manager Options

Torque To Spreadsheet Single Channel Big Reading Dual Channel Cal Cert

Test Set up

Select Test * 001

Test ID * 001 # Samples/point * 1

Test Type * As Left-CW Low Limit * 10

of Points 3 High Limit * 10

Target Full Scale * 3000 % or Eng. Unit * %

Test Order (Drag to change Order) As Left-CW

☐ As Found ☒ As Left

☒ Clockwise ☐ Counter Clockwise

Start Save As Reset

No COM Port Connect Channel 1 Reading

0.000

No COM Port Connect Channel 2 Reading

0.000

Start Test

Zero/Clear Menu Mode Unit Capture Zero/Clear Menu Mode Unit

Tools Info

Tool Name * Save Average ONLY to Cert

S/N * As Found-CW Copy All

Recall Interval months

Temperature

Humidity

Model

Manufacture

Cert Lot

Procedure

Operator ID

Comment

Select available COM

Available COM Port

#	Channel 1 Readings	Channel 2 Readings	Low	Target	High
*					

Copy -->

#	Channel 1 Readings	Channel 2 Readings	Low	Target	High
*					

Copy -->

#	Channel 1 Readings	Channel 2 Readings	Low	Target	High
*					

Copy -->

#	Channel 1 Readings	Channel 2 Readings	Low	Target	High
*					

Copy -->

Windows taskbar: 12:18 PM 9/27/2017

II. Instruction

The screenshot shows the Calibration software interface. The top menu bar includes File, Tools Manager, Test Manager, and Options. The 'Test Set up' section on the left contains fields for Select Test*, Test ID*, Test Type*, # of Points, Target Full Scale*, and Test Order. The main area features two large digital displays for Channel 1 and Channel 2 readings, both showing 0.000. Below the displays are buttons for Start Test, Capture, and various settings. The bottom section contains four data tables for 'As Found-CW', 'As Found-CCW', 'As Left-CW', and 'As Left-CCW'. The left sidebar includes a 'Tools Info' section with fields for Tool Name*, S/N*, Recall Interval, Temperature, Humidity, Model, Manufacture, Cert Lot, Procedure, Operator ID, and Comment. The bottom of the interface has buttons for Save & Open Excel, Delete Last, Clear Readings, New Test, Save To Cert, and Open Cert.

1. Test Set up: If this window is enabled, it indicates that the application is currently in Test Setup Mode. Fields in **Bold** and with an * are required to be filled in before being able to start a test.

- Select Test*: Select existing Tests, (default Tests are indicated by the double asterisk. **) or create New Test:
 - 3 points**: 20%, 60%, 100% of Full Scale
 - 5 points**: 20%, 40%, 60%, 80%, 100% of Full Scale
 - 5 points and 10%**: 10%, 20%, 40%, 60%, 80%, 100% of Full Scale
 - 5 points 5% and 10%**: 5%, 10%, 20%, 40%, 60%, 80%, 100% of Full Scale
 - 10 points**: 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100% of Full Scale
 - 10 points and 5%**: 5%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100% of Full Scale
 - 20 points**: 5%, 10%, 15%, ..., 95%, 100% of Full Scale
- Test ID*: Name of the Test.
- Test Type*: Either Single or Dual Channel Test.
- # Of Points*: indicates how many targets there are. Unless it is one of the Default Tests, Users custom Test Targets will be Full Scale divided evenly by the # of Points.
- Target Full Scale*: Indicates Full Scale of Tester.
- # Samples/points*: Indicates how many samples will be taken for each Target Point.
- Low Limit*/High Limit*: Define the limit that will determines whether the Readings pass or fail.
- % or Eng. Unit*: Select whether the limit values are a percentage (%) or a specific numerical value from Target.

- Channel 1 Unit/ Channel 2 Unit: Will automatically sync up with Tester once connected. User doesn't need to fill out this field.
- Test Order: User can select which quadrant of the test to run and in which order.
- Save As: Save the current Test as a New Test.
- Reset: reset all values to the original Values of the Test. Please note that if a Test was changed and saved, it will only revert back to the values AFTER the last Save.

2: User can fill in Tool Information in Tools Info Window, this information will populate Cert Manager.

3: Listing of Available Testers/Transducers that can be connected.

4: Display Live Reading of Testers/Tranducers that are connected to Channel 1 and Channel 2.

- Trough Mode: can only be activated in Dual Channel Test and should only be used for Air Tools.

5: Export Average ONLY to Cert Manager: in case there are more than 1 # Samples/point, checking this option will only export Average values for each Test Target to Cert Manager.

6: Copy All: This option is only available in Test Setup Mode. All Low, Target, High values from As Found-CW quadrant will be copied to the other 4 quadrants when clicked.

7,8,9,10: Show All Test Points that will be taken for this Test. Target, High, Low column can be edited manually while in Test Setup Mode, but not during a Test. As Found Readings can also be copied over to As Left Reading by using the Copy button.

11. Excel Export: Export current Readings to an Excel Spreadsheet, along with Tool Info. Please note that this Excel export CANNOT be read by Cert Manager.

12. Delete Last: Delete the most recent reading that was taken.

13. Clear Readings: Clear all Readings. Ready for new test.

14. New Test: Clear all the Readings and go back to **1. Test Set up**.

15. Save To Cert: Save the current Test into Cert Manager. Please make sure to press Import Cert after opening up Cert Manager to update any new Cert.

16. Open Cert: Open Cert Manager Application.

Tools Manager Tab

I. Overview

Tools Manager allows user to select or create a tool profile and then associate a Test with the Tool.

User either selects a Tool file or clicks on New to create a new tool file. The **Tool ID** is required, all other fields are optional. After selecting or creating the Tool file user can associate or create a Test file for this specific tool.

The screenshot shows the 'Tools Manager' window with the following components and numbered callouts:

- 1:** Search field for Tool ID.
- 2:** 'New' button to create a new tool file.
- 3:** 'Tool ID/Name' text box, a required field.
- 4:** 'Ch1 Mode' and 'Ch2 Mode' dropdown menus.
- 5:** 'Scan Operator' checkbox.
- 6:** 'Pause for Tool Setup' checkbox.
- 7:** 'Save' and 'Save As' buttons.
- 8:** 'Test ID' dropdown menu in the 'Test Set up' section.
- 9:** 'Test Managers' button at the bottom right.

Other visible fields include 'Serial Number', 'Model', 'Equipment', 'Manufacture', 'Lot/ID', 'Test Type', '# of Points', 'Target Full Scale', '# Samples/point', 'Low Limit', 'High Limit', and '% or Eng. Unit'.

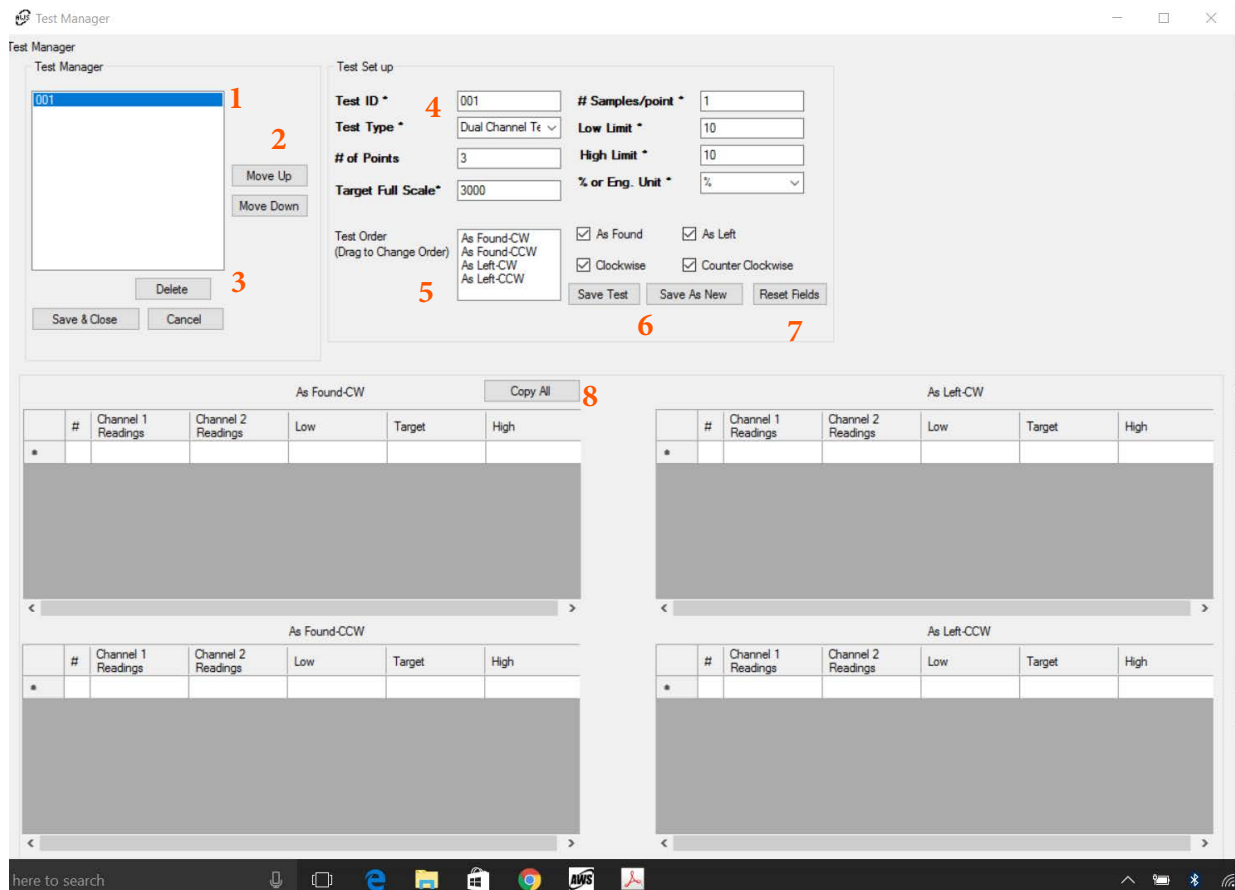
- 1:** Select Tool ID file name
- 2:** Click on New to create a new Tool file.
- 3:** Tool ID/Name is required, all other label fields are optional at this point.
- 4:** Select Torque Mode for Ch 1 and Ch 2 if running Dual Channel.
- 5:** Select whether to force Operator ID (Scan Operator).
- 6:** Select whether to force a pause to make adjustments to the tool being tested.
- 7:** Select whether to Save or Save As. Save saves file in Quick Path, Save As allow user to save in a different path/location.
- 8:** User can select a Test file to associate with the Tool or create a New Test file.
- 9:** Test Managers launches full Test Manager module.

Test Manager Tab

I. Overview

Test Manager allows user to select or create a test profile.

User either selects a Test file or enters a new Test ID name.



1: Select Test ID file name

2: Use Up and Down buttons to scroll through file names.

3: Select Delete, Save & Close or Cancel.

4: Enter Test Set up Test to edit or create new test file. ID/Name is required as is all **bold** label fields.

5: Select As Found CW, As Left CW, As Found CCW, As Left CCW.

6: Save Test or Save As New.

7: Reset Fields.

8: Copy All. Copies data into all quadrants.