# SMART TWEEZERS ST5S-BT BLUETOOTH UTILITY

Version 1.0.1

User Manual

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## INSTALLATION.

The installer package is available on the USB drive supplied with the ST5SBT or as a download from our website.

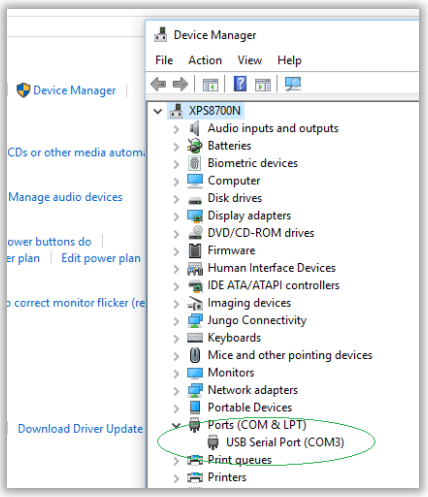
Run the installer executable and follow its prompts.

It is recommended to install the supplied FTDI VCP (Virtual COM Port) drivers from the package to ensure proper connectivity to the BT receiver.

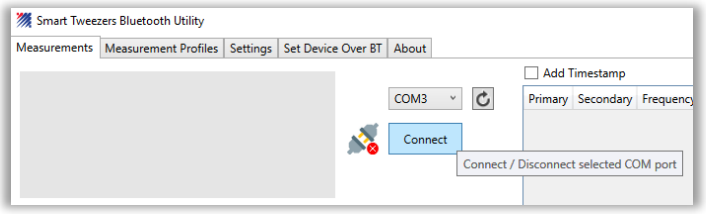
## CONNECTING TO SMART TWEEZERS ST5SBT

Insert the supplied BT receiver into an available USB port.

*Note: If there are several USB-to-COM adapters connected to the PC, note the COM port number which appears in the Windows Device Manager after the ST5SBT receiver is inserted into the USB port. For example:*

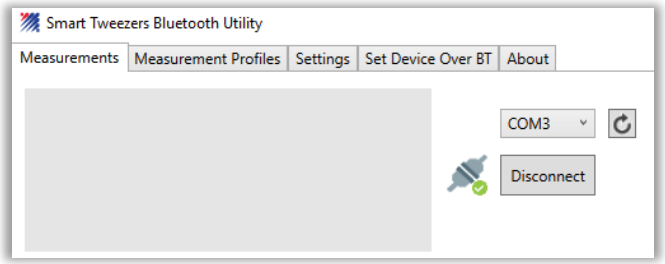



Start the application and check that a COM port is available in the application's dropdown box or select the receiver's assigned COM port.




*Note: If there is no COM port is listed in the dropdown box, verify the hardware installation in the Windows Device Manager and/or reinstall FTDI drivers.*

Click CONNECT button. This connects the application to the selected COM port.




Enable Bluetooth functionality on your Smart Tweezers device by entering menu and selecting *SYSTEM->BLUETOOTH->ON*

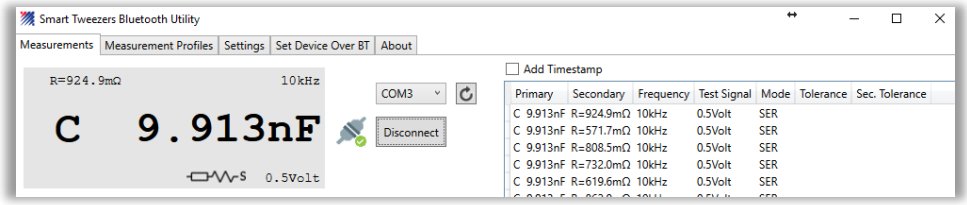
Check the connectivity by measuring any electronic component.

*Note: To troubleshoot connectivity*

- *Make sure that Bluetooth is enabled in the Smart Tweezers device*
- *Close the application*
- *Remove and re-insert the receiver*
- *Open the application and re-connect.*

## MEASUREMENTS SCREEN

Current measurement readings are displayed on the main display area and logged into the history tape.

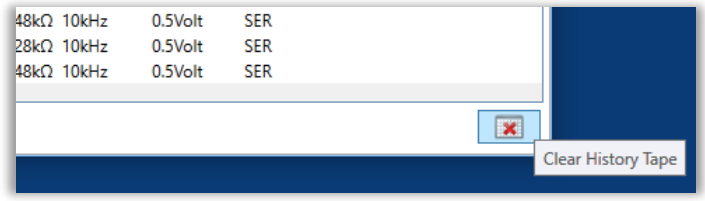



### ADDING TIMESTAMPS

Timestamps could be added to the history tape by checking the **Add Timestamp** checkbox.

### CLEAR HISTORY TAPE

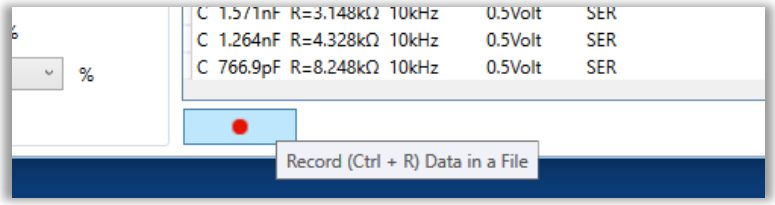
To clear the history tape click the Clear History Tape button.



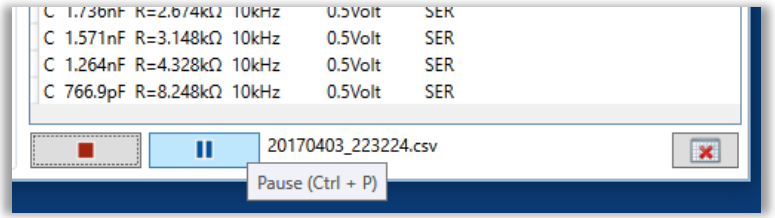
## RECORDING MEASUREMENTS INTO FILES.

Measurements can be recorded into CSV (Comma-separated values) files. The format is compatible with the Microsoft Excel and can be processed by other similar software systems for subsequent analysis.

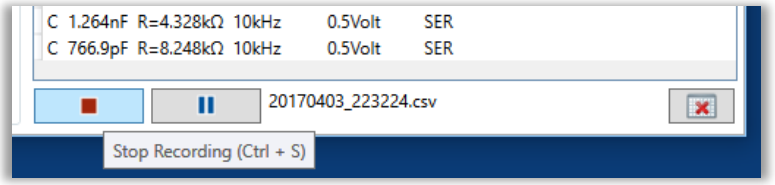
To start recording, click on the Record button.




To pause recording, click on the Pause button




To stop recording, click on the Stop Button




The default output folder and file name prefix can be altered on the **Settings** tab of the application.

# DATA TOLERANCE ALERTS

Smart Tweezers Bluetooth Utility can be set to trigger alerts if a measured value falls outside of the selected tolerance brackets.

The alerts can be set for Resistance, Capacitance or Inductance and accompanying secondary parameters independently.

In addition any kind of measurement can be marked as an outlier and it will not be recorded in the history tape and in the CSV files. For example if the user measures a set of capacitors, all resistances and inductances can be set as outliers (they will be ignored).

## CONFIGURING TOLERANCE ALERTS

### MANUAL CONFIGURATION

Tolerance alerts are configured in the same way for Resistance, Capacitance and Inductance.

Each configuration area contains controls for entering of reference values for primary and secondary values as well as a controls for marking the measurement kind as an outlier (ignoring).

To configure alert for primary values, enter the reference value, select unit of measurement and tolerance brackets.

To configure alerts on secondary values select context-specific value descriptor, reference value, unit of measurement (if any) and tolerance brackets.

To enable a value alert triggering check the related checkbox.

*Note: Secondary values are not available for resistance measurements.*

*Note: If both primary and secondary values alerts are enabled then measurements would be graded as PASS if both Primary and Secondary values are inside the tolerance brackets (AND relationship).*

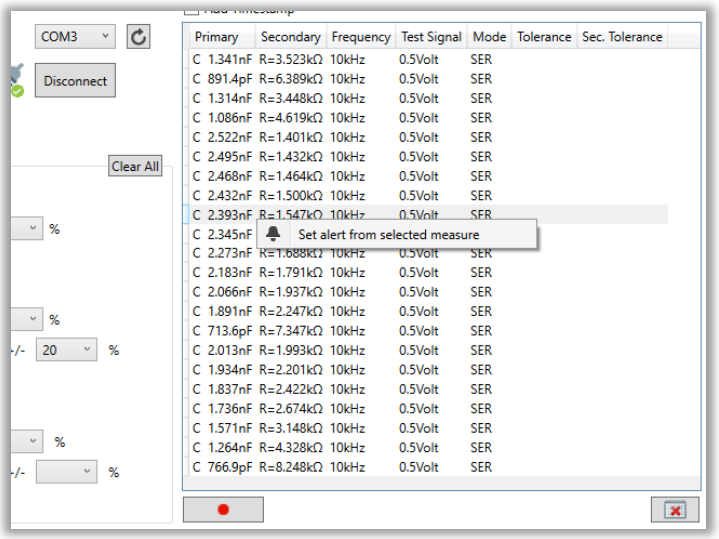
To set a specific kind of measurements as outliers, check the **Ignore All Values** checkbox.

## PREFILLING ALERTS FROM THE HISTORY TAPE

Alert configuration can be prefilled by a measured value from the history tape.

To prefill an alert:

- Measure a reference value component
- Find the corresponding line in the history tape.
- Right-click on the line
- Select “Set Alert from the Measured Value”
- The corresponding alert control will be prefilled with the measured readings




## MEASURING WITH SET TOLERANCE ALERTS

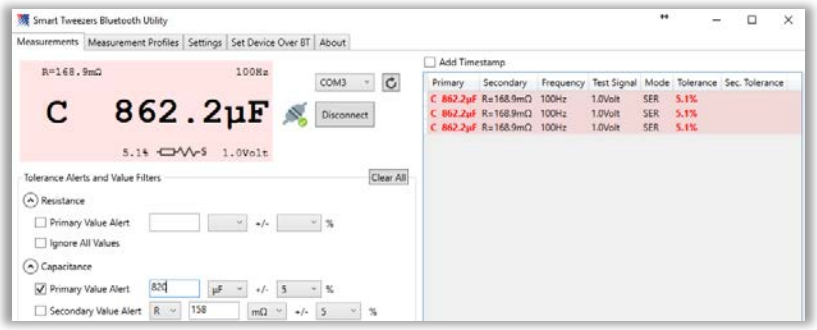
With tolerance alerts configured and enabled The Smart Tweezers BT Utility triggers alerts if the measured value of the corresponding kind falls outside the selected tolerance brackets.

The FAIL status will be indicated by:

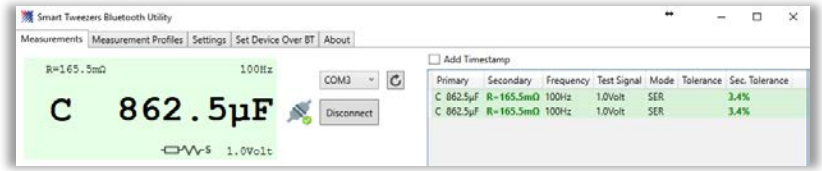
- Main display background changed to pink
- The corresponding line in the history tape will be highlighted by pink background
- The value will be highlighted by red in the history tape
- Audio cue will sound (configurable on the Settings screen)

For example, on the sample screens below:

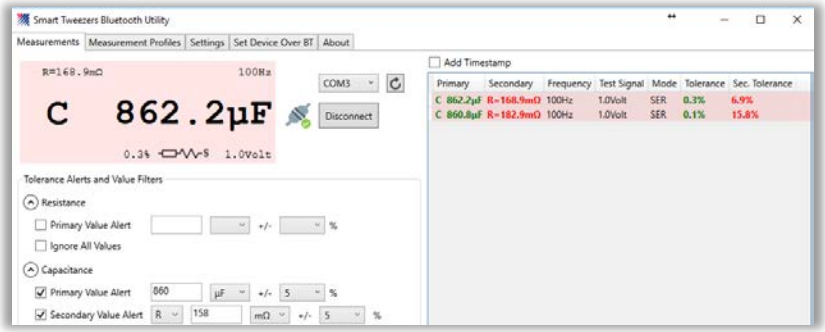
The tolerance alert has been set for a capacitance primary value (failed, outside the tolerance brackets)



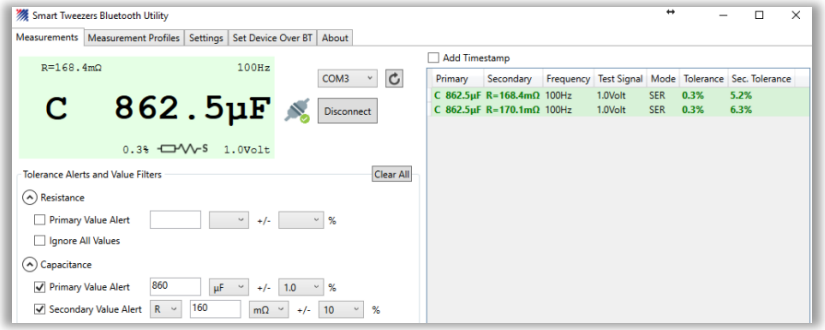

The tolerance alert has been set for a capacitance secondary value (passed, inside the tolerance brackets)




The tolerance alert has been set for both primary and secondary values (primary passed, secondary failed)




The tolerance alert has been set for capacitance's both primary and secondary values (both values passed)



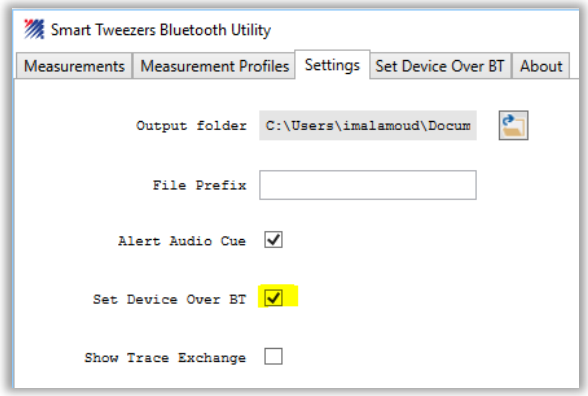
# SETTING SMART TWEEZERS OVER BLUETOOTH

Smart Tweezers ST5SBT can be controlled over the Bluetooth connection. Smart Tweezers Bluetooth Utility allows to set most measurement modes and device configuration options by sending Bluetooth requests.

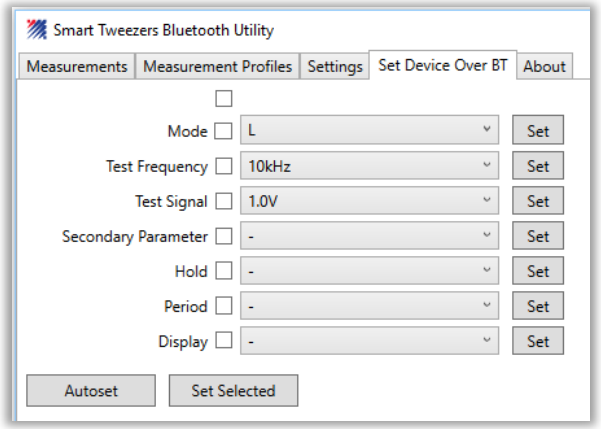
*Note: Control via Bluetooth function is implemented in the device firmware version 19.24 and later.*

## ENABLING CONTROLS

To enable the control function check the **Set Device over BT** option on the Settings tab




The **Set Device over BT** tab would appear.



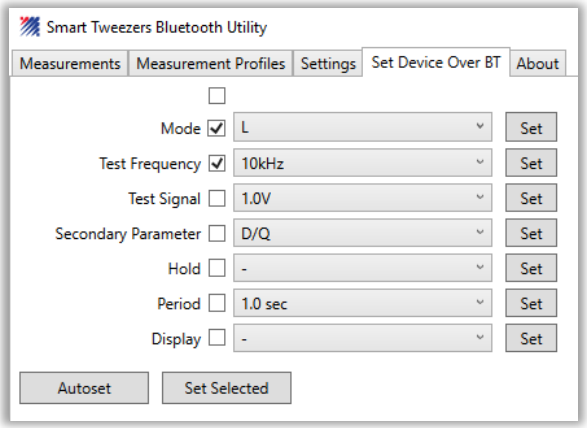

## SETTING SMART TWEEZERS OVER BLUETOOTH

On the Set Device over BT tab a set of dropdown boxes lists various device modes.

To reset the device into the default automatic mode click the **Autoset** button.
Smart Tweezers would switch into A/AM/AF mode.

To change a single mode, select it in the dropdown box and click the **Set** button beside the selected dropdown box.

To change several modes at once, select them in dropdown boxes, check checkboxes besides the modes to change and click the **Set Selected** button. For example on the picture below a configuration to set the mode to L and the testing frequency to 10 kHz is shown.




## MEASUREMENT PROFILES

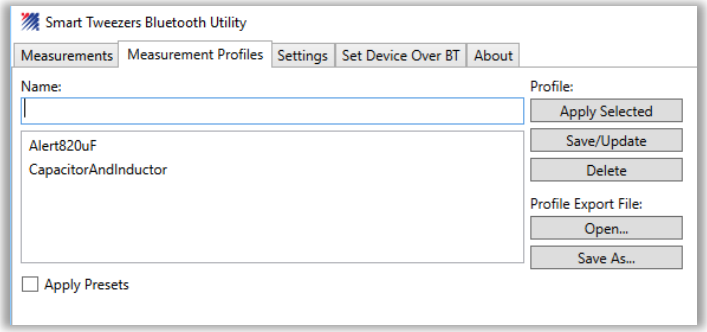
Smart Tweezers BT Utility allows to save the current application state as named profiles including

- Configured alert conditions
- Selected set of measurement parameters from the Set Device over BT tab
- Application settings

This is useful, for example in a case when complex alert conditions are required for later retrieval without reconfiguring.

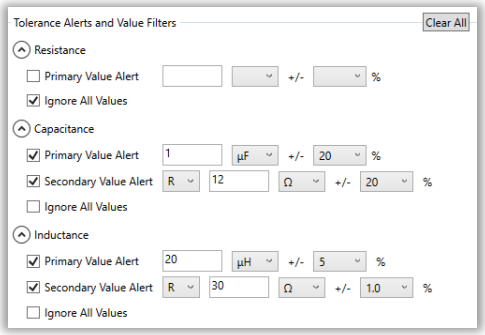
### CREATING MEASUREMENT PROFILES

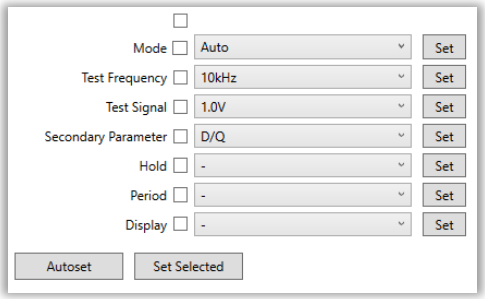
Measurement profiles can be managed on the Measurement Profiles tab of the application.



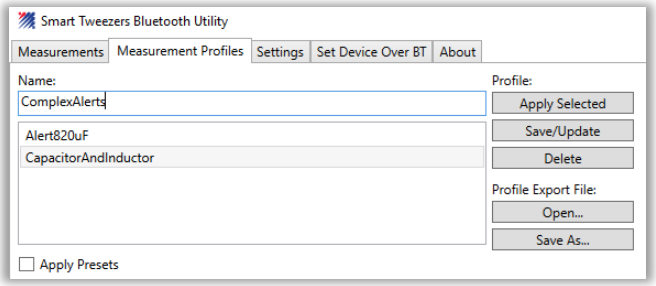
To create a measurement profile:

- configure an alert condition and (optionally) device settings. For example:

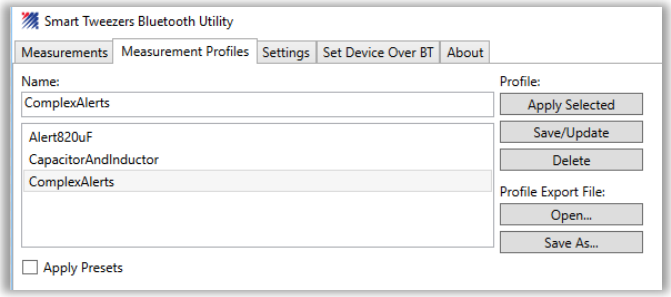



- activate Measurement Profiles tab
- enter a new profile name or select an existing profile from the list



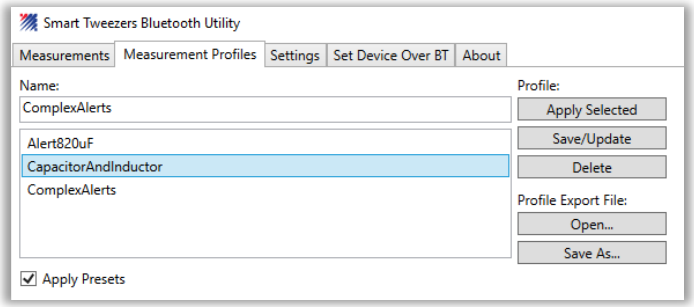

- click the Save/Update button




*Note: if the existing profile is selected it will be overwritten by the configured values*

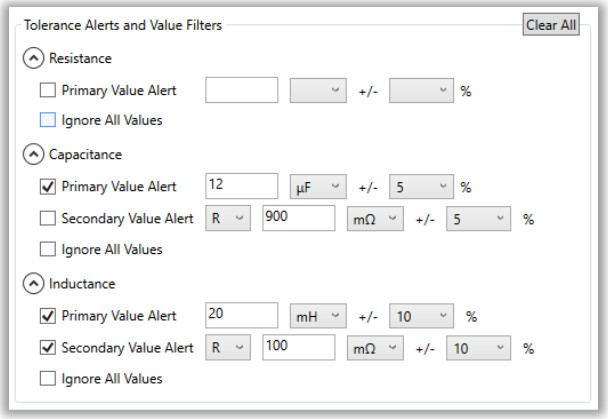
## APPLYING MEASUREMENT PROFILES

To apply a stored measurement profile, select it from the list and click on the **Apply Selected** button.




If the Apply Presets is checked then stored device settings will be sent to the connected Smart Tweezers device setting it in the preset mode.

Here is a sample result:




## DELETING MEASUREMENT PROFILES

To delete a profile, select it in the list and click the Delete button.

## EXPORTING AND IMPORTING MEASUREMENT PROFILES

Measurement profiles can be exported as files and imported from files.

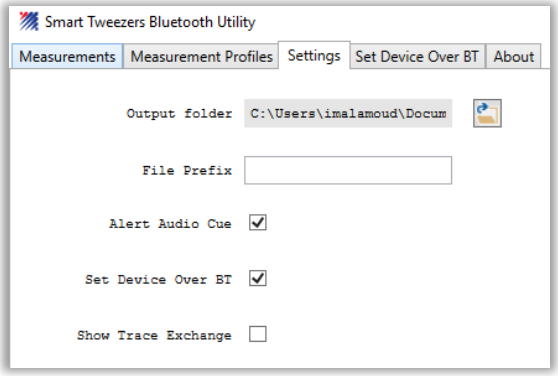
To export a profile, select it in the list and click the **Save As…** button.

The application will prompt for a file name.

To import a profile click on the **Open…** button and select a saved profile file.

## APPLICATION SETTINGS

The Settings tab contains a number of the application options:




- **Output Folder** sets a local folder for recorded measurements files
- **File Prefix** allows to add a custom prefix to recorded measurements files
- **Alert Audio Cue** enables or disables audio cues for failed tolerance alerts
- **Set Device Over BT** enables or disables the Smart Tweezers presets interface
- **Show Trace Exchange** enables or disables the **Trace Exchange** application tab where data exchanged between the application and the Smart Tweezers device can be inspected.