**Primary Data Analysis Software Quick Start Guide**

**Background**

The Primary Data Analysis Software is designed to replace the legacy Excel VBA software. This new software primarily uses Python, with VBA for formatting tables and charts. It facilitates the transition from subtest reports to consolidated reports, managing the entire test lifecycle: starting tests, processing subtest data, and generating consolidated Excel files and reports.

**Quick Start User Guide**

**1. Launch the Software**

1. Open the Primary Data Analysis Software.

**2. Select Primary Data Analysis**

1. Choose the “Primary Data Analysis” option.

**3. Start a New Test**

1. Go to the “Home” tab.
2. Click “Start New Test”.
3. Enter cell and test information, then click “Save”.
4. Create the Test Matrix and click “Save”.
5. Click “Start New Test”.
6. Click “Create”. This will:
   * Create a new folder in the test folder path.
   * Add an Excel file with the test and cell information.
   * Automatically create all subtest folders.

**4. Use the Software on an Existing Test**

1. Follow steps 1-5 from “Start a New Test”.
2. Instead of clicking “Start New Test”, click “Find Existing Test”. The necessary files will be automatically created.

**5. Process Subtest Data**

1. **Ensure steps 3 or 4 are completed.**
2. Open the Primary Data Analysis Software.
3. Click the “Subtest” tab.
4. Click “Process Data”.
5. Click “Find Subtest Folder”.
6. Select the subtest folder.
7. Ensure all Maccor raw data files are selected, and the subtest info is correct.
8. Click “Build Excel File”.
9. Select test metrics. If there are more than three voltage cutoff crossings for any VCO, the software will prompt you to select the voltage cutoff crossing of interest. Click “Continue” once selected.
10. An Excel file will be created. Review the tables and make any necessary changes.

**6. Create Consolidated Excel File**

1. After completing all subtests, start creating the consolidated Excel file for the consolidated Word report.
2. Select the “Test” tab in the Primary Data Analysis Software.
3. Click “Build Consolidated Excel File”.
4. Select the test folder.
5. The consolidated Excel report will be created.
6. Make any changes to the tables and charts. These will be copied into the consolidated Word report.

**7. Create Consolidated Word Report**

1. After creating the consolidated Excel file, proceed to generate the consolidated Word report.

# Additional information

## Tables naming convections

[pending]

## Test metrics calculations algorithm

[pending]

// For finding test metrcs at each voltage cutoff, first all the voltage cutoff crossings are record and saved

// temporarily. Once the raw data analysis is complete, the following critiria is applied to the filter all the

// Voltage cutoffs crossings:

// 1.   Any voltage cutoff in a pulse or rapid data collection window is ignored.

// 2.   Voltage drop at the biggining of the discharge is ignored if the voltage drop is due to

//      depasivation of voltage delay. This is done by ignoring the first 60 seconds of the discharge.

// 3.   The first voltage cutoff crossing that is not ignored is selected for the test metrics table,

//      All remaining measurements are ignored.

// NOTE: if the are more than three voltage cut-off crossings, a gui will prompt the user to visually select the

//       correct voltage cutoff crossing for the test metrics tabl

## DCIR calculations

[pending]

## Choosing median cell

The median cell is chosen by the capacity at the principal voltage cut-off