Quick Guide OPTIMA Software

STARTUP

- Turn on the instrument and the computer.
- Start the OPTIMA Control software.
- Login with your password or just click ‘Run’ to login as "User".

To measure a microplate, you can either use the quick start function or you can execute a pre-defined test protocol.

QUICK START

1. To measure a full plate in endpoint mode without defining a test protocol, click the ‘Quick Start’ button:

2. Select the measurement method. Choose the excitation and emission filters and the type of microplate that will be used.

3. A plate identifier (Plate ID) can also be specified (optional).

4. Start the measurement.

PROTOCOL DEFINITION

1. To create a new test protocol or to edit an existing one:

   - Click the ‘Test protocols’ button:
   - Double click the protocol name to edit an existing protocol or click ‘New’ to create a new protocol. Choose the Measurement Method (FI, FP, TRF, luminescence, absorbance) and choose the Reading Mode:
     - End point for single readings
     - Plate mode for slow kinetics
     - Well mode for fast kinetics
     - Well scanning for scanning (useful if you use large wells and if the samples are not equally distributed)

2. Inside the protocol definition window:

   - Enter a test protocol name.
   - Choose the microplate being used (Greiner, Corning, Nunc, etc.).
   - Type in a positioning delay (0.2 s for non-cell based assays, or else 0.5 s).
   - Plate Mode: Type in the no. of cycles (how many times the reader will cycle through the plate).
   - Well Mode: Type in the no. of intervals (how many times the reader will read the well).
   - Type in the no. of flashes to be used per reading (default settings are recommended).
   - Choose the excitation and emission filters to be used.
   - Select the ‘Layout’ sheet. Enter the position of samples, blanks and standards (if any).
   - If standards and/or reagent dispenser(s) are used, type in the values in the ‘Concentrations / Volumes / Shaking’ window.
   - Click the ‘Check timing’ button. This gives you the smallest possible cycle time (Plate Mode) or interval time (Well Mode). A longer time can be achieved by typing in a higher value in the ‘Basic Parameters’ sheet.
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MEASURING (executing pre-defined protocols)

1. Click the ‘Measure’ button: 

2. It is possible to define up to three plate identifiers in the ‘Start Measurement’ sheet.

3. In the ‘Gain Adjustment’ sheet, select the well that will have the highest intensity and click the ‘Gain adjustment’ button:
   - The required value should be 90% in endpoint readings (giving highest values around 65000-10% = 58500).
   - For kinetic measurements, 10% - 50% could be the required value (this is dependent on the expected increase in the signal).

4. Click the ‘Start measurement’ button.

RESULTS

1. To see the measurement results during a reading:
   - Click the ‘Current State Graphics’ button. Different display options are available, e.g. curve, spectra...

2. To perform data calculations using the MARS Data Analysis software:
   - Close the ‘Current State’ window.
   - Click the ‘Data Analysis Software’ button:

3. In the ‘Open Test Runs’ window:
   - Double click the test name of the test run to be analyzed

4. Analyze the measured data:
   - Select the data to be displayed in the working area with the navigation tree (Data Node) on the left side of the main window.
   - Use the standard calculation wizard to perform a quick curve fit calculation; or use the calculation menus to define what is to be calculated and to be displayed.
   - To see a standard curve, open the ‘Standard Curve’ page. The calculated unknowns are displayed in the ‘Microplate View’ and the ‘Table View’.
   - To remove outliers, simply shade them out in the ‘Microplate View’ using the toggle function (Ctrl –T).
   - For kinetic measurements (more than one measured cycle or interval), choose the range(s) of interest (Calc. Start and Stop) and the data values from these ranges can be evaluated using a kinetic calculation.