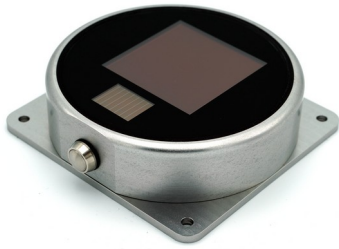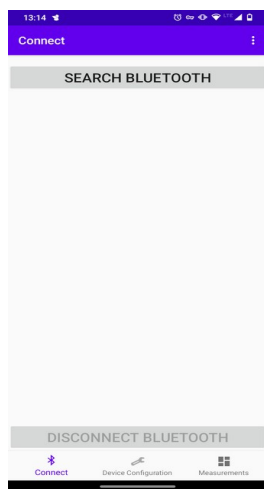## *K2WLux Android Application Review 1.1*

Introduction

The K2WLux is an Android application used for adjusting the parameters for the devices of the series MarkPro developed by K2W Lights. This application can be found in the "Google Play Store".

In this document a basic overview of the application is given.

Connecting to a device

The "Connect" page (accessed by the lower menu) is used to connect to a new device. Make sure a MarkPro device is next to the cellphones (range <2m is suggested) and available for Bluetooth connection (*). Then press the "Search Bluetooth" button. This button will search for devices in the surroundings and fill a list. When a device appears, simply press on it and wait for the popup "device connected" appears. If we connected successfully to the device, the "Search Bluetooth" Button will be blocked and the "Disconnect Bluetooth" can now be pressed.

(*) The MarkPro devices are not always available for a Bluetooth connection, because that would be a waste of energy and would pollute the environment with Bluetooth advertisements. There are two ways to make the device available for Bluetooth:
1. Pressing the physical button on the device (some versions do not have it)
2. Restarting the Power Supply

After one of the previous events occurs, the device will stop the measurements for a 30 seconds window.

After 30 seconds and before 100 seconds, the device will measure but will still be able to connect via Bluetooth. After that it stops sending Bluetooth advertisements and therefore we will not be able to find it through the K2WLux application.

Device configuration settings
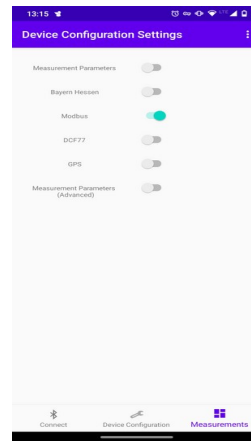
There are many available configurations developed for this APP. The "Device Configuration Settings" page is used for that. To access it, one must press the "3 dots" drop down menu and select "Device Configuration Settings". Then the user might select the desired function (for example modbus). Note that only one function can be selected at the time. Then the desired function can be configured by the "Device Configuration" accessed by the lower menu.

Device configuration color coding

In the "Device Configuration" page accessed by the lower menu, one might view values in red or in green:

- Green Values: the values turn green when the device sends them via Bluetooth to the application. This is the current value of the given parameter that the device uses at the moment.
- Red Values: the values turn red when the user changes them

Note that the "load" button asks the device for its current parameters. When successfully loaded, a given parameter will turn into green and might change its value.

Modbus configuration

If your device has the Modus interface, you can use the application to change the "modbus address" or the communication "baud rate". Remember to chose "Modbus" from the "Device Configuration Settings" page (accessed by the 3 dots drop down menu).

To change the parameters of the Modbus connection one can follow the steps:
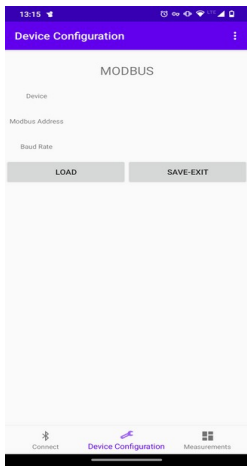
1. Successfully connect to the device
2. Navigate to the "Device Configuration" Page on the lower menu
3. Verify that the "Device", "Modbus Address" and "Baud Rate" are filled in green
4. Press the green "Modbus Address" and choose one value from the list. Verify that the value is now red
5. Press the green "Baud Rate" and choose one value from the list. Verify that the value is now red
6. Press the "Load" button. Verify that the values are now green
7. If one wants to save the new values to the flash, meaning that the new parameters should be changed even when the power supply is restarted, the "save and exit" button must be pressed. Note that this button will disconnect the Bluetooth.

Measurement configuration

Here one can change the period of the measurement. Remember to chose "Measurement Parameters" from the "Device Configuration Settings" page (accessed by the 3 dots drop down menu).

The period of the measurement is given by the parameter "st" (sleep time). The minimum period is 1 second (1Hz measurements). To change it, follow the steps:
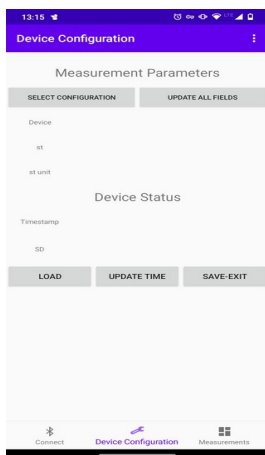
1. Make sure the device is connected
2. Navigate to the "Device Configuration" page in the lower menu
3. Verify that the "Device" is filled and that the "st" and "st unit" are green.
4. Press the green "st" value and chose one value from the list. Verify that it is now red
5. Press the "st unit" value and chose one value from the list. Verify that it is now red
6. Press "LOAD" and verify that the values are now green and correctly updated
7. Press "SAVE-EXIT" to save the new values in the FLASH, meaning they will be loaded when the device restarts. Note that the Bluetooth will be disconnected

When using a serial interface, the measurement frequency should be higher than the frequency the device is asked for new values. If that is not the case, the same measurement will be sent over and over again until the devices performs a new measurement.

New measurement
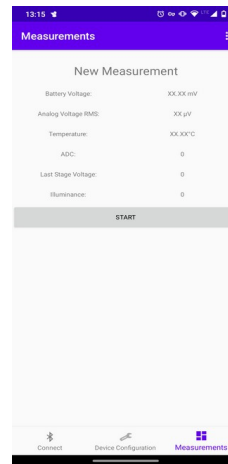
The device can be tested in the "new measurement" page. Make sure that the "New Measurements" setting is chosen at the "Measurements Settings" page, accessed by the three dots drop down menu, then navigate to "Measurements" on the lower menu. Simply press "Start" and the values should be updated. The device will make measurements and send them through Bluetooth as fast as possible – this page is used for testing and the previously configured "sleep time" will not take any effects here.

Battery Voltage: if the device is running with a battery, this is the measured battery voltage. This measurement is not precise, it is just indicating everything is fine. If supplied by an external Voltage, this value will be close to zero.
Analog Voltage RMS: the analog supply voltage might have fluctuations. This is the root mean square value of the supply voltage noise. It should be as low as 0.05uV.
Temperature: measured temperature in 0.25°C steps
ADC: stage of the chain used for the given measurement
Last ADC Stage: Measured Voltage
Illuminance: measured value in lux. The scientific notation is used to cover the values from μlx to klx.