### PROJECT DESCRIPTION
Click Sensor Hub is an IoT development Kit, like the Hexiwear docking station. Except our project utilizes NXP’s FRDM-KL46Z development platform. The FRDM-KL46Z is interfaced to our designed PCB which contains four mikroBUS sockets.

### PROJECT REQUIREMENTS
I. Connectivity between the FRDM-KL46Z and four mikroBUS sockets.
II. Each socket provides both 3.3V and 5V power supplies.
III. Successfully communicate SPI, UART, PWM, I2C, CAN. Establish connectivity with any of the four PCB sockets to the FRDM-KL46Z.
IV. Write code for selection of clicks.

### WHY USE CLICKS?
It’s an open standard.

### CLICK TEST RESULTS
A total of ten clicks were selected for testing. During the selection process we took into consideration the type of signal interfaces and voltage requirements. The selection of clicks we purchased allowed us to thoroughly test all the signal interfaces available on a mikroBUS socket. Tested both the 3.3V and 5V sources.

### SIMILAR TO HEXIWEAR

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### CLICK TEST RESULTS

<table>
<thead>
<tr>
<th>Click Tested</th>
<th>Test Specifications</th>
<th>Test Results</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp &amp; Hum 2 Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be above 3.3V</td>
<td>Pass</td>
</tr>
<tr>
<td>Color 2 Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>USB UART 3 Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>Air Quality Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>Bar Graph 2 Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>MicroSD Click USB UART 3 Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>Accel 5 Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>Gaussian Meter Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>Light Ranger 3 click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>Alcohol Click</td>
<td>Brand powered by 3.3V connections</td>
<td>Connected board and checked LED light. Measured voltage of respective pins measured to be below 3.3V threshold</td>
<td>Pass</td>
</tr>
<tr>
<td>Voltages of respective pins measured to be below 3.3V threshold</td>
<td>Voltage measured to be unsafe. Measured at 4.2 volts peak despite tweaking variable resistor to max value.</td>
<td>Fail, click not test to use</td>
<td></td>
</tr>
</tbody>
</table>

### SYSTEM DEFICIENCY

- PCB is not tested on Click Sensor Hub board due to damage it would cause to FRDM.
- Voltage measured to be unsafe. Measured at 4.2 volts peak despite tweaking variable resistor to max value.

### ACKNOWLEDGEMENTS

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### TWO LAYER PCB DESIGN

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### SELECTION OF TEN CLICKS

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### DESIGN LAYOUT

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### SOCKET TEST RESULTS

“Socket X, symbolizes that the same tests were carried out for each of the four mikroBUS sockets. *One click at a time*.

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### ACKNOWLEDGEMENTS