1. Features

- All WiPy, LoPy and SiPy pins are available on breakout pins
- Micro USB Connector for power and for serial communication.
- User Button
- User LED
- Reverse battery protection
- LiPo battery charger
- Micro SD card connector with push-pull function
- 7 jumpers for enabling and disabling features

2. Block diagram
3. Overview

1. Feature selection jumpers
2. Micro USB connector for power and serial communication
3. LiPo battery connector (JST)
4. USB Powered LED
5. Charge indication LED
6. User LED
7. User push button
8. MicroSD card socket

4. Feature selection jumpers

<table>
<thead>
<tr>
<th>Jumper number</th>
<th>Pin Name</th>
<th>Pin function jumper Closed</th>
<th>Pin function jumper Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GPIO2</td>
<td>RxD</td>
<td>GPIO2</td>
</tr>
<tr>
<td>2</td>
<td>GPIO6</td>
<td>CTS</td>
<td>GPIO6</td>
</tr>
<tr>
<td>3</td>
<td>GPIO1</td>
<td>TxD</td>
<td>GPIO1</td>
</tr>
<tr>
<td>4</td>
<td>GPIO7</td>
<td>RTS</td>
<td>GPIO7</td>
</tr>
<tr>
<td>5</td>
<td>GPIO3</td>
<td>VBat</td>
<td>GPIO3</td>
</tr>
<tr>
<td>6</td>
<td>GPIO16</td>
<td>User LED Enabled</td>
<td>User LED Disabled</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>Battery charge current 450mA</td>
<td>Battery charge current 100mA</td>
</tr>
</tbody>
</table>
5. Using the LED

To use the LED on the super expansion board mount jumper 6. The user LED is connected to GPIO16 (G16 on the expansion board).

Example code:

```python
from machine import Pin

# initialize GP16 in gpio mode (alt=0) and make it an output
p_out = Pin('GP16', mode=Pin.OUT)

# switch on the LED
p_out.value(0)

# switch off the LED
p_out.value(1)

# toggle the state of the LED
p_out.toggle()
```

6. Using the pushbutton

The user pushbutton is always connected to GPIO17 (G17 on the expansion board)

Example code:

```python
from machine import Pin

# initialize GP17 in gpio mode and make it an input with the
# pull-up enabled
p_in = Pin('GP17', mode=Pin.IN, pull=Pin.PULL_UP)

# get value, 0 or 1
p_in()
```

7. cautions and warnings

The following conditions WILL CAUSE THE WiPy TO BE PERMANNTLY DAMAGED.

- When a voltage above 3.6V is applied to any pin of the WiPy (besides the Vin pin)
- When a voltages above 1.8V is applied to an analogue input.

8. List of acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vin</td>
<td>Input voltage, connected to the USB power when available, otherwise connected to the battery.</td>
</tr>
<tr>
<td>SD-DAT0</td>
<td>SD-card data0</td>
</tr>
</tbody>
</table>
9. Remarks and suggestions

If you have any remarks or suggestions please let us know at support@pycom.io

10. Changelist

<table>
<thead>
<tr>
<th>Version</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Initial version</td>
</tr>
</tbody>
</table>
| 1.1     | Added:
|         | Using the LED |
|         | Using the pushbutton |
|         | List of acronyms |
| 1.2     | Update to new expansion board form factor |