

# **LOW POWER EMBEDDED DESIGN PROJECT UPDATE #9**

**Team Name: WearTech**

## **Team Mates:**

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## Executive Summary:

### Part Selection

<b>Battery</b>	<b>GMB401215-45mAh</b>
<b>PMU IC</b>	<b>LT1965</b>
<b>Processor</b>	<b>EFR32BG13– f1024</b>
<b>Inductive Charging IC</b>	<b>BQ5103B</b>
<b>Battery Charger IC</b>	<b>BQ24040</b>
<b>Sensor</b>	<b>BMA280</b>

As discussed, our project requires 2 Blue Gecko dev kits to act as devices in the mesh network.

### On Schedule: Yes

#### Accomplishments:

- We have completed 100% of the schematics.
- Completed the Layouts.
- Got Layouts reviewed
- Continue to work on firmware
- Worked on learning about BLE mesh

#### Next week:

- Finalize components and get the board out for fabrication
- Continue working on Firmware Development
- Continue working on BLE mesh
- Test Inductive charging

# Verification Plan:

To be verified	Definition of passing	Date test performed	Tested by	Measured result	Passed ?
Supply voltage to the MCU should be within the minimum and maximum specification	The voltage should be within 1.8V to 3.3 V				
Supply voltage to the BMA280 sensor should be within the minimum and maximum specifications	The voltage should be within 1.2V to 3.6 V				
The MCU is receiving correct data from the sensor	<p>The interrupt should get triggered whenever the sensor senses data.</p> <p>The MCU is receiving the correct accelerometer reading from the sensor- verify clock too.</p> <p>Verify Chip Select of SPI goes low while transferring data</p>				
The radio is transmitting data correctly	Verify at the receiver's end the data received				

Supply voltage from the USB	The voltage should be within 4.3 to 5 V				
Supply current from the Inductive coil	50mA to 1A				
The Current out from the Inductive Chrager – BQ51013B	1.1 to 1.2A				
The Current input to the BQ24040	1.1 to 1.245 A				
The Voltage at the RECT pin	Must be within 4.3 to 5V				
The voltage at the BAT Pin/VOUT from BQ24040	3.5 to 4.2V				
The current at the BAT Pin/VOUT BQ24040	45mA +/- 10%				
The voltage input to the LDO LT1965	1.8 to 20 V				
The voltage output from the LDO to MCU	2.5V exact				