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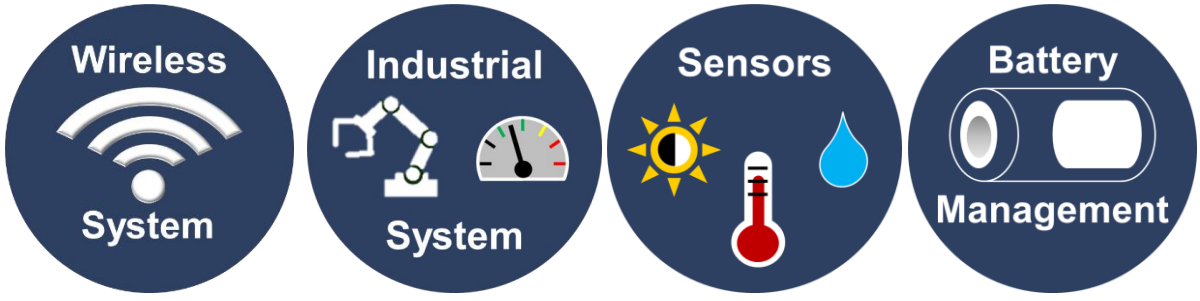
RSL10 Mesh Platform Getting Started Guide

STR-RSL10-MESH-KIT-GEVK



June, 2020 – Rev. 0

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1 RSL10 Mesh Platform Setup

1.1 RSL10 Mesh Platform Contents

- (2) RSL10 Mesh Nodes
- (1) Strata Gateway Node
- (3) USB cables
- (1) Rare earth ring magnet (for Alarm and Dimmer functions)
- Disclaimer

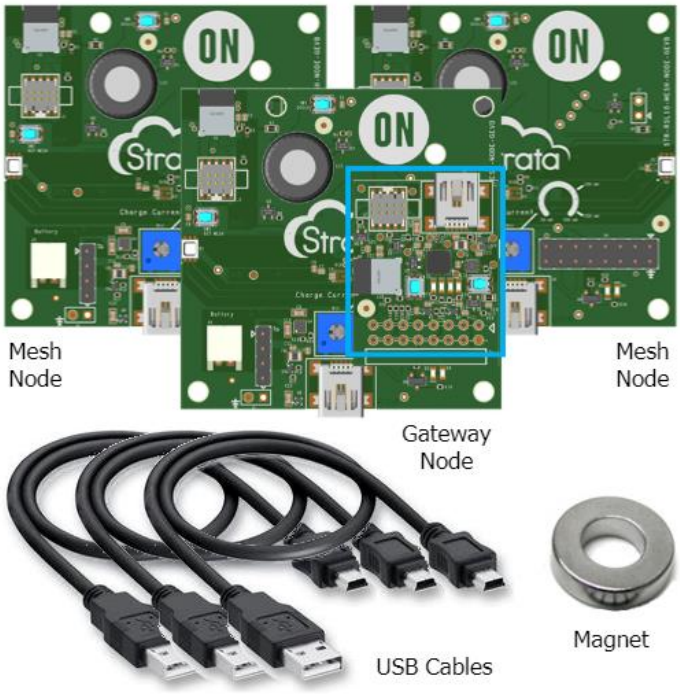
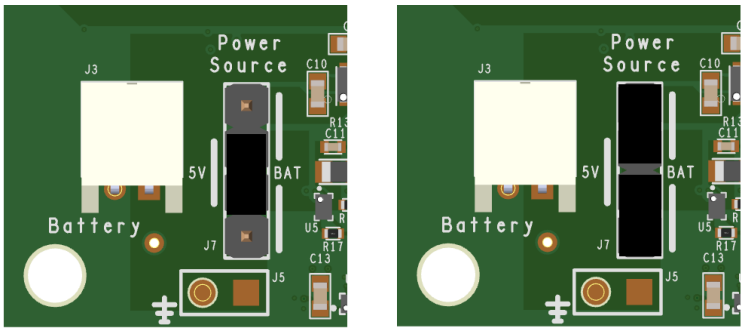


Figure 1: Mesh Platform Contents

1.2 Power Selection

Each Mesh Node has a 4-pin header to select whether or not a battery is being used. The default selection is with a jumper placed across the two middle pins, resulting in isolation of the battery rail and associated charging circuit and the node being powered directly from the 5V rail, which is sourced from USB or the Strata Gateway.

If using a rechargeable battery, which fits the requirements in section **1.3.1** to power the node and allow the node's USB port to charge the battery, place two jumpers across each pair of end pins as shown in Figure 2.



Bypass Battery **Use Battery**

Figure 2: Power Selection Jumper Positions

1.3 Battery

The Mesh Kit does not include batteries but if one is used it must fit the following requirements or be from the recommended list.

1.3.1 Requirements

The Mesh Node contains the ON Semiconductor FAN54120, a stand-alone Lithium-Poly/Lithium-Ion single-cell battery charger. The float charge voltage is fixed such that using a battery with a different float voltage than the following specification requires changing the battery charger IC to a different fixed voltage version and is only advised for advanced users with soldering capabilities.

The primary battery connection is the JST-PH connector commonly found on Li-Poly batteries available on the market. Advanced users can solder battery wires directly to the board using the provided test points, but caution must be used to identify the correct polarity and ensure the battery fits the requirements.

Battery Type	Li-Poly/Li-Ion Single Cell
Battery Capacity	70 mAh – 1250 mAh
Float Charge Voltage	4.2V
Nominal Voltage	3.7V
Connector	JST-PH
Protection Circuit Module (PCM)	Required

1.3.2 Recommended List

Size [mAh]	Manufacturer	MPN	Suggested I_Fast [mA]
100	Adafruit	1570	50
150	Adafruit	1317	50
350	Adafruit	2570	100
400	Adafruit	3898	200
500	Adafruit	1578	250
1200	Adafruit	258	495
110	Sparkfun	PRT-13853	50
400	Sparkfun	PRT-13851	200
850	Sparkfun	PRT-13854	400
1000	Sparkfun	PRT-13813	495

1.4 Strata and Hardware Setup

Download Strata Developer Studio from www.onsemi.com/Strata

Connect the PC running Strata to the Gateway node using one of the included USB cables, attaching to the USB port on the stacked daughter-board as depicted in Figure 3. If a battery is not being used with the nodes, connect them to any USB power source using the provided cables.

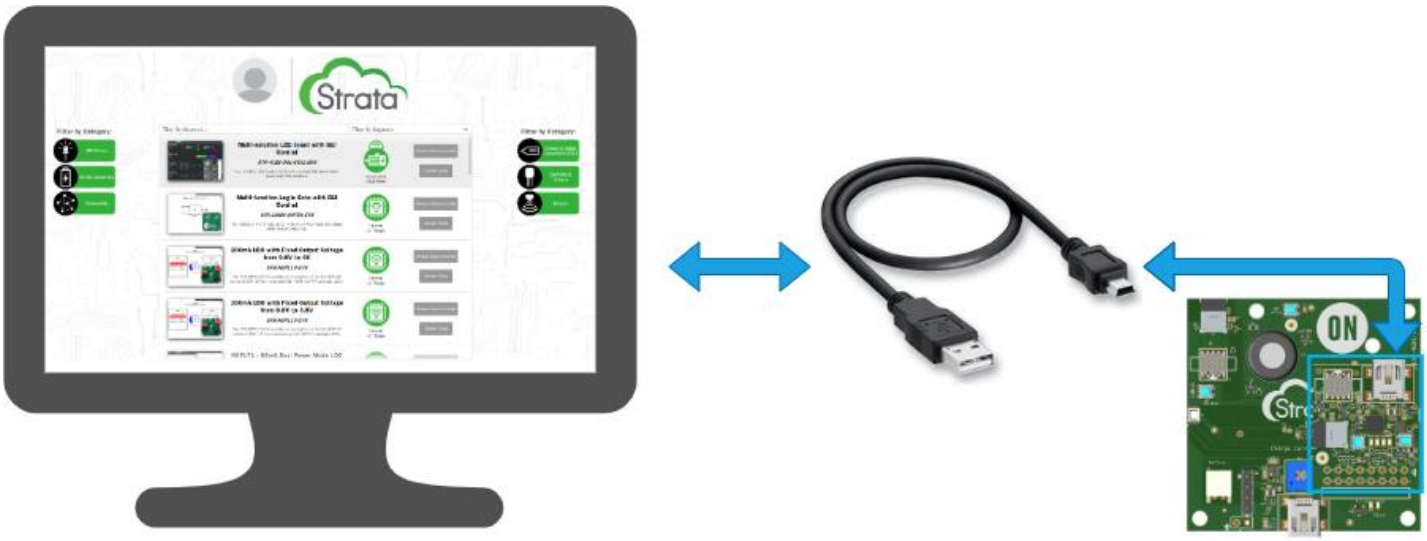


Figure 3: Connect the Gateway node to Strata

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