

Wireless Sensor Node - Solar Kit

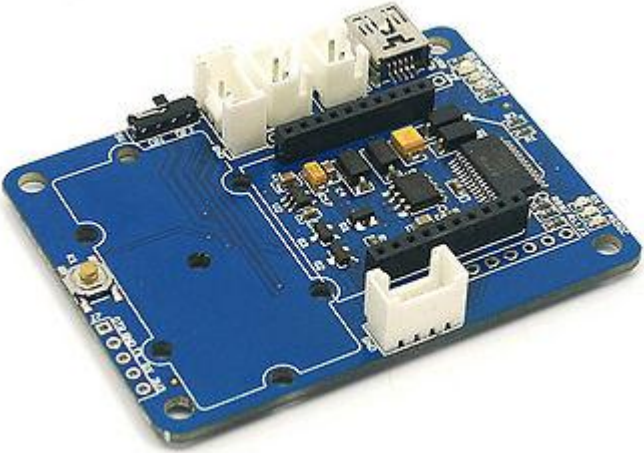
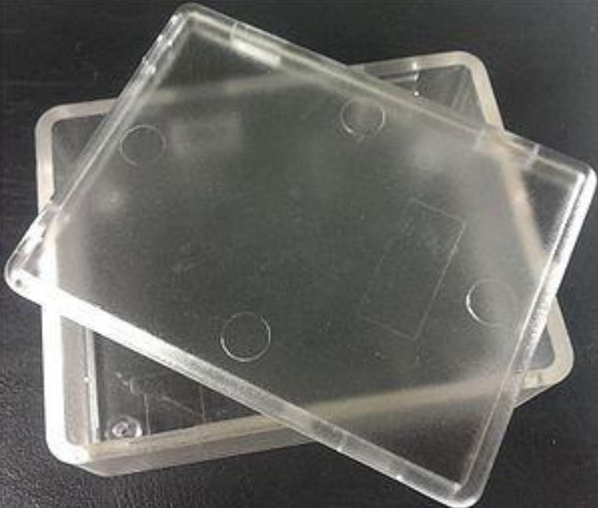
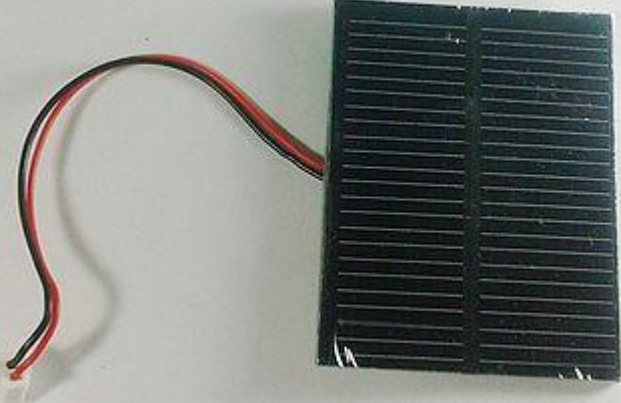
Introduction





Wireless Sensor Node - Solar Kit is an easy to use bundle created for experimenting with XBee and XBee compatible standalone wireless modules like RFBees and Wifi Bees. Every maker is confronted with the question of selecting the right set of components to build a Wireless Sensor Node. The Wireless Sensor Node - Solar Kit fills this place very appropriately. The Grove - XBee Carrier provides LDO power supply, charger for LiPo Battery and programming port for XBee compatible modules. The Solar Panel provides the required charging voltage in remote areas. The 500 mAH LiPo Battery provides the backup when the Sun is away. A properly designed and configured wireless module could provide very long hours of usage. For this, put the node to sleep when not transmitting the sensor value. This kit comes with a perfectly made Transparent Box, sets of Screws and Plastic Rivets.



- We suggest you to buy more than one kit to create a distributed array of Sensor Nodes.
- Bees Shield along with Seeduino and Wifi Bee can act as Wireless internet Gateway for these nodes.

Contents of the Kit

Component	Image	Description	Quantity
Grove - XBee Carrier v0.9b		Base board for XBee nodes	1
Transparent Box		Enclosure for Node Components	1
0.5 W - 55x70 mm Solar Panel		Charging Power Supply	1

<p>5 cm Grove Wire</p>			<p>4 Wire Cable to attach Grove modules to Grove - XBee Carrier</p>	<p>2</p>
<p>Mini USB Cable</p>			<p>Programming Cable</p>	<p>1</p>
<p>XK 353545 500mAH LiPo Battery</p>			<p>Lithium Ion Battery</p>	<p>1</p>
<p>KA 2*6 Screws</p>			<p>Metal Screws for fixing Grove - XBee Carrier to Box</p>	<p>4</p>

2064 Rivets			Plastic rivets for attaching Grove modules to Grove - XBee Carrier	8
-------------	---	--	--	---

Application Ideas

- Distributed Wireless Sensor Nodes with XBee or WifiBee or RFBee.
- Build Data Loggers when connected with Wireless Gateway.
- Intelligent Home Network
- Industrial Automation
- SCADA (Supervisory control and data acquisition.) systems

Cautions

- Insert the Bees in the right direction.

Specification

Key Specification

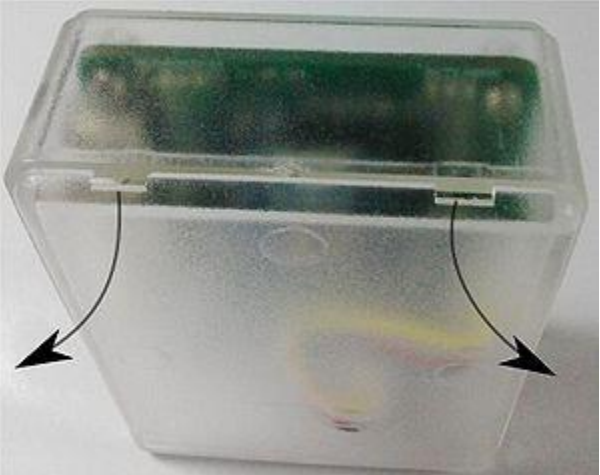
Item	Specification
Grove - XBee Carrier I/O Logic	3.3V
LiPo Battery	500mAH @ 3.7V
Solar Panel	0.5Watt @ 5.5V

Usage



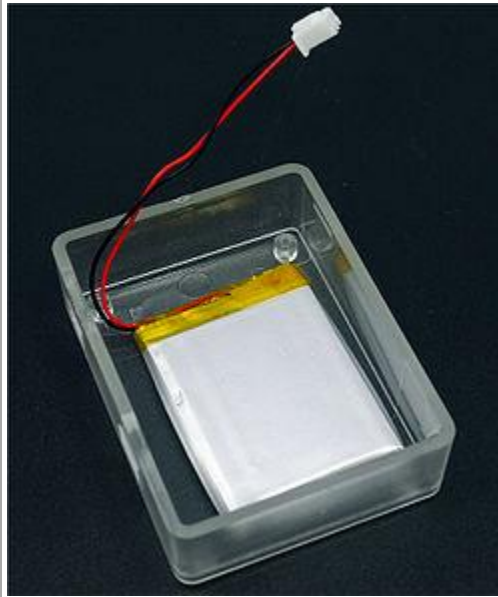
Quick Start Guide

This section provides a Step-by-Step construction of a Wireless Sensor Node. Images are only for illustrating the procedure of that step. We have used two different setups of Grove - Xbee Carrier and Grove modules. So, just follow the procedure.

Step	Procedure	Illustration
1	Open the box as shown	

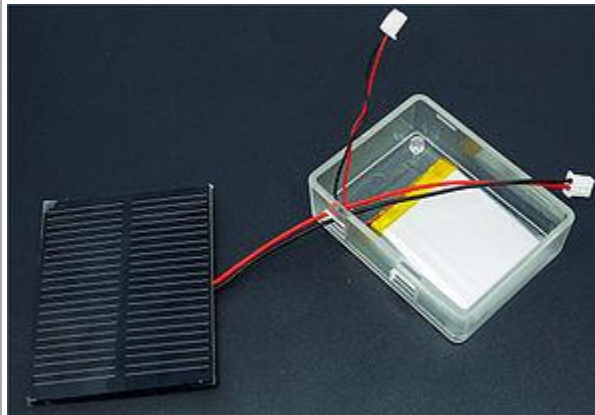
1.1

Place the LiPo Battery inside the Box



1.2

Insert the Solar Panel Connector



1.3

Open the plastic rivet



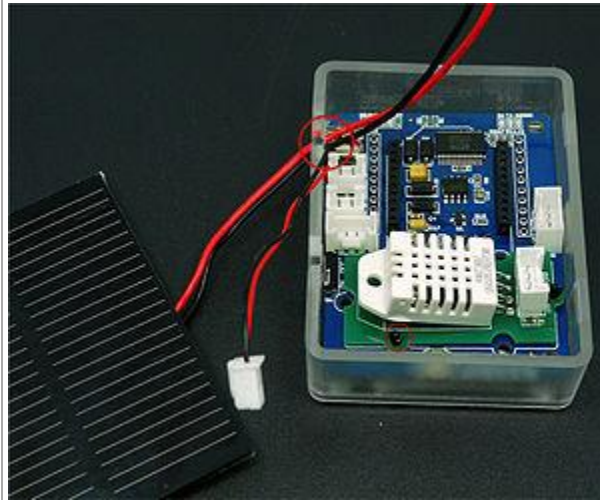
1.4

An opened rivet looks like this



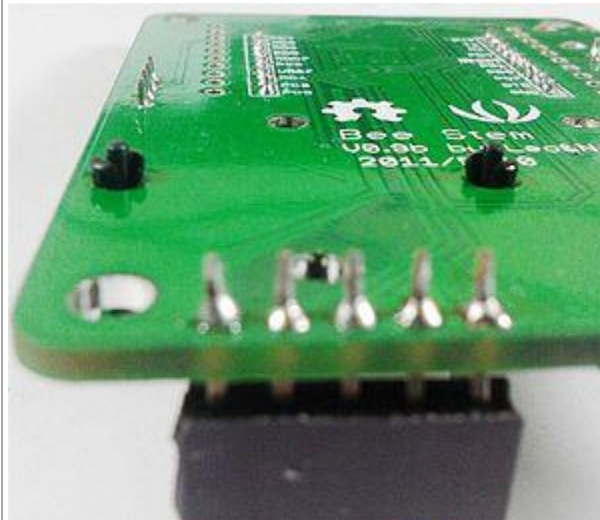
1.5

Attach a Grove module with the help of Rivets. Keep the Grove - Bee Carrier as shown inside the transparent box.



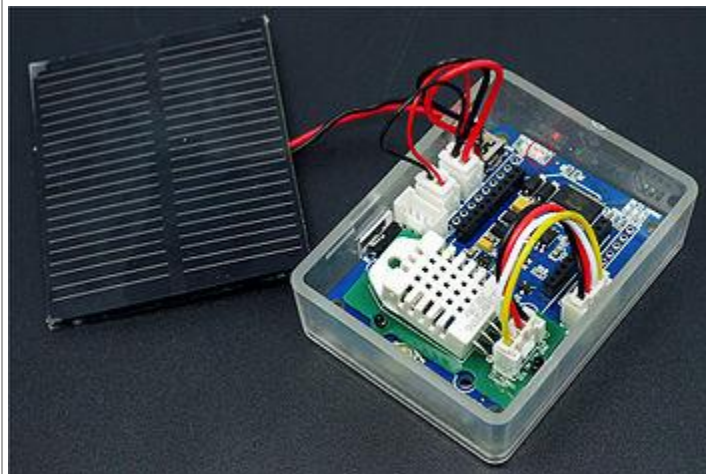
2.3

A fully closed rivet looks like this



3.0

Attach the 4-Wire Grove Cable, Battery and Solar Panel Connectors to Grove - XBee Carrier



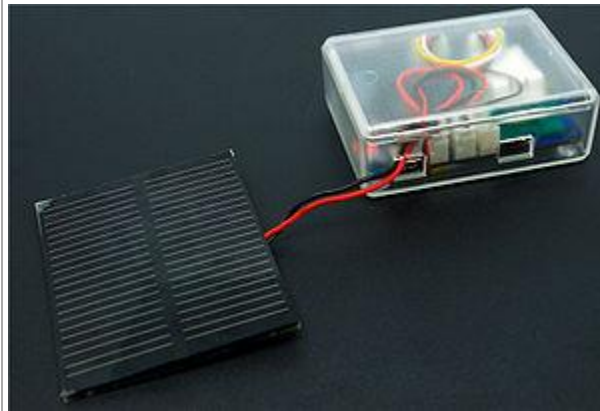
4.0

Insert XBee module. Fix the Screw at four corners



5.0

Close the lid. USB socket and Power Switch are accessible from the side



6.0

Connect the USB cable and program the XBee

