SEED TECHNOLOGY INC (SEEEDUINO)
Wireless Sensor Node - Solar Kit
Model: KIT80949P

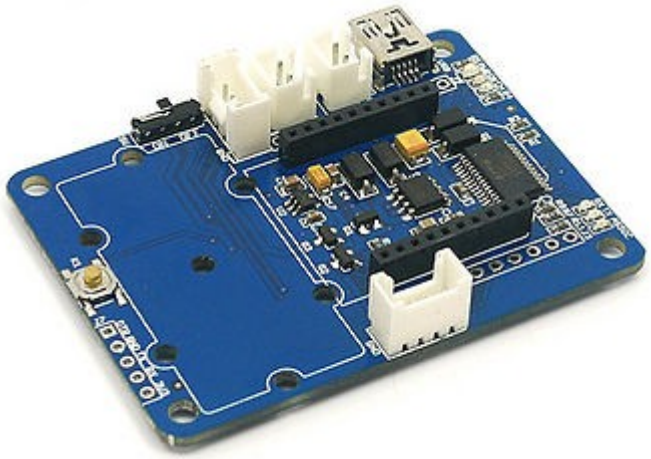
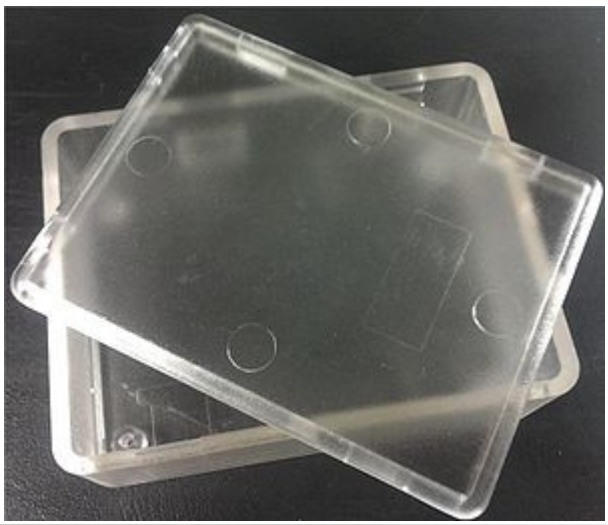
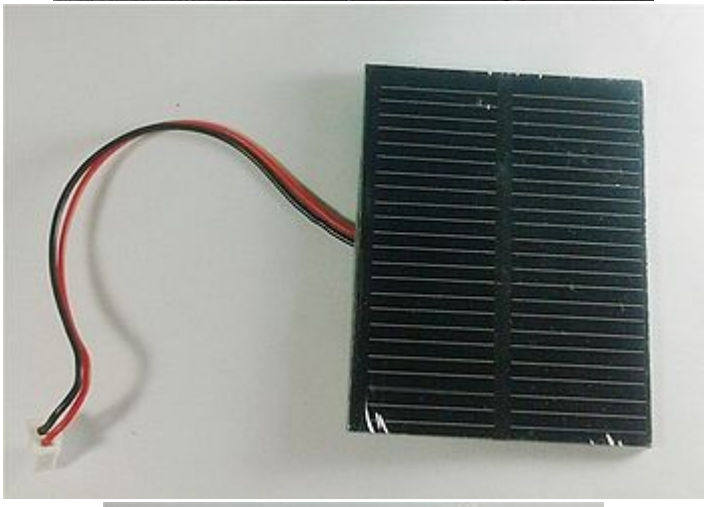
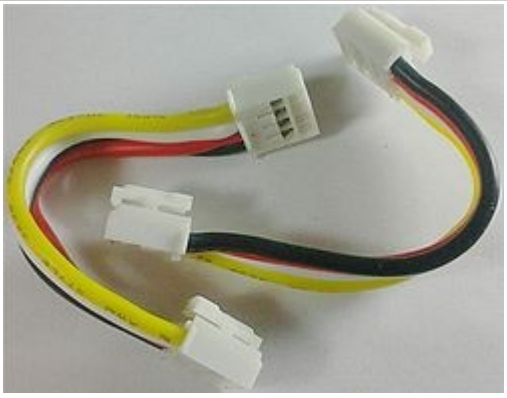
Introduction

Wireless Sensor Node - Solar Kit is an easy to use bundle created for experimenting with XBee and **XBee** compatible standalone wireless modules like RFBee and Wifi Bee. Every **maker** is confronted with the question of selection the right set of components to build **Wireless Sensor Node**. **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 **Seeeduino** 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
5 cm Grove Wire		4 Wire Cable to attach Grove modules to Grove - XBee Carrier	2

Mini USB Cable		Programming Cable	1
XK 353545 500mAH LiPo Battery		Lithium Ion Battery	1
KA 2*6 Screws		Metal Screws for fixing Grove - XBee Carrier to Box	4
2064 Rivets		Plastic rivets for attaching Grove modules to Grove - XBee Carrier	8

Application Ideas

- Distributed Wireles 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

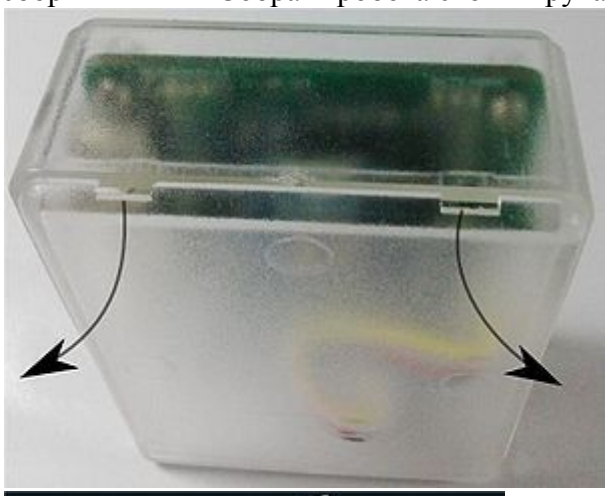
Wireless Sensor Node Field Use - Charged by Solar Panel"

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.

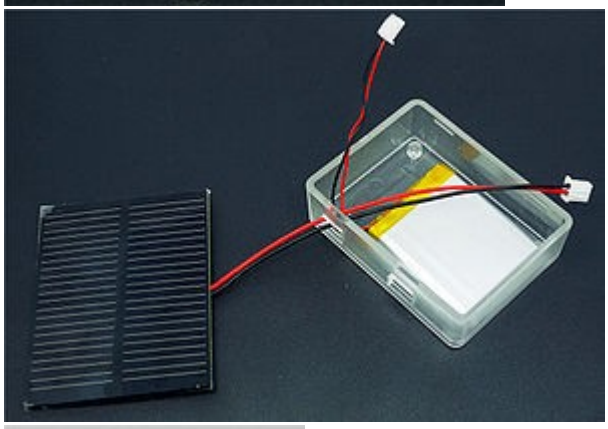
Step	Procedure	Illustration

1 **Open the box as shown**



1.1 **Place the LiPo Battery inside the Box**

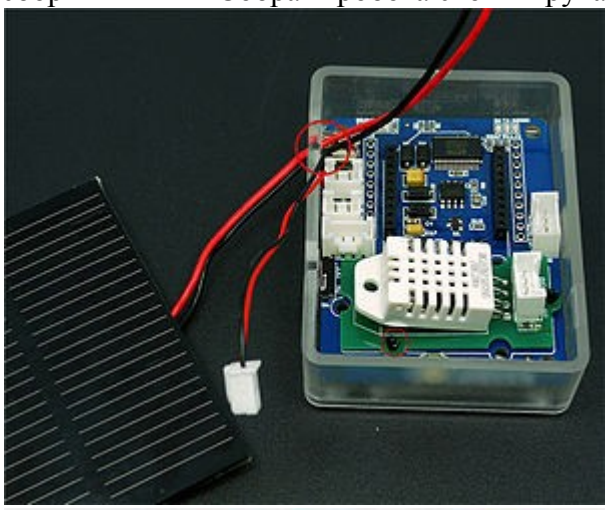
1.2 **Insert the Solar Panel Connector**



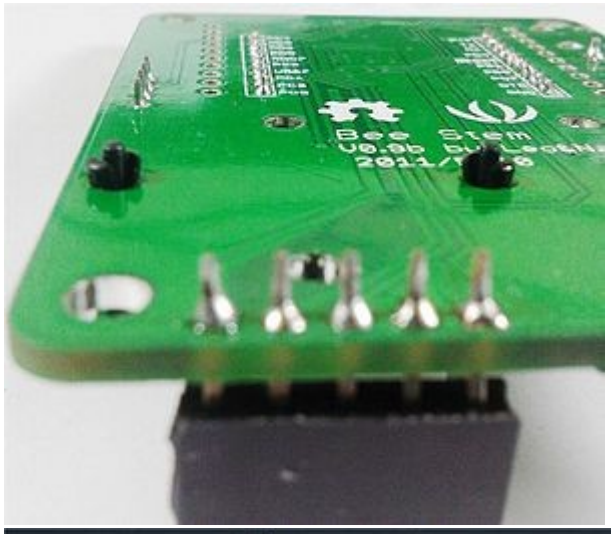
1.3 **Open the plastic rivet**

1.4 **An opened rivet looks like this**

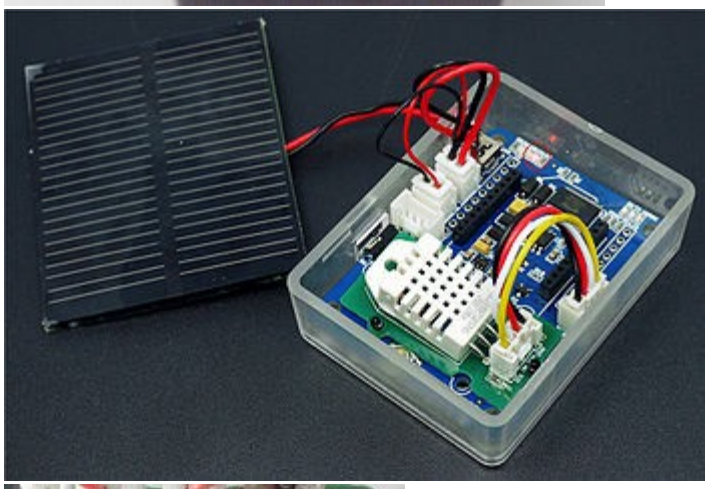
1.5 **Attach a Grove module with the help of Rivets. Keep the Grove - Bee Carrier as shown inside the transparent box.**



2.3 **A fully closed rivet looks like this**

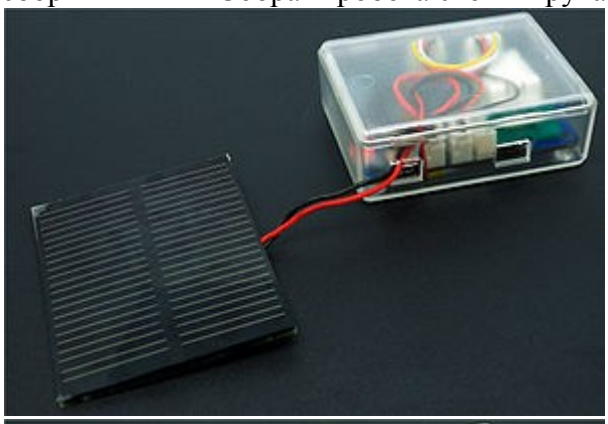


3.0 **Attach the 4-Wire Grove Cable, Battery and Solar Panel Connectors to Grove - XBee Carrier**

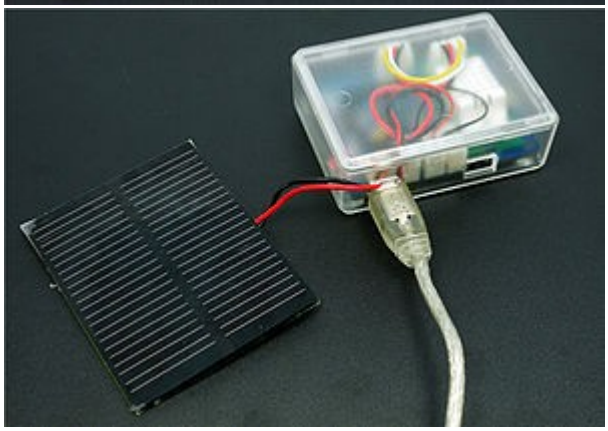


4.0 **Insert XBee module. Fix the Screw at four corners**

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**

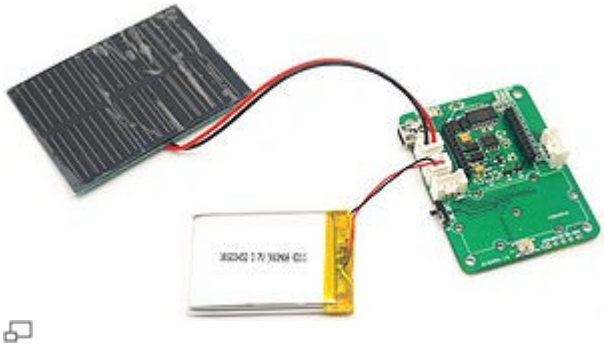


Programming with various Bee Modules

Information on how to setup / program Bee Modules are available in

- Grove - XBee_Carrier
- Wifi Bee Page

Image Gallery



LiPo Being Charged by Solar Panel"

Support

If you have questions or other better design ideas, you can go to our forum or wish to discuss.

Version Tracker

Revision	Descriptions	Release

v0.9b	Initial public release	9-Aug-2011

Bug Tracker

Bug Tracker is the place you can publish any bugs you think you might have found during use. Please write down what you have to say, your answers will help us improve our products.

Additional Idea

We appreciate if you could write addition ideas and demonstration for this kit.

Resources

The resources need to be downloaded, like Eagle file, Demo code, project or other datasheet.

How to buy

- Click here to buy Wireless Sensor Node - Solar Kit from Seeedstudio Bazaar.

See Also

- Grove - XBee_Carrier
- Bees Shield
- XBee
- Wifi Bee
- RFBee
- UartSBee
- Seeeduino_V2.2

Licensing

External Links

Links to external webpages which provide more application ideas, documents/datasheet or software libraries.