



# winhec

Shenzhen 2015



# Hardware Modularization within Internet of Things

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CTO, Seed Studio



### With diverging community platforms

- Chaihuo Maker Space
- Maker Faire Shenzhen
- Ecommerce
- Global Distribution

# PROMOTE



### With agile manufacturing services

- Fusion Prototyping Service
- Open Parts Library
- Hardware Development Kit
- Agile and Open Manufacturing Service
- Distributed Portal

# PRODUCE



### With open source hardware

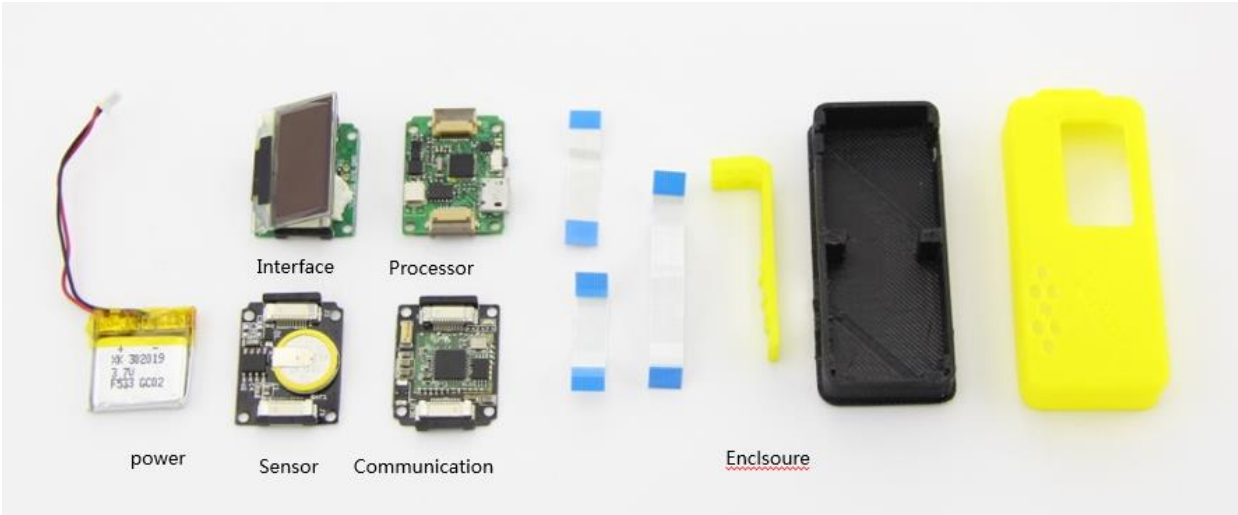
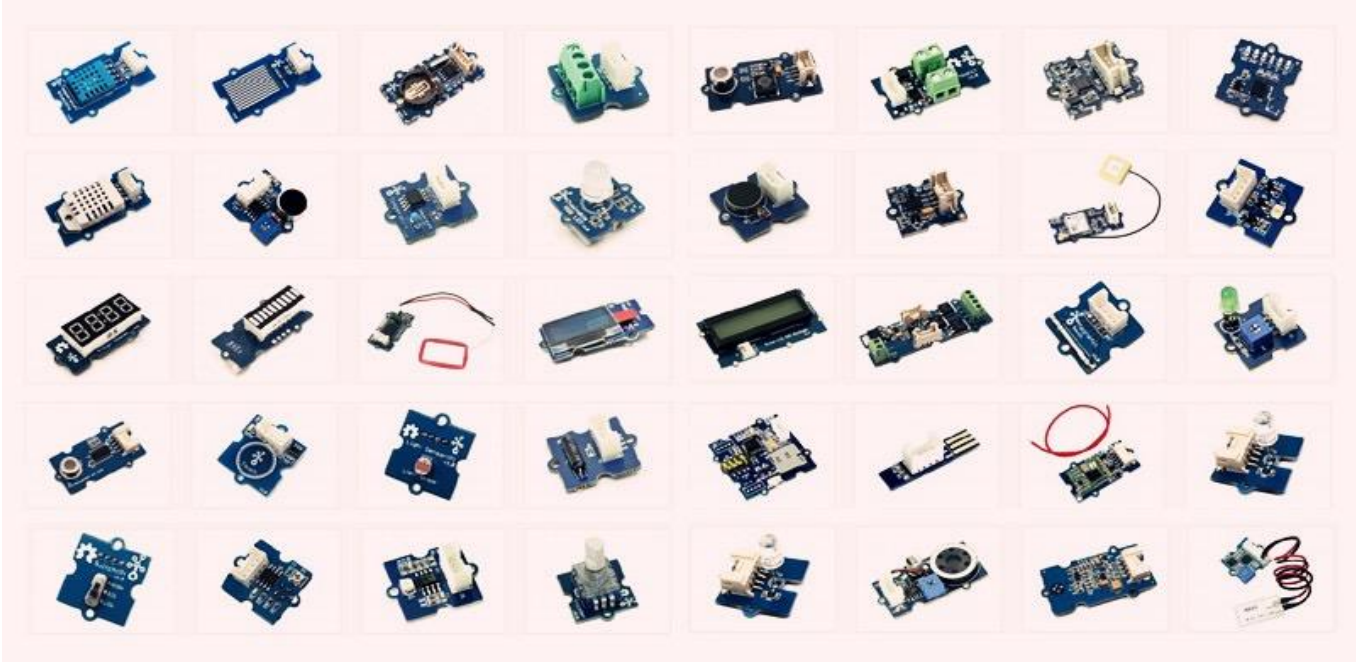
- Maker Education Kits
- Open Source Hardware Modules
- Theme Based Kits
- Technical Solutions

# PROTOTYPE





# Prototype



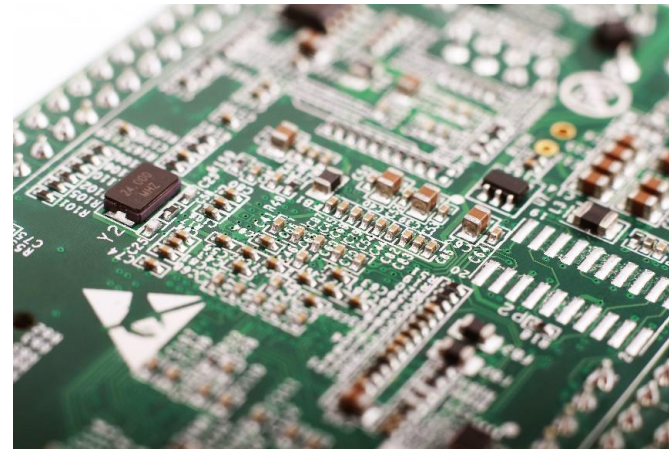


# Open Manufacturing for Process



```
file edit sketch tools help
sketch_0d07a.s

//Serial Relay - Arduino will patch a
//serial link between the computer and the GPRS
Shield
#include <SoftwareSerial.h>
SoftwareSerial GPRS(7, 8);
unsigned int count=0;
signed char buffer[64];
void setup()
{
  GPRS.begin(19200);
  Serial.begin(19200);
}
void loop()
{ if (GPRS.available())
  { while(GPRS.available())
  { buffer[count++]=GPRS.read();
  if(count == 64)break; } Serial.write(buffer,count);
  clearBufferArray();
  count = 0;
}
if (Serial.available()) // if data is available on
hardwareserial port ==> data is coming from PC or
notebook GPRS.write(Serial.read()); // write it to
the GPRS shield
}
void clearBufferArray() // function to clear buffer
array
```



# INDUSTRY RESOURCES

**GROW  
THE  
DIFFERNECE**

10k+

Mass Production  
**Hardware Corporations**

1,000

Indie Products  
**Hardware Startup**

1

Engineering Sample  
**Veteran Maker**

0.1

Prototype  
**Maker**

0

Idea  
**Dreamer**

**MAKER BUSINESS PYRAMID**

humidity  
Shield  
wearables  
DSO  
hackathon  
Xadow  
Fusion  
Seeeduino  
idea  
agile  
innovate  
homebrew  
IoT  
3D Printing  
Developer  
ODM  
Design  
manufacture  
Shenzhen 2U  
OPL  
workshop  
Community  
hack  
PCBA  
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**SEEED TECHNOLOGY INC.**

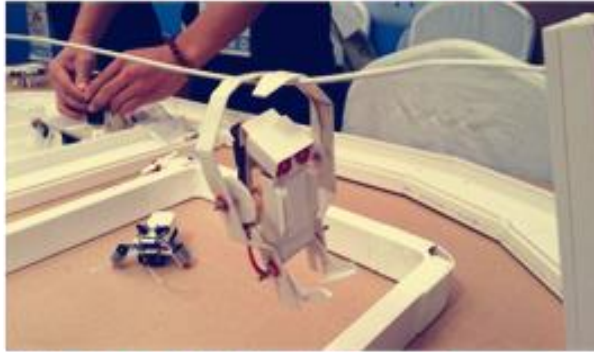


# 社区活动





# Innovate With China



SHENZHEN MAKER FAIRE





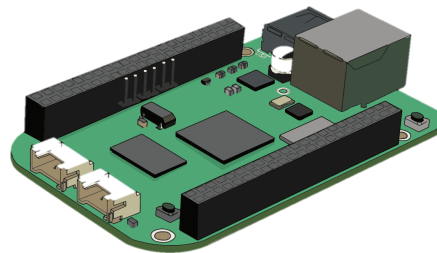
# Internet of Things



数据收集、处理、分析

Gateway: WiFi, BLE, Cellular, etc ( 协议 / 连接 )	
平台层:	OS: Windows 10 IoT Core, Linux, Mbed OS
	驱动层
硬件层 :	800+ 硬件模块
	150+ 功能模块

# Microsoft 和 Seeed 合作产品



BeagleBone Green  
成为 Azure 可信任设备

8月份

即将发布.....

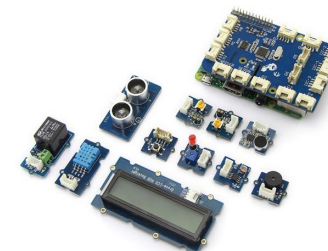


部分 Grove 模块支持 Win10 IoT

9月份

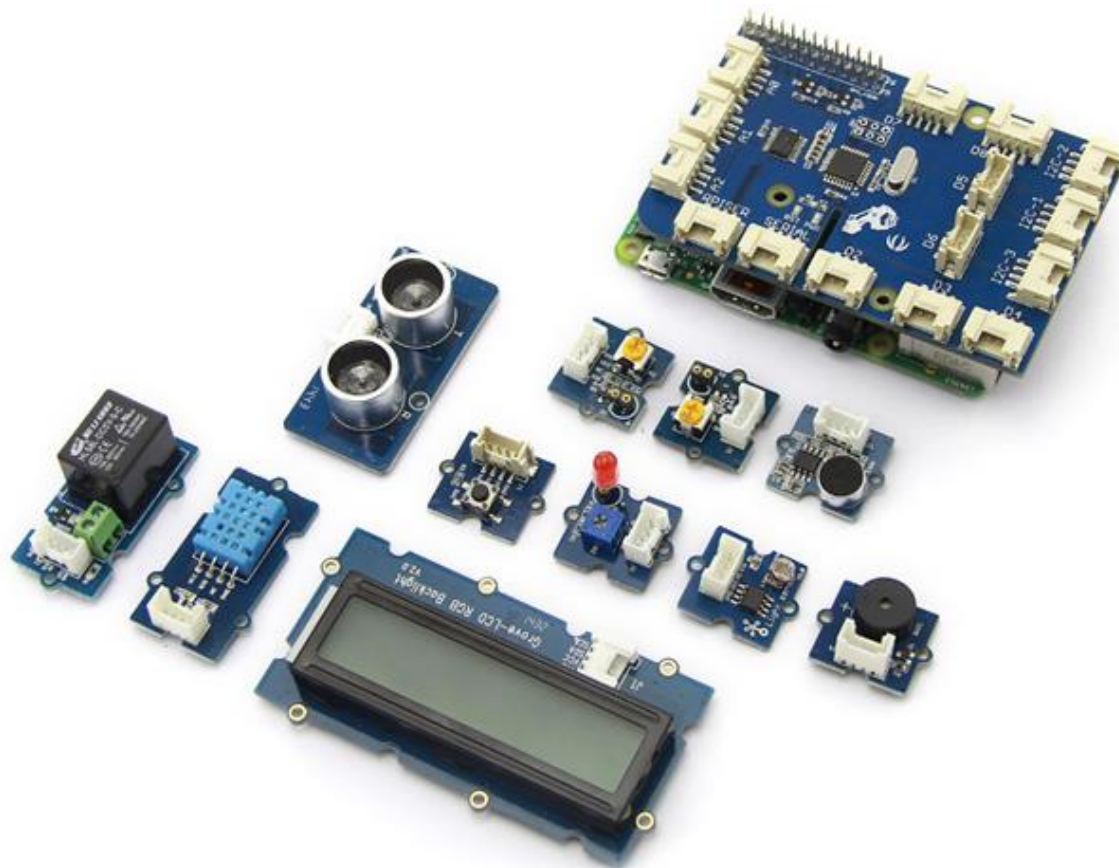


GrovePi+ Kit for Win10 IoT





# 合作产品

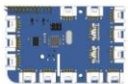


支持 Windows 10 IoT 的模块化硬件套件：

**GrovePi+ Starter Kit for Windows 10 IoT**

即将推出.....

# 合作产品



Grove pi+ × 1



Grove - Temperature&Humidity × 1



Grove -Relay × 1



Grove - Ultrasonic Ranger × 1



Grove-LCD RGB Backlight × 1



Grove Buzzer × 1

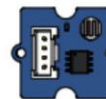


Grovepi+Guidebook × 1

Cables × 10



Grove - sound Sensor × 1



Grove - light sensor × 1



Grove - Button × 1



Grove - Rotary Angle Sensor × 1



Grove - red led × 1



Grove blue led × 1



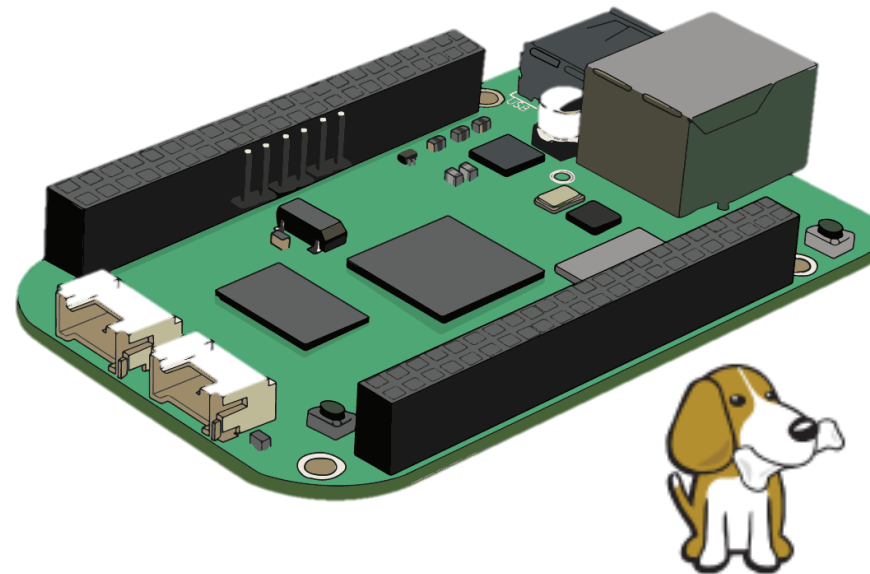
Grove green led × 1

## GrovePi+ Starter Kit for Windows 10 IoT:

- 模块化硬件
- 完全开源
- 快速开发原型



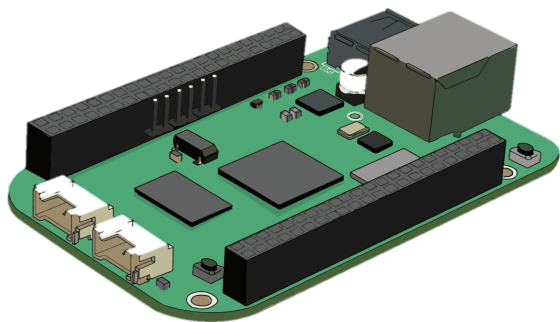
# 合作产品



Windows Azure IoT 现已经支持

Seeed BeagleBone Green

# 合作产品



Grove - I2C ADC x 1



Grove - Relay x 1



Grove - OLED Display 0.96" x 1



Grove - Temperature Sensor x 1



Grove - 3-Axis Digital Accelerometer ( $\pm 16g$ ) x 1



Grove - I2C Hub x 1



Grove - Buzzer x 1



Grove - Button x 1



Grove - Sound Sensor x 1

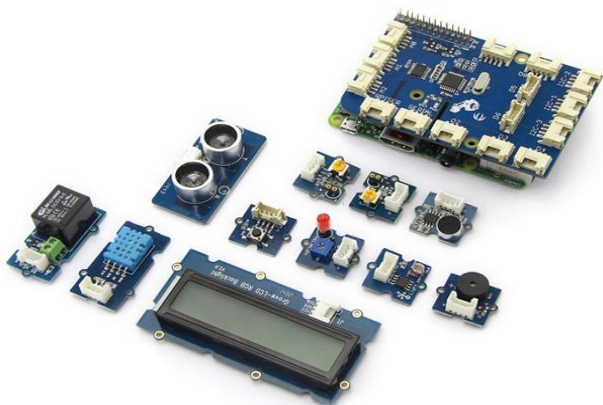


Grove - Chainable RGB LED x 1

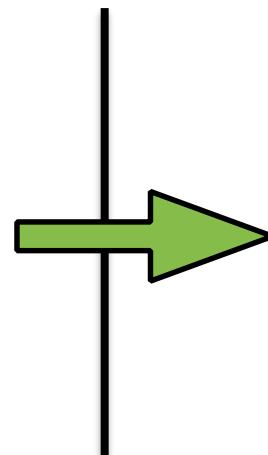
将会支持更多的模块化硬件



# 模块化硬件 + Win10 IoT + Azure = 快速原型



**GrovePi+ Kit for Windows 10**



**Plant Box Demo based on Raspberry Pi and Win10 IoT Core**



期望能和微软一起给 Maker 社区提供更多可能性。



# Thanks



- Albert Miao
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