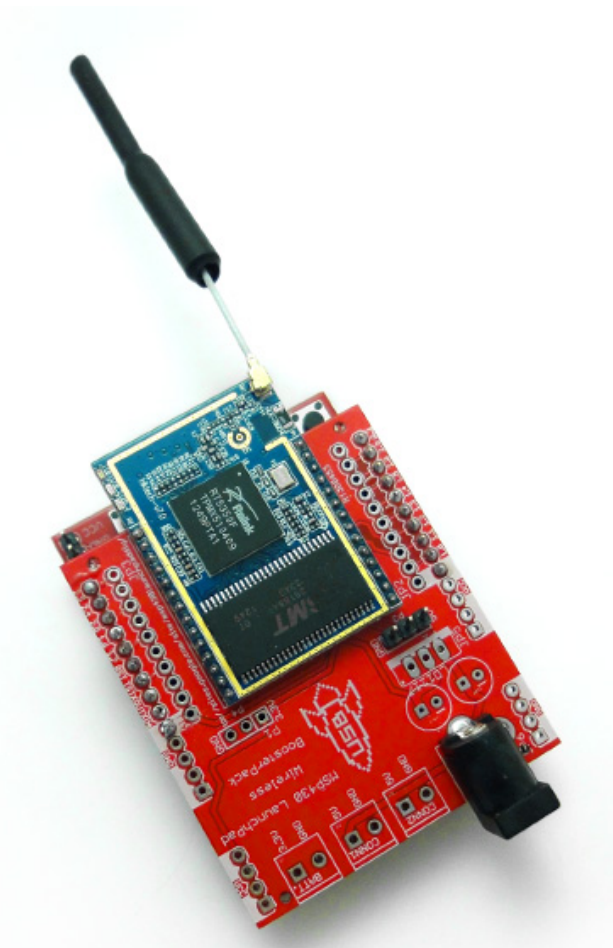


[OST - MSP430 launchpad]



[玩USB互動裝置]
開發日誌

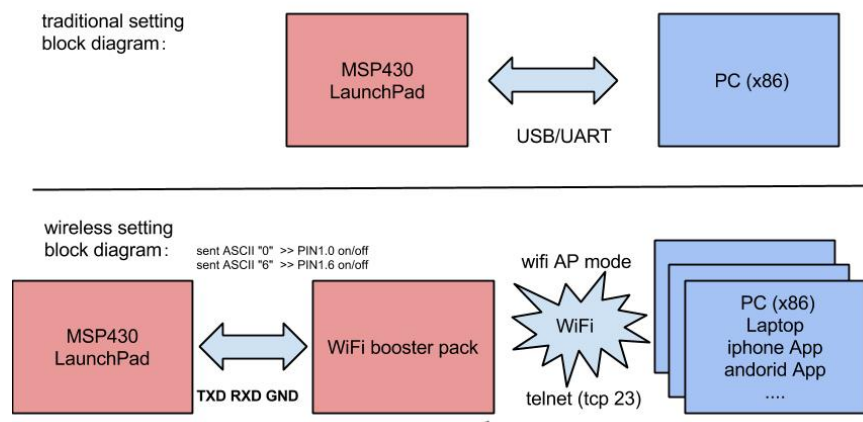
<http://sites.google.com/site/msp430launchpaddy/>

WiFi 2.4G booster pack user guide

1.feature

WiFi 2.4G Booster Pack is an special design kit for TI msp430 LaunchPad board and make it into a wireless remote control device. By using this booster pack, user can have more fun with wireless application, such as easy control by laptop monitor (or smartphone or any internet connected device) to access internet without physical cable limitation. Here is the hardware feature description as following:

- **support UART** - MSP430 LaunchPad communicate with standard serial port protocol and using 3 wire signal(TXD, RXD and GND)on the board, by this kit. it can convert to wireless signal.
- **ac power supply** - one big concern about the wireless device is usually took more power consumption, so this kit design with power supply plug (from ac-to-5vdc adaptor) and also optional support dc input connector or user may use it to charge by solar panel power supply.
- **wireless 802.11b/g/n standard** - it is sufficient for this spec able to implement wireless remote control application via laptop /smartphone. the max transmission rate up to 150Mbps.
- **external antenna** -for best wifi transmission performance, it have external antenna , by your wish, user able to replace to any kind of high gain antenna and adjust antenna position by environment.
- **LED indicator status**- included three LED on the wifi module, easy to understand the wifi status (power supply status and transmit/ receive status).



2.assembly procedure

- 1.check pcb board contain with two layer, the top size have "usb rocket" logo. solder DC jack connector power plug, on three-pins position.
- 2.solder 10PIN female connector on two side of the pcb board.
- 3.solder WiFi module on top side of the pcb board.
- 4.attach external type of antenna, you can tune the antenna angle /direction by your wish, just push the connector on it.
- 4.assembly wifi module on pcb of booster pack board , plase note that two side pinout have direction, please check the reference picture.

table1 connector pinout

MSP430-EXP430G2						
Header Pin Numbers	wifi module	MSP430 G2553 Name		MSP430 G2553 Name	wifi module	Header Pin Numbers
1	pin4	VCC		GND	pin2	20
2		P1.0 (LED1)		XIN		19
3	pin20	P1.1 (UART)		XOUT		18
4	pin21	P1.2 (UART)		TEST		17
5		P1.3 (S2)		RST (S1)		16
6		P1.4		P1.7		15
7		P1.5		P1.6 (LED2)		14
8		P2.0		P2.6		13
9		P2.1		P2.4		12
10		P2.2		P2.3		11
Header Pin Numbers	wifi module	MSP430 G2553 Name		MSP430 G2553 Name	wifi module	Header Pin Numbers

3.first time setup

3.1 setup procedure #1

- connect WiFi BoosterPack plug (ac to 5vdc adaptor : PIN1=+5vdc , PIN2=GND)
- set laptop computer wifi config as DHCP
- get auto assigned IP address, factory default password as 12345678
- open web browser enter web address as " http://192.168.16.254" (factory default IP address)
- login webpage user name /password: admin/ admin
- check the Web GUI for the wifi module.

3.2 setup procedure #2

then user can click the "pull-down" selection to change protocol setting , as following config :

- set Netmode from default to WIFI (AP) - SERIAL
- set data encryption from WPA2 AES to OPEN (* maybe change this setting by user)
- set IP address from 192.168.16.254 to 192.168.11.254

please note!! it require a reboot after change IP of the wifi module

- set serial port baud rate setting from 115200 to 9600 N-8-1
- set Port Number from 8080 to 23

http://192.168.11.254/Serial2Net.asp

HLK-RM04 Web Configure

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Hi-Link™

WIRELESS-N ROUTER IEEE 802.11N

HLK-RM04

- Serial2Net Settings
- Advance Settings
- Management
- Upload Firmware

HLK-RM04 Serial2Net Settings

NetMode:

SSID:

Encrypt Type:

IP Address:

Subnet Mask:

	Current	Updated
Serial Configure:	9600,8,n,1	<input type="text" value="9600,8,Δ,1"/>
Serial Framing Length:	64	<input type="text" value="64"/>
Serial Framing Timeout:	10 milliseconds	<input type="text" value="10"/> milliseconds (< 255, 0 for no timeout)
Network Mode:	server	<input type="text" value="Server"/>
Remote Server Domain/IP:	192.168.11.245	<input type="text" value="192.168.11.245"/>
Local/Remote Port Number:	23	<input type="text" value="23"/>
Network Protocol:	tcp	<input type="text" value="TCP"/>
Network Timeout:	0 seconds	<input type="text" value="0"/> seconds (< 255, 0 for no timeout)

4.first time install software

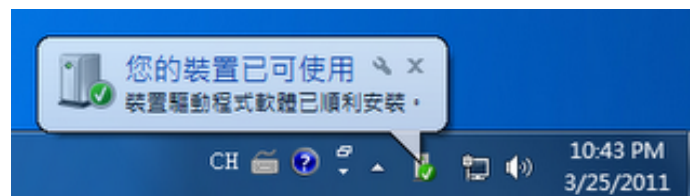
4.1 step 1 - launchpad usb driver

LaunchPad shipping included with standard USB type cable, we recommend to use it for computer usb port.

- launchpad windows usb driver also available at official website:
http://e2e.ti.com/cfs-file.ashx/___key/CommunityServer-Discussions-Components-Files/166/4456.LaunchPad_5F00_Driver.zip
- when first time plug in LaunchPad board, windows system will show toolbar message as "now is search and install device driver."
- select driver folder \Step1_USB launchpad driver for windows\430cdc.inf

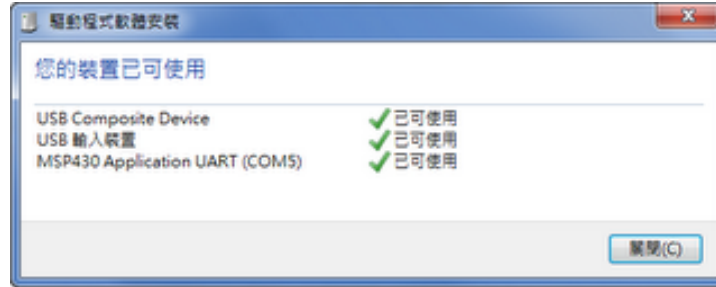


- wait for windows system ready and complete driver installation。



- message show "your device already available"

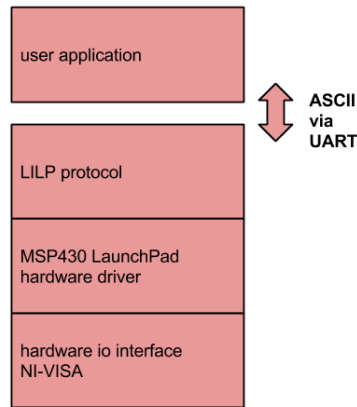
*usb driver install procedure only necessary run on the very first time with new computer



- check control panel>>system>>device manager>> device port(COM and LPT)"option >>find this new USB device.
- please note this example as port setting at COM5, the real application for COM PORT number maybe a difference value like COM6...COM7....or any number.
- check USB device name "MSP430 Application UART" message.
- congratulation ! end of usb driver installation.

4.2. step 2 - LILP uploader

WiFi 2.4G booster pack is an extension kit that based on TI MSP430 LaunchPad microprocessor. To provide user have more friendly method to build their application own application code, we recommend use "**LILP**" protocol (LabVIEW Interface for LaunchPad I/O Protocol).



*LILP uploader procedure only necessary run on the very first time with new launchpad board.

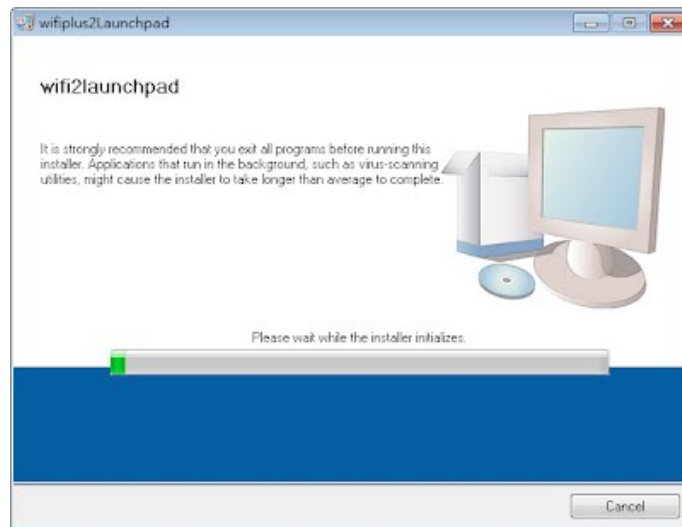
* this protocol support chip model for MSP430G2553, the original chip attached on MSP430G2 launchpad board.



- plug launchpad board usb on laptop computer usb port
- run \Step2_LILPv1 uploader\LILP uploader_v1.0.0219\LILP_uploader.exe
- click "**upload LILPv1**" button
- check the message show on the screen
- congratulation ! end of LILPv1 installation.

4.3.step 3- install application : wifiplus2Launchpad

- run \Step3_GUI appliaction\wifiplus2launchpad\setup.exe



*install application procedure only necessary run on the very first time with new computer.

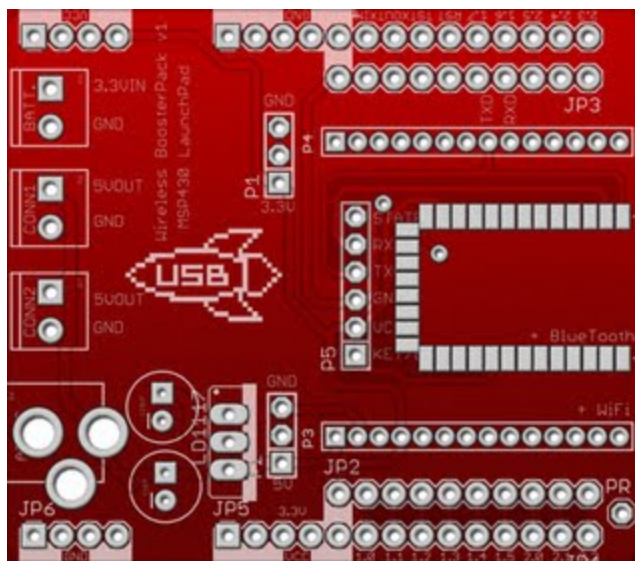
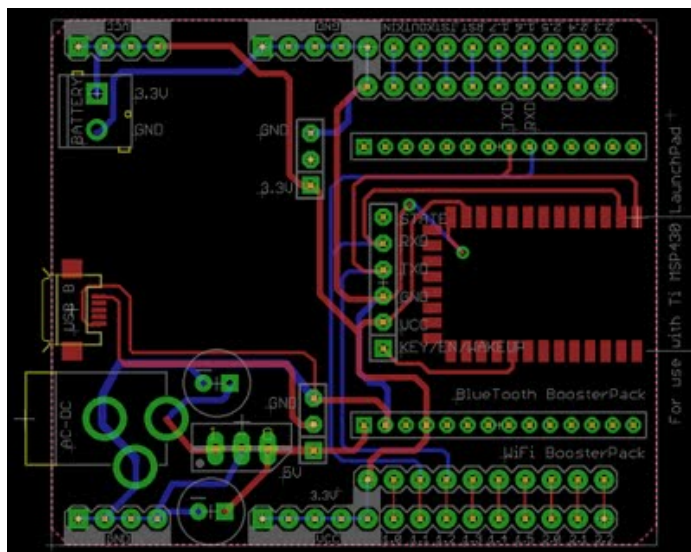
5.run application: wifiplus2launchpad

operation introduction :

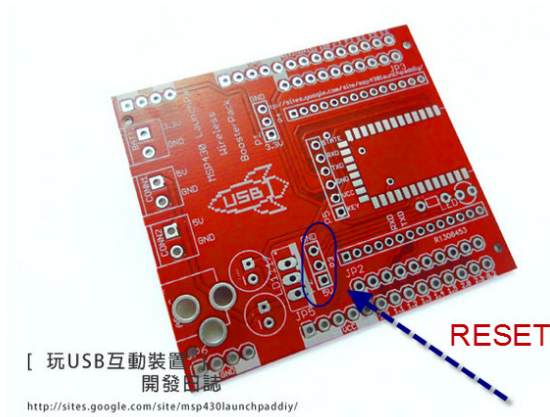
- 1. click the red led on the application as virtual panel.
- 2. check red LED indicator on the launchPad board change to turn ON/OFF.
- 3. as the same method, use can click the green LED then the green LED indicator on the launchPad board will change to turn ON/OFF.



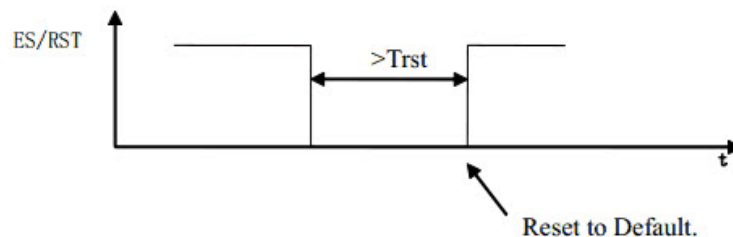
6. pcb board design



7.restore to factory default



- 1. first solder the three male pin for RESET.
- 2. power on the module , wait for about 30 sec.
- 3. use JUMPER wire , connect RST with 5V PIN.
- 4. use JUMPER wire , connect RST with GND PIN. hold for waiting time about 6 sec. (Trst)
- 5. power cycle again , about 30 sec , use wifi client to find wifi AP as SSID name as HLK-XXXX



8.more information

if something else you want to ask discussion group and technical support.

<http://sites.google.com/site/msp430launchpaddiy/>

<http://sites.google.com/site/msp430launchpaddiy/home/tao-lun-qu>