

Getting Started with the PHYTRE WiFi Module(WACIO_GP) & Evaluation Kit WACIO_GP_XXX

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Introduction

Phytrex WACIO_GP_XXX evaluation kit (here after called "WACIO_GP_XXX EVB") provides a development environment for system designs that demand homekit products. The WACIO_GP_XXX EVB is support Outlet profile reference design and allows scaling to other profiles environments with different SDK. Customer can connect Ethernet cable or through wireless access to update firmware.

Applications

- Homekit Product Development
- Smart Socket
- Smart Thermostat
- Smart Light bulb

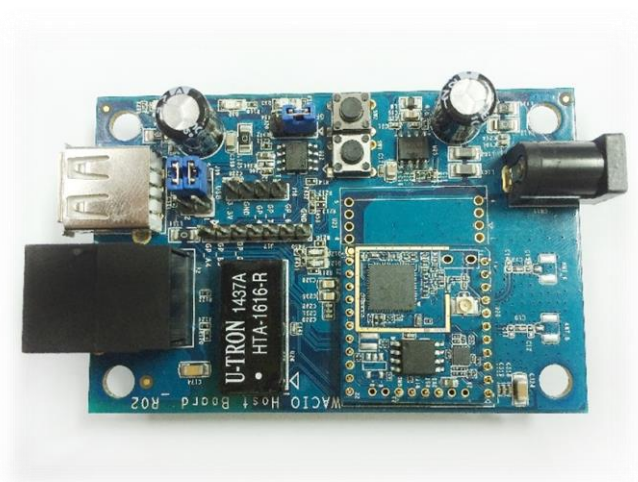


Figure 1: WACIO_GP_XXX & Host Board

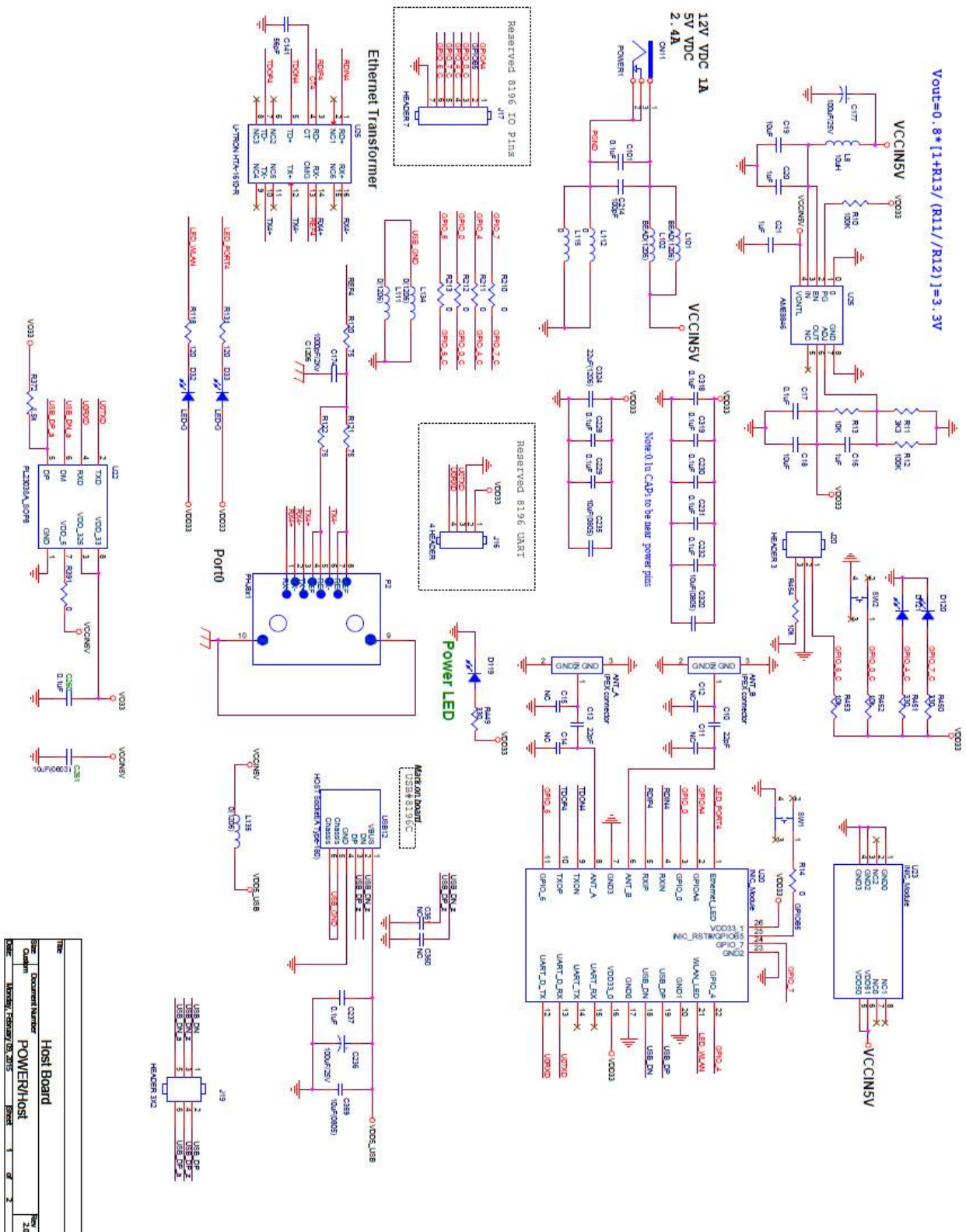
WACIO_GP_XXX Module Support List

WACIO_GP_XXX	USB *1, GPIO*3, RST*1	Option	External antenna
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Table 1. Module support on EVB

Schematic circuit of Evaluation board

Figure 2: WACIO_GP_XXX EVB Circuitry Drawing



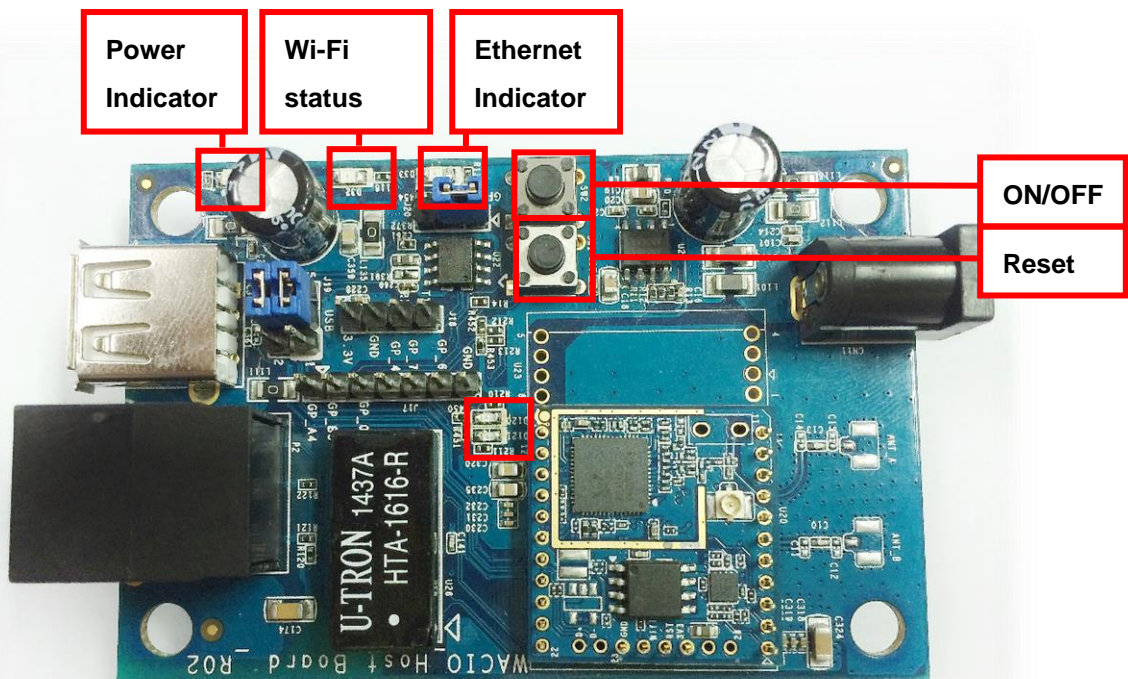
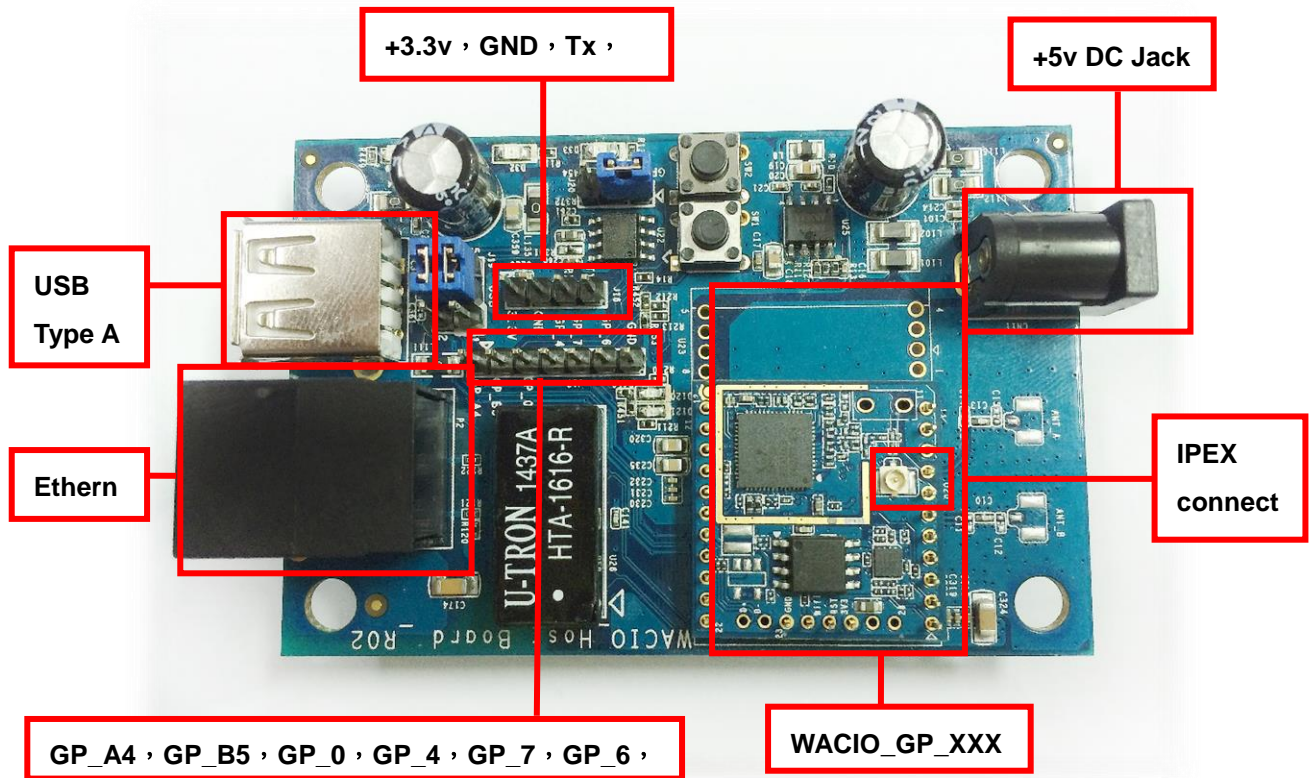


Figure 3: Board PIN Definition

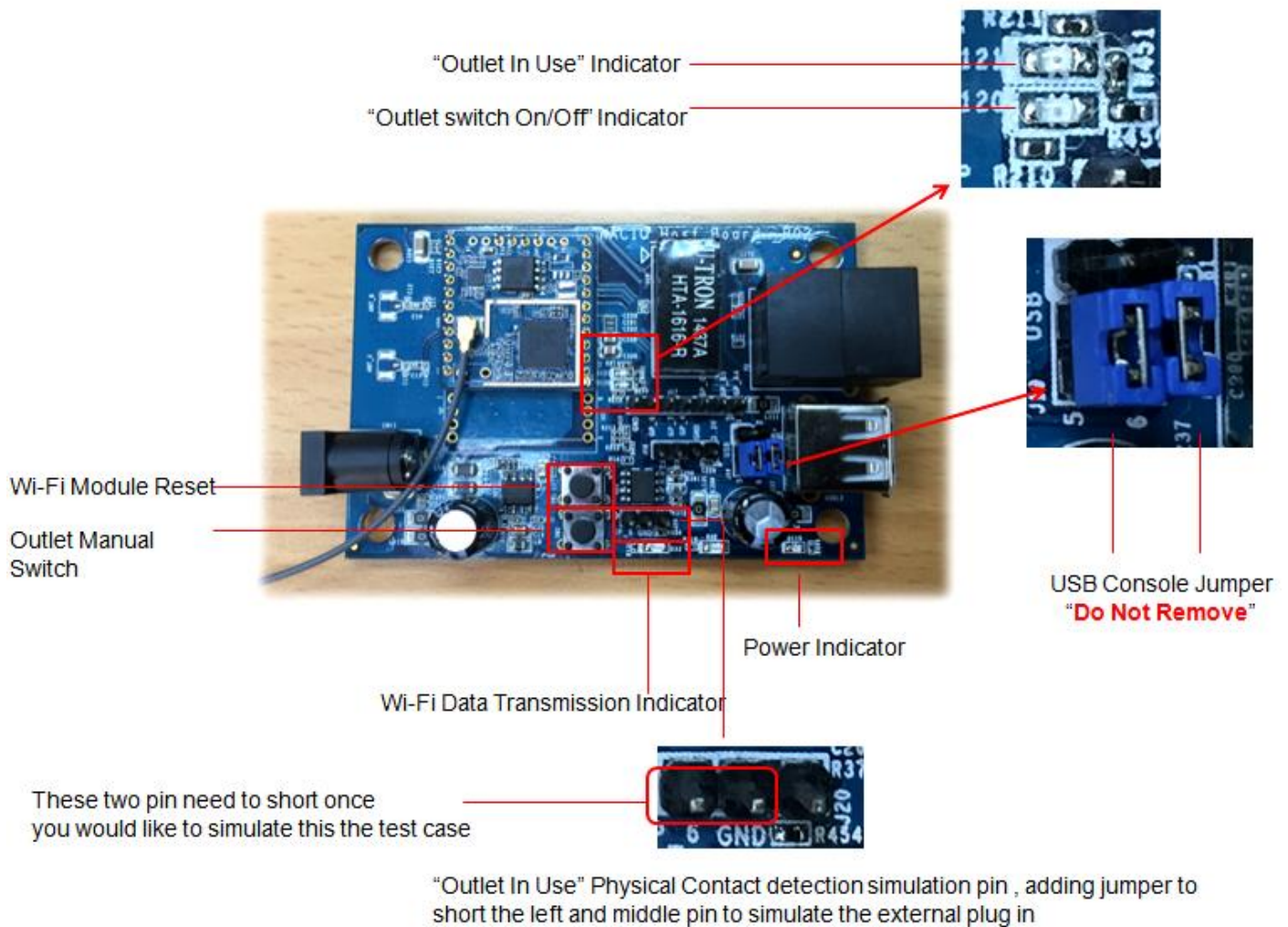


Figure 4: The host board introduction

Note :

1. Power Indicator will "turn on" when USB cable or Power Adaptor plug into DC Jack
2. Outlet Manual Switch button is the power switch of outlet
3. Outlet switch indicator will turn on or off when switch on or off via manual mode or remote mode
4. Outlet in Use indicator will turn on or off when physical contact is active
5. Wi-Fi indicator will be twinkling under specified scenario
6. Ethernet will be twinkling when data is transmitting through this interface

LED Indicator

WACIO_GP_XXX EVB embeds many LED indicators, it provides versatile functional indication under different scenarios. It includes power on/off, Ethernet ,Wi-Fi and Outlet status. Table 2. shows the location of LED indicators and definition.

LED Indicator	Function	Note
D119	Power	
D120	Outlet Power Switch	
D121	Outlet In Use	R367
D32	Wi-Fi Status	R369
D33	Ethernet	R370

Table 2: LED Indicators and Definition

Note. R367,R369 and R370 (red)on WACIO_GP_XXX module should be placed, not allow to open

The Wi-Fi lamp indicator (Figure 5) will display under following status

Status	Wi-Fi Lamp Indicator
System Booting	Turn off
Waiting to Join Network	Fast Flashing
WAC complete	Flashing depends on data transmission (Wi-Fi mode)

Table 3: Wi-Fi status lamp indicator

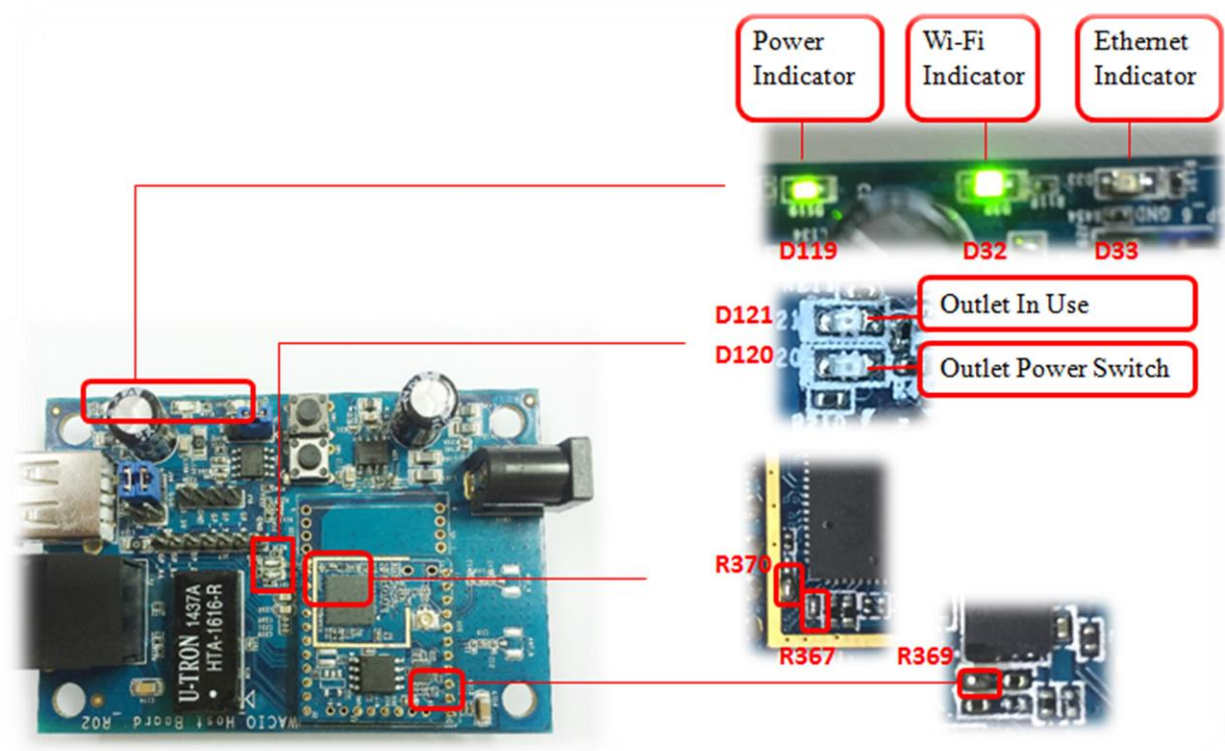


Figure 5: LED Indicator and relative resistors

EVB Board PIN Definition

Port	Description
+5v DC Jack (CN11)	Development board main power +5v
+3.3v*	WACIO_GP_XXX Module external power
GND	Ground
Tx	Console port debug pin Tx
Rx	Console port debug pin Rx
Ethernet interface	Download firmware by TFTP (RJ-45)
Reset button	Clear Wi-Fi Configured status(WACIO_GP_XXX System reboot)
GP_A4	IO port
GP_B5	IO port (Reset)
GP_0	IO port
GP_4	IO port
GP_6	IO port
GP_7	IO port (Hi-Low ON/OFF control)

Table 4: EVB PIN definition

***Note : User can provide the external +3.3V power supply through this pin**

EVB Instructions

- U23 is the block for WACIO_GP_XXX module. Place WACIO_GP_XXX module carefully.
Note: The side with IPEX connector is top side, please check before turn on the power (Figure3)
- Plug the DC +5V Power Adaptor on DC Jack (CN11)
- Operation power of WACIO_GP_XXX module is +3.3V. The host board is already embedded the DC to DC regulator to convert +5V to +3.3V
- Reset button is for clear Wi-Fi WACIO_GP_XXX configured status, it means WACIO_GP_XXX return to unpaired status.
- The firmware update can be implement through TFTP(Ethernet) or Web page (Wi-Fi).

Use "TFTP" to update firmware

Connecting Block diagram

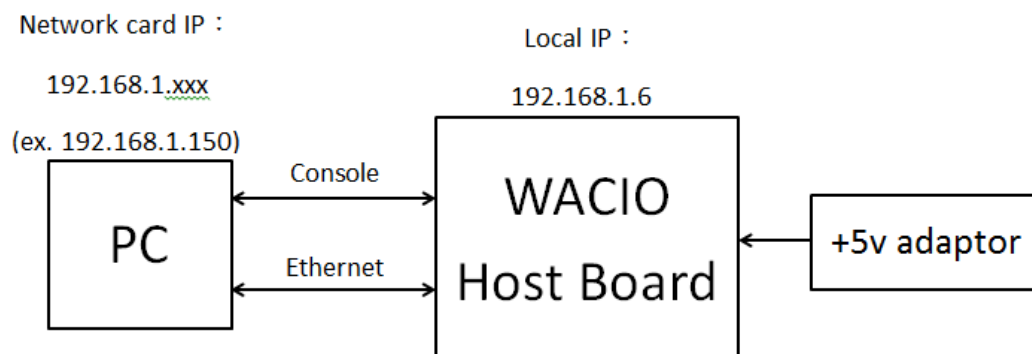


Figure 6: System connecting block diagram

Tools and Shareware

- (1) Power Adaptor(+5v , 1A)
- (2) Ethernet cable
- (3) USB Type A to Type A Cable
- (4) TeraTerm
- (5) TFTPd32



Power Adaptor



Ethernet Cable



Type A to Type A USB Cable

Figure 7: EVB Kit Accessories

Connecting Host Board with cable

PC via Ethernet and USB



Figure 8: USB (Type A) and Ethernet cable connection

Step1 : Running Tera Term application program.



Setting Serial port as below :



Figure 9: Setting COM Port

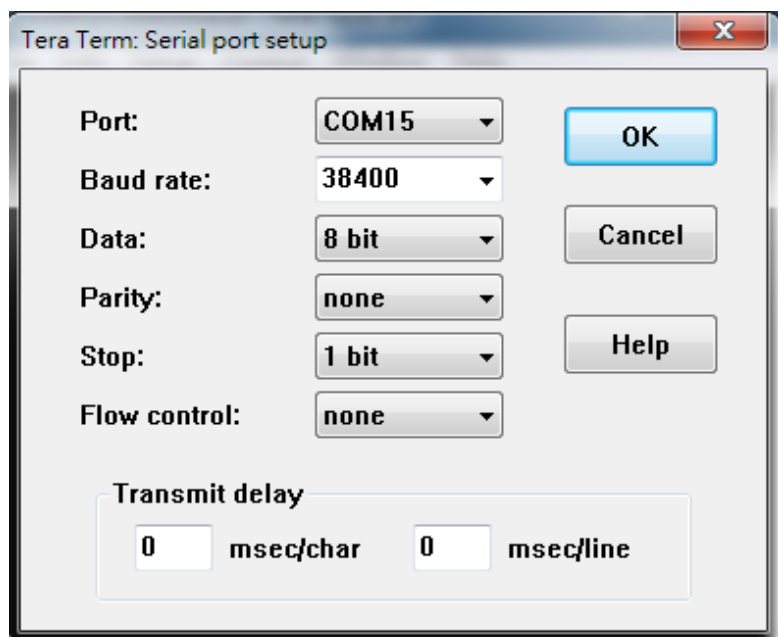


Figure 10: Setting Baud Rate to 38400 bps

Step3 : Connect the Ethernet Cable and Running "Tftpd32" application program



Settings of Tftpd32 are as follows :

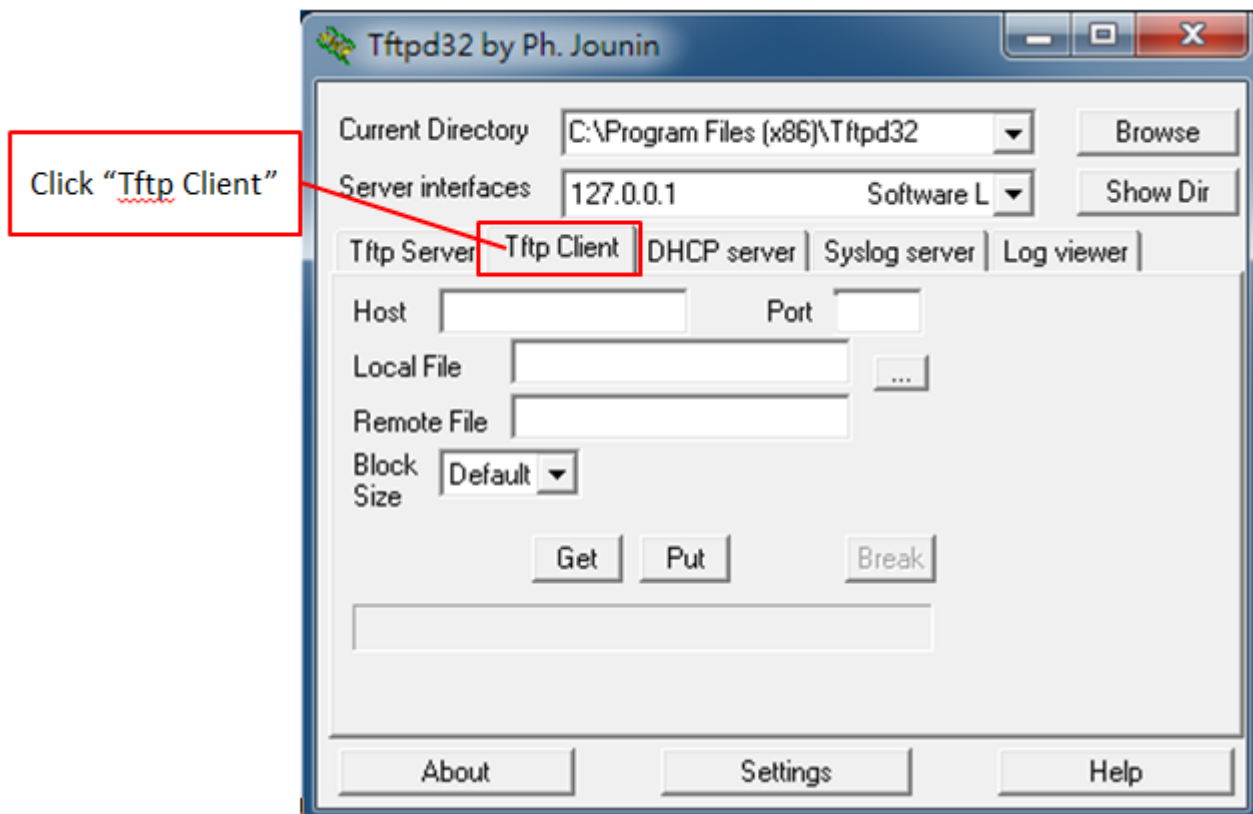


Figure 13: Setting on TFTP Screenshot (1)

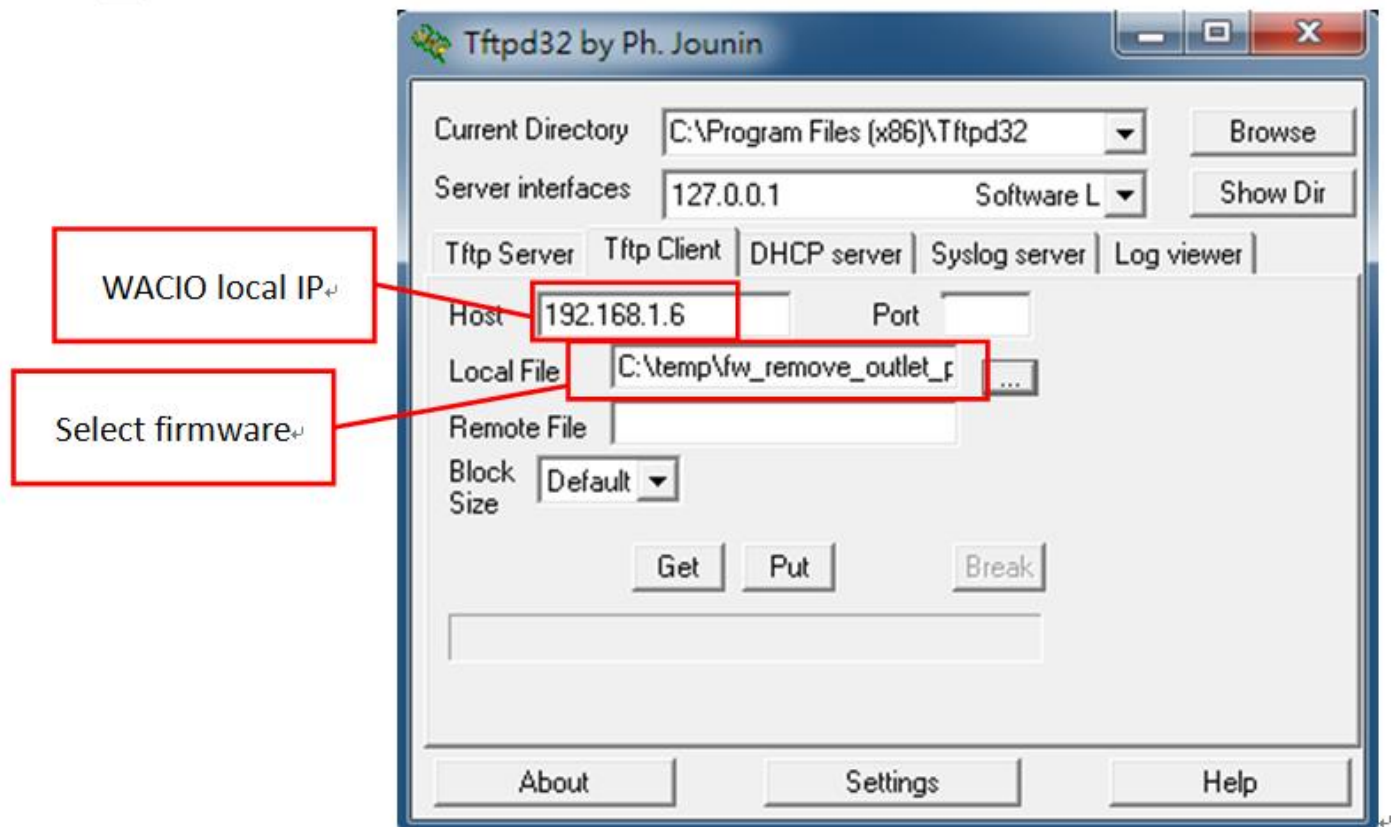


Figure 14: Setting on TFTP Screenshot (2)

Step3 : Click “Put” to update firmware

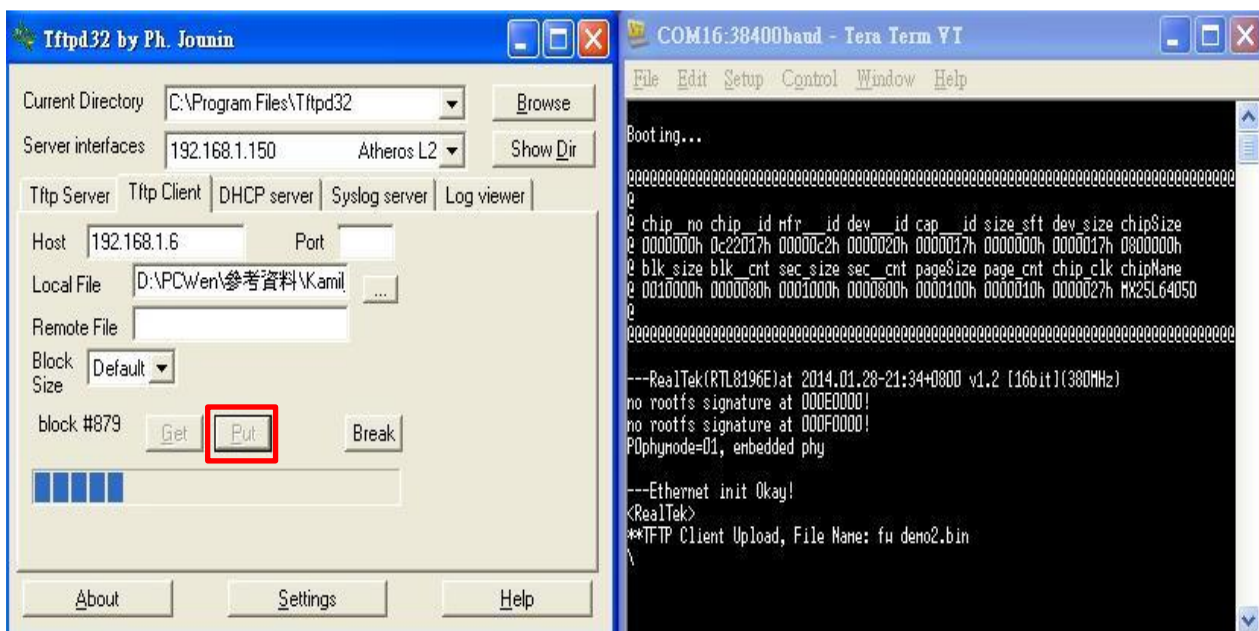


Figure 15: Screenshot of Updating the firmware (1)

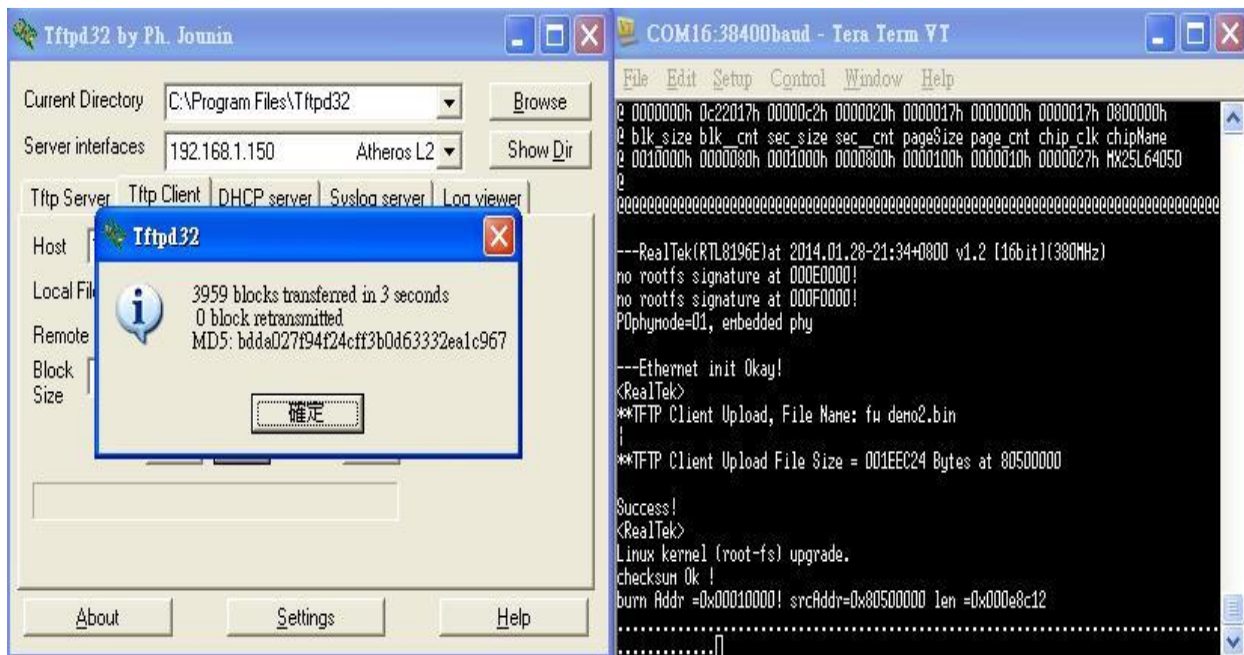


Figure 16: Screenshot of Updating the firmware (2)

System will reboot when update is complete.

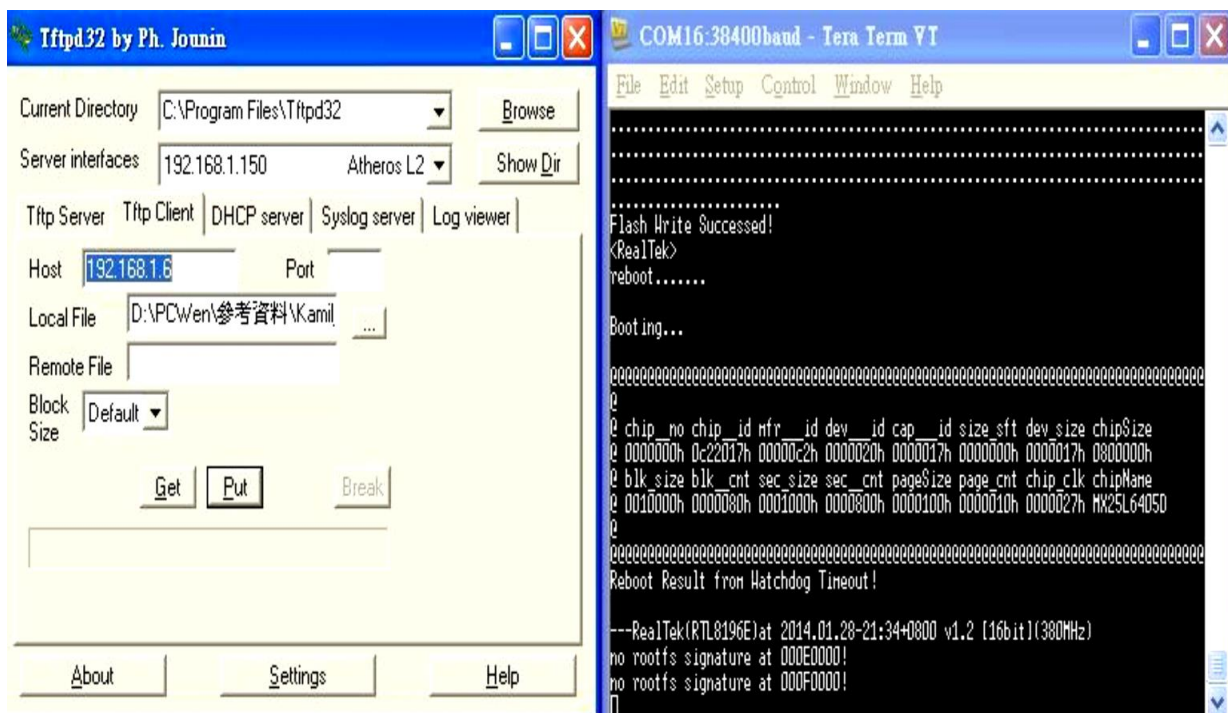


Figure 17: Screenshot of Updating the firmware (3)

Note

This wifi module is no shielding case. So system manufacturers use this module into their product must add necessary shielding facility in the box to avoid emission interference.

For host vendors or integrator, part 15B, and part 15C emission (15.247) are subject to re-performing.

Support and Contact

If you need to purchase our products or have any technical issues, please contact us
(Monday to Friday AM 9:00~1200 ; PM 1:00~6:00). Phytrex Technology Corp.

TEL : +886-3-5169331

Address : 8F-16, No.81, Shuili Rd., Hsinchu, 30059, Taiwan

Email : sales@phytrex.com

FCC Compliance and Advisory Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, according to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures :

- 1.Reorient the receiving antenna.
- 2.Increase the separation between the equipment and receiver.
- 3.Connect the equipment into and outlet on a circuit different from that to which the receiver is connected.
- 4.Consult the dealer or an experienced radio/TV technician for help.

Any special accessories needed for compliance must be specified in the instruction manual.

Warning: A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used. Use only shielded cables to connect I/O devices to this equipment.

CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment

USERS MANUAL OF THE END PRODUCT :

In the user manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated.

The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Operation is subject to the following two conditions : (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

LABEL OF THE END PRODUCT :

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: 2AEL6WACIOGP001".