WU5108
802.11 b/g/n
Wireless LAN USB2.0 Module

User's Manual

REGULATORY STATEMENTS

FCC Certification

The United States Federal Communication Commission (FCC) and Canadian Department of Communications have established certain rules governing the use of electronic equipment.

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 interface, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant 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 to correct the interference by one of the following measures:

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

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Federal Communication Commission (FCC) Radiation Exposure Statement

This EUT is compliance with SAR for general population/uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C. This equipment should be installed and operated with minimum distance 2.5cm between the radiator & your body.

CE Statement:

Hereby, AboCom, declares that this device is in compliance with the essential requirement and other relevant provisions of the R&TTE Driective 1999/5/EC.

1. Introduction

The **WU5108** is an IEEE802.11b/g/n mini-size USB module that can connect the BP300 printer equipped with a USB Pin Connecter (Figure 2-1).   The module has a core WiFi chipset, AR9271 which is produced by Atheros Communications, Inc.

The **WU5108** delivers reliable, cost-effective, feature rich wireless connectivity at high throughput from an extended distance. It supports WMM and WMM-PS (IEEE802.11e QoS standard); also has an innovative built-in WPS (Wi-Fi Protected Setup) function which can build a connection between an AP and synchronize the encryption settings.
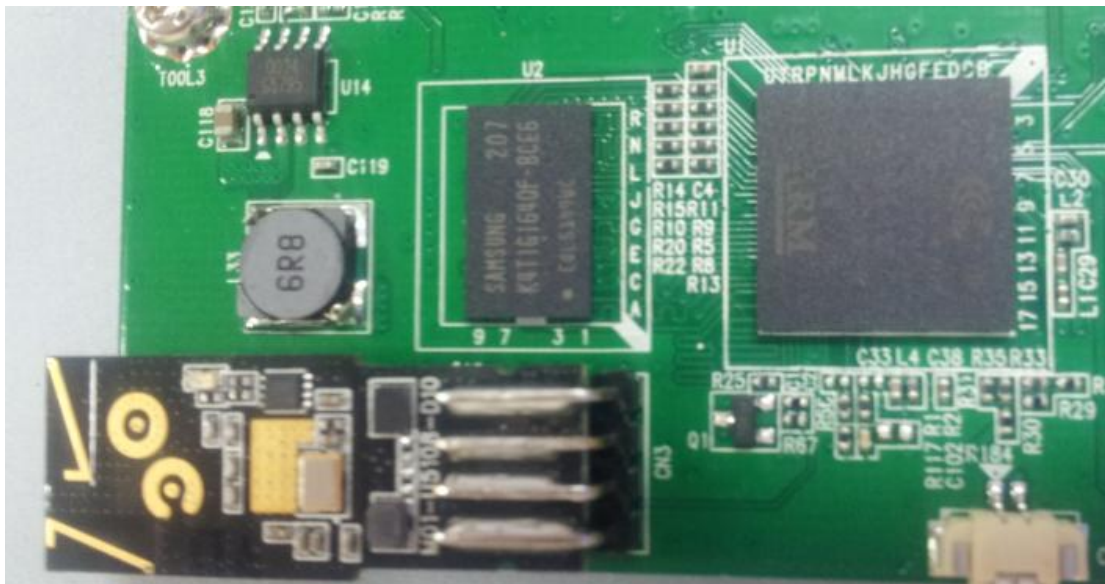
2. Features

The **WU5108** Module supports various Operating Systems and several Network Environments. Table2-1 explains the types for the systems.

<Table 2-1>   **WU5108** Specification

Standard	IEEE 802.11b/g/n standards compliant
Antenna	Internal Antenna
Supported OS	Windows 2000, XP, Vista, WIN7, RTOS(ThreadX)
Interface with External PCB	USB2.0/1.1
Security	WEP 64/128 WPA, WPA2
Frequency Range	802.11b/g/n USA(FCC): 2.412GHz ~ 2.462GHz Europe(ETSI): 2.412GHz ~ 2.472GHz Japan(TELEC): 2.412GHz ~ 2.472GHz
Number of Selectable Channels	802.11b/g/n: USA(FCC) 11 Channels EU(ETSI) 13 Channels Japan(TELEC) 13 Channels
Data Rate	802.11b: 1,2, 5.5, 11Mbps 802.11g: 6,9,12,18,24,36,48,54Mbps 802.11n: up to 150Mbps

Transmit Power	802.11b : 16 +/-1 dBm(Typical) 802.11g : 13 +/-1 dBm(Typical) Wireless-N : 13 +/-1 dBm(Typical)
Physical Specifications	Weight : 2.5g Dimension : 32.4(L)*16.6(W)*2.9(H)
Environment Specification	Operating Temp : 0 to 40 (Celsius Degree) Storage Temp : -20 to 70 (Celsius Degree) Operating Humidity : 10% to 90% Non-Condensing Storage Humidity P : 10% to 95% Non-Condensing
Power Requirement	Standard USB Power DC 5V
Power Input Method	Printer Type : Soldering with a connector between the module and the Printer(BP300) ➔ Figure2-1

<Figure 2-1> Connection between WU5108 and Main PCB

<Information>

Applicant : Prinics Co., Ltd

Address : E-1101, Digital Empire B/D, 980-3, Youngtong-Dong, Youngtong-Gu, Suwon-Si, Korea

Manufacturer : AboCom System, Inc.

Address : No.77, Yu-Yih Rd., Chu- Nan, Miao-Lih Country 35059, Taiwan R.O.C
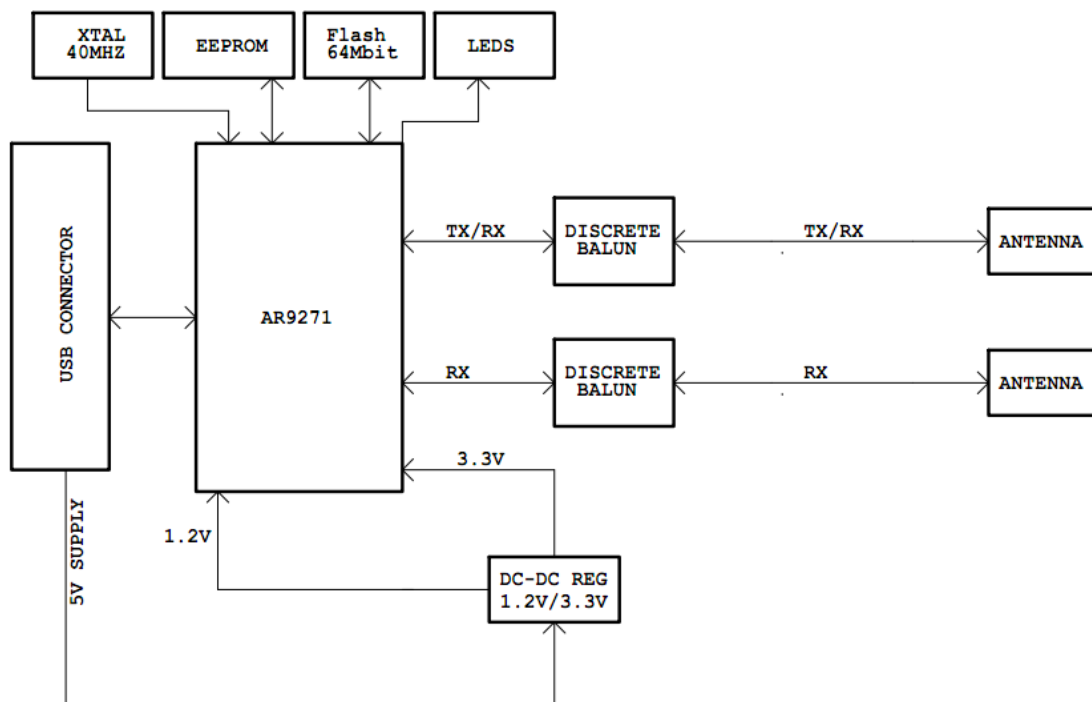
FCC ID : PO5WU5108

If the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label shall be: "Contains FCC ID: PO5WU5108"

3. Block Diagram

The **WU5108** module consists of Main Chipset, AR9271 and peripheral parts (Fiqure3-1).   It communicates with an external Main Printer PCB by using standard USB2.0 interface (Fiqure2-1).

When the adopter power is applied to the printer, it will be supplied to WU5108 via USB 2.0 Power Pin (5V Pin in the USB2.0).
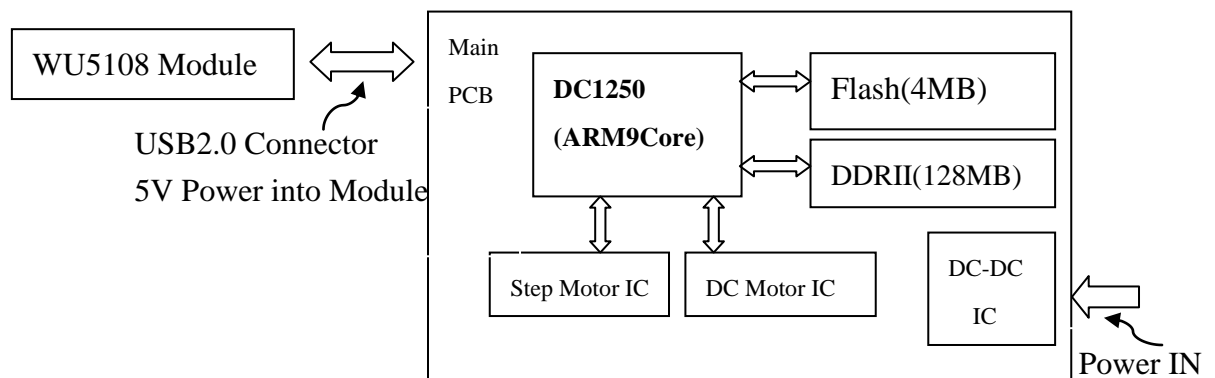
<Figure 3-1>   WU5108 Block Diagram

4. Installation

The BP300 Printer has an ARM926EJ CPU and 4MByte Flash Memory for a program execution file. The Module driver is already embedded in the file. The execution file is produced from compiling the ARM based codes, and then it is flashed in the flash memory using a flash memory writing equipment.

When the printer has Power-ON, the module has 5V power from the printer PCB via USB connector (Figure4-1).

<Figure 4-1> BP300 Printer System Block Diagram

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 ┌──────────────────┐          ┌─────────────────────────────────────────────────┐
 │                  │  ⟺       │ Main                                            │
 │  WU5108 Module   │          │ PCB   ┌──────────────┐   ┌──────────────────┐    │
 │                  │          │       │  DC1250      │ ⟺ │  Flash(4MB)      │    │
 └──────────────────┘          │       │ (ARM9Core)   │   └──────────────────┘    │
                               │       │              │ ⟺ ┌──────────────────┐    │
    USB2.0 Connector           │       └──────────────┘   │  DDRII(128MB)    │    │
    5V Power into Module       │          ⇕      ⇕        └──────────────────┘    │
                               │      ┌─────────┐ ┌──────────┐  ┌────────────┐    │
                               │      │Step Motor│ │DC Motor IC│ │  DC-DC     │    │
                               │      │   IC    │ │          │  │   IC       │ ⇐  │
                               │      └─────────┘ └──────────┘  └────────────┘    │
                               └─────────────────────────────────────────────────┘
                                                                         Power IN
```
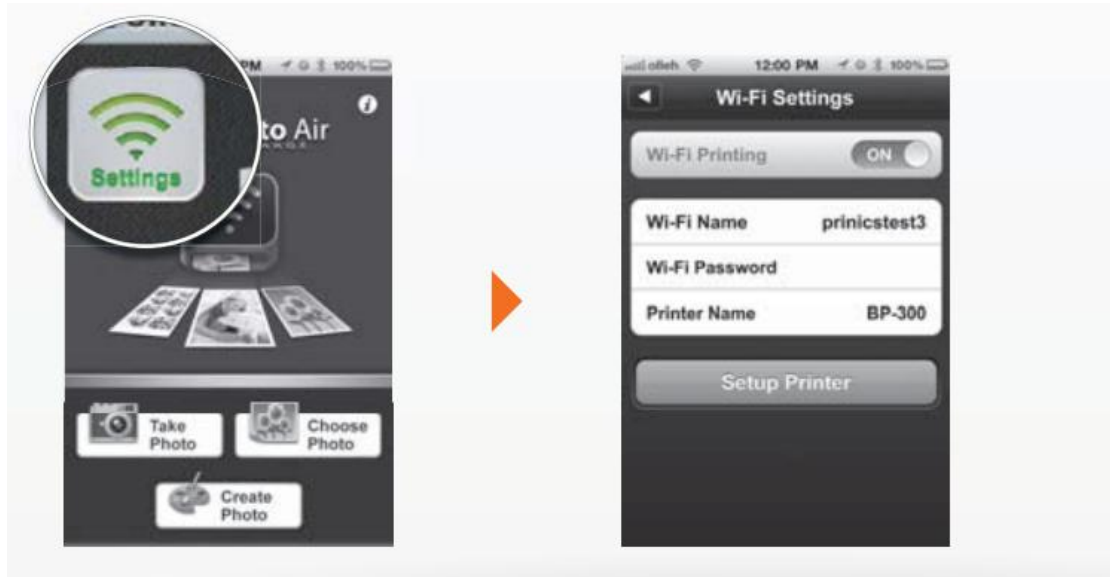
5. WU5108 Setup

The **WU5108** module in BP300 printer will be set up via the Android & iPhone application (Bolle Photo Air) to use a wireless printing. The module supports the securities – WPA, WPA2, and WEP64/128. The application program can check the each security one by one to connect to the Router.

In order to print an Image via **WU5108** Module from the Smart phones, first of all, the module should be connected to the AP Router. The Routers have their own security such as WPA, WPA2 and WEP64/128.

To connect to the AP (Router), the steps will be follows:

<iPhone Setup Case>

1. Using the iPhone Application(Bolle Photo Air), the Setting button in the Main Application window is to click. The application can be downloaded from the AppStore for iPhone and Android.

2. Put the Router Password and Printer Name, and then click the Setup Printer button. The security will be checked one by one automatically. That is, first, checking the WPA2 -> WPA -> WEP64/128 with the password, automatically.
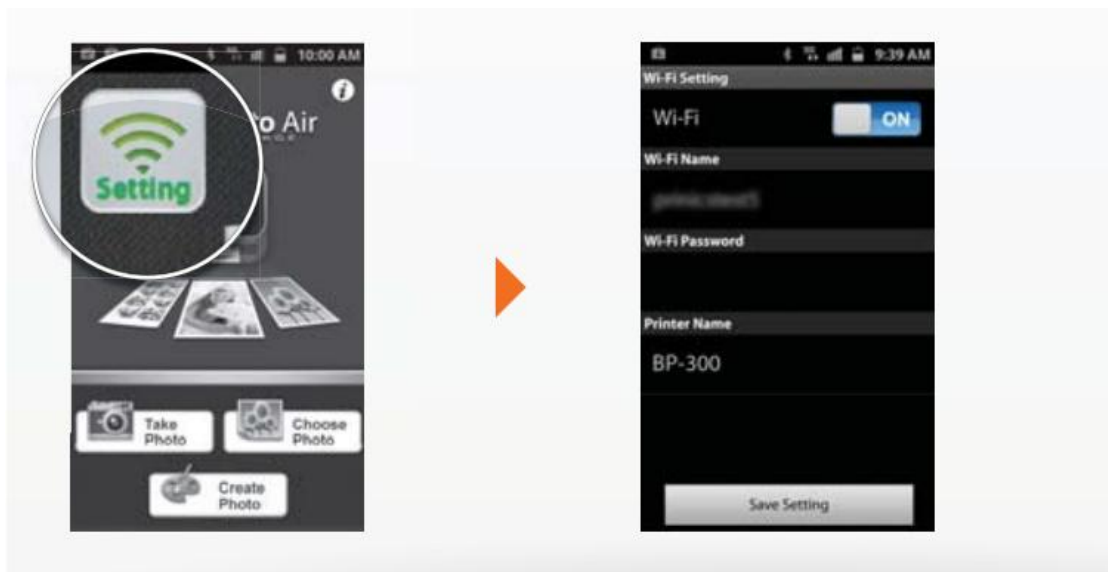
3. The iPhone application sends the setting data to the printer via the Phone's USB 2.0 cable
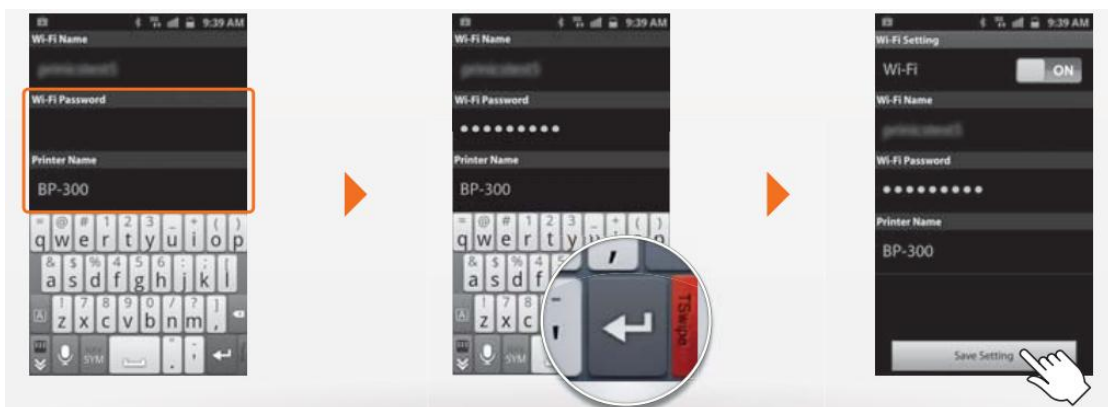

4. The printer gets the setting data and run the **WU5108** Driver to search the Router. If the module connect to the Router, it sends the success message to the Main CPU(DC1250), and then the Main CPU sends the message to the Smart phone.
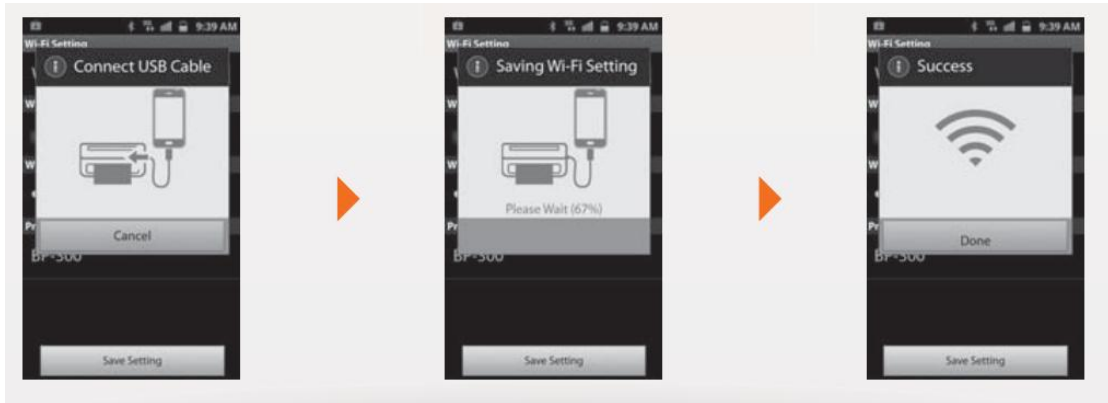
<Android Phone Setup Case>

1. Using the Android Phone Application(Bolle Photo Air), the Setting button in the Main Application window is to click

2. Put the Router Password and Printer Name, and then click the Setup Printer button.

3. The Android Phone application sends the setting data to the printer via the Phone's USB 2.0 cable. The printer gets the data and run the WU5108 Driver to search the Router. If the module connect to the Router, it sends the success message to the Main CPU(DC1250), and then the Main CPU sends the message to the Smart phone.
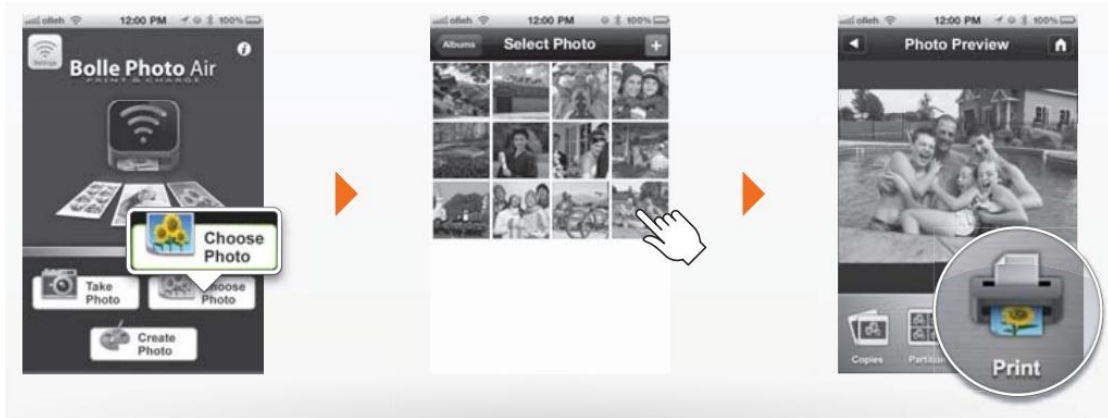
<How to work for Printing via WU5108>

The printer has the **WU5108** module in the case. The printer(BP300) can print an image via a wireless Router getting the image from the phone.

<Figure 5-1> Interface between Printer and Smart Phone

1. In order to print from the phone, open the application in the phone and then open an image to want to print. Click the "Print" button to print

2. The application sends a command to list up what printers are available to print. The **WU5108** Module is already ready to get the image from the phone via a router. If it gets the image, it sends to the Main CPU to process to print.