# WILC1000 AP Provisioning – Quick Start Guide

# Ver 4.2

## Test Platform/Environment

### Hardware/Tools

SAM4S XPLAINED Pro Board (any other XPLAINED Board from Atmel)

WILC1000/WILC1500 XPLAINED Pro

Mini B Type USB Cable

### Software/ Tools

Atmel Studio 7.0 onwards

TeraTerm – v4.94 and above

Python v2.6 and above

Mobile with Android (tested on Ver 6 and above)

provision\_ap\_app.apk file

## Getting Started

1. Connect the WILC1000 XPLAINED Board to EXT1 slot of SAM4S XPLAINED Board
2. Connect the USB Cable to the Debug USB port on the SAM4S XPLAINED Board and the other end to the PC
3. The USB connection support both supply of power to the SAM4S XPLAINED Board and for monitoring debug messages on PC through the virtual COM PORT
4. Upon connecting to PC and The POWER LED (Green) and STATUS LED (Orange) is seen glowing
5. On the WILC1000/WILC1500 XPLAINED Board visually monitor or inspect for the LED toggling
6. Start the Atmel Studio on the PC
7. Open the WILC1000\_PROVISION\_AP\_EXAMPLE code from the ASF3.0 (4.2) application examples
8. Select the SAM4S XPLAINED Board through the Atmel Studio IDE
9. SAM4S XPLAINED Board detected on the Atmel Studio indicates that the board is now ready for running the demo application
10. Compile the WILC1000\_PROVISION\_AP\_EXAMPLE code once and download the same to the SAM4S XPLAINED Board
11. Make sure to monitor the downloaded code by reading the ‘Build Succeed’ phrase on the output window of the Atmel Studio environment
12. Once RESET, the WILC1000 starts as an AP and is visible as part of Wi-Fi network in the vicinity

Note :

1. For details on the with respect to usage, connections and programming SAM4S XPLAINED Board and WILC1000/WILC1500 XPLAINED Board refer respective user’s guide from www.microchip.com
2. For details on how to use the ATMEL Studio refer the Atmel Studio Help from [www.microchip.com](http://www.microchip.com)/atmelstudio

## Using Terminal Emulator and Python Script

Once the WILC1000\_PROVISION\_AP\_EXAMPLE code (binary elf file) is downloaded to the host MCU on the SAM4S XPLAINED Board and checked, following procedure is used to work with the terminal emulator like Tera Term

1. Open Tera Term and configure the host board for the following using the Serial Port Configuration from the relevant terminal emulator (in this case Tera Term)  
   Assigned/Detected COM Port

Buadrate Rate : 115200

Data : 8 bit

Parity : None

Stop : 1 bit

Flow Control : None

1. Press the RESET press button the SAM4S XPLAINED Pro Board
2. Message on the Tera Term will appear as follows :

-- WILC1000 Provision AP Test --

-- SAM4S\_XPLAINED\_PRO --

-- Compiled: Sep 22 2017 12:07:58 --

wifi\_cb: AP M2M\_WIFI\_CONNECTED 00-00-00-00-00-00

AP Provision mode started.

On the android device, connect to WILC1000\_PROVISION\_AP then run setting app.

main : Created TCP Server Socket!

main : TCP Server Socket Bind done !

main : TCP Server Socket in Listen mode !

1. Now connect the PC to the Access Point (AP) named WILC1000\_PROVISION\_AP
2. Message on the Tera Term will appear as follows :

wifi\_cb: AP M2M\_WIFI\_CONNECTED 5c-e0-c5-e8-71-d2

1. Now run the Python Script - tcpclient\_for\_ap\_provisioning\_test.py related to the AP Provision on the PC

**Note** - Python script related to the project is stored in the location provision\_ap\_wilc1000\_example\script

1. Message on the Tera Term will appear as follows :

main : TCP Server Socket ready to accept data!

main : number of received packets from TCP Client : 32 apply,NETGEAR48,2,littleoctopus7!

main : SSID : NETGEAR48!

main : SSID : 2!

main : PSW : littleoctopus7 14!

Disable to AP.

wifi\_cb: AP M2M\_WIFI\_DISCONNECTED 5c-e0-c5-e8-71-d2, reason: UNKNOWN, 0

Connecting to NETGEAR48.

main : ssid Length : 9!

main : number of received packets from TCP Client : 32 !

wifi\_cb: M2M\_WIFI\_CONNECTED

wifi\_cb: STA M2M\_WIFI\_REQ\_DHCP\_CONF

wifi\_cb: STA IPv4 addr: 192.168.1.2

wifi\_cb: STA IPv6 addr: fe80:0000:0000:0000:faf0:05ff:feff:3666

**Note –** The connecting AP, SSID and Password details used in the demo are as follows:

SSID : NETGEAR48

Password : littleoctopus7

1. The WILC1000 module would have got connected to AP available and defined by the Python script

## Using Mobile Android App

Once the WILC1000\_PROVISION\_AP\_EXAMPLE code (binary elf file) is downloaded to the host MCU on the SAM4S XPLAINED Board and checked, following procedure is used to work with the Mobile APP

1. Copy and Install the provision\_ap\_app.apk into a mobile/smart phone of choice

**Note** - provision\_ap\_app.apk related to the project is stored in the folder location provision\_ap\_wilc1000\_example\android\_app

1. Press the RESET press button the SAM4S XPLAINED Pro Board
2. Monitor some of the messages on the TeraTerm for understanding if required, this step is not mandatory
3. Message on the Tera Term will appear as follows :

-- WILC1000 Provision AP Test --

-- SAM4S\_XPLAINED\_PRO --

-- Compiled: Sep 22 2017 12:07:58 --

wifi\_cb: AP M2M\_WIFI\_CONNECTED 00-00-00-00-00-00

AP Provision mode started.

On the android device, connect to WILC1000\_PROVISION\_AP then run setting app.

main : Created TCP Server Socket!

main : TCP Server Socket Bind done !

main : TCP Server Socket in Listen mode !

1. Now connect the Mobile to the Wi-Fi Access Point (AP) named WILC1000\_PROVISION\_AP
2. Message on the Tera Term will appear as follows :

wifi\_cb: AP M2M\_WIFI\_CONNECTED 5c-e0-c5-e8-71-d2

1. Now open/run the WILC1000 APP installed on the Mobile phone
2. Hit the ‘Connect to WILC1000’button on the APP to connect to link the current AP to the APP
3. Now enter the new AP details which the WICL1000 module will connect in STA mode, by hitting the ‘SSID/Security/PW’ and press ‘Apply’ button

SSID : NETGEAR48

Security : 2

Password: \*\*\*\*\*\*\*\*\*\*

1. Now the WILC1000 module in STA mode gets connected to the new AP
2. Message on the Tera Term will appear as follows :

main : TCP Server Socket ready to accept data!

main : number of received packets from TCP Client : 32 apply,NETGEAR48,2,littleoctopus7!

main : SSID : NETGEAR48!

main : SSID : 2!

main : PSW : littleoctopus7 14!

Disable to AP.

wifi\_cb: AP M2M\_WIFI\_DISCONNECTED 5c-e0-c5-e8-71-d2, reason: UNKNOWN, 0

Connecting to NETGEAR48.

main : ssid Length : 9!

main : number of received packets from TCP Client : 32 !

wifi\_cb: M2M\_WIFI\_CONNECTED

wifi\_cb: STA M2M\_WIFI\_REQ\_DHCP\_CONF

wifi\_cb: STA IPv4 addr: 192.168.1.2

wifi\_cb: STA IPv6 addr: fe80:0000:0000:0000:faf0:05ff:feff:3666

**Note –** The connecting AP, SSID and Password details used in the demo are as follows:

SSID : NETGEAR48

Password : littleoctopus7

1. Press the Current AP name in the app
2. The Provision WILC1000 AP mobile APP prompts the recently connected AP name
3. The ‘Finish’ button closes the mobile APP