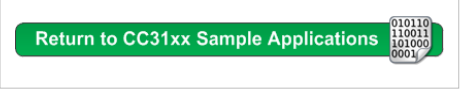
CC31xx Provisioning Smart Config

Overview and application details



This is a sample application demonstrating how to provision CC3100 to a Wi-Fi network using SmartConfig.

What is SmartConfig? A first step in utilizing CC31xx in a Wi-Fi enabled application is to configure CC3100 to a user's Wi-Fi network. This requires information on the AP, or SSID name, and the security passcode when WEP/WPA/WPA2 is enabled. Considering that embedded Wi-Fi applications will generally lack user interfaces such as keypads or touchscreens, this process can be complex without the use of advanced I/O.

To create a great user experience, TI has created SmartConfig technology - a one-step and one-time process to connect a CC31xx-enabled device to the home wireless network. This greatly stands apart from other Wi-Fi suppliers who require multiple steps to configure a device onto the network.

SmartConfig leverages the standard mechanisms present in Wi-Fi to configure a CC31xx's association information on the fly, regardless of whether the user-interface is available. In this process a Wi-Fi enabled device such as a smartphone, tablet or a laptop is used to send the association information to the CC31xx.

Addtionally, SmartConfig does not depend on the host microcontroller's I/O capabilities, thereby usable by deeply embedded applications. It can be used to associate multiple devices to the same AP simultaneously. The Configuration process is secured with AES-128 encryption, and the SSID and KEY length are supported up to 32 bytes.

And furthermore, the device used to configure (smartphone, tablet, or PC) stays connected to the user's home network during the configuration process (as opposed to other methods that require disconnection).

Note: This wiki page is only applicable for **CC3100-SDK v1.0.0** and upward releases. For documentation on older SDKs' examples, refer corresponding file in **<cc3100-sdk-installation-location>\cc3100-sdk\docs\examples**

Usage

- Connect the board to a Windows-PC and configure the terminal-program for seeing the logs - [| CC31xx_&_CC32xx_Terminal_Setting_Wiki [1]] has detailed instructions for configuring the terminal-program
- Build and run the application.

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The application configures the device in SmartConfig mode.
The device will then wait for the SmartConfig application to provision it to a Wi-Fi network
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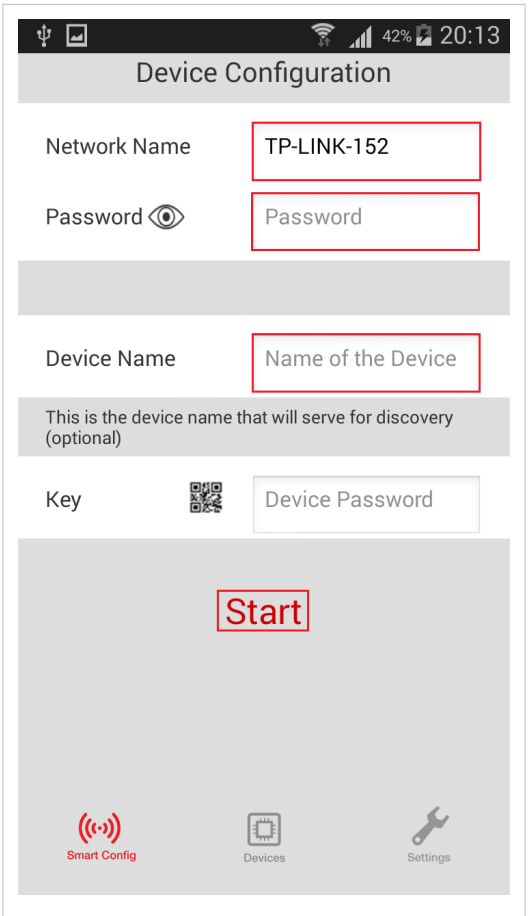
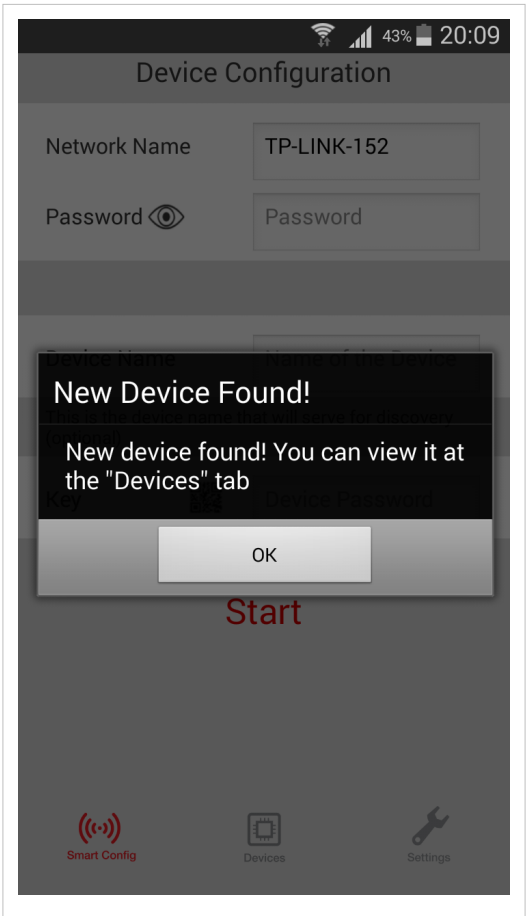
- Connect your Smartphone to a Wi-Fi network with which you wish to provision the device
- Run TI SmartConfig [2] Application on your Smartphone
- The name of the network will automatically show up in **Network Name** field of **SmartConfig** application. Enter **Password** for connecting to secured APs. For open network, leave the 'Password' field blank.
- Enter a **Device Name**. This will be used to identify your device.
- Press 'Start' button.



- Once the SmartConfig process is completed, a pop-up windows shows up to indicate that the new device is connected to the network.
  Note: If device is already added in the list the pop-up window won't show up. Restart the Smartphone application to clear the list.



- See the self explanatory logs on the terminal-program's console. On success, below message will be displayed on the terminal

Limitations/Known Issues

None

References

[1] http://processors.wiki.ti.com/index.php/CC31xx_&_CC32xx_Terminal_Setting
[2] http://www.ti.com/tool/wifistarter

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