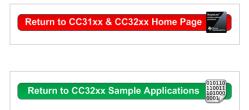
CC32xx Antenna Selection Application

Overview

CC3200 Antenna Selection is method by which user can configure the WLAN RF Antenna on the CC3200 device from a Browser. The CC3200 device scans the Access Points with 2 different Antennas, stores the SSID and RSSI information in the memory and create an HTML page. User can open the HTML page and select the Antenna



which he/she wants to configure. Also user can check the connection to the Access Point using the selected Antenna.

Prerequisites

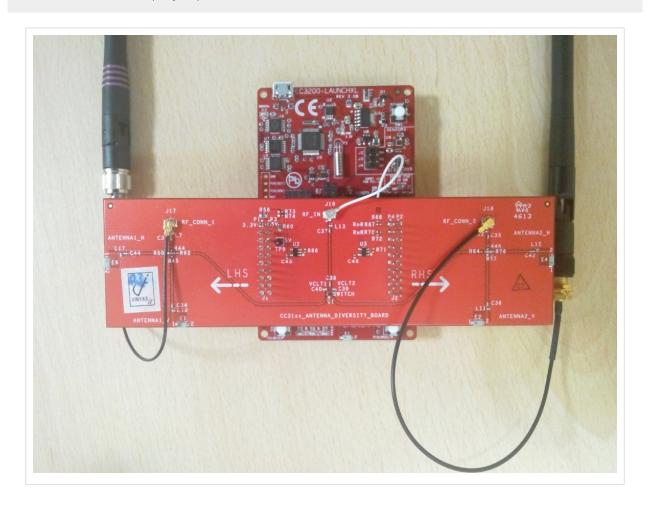
• CC31xx_antenna_diversity_board

Board Modifications

Below modifications are required on CC3200-LP for working with CC31xx_antenna_diversity_board

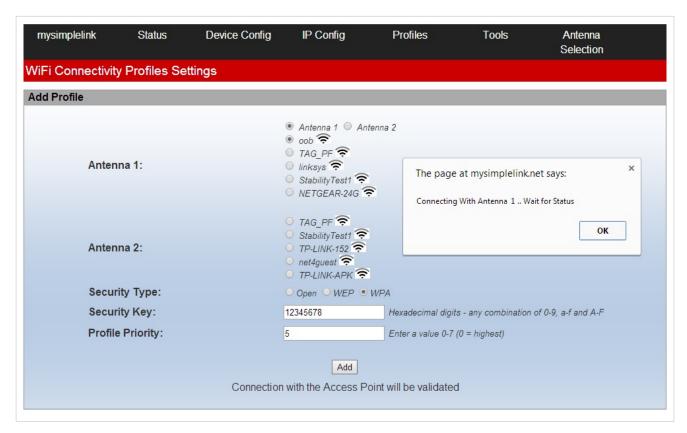
- 1. Unmount R111 & Mount R110
- 2. Connect J18 on Launch Pad to J19 on Antenna Board
- 3. Stack the Launch Pad and Antenna Board as shown in the picture below

Choose the PIN(29,30) to connect on P4.1 and P4.2

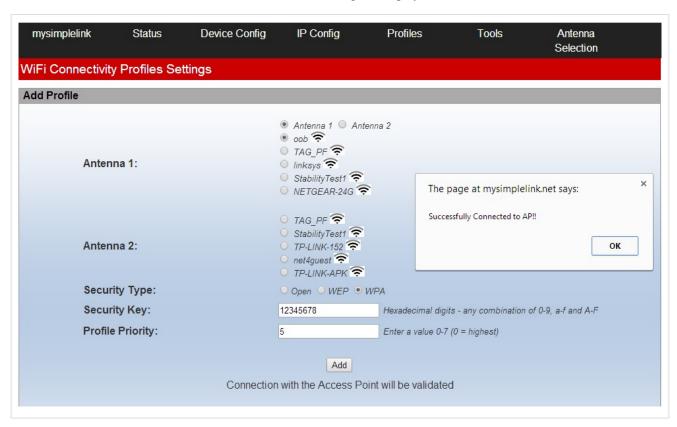


Usage

- Flash Example Content(html,image,js,Application binary)on serial flash by following below steps.
 - 1. If CC3200 SDK is installed at default location C:\ti\CC3200SDK
 - Open C:\ti\CC3200SDK\cc3200-sdk\example\antenna_selection\html\antenna_selection.ucf session file
 in Uniflash.
 - Flash the files to the device. Detailed instructions at Uniflash User Guide.
 - 2. If CC3200 SDK is not installed at default location C:\ti\CC3200SDK
 - Open <cc3200-sdk>\examples\antenna_selection\html\antenna_selection.ucf session file in Uniflash.
 - Modify Url for all the files in the list.
 - Flash the files to the device. Detailed instructions at Uniflash User Guide.
- Run the reference application
 - 1. Run From IDE (IAR/CCS)
 - Open the Project as mentioned in the <cc3200-sdk>\docs\CC3200-Getting Started Guide.pdf
 - Build and download the application to the board
 - 2. Run Flashed Binary
 - Remove SOP-2 Jumper on Board and Press Reset. Refer <cc3200-sdk>\docs\CC3200-Getting Started Guide.pdf for detailed Information
- CC3200 Device first comes up in STA mode, scans for visible access-points. Next, it restarts and comes up in AP mode (Default SSID: mysimplelink-<MacAddr>)
- User connects his/her WIFI enabled device PC/MAC/Smartphone to above AP
- Type "mysimplelink.net\main.html" in browser. it will Open CC3200 Main HTML Page
- · Click/Press on Antenna Selection which will open the Antenna Selection page as shown in picture below
- Antenna Selection page displays the list of the Access Points SSID and RSSI with 2 different Antenna
- User select the AP by clicking on the Radio Button
- User also need to provide Security Type, Security Key and Profile Priority in the corresponding fields
- User clicks Add Button



- Device then switches to Station Mode and connects to the selected AP
- · After the Connection is Successful or Failed, Alert Message is Displayed



Source Files briefly explained

- main.c
 - 1. Select Antenna 1
 - 2. Scans and Stores AP information
 - 3. Select Antenna 2
 - 4. Scans and Stores AP information
 - 5. Handles HTTP GET request to provide AP List
 - 6. Handles HTTP POST request to receive command to connect to AP with Selected Antenna
 - 7. Connection to the selected AP
- startup_ewarm.c
 - 1. Implements interrupt vector table when using IAR ewarm tool chain

Note: This example can be used either on TI-RTOS or FreeRTOS. For the application to work with TI-RTOS, ti_rtos_config project need to be imported into the application workspace. These projects can be found in CC3200-SDK under ti_rtos folder. Please follow this link for CC3200 TI-RTOS usage CC3200 TI-RTOS

Limitations/Known Issues

- Only 5 APs are displayed
- Duplicate SSIDs are displayed when the SSID has multiple BSSIDs
- During Connection Status Check, User Device PC/MAC/Smartphone might connect to different AP, User need to reconnect to the SimpleLink AP Again

Article Sources and Contributors

CC32xx Antenna Selection Application Source: http://processors.wiki.ti.com/index.php?oldid=178365 Contributors: A0221015, Codycooke, Jitgupta, Kaushal, Malokyle

Image Sources, Licenses and Contributors

File:Cc31xx cc32xx return home.png Source: http://processors.wiki.ti.com/index.php?title=File:Cc31xx_cc32xx_return_home.png License: unknown Contributors: A0221015

File: Cc32xx return sample apps.png Source: http://processors.wiki.ti.com/index.php?title=File: Cc32xx_return_sample_apps.png License: unknown Contributors: A0221015

Image:cc3200 ant board conn.jpg Source: http://processors.wiki.ti.com/index.php?title=File:Cc3200 ant board conn.jpg License: unknown Contributors: Kaushal

Image:ant_sel1.jpg Source: http://processors.wiki.ti.com/index.php?title=File:Ant_sel1.jpg License: unknown Contributors: Codycooke

Image:ant_sel2.jpg Source: http://processors.wiki.ti.com/index.php?title=File:Ant_sel2.jpg License: unknown Contributors: Codycooke

License

THE WORK (AS DEFINED BELOW) IS PROVIDED UNDER THE TERMS OF THIS CREATIVE COMMONS PUBLIC LICENSE ("CCPL" OR "LICENSE"). THE WORK IS PROTECTED BY COPYRIGHT AND/OR OTHER APPLICABLE LAW. ANY USE OF THE WORK OTHER THAN AS AUTHORIZED UNDER THIS LICENSE OR COPYRIGHT LAW IS PROHIBITED.

BY EXERCISING ANY RIGHTS TO THE WORK PROVIDED HERE, YOU ACCEPT AND AGREE TO BE BOUND BY THE TERMS OF THIS LICENSE. TO THE EXTENT THIS LICENSE MAY BE CONSIDERED TO BE A CONTRACT, THE LICENSOR GRANTS YOU THE RIGHTS CONTAINED HERE IN CONSIDERATION OF YOUR ACCEPTANCE OF SUCH TERMS AND CONDITIONS.

License

1. Definitions

- "Adaptation" means a work based upon the Work, or upon the Work and other pre-existing works, such as a translation, adaptation, derivative work, arrangement of music or other alterations of a literary or artistic work, or phonogram or performance and includes cinematographic adaptations or any other form in which the Work may be recast, transformed, or adapted including in any form recognizably derived from the original, except that a work that constitutes a Collection will not be considered an Adaptation for the purpose of this License. For the avoidance of doubt, where the Work is a musical work, performance or phonogram, the synchronization of the Work in the purpose of the purpose o

2. Fair Dealing Rights

Nothing in this License is intended to reduce, limit, or restrict any uses free from copyright or rights arising from limitations or exceptions that are provided for in connection with the copyright protection under copyright law or other

3. License Grant

Subject to the terms and conditions of this License, Licensor hereby grants You a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) license to exercise the rights in the Work as stated below:

- to Reproduce the Work, to incorporate the Work into one or more Collections, and to Reproduce the Work as incorporated in the Collections; to create and Reproduce Adaptations provided that any such Adaptation, including any translation in any medium, takes reasonable steps to clearly label, demarcate or otherwise identify that changes were made to the original Work. For example, a translation could be marked "The original work was translated from English to Spanish," or a modification could indicate "The original work has been modified."; to Distribute and Publicly Perform the Work including as incorporated in Collections; and, to Distribute and Publicly Perform Adaptations.

 For the avoidance of doubt:

- i. Non-waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme cannot be waived, the Licensor reserves the exclusive right to collect such royalties for any exercise by You of the rights granted under this License;
 ii. Waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme can be waived, the Licensor waives the exclusive right to collect such royalties for any exercise by You of the rights granted under this License; and,
 iii. Voluntary License Schemes. The Licensor waives the right to collect royalties, whether individually or, in the event that the Licensor is a member of a collecting society that administers voluntary licensing schemes, via that society, from any exercise by You of the rights granted under this License.

 The above rights may be exercised in all media and formats whether now known or hereafter devised. The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats. Subject to Section 8(f), all rights not expressly granted by Licensor are hereby reserved.

- Restrictions

 license granted in Section 3 above is expressly made subject to and limited by the following restrictions:

 You may Distribute or Publicly Perform the Work only under the terms of this License. You must include a copy of, or the Uniform Resource Identifier (URI) for, this License with every copy of the Work You Distribute or Publicly Perform. You may not offer or impose any terms on the Work that restrict the terms of this License or the ability of the recipient of the Work to exercise the rights granted to that recipient under the terms of the License. You may not sublicense the Work. You may not sublicense the Work Income on the Work that restrict the ability of the recipient of the Work from You occurred to exercise the rights granted to that recipient under the terms of the License. Perform the Work from You contained to exercise the rights granted to that recipient under the terms of the License. Perform the Work from You contained to exercise the rights granted to that recipient under the terms of the License. Perform the Work from You contained to exercise the rights granted to that recipient under the terms of the License. The Applicable License with the same and the properties of the License and License Vine may redit as required by Section 4(c), as requested. If You create an Adaptation, upon notice from any License You must, to the extent practicable, remove from the Adaptation and you redit as required by Section 4(c), as requested. You may Distribute or Publicly Perform an Adaptation only under the terms of (i) this License. (iii) a License with the same License Elements as this License (vine and the License Performents of the Adaptation on your license Performents of the Adaptation on your license Performents and the Individual Performents of the Adaptation only under the terms of the Applicable License Performents and the following provisions: (i) You must include a copy of, or the URI for, the Applicable License Performents of the Applicable Licenses. The Vou Distribute or Publicly

5. Representations, Warranties and Disclaimer

UNLESS OTHERWISE MUTALLY AGREED TO BY THE PARTIES IN WRITING, LICENSOR OFFERS THE WORK AS-IS AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE WORK, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTIBILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, OR THE ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OF ABSENCE OF ERRORS, WHETHER OR NOT DISCOVERABLE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO SUCH EXCLUSION MAY NOT APPLY TO YOU.

6. Limitation on Liability

EXCEPT TO THE EXTENT REQUIRED BY APPLICABLE LAW, IN NO EVENT WILL LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE
OR EXEMPLARY DAMAGES ARISING OUT OF THIS LICENSE OR THE USE OF THE WORK, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

License 6

7. Termination

This License and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this License, Individuals or entities who have received Adaptations or Collections from You under this License, however, will not have their licenses terminated provided such individuals or entities remain in full compliance with those licenses. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this License. Subject to the above terms and conditions, the license granted here is perpetual (for the duration of the applicable copyright in the Work). Notwithstanding the above, License reserves the right to release the Work under different license terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this License (or any other license that has been, or is required to be, granted under the terms of this License), and little license that has been and the license terms of this License. The license is the license term of the license terms of this License (or any other license that has been, or is required to be, granted under the terms of this License).

VISCEIBINEOUS

Each time You Distribute or Publicly Perform the Work or a Collection, the Licensor offers to the recipient a license to the Work on the same terms and conditions as the license granted to You under this License.

Each time You Distribute or Publicly Perform an Adaptation, Licensor offers to the recipient a license to the original Work on the same terms and conditions as the license granted to You under this License.

If any provision of this License is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this License, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

No term or provision of this License shall be deemed waived and no breach consented to unless such waiver or consents which is constitutes the entire agreement between the parties with respect to the Work licensed here. There are no understandings, agreements or representations with respect to the Work not specified here. Licensor shall not be bound by any additional provisions that may appear in any communication from You. This License may not be modified without the mutual written agreement of the Licensor and You.

The rights granted under, and the subject matter referenced, in this License were drafted utilizing the terminology of the Berne Convention of Literary and Artistic Works (as amended on September 28, 1979), the Rome Convention of 1961, the WIPO Copyright Treaty of 1996, the WIPO Performances and Phonograms Treaty of 1996 and the Universal Copyright Convention (as revised on July 24, 1971). These rights and subject to the Corresponding provisions of the implementation of the soft terral principle healt and law. If the standard suite of rights granted under applicable copyright law includes additional rights not granted under this License, such additional rights are deemed to be included in the License; this License is not