

CC32xx P2P Application

Overview

This sample example demonstrates how CC3200 connects to a P2P device. The application starts a TCP server on port 5001 and waits for P2P device to connect and send data on it.

Different supported P2P roles of CC3200 are:

- `SL_P2P_ROLE_GROUP_OWNER`: CC3200 will be configured in 'Group-Owner' mode
- `SL_P2P_ROLE_CLIENT`: CC3200 will be configured in 'Client' mode
- `SL_P2P_ROLE_NEGOTIATE`: CC3200 will negotiate with remote device for client/GO role.

CC3200 can be configure in below modes to initiate negotiation:

- `SL_P2P_NEG_INITIATOR_ACTIVE`: CC3200 will perform discovery - Once the remote device is found, it sends the negotiation request immediately
- `SL_P2P_NEG_INITIATOR_PASSIVE`: CC3200 will perform discovery - Once the remote device is found, CC3200 waits for it to start negotiation
- `SL_P2P_NEG_INITIATOR_RAND_BACKOFF`: CC3200 will perform discovery - Once the remote device is found, it triggers a random timer (1-7 seconds) and waits for the remote device to negotiate. On timer expiry, CC3200 starts negotiation itself

Supported security types used during p2p negotiation are:

- `SL_SEC_TYPE_P2P_PBC`
- `SL_SEC_TYPE_P2P_PIN_DISPLAY`
- `SL_SEC_TYPE_P2P_PIN_KEYPAD`

CC3200 can be configured in 'any_p2p' mode as well - When configured, CC3200 will perform discovery and connect to the first found device using security type '`SL_SEC_TYPE_P2P_PBC`'

Application details

The example intends to demonstrate how p2p mode can be configured and used. Application configure the device with following settings:

- P2P role negotiate (`SL_P2P_ROLE_NEGOTIATE`)

```
#define P2P_ROLE_TYPE_NEGOTIATE
```

- P2P negotiation initiation active (`SL_P2P_NEG_INITIATOR_ACTIVE`)
- P2P device listens on channel 11 and P2P device's operation channel is set to 6
- P2P connect security type 'PBC'

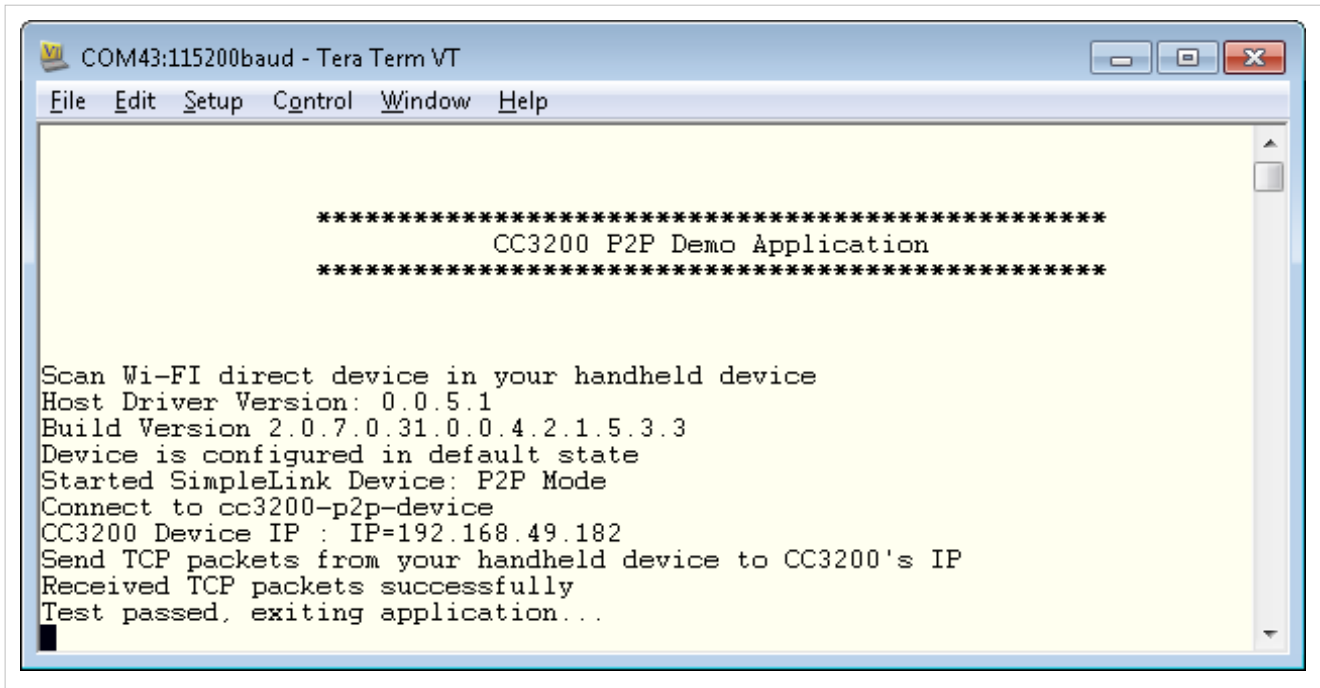
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Usage

- Open a terminal program (like teraterm) and configure it w/ '9600' baud rate.
- Build and run the application
- Start remote P2P device

CC3200 will be visible as P2P_DEVICE_NAME (which is set in the sample application) to the remote P2P device

- Connect to CC3200. On successful connection, CC3200's IP address will be displayed on the terminal-program's console

A screenshot of a Tera Term terminal window. The title bar reads 'COM43:115200baud - Tera Term VT'. The menu bar includes 'File', 'Edit', 'Setup', 'Control', 'Window', and 'Help'. The terminal output is as follows:

```
*****  
                CC3200 P2P Demo Application  
*****  
  
Scan Wi-Fi direct device in your handheld device  
Host Driver Version: 0.0.5.1  
Build Version 2.0.7.0.31.0.0.4.2.1.5.3.3  
Device is configured in default state  
Started SimpleLink Device: P2P Mode  
Connect to cc3200-p2p-device  
CC3200 Device IP : IP=192.168.49.182  
Send TCP packets from your handheld device to CC3200's IP  
Received TCP packets successfully  
Test passed, exiting application...
```

- Open an 'Iperf' client on the remote P2P device and connect on 'PORT_NUM'

```
Iperf.exe -c <DEST_IP_ADDR> -p <PORT_NUM> -i 1
```

Limitations/Known Issues

None

Article Sources and Contributors

CC32xx P2P Application *Source:* <http://processors.wiki.ti.com/index.php?oldid=184789> *Contributors:* A0221015, Codycooke, Jitgupta, Malokyle

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