

Github root directory: <https://github.com/Ayertena/CC1350-LABs>

Date Due: November 19th, 2018

Task 00: Labeled Launchpads

Task 01: SmartRF Studio ↔ SmartRF Studio

Successfully transmitted 100 packets and received packets In RF Studio.

Task 02: Importing and running the rfPacketTx

Imported build and ran the rfPacketTx example.

Task 03: Exporting and using RF configuration

Successfully changed the RF settings.

Task 04: Firmware TX → SmartRF Studio RX

Successfully received packets using CCS(Rx) and RF studio.

Task 05: Importing and Modifying rfPacketRx

Successfully imported, built and ran the rfPacketRx.

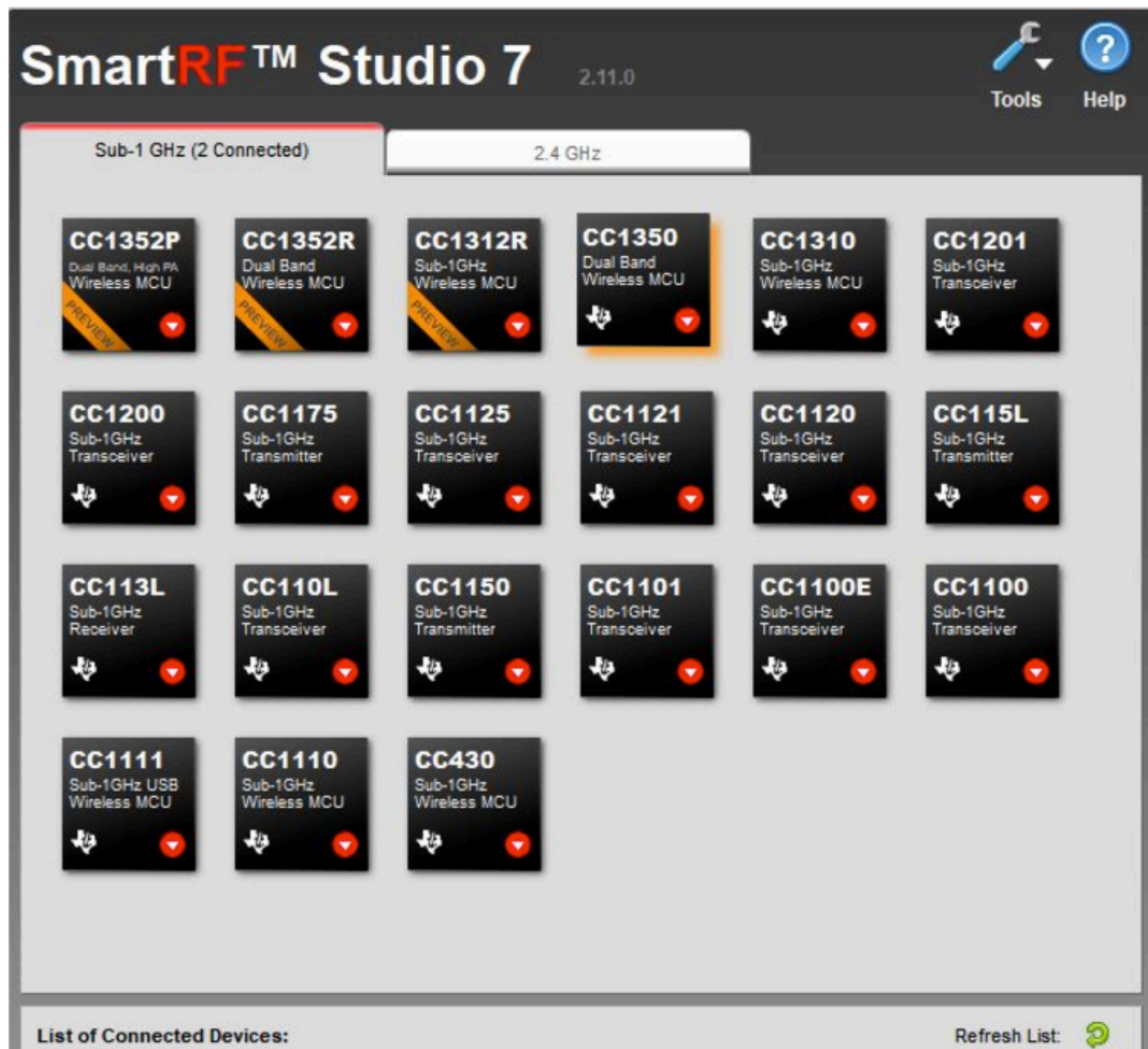
Task 06: Firmware TX → Firmware RX

Successfully reconnected the devices and transmitted and received packets.

Task 07: SmartRF Studio TX → Firmware RX

Successfully connected Tx launchpad to RF studio and transmitted and received packets.

Figure 1: RFStudio



Figuer2: Rx

XDS-L400A5EZ - CC1350_PROP - Device Control Panel

File Settings View Evaluation Board Help

Packet RX Start Stop Command View RF Parameters

Target Configuration

RF Design Based On: LAUNCHXL-CC1350-7XD-7793 DC/DC Enable Cap-array Tuning Delta 0 0x00 Customize...

Typical Settings

Category Setting Name

Settings for 779 - 930 MHz band

- 50 kbps, 2-GFSK, 25 kHz deviation
- 50 kbps, 2-GFSK, 25 kHz deviation, IEEE 802.15.4g MR-FSK PHY mode
- 200 kbps, 2-GFSK, 70 kHz deviation
- 300 kbps, 2-GFSK, 105 kHz deviation
- 400 kbps, 2-GFSK, 140 kHz deviation
- 500 kbps, 2-GFSK, 175 kHz deviation
- R25.bos, 1.knacy, 1.0ns.Banana, 10.kchiva, 2-FSK_conv_FFC, r=1/2 K=7, DSSS_SF=8, Tx dev.: 5.kHz, Rx BW: 40.kHz

RF Parameters

Frequency 868.00000 MHz Symbol Rate 100.00000 kBaud Deviation 50.000 kHz

RX Filter BW 196 kHz TX Power 14 dBm Whitening No whitening

Continuous TX Continuous RX Packet TX Packet RX

Expected Packet Count: 100 Infinite

Viewing Format: Hexadecimal

Length Config: Variable

Sync Word: 0x930b51de Sync Word Length: 32 Bits

No address check 0xAA or 0xBB

Seq. Number Included in Payload

```

17:09:16.418 | 1e | 0086 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:16.556 | 1e | 0087 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -25
17:09:16.695 | 1e | 0088 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:16.818 | 1e | 0089 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:16.957 | 1e | 0090 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:17.085 | 1e | 0091 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:17.232 | 1e | 0092 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:17.373 | 1e | 0093 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:17.514 | 1e | 0094 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:17.640 | 1e | 0095 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:17.776 | 1e | 0096 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:17.890 | 1e | 0097 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24
17:09:18.026 | 1e | 0098 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -25
17:09:18.157 | 1e | 0099 | 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc fb cb 66 0a b3 2d cc 76 d4 | -24

```

Dump Data to File: ...

Start Stop

CC1350_PROP, Rev 2.1 (Rev B), XDS-L400A5EZ XDS110 Radio State: N.A.

Average RSSI: -25.2 dBm
Received OK: 100
Received Not OK: 0
Packet Error Rate: 0.0 %
Bit Error Rate: 0.00 %

Figure3: Tx

XDS-L400A7R1 - CC1350_PROP - Device Control Panel

File Settings **View** Evaluation Board Help

Packet TX Start Stop Command View ☒ RF Parameters

Target Configuration

RF Design Based On: LAUNCHXL-CC1350-7XD-7793 ☒ DC/DC Enable ☐ Cap-array Tuning Delta: 0 : 0x00 Customize...

Typical Settings

Category	Setting Name
Settings for 779 - 930 MHz band	50 kbps, 2-GFSK, 25 kHz deviation
	50 kbps, 2-GFSK, 25 kHz deviation, EEE 802.15.4g MR-FSK PHY mode
	200 kbps, 2-GFSK, 70 kHz deviation
	300 kbps, 2-GFSK, 105 kHz deviation
	400 kbps, 2-GFSK, 140 kHz deviation
	500 kbps, 2-GFSK, 175 kHz deviation

RF Parameters

Frequency: 868.00000 MHz	Symbol Rate: 100.00000 kBaud	Deviation: 50.000 kHz
RX Filter BW: 196 kHz	TX Power: 14 dBm	Whitening: No whitening

Continuous TX Continuous RX **Packet TX** Packet RX

Packet Count: 100 ☐ Infinite
Length Config: Variable


Preamble	Sync word	Length (dec)	Packet Data	CRC
01010101...	93 06 51 de	30	S N 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc f8 cb 66 0a b3 2d cc 76 d4


Preamble Count: 4 Bytes Sync Word Length: 32 Bits ☐ Address
Preamble Mode: Send 0 as the first preamble bit

☒ Add Seq. Number

☒ Random 23 3d ab 20 b0 a7 82 9d 77 d9 96 a3 e0 6d a8 3f d3 7d fc f8 cb 66 0a b3 2d cc 76 d4
☐ Text
☐ Hex

☐ Advanced


TX


RX

Sent Packets: 0
Frequency: 868.00000 MHz
Output Power: 14 dBm

Start Stop

CC1350_PROP, Rev. 2.1 (Rev. B), XDS-L400A7R1 XDS110 Radio State: N.A.