CC256xEM Bluetooth® Adapter Kit

User's Guide

Literature Number: SWRU417
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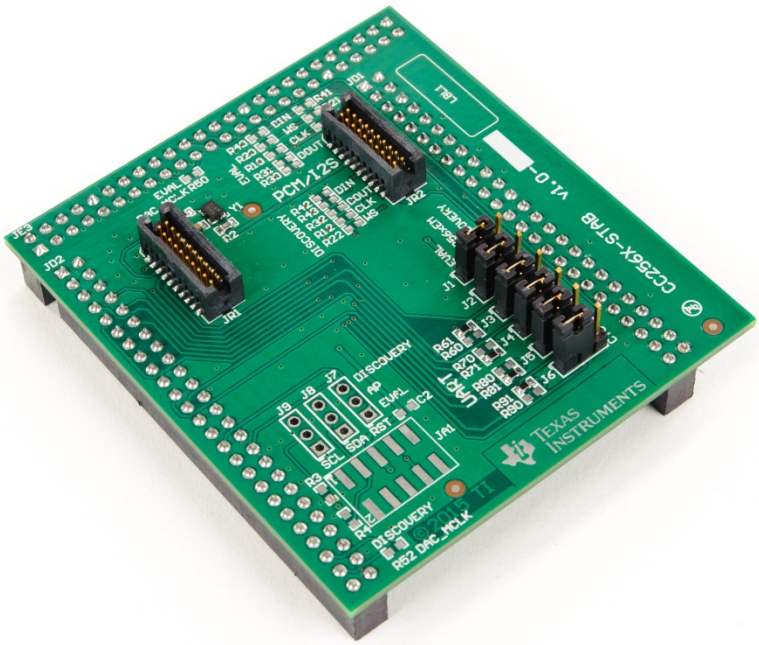
CC256xEM Bluetooth Adapter Kit User Guide

The CC256xEM *Bluetooth*® Adapter Kit (CC256XEM-STADAPT) is a connector board aimed to help evaluate TI's CC256x Bluetooth and Dual-Mode solution with STM32 MCUs. The CC256XEM-STADAPT board serves as a translation board between a CC256xEM board (CC256XQFNEM, CC2564MODAEM, and CC2564MODNEM) and a STM32 MCU Evaluation board (STM3240G-EVAL and STM32F4DISCOVERY).

This document provides an overview of the CC256XEM-STADAPT board, and describes the required hardware and software tools. Furthermore, this user's guide details the functions of each component on the board and how they are configured for different settings. There is also a Bluetooth Adapter Kit Quick Start Guide (SWRU416) that summarizes the configurations for different functions. There are also design files available with schematics, layouts, and bill of materials (SWRC308).



CC256XEM-STADAPT Board

Bluetooth is a registered trademark of Bluetooth SIG.

Kit Content

- 1 CC256XEM-STADAPT Board

Requirements

Hardware

- 1 CC256xEM Board – Sold separately
  - CC256XQFNEM Board – http://www.ti.com/tool/cc256xqfnem
    OR
  - CC2564MODAEM Board – http://www.ti.com/tool/cc2564modaem
    OR
  - CC2564MODNEM Board – http://www.ti.com/tool/cc2564modnem
- 1 STM32 MCU Evaluation Board – Sold separately
  - STM3240G-EVAL Board
    OR
  - STM32F4DISCOVERY Board

Software

- TI dual-mode Bluetooth stack on STM32F4 MCUs – Free download
  - CC256XSTBTBLESW – http://www.ti.com/tool/cc256xstbtblesw

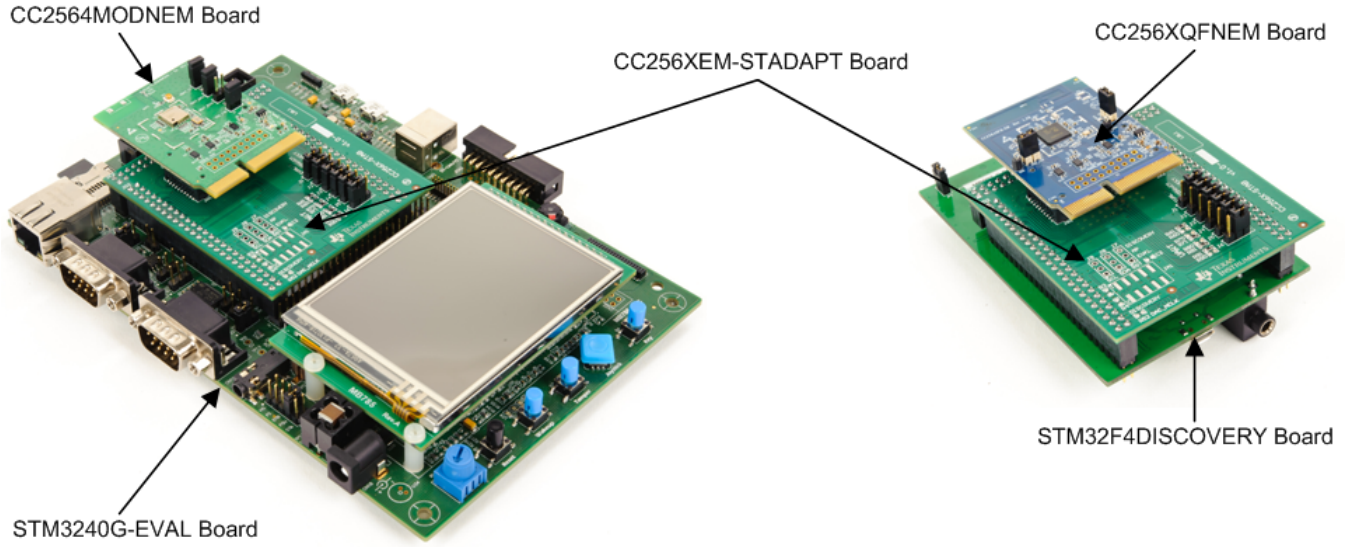


Figure 1. Hardware Setup Examples

Overview

The CC256XEM-STADAPT board allows the connection between a CC256xEM board (CC256XQFNEM, CC2564MODAEM, and CC2564MODNEM) and a STM32 MCU Evaluation board (STM3240G-EVAL and STM32F4DISCOVERY).

On one side, the JR1 and JR2 connectors are provided to interface with a CC256xEM board; on the other side, there are two options for the STM32 MCU Evaluation boards. For the first option, JE3 and JD2 connectors enable the connection to CN3 and CN4 headers in the STM3240G-EVAL board, respectively. In the second option, JD1 and JD2 connectors allow the connection to headers P1 and P2 in the STM32F4DISCOVERY board, respectively. Furthermore, an on-board 32.768-KHz crystal oscillator can provide the slow clock to the CC256xEM boards.

The CC256XEM-STADAPT board provides flexibility to route the UART and PCM/I2S signals to different pins on the STM32 MCU Evaluation boards through a set of resistors and jumpers. The jumpers on headers J1 through J6 control which evaluation board, STM3240G-EVAL or STM32F4DISCOVERY, receives the UART signal. Zero-ohm resistors can be soldered on to the PCM/I2S section to provide the signal to the STM32 MCU Evaluation boards if their application requires I2S communication. Reference *Section 2.3* and *Section 2.4* for the UART and PCM/I2S communication configurations.

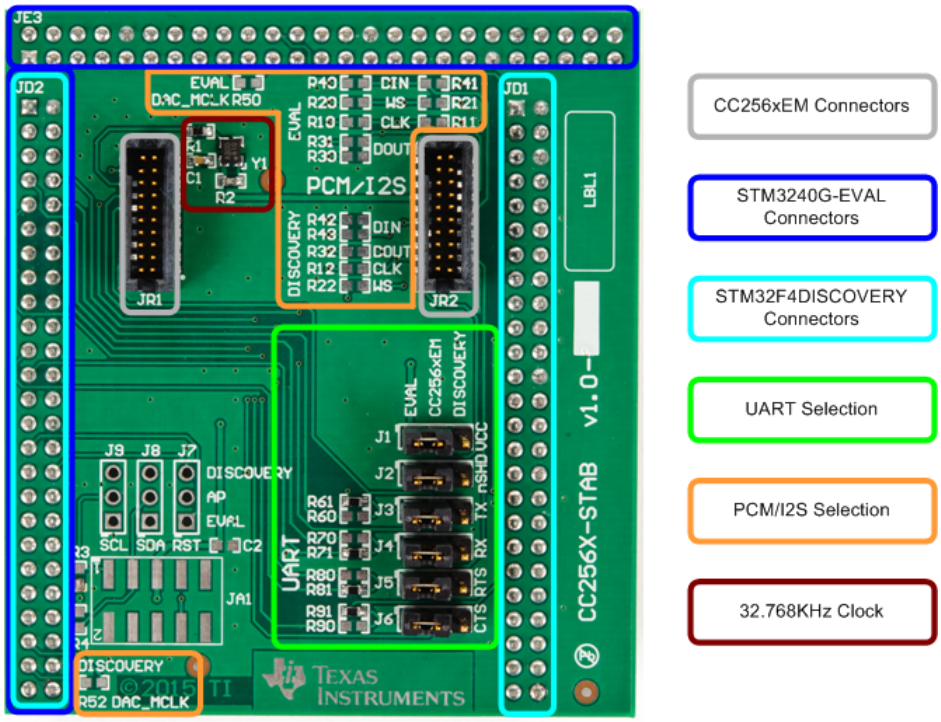


Figure 1-1. CC256XEM-STADAPT Overview

Hardware Description

The CC256XEM-STADAPT routes the pins from a CC256XEM board to the appropriate pins of either a STM3240G-EVAL or STM32F4DISCOVERY board. It also has a 32.768 KHz crystal oscillator to provide the slow clock to the CC256XEM.

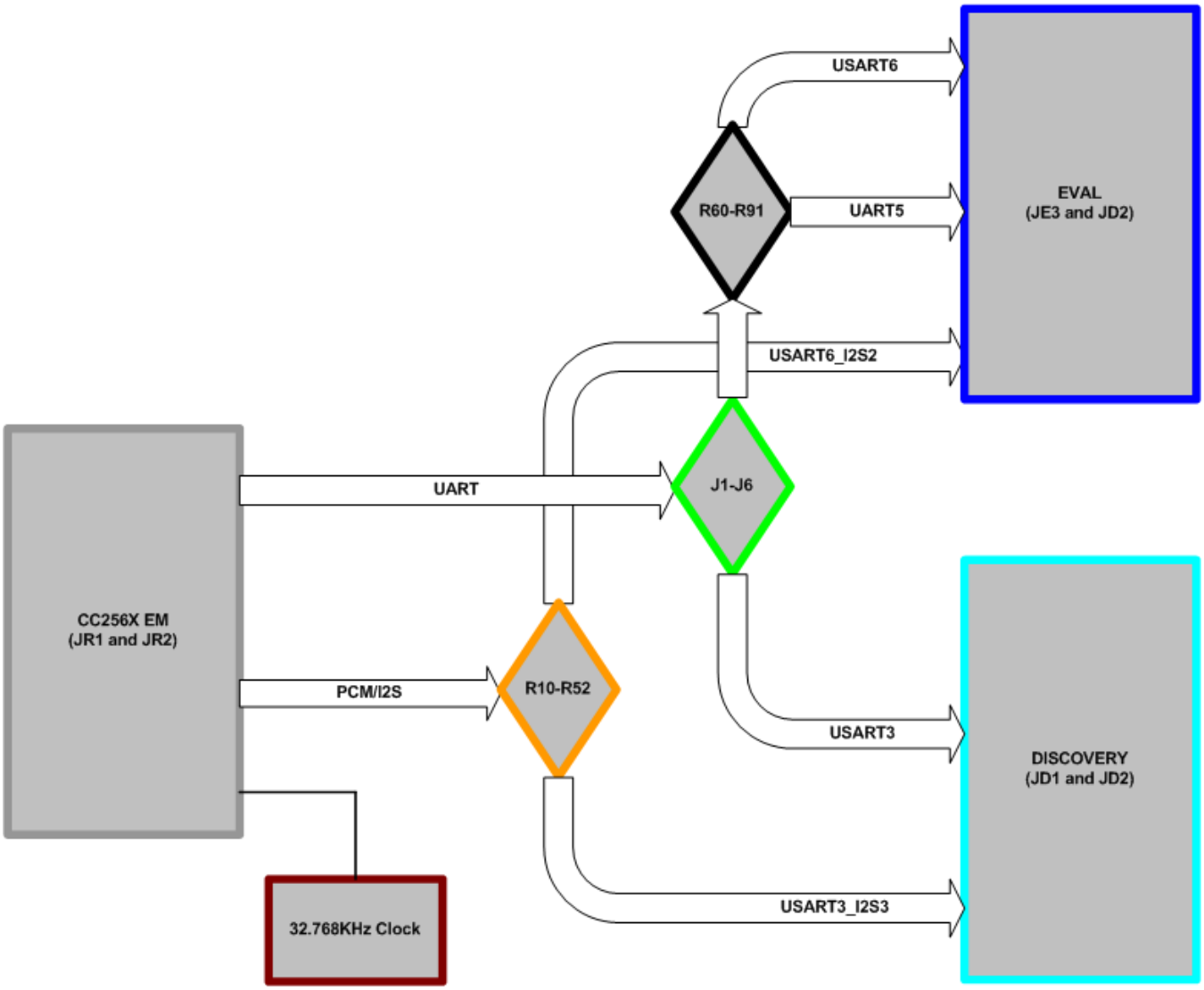


Figure 2-1. Block Diagram

2.1 CC256XEM Connectors

The twin 2×10 headers, JR1 and JR2, interface with the connectors RF1 and RF2, respectively, of a CC256XEM board (CC256XQFNEM, CC2564MODAEM, or CC2564MODNEM).

Table 2-1 and Table 2-2 are divided into the pins and functions on the CC256XEM-STADAPT board seen in the data sheet or schematics, and the corresponding pins and functions on the CC256X EM boards.

Table 2-1. Table of Pins JR1

CC256XEM-STADAPT		CC256X EM	
Pin	**Function**	**Pin**	**Function**
JR1.20	GND	RF1.1	GND
JR1.18	CC_UART_CTS	RF1.3	HCI_CTS_3V3
JR1.16	CC_SLOW_CLOCK	RF1.5	SLOW_CLK_EXT_3V3
JR1.14	CC_UART_RX	RF1.7	HCI_RX_3V3
JR1.12	CC_UART_TX	RF1.9	HCI_TX_3V3
JR1.10	X	RF1.11	X
JR1.8	X	RF1.13	X
JR1.6	X	RF1.15	X
JR1.4	X	RF1.17	X
JR1.2	GND	RF1.19	GND
JR1.19	X	RF1.2	X
JR1.17	X	RF1.4	X
JR1.15	X	RF1.6	X
JR1.13	X	RF1.8	X
JR1.11	X	RF1.10	X
JR1.9	X	RF1.12	X
JR1.7	X	RF1.14	X
JR1.5	X	RF1.16	X
JR1.3	X	RF1.18	X
JR1.1	X	RF1.20	X

Table 2-2. Table of Pins JR2

CC256XEM-STADAPT		CC256X EM	
Pin	**Function**	**Pin**	**Function**
JR2.20	X	RF2.1	X
JR2.18	X	RF2.3	X
JR2.16	X	RF2.5	X
JR2.14	CC_VCC	RF2.7	VBAT_MCU
JR2.12	CC_VCC	RF2.9	VBAT_MCU
JR2.10	CC_PM_FSYNC	RF2.11	AUD_FSYNC_3V3
JR2.8	X	RF2.13	X
JR2.6	X	RF2.15	X
JR2.4	CC_PCM_CLK	RF2.17	AUD_CLK_3V3
JR2.2	CC_nSHUTD	RF2.19	nSHUTDN_3V3
JR2.19	GND	RF2.2	GND
JR2.17	X	RF2.4	X
JR2.15	X	RF2.6	X
JR2.13	CC_PCM_DOUT	RF2.8	AUD_OUT_3V3
JR2.11	CC_PCM_DIN	RF2.10	AUD_IN_3V3
JR2.9	X	RF2.12	X
JR2.7	X	RF2.14	X
JR2.5	X	RF2.16	X
JR2.3	CC_UART_RTS	RF2.18	HCI_RTS_3V3
JR2.1	X	RF2.20	X

2.2 STM32 Connectors

The CC256XEM-STADAPT board interfaces with either a STM3240G-EVAL or STM32F4DISCOVERY through use of three 2×50 headers: JD1, JD2, and JE3.

NOTE: There may be alternate functions for each MCU pin, but only the ones used in the relevant setting are listed.

2.2.1 JD1 Headers

The JD1 headers are one of three 2×50 headers that protrude out of the bottom of the board. The CC256XEM-STADAPT can connect to a STM32F4DISCOVERY Evaluation board by connecting JD1 and JD2 into the P1 and P2 headers, respectively.

Table 2-3. Table of Pins JD1

CC256XEM-STADAPT		STM32F4DISCOVERY		
Pin	**Function**	**Pin**	**MCU Pin**	**Function**
JD1.1	GND	P1.2	GND	GND
JD1.3	X	P1.4	VDD	X
JD1.5	X	P1.6	NRST	X
JD1.7	X	P1.8	PC0	X
JD1.9	X	P1.10	PC2	X
JD1.11	X	P1.12	PA0	X
JD1.13	X	P1.14	PA2	X
JD1.15	DISCOVERY_I2S3_WS	P1.16	PA4	I2S3_WS
JD1.17	X	P1.18	PA6	X
JD1.19	X	P1.20	PC4	X
JD1.21	X	P1.22	PB0	X
JD1.23	X	P1.24	PB2	X
JD1.25	X	P1.26	PE8	X
JD1.27	X	P1.28	PE10	X
JD1.29	X	P1.30	PE12	X
JD1.31	DISCOVERY_CC_nSHUTD	P1.32	PE14	GPIO
JD1.33	X	P1.34	PB10	X
JD1.35	X	P1.36	PB12	X
JD1.37	X	P1.38	PB14	X
JD1.39	DISCOVERY_USART3_TX	P1.40	PD8	USART3_TX
JD1.41	X	P1.42	PD10	X
JD1.43	DISCOVERY_USART3_RTS	P1.44	PD12	USART3_RTS
JD1.45	X	P1.46	PD14	X
JD1.47	X	P1.48	NC	X
JD1.49	X	P1.50	GND	X
JD1.2	GND	P1.1	GND	GND
JD1.4	X	P1.3	VDD	X
JD1.6	GND	P1.5	GND	GND
JD1.8	X	P1.7	PC1	X
JD1.10	X	P1.9	PC3	X
JD1.12	X	P1.11	PA1	X
JD1.14	X	P1.13	PA3	X
JD1.16	X	P1.15	PA5	X
JD1.18	X	P1.17	PA7	X

Table 2-3. Table of Pins JD1 (continued)

CC256XEM-STADAPT		STM32F4DISCOVERY		
Pin	**Function**	**Pin**	**MCU Pin**	**Function**
JD1.20	X	P1.19	PC5	X
JD1.22	X	P1.21	PB1	X
JD1.24	GND	P1.23	GND	GND
JD1.26	X	P1.25	PE7	X
JD1.28	X	P1.27	PE9	X
JD1.30	X	P1.29	PE11	X
JD1.32	X	P1.31	PE13	X
JD1.34	X	P1.33	PE15	X
JD1.36	X	P1.35	PB11	X
JD1.38	X	P1.37	PB13	X
JD1.40	X	P1.39	PB15	X
JD1.42	DISCOVERY_USART3_RX	P1.41	PD9	USART3_RX
JD1.44	DISCOVERY_USART3_CTS	P1.43	PD11	USART3_CTS
JD1.46	X	P1.45	PD13	X
JD1.48	X	P1.47	PD15	X
JD1.50	X	P1.49	GND	X

2.2.2 JD2 Headers

The JD2 headers are among the three 2×25 headers on the bottom of the board. These headers are used when connecting to either the STM32F4DISCOVERY or STM3240G-EVAL. When connecting to the DISCOVERY board, the JD1 and JD2 connect to the P1 and P2 headers, respectively. When connecting to the EVAL board, the JE3 and JD2 connect to the CN3 and CN4 headers, respectively.

Table 2-4. Table of Pins JD2

CC256XEM-STADAPT		STM32F4DISCOVERY			STM3240G-EVAL		
Pin	Function	Pin	MCU Pin	Function	Pin	MCU Pin	Function
JD2.1	EVAL_DAC_DIN	P2.2	GND	X	CN4.40	PI3	I2S2_SD/ GPIO
JD2.3	X	P2.4	5V	X	CN4.38	PA14	X
JD2.5	DISCOVERY_VCC	P2.6	3V	VBAT	CN4.36	PC10	X
JD2.7	EVAL_UART5_TX	P2.8	PH1	X	CN4.34	PC12	UART5_TX
JD2.9	EVAL_UART5_RTS	P2.10	PC15	X	CN4.32	PD1	GPIO
JD2.11	X	P2.12	PC13	X	CN4.30	GND	X
JD2.13	X	P2.14	PE5	X	CN4.28	PD4	X
JD2.15	X	P2.16	PE3	X	CN4.26	PD6	X
JD2.17	X	P2.18	PE1	X	CN4.24	PG9	X
JD2.19	DISCOVERY_I2C1_ SDA	P2.20	PB9	I2C1_SDA	CN4.22	PG11	X
JD2.21	EVAL_USART6_CTS	P2.22	VDD	X	CN4.20	PG13	USART6_CTS
JD2.23	EVAL_USART6_TX	P2.24	PB7	X	CN4.18	PG14	USART6_TX
JD2.25	DISCOVERY_I2S3_ SD	P2.26	PB5	I2S3_SD	CN4.16	PB3	X
JD2.27	X	P2.28	PB3	X	CN4.14	PB5	X
JD2.29	EVAL_CP_RST	P2.30	PD6	X	CN4.12	PB7	GPIO
JD2.31	X	P2.32	PD4	X	CN4.10	GND	X
JD2.33	EVAL_I2C1_SDA	P2.34	PD2	X	CN4.8	PB9	I2C1_SDA
JD2.35	X	P2.36	PD0	X	CN4.6	PE1	X
JD2.37	X	P2.38	PC11	X	CN4.4	PI5	X
JD2.39	X	PI7	PA15	X	CN4.2	PI7	X
JD2.41	X	X	PA13	X	X	X	X
JD2.43	X	X	PA9	X	X	X	X
JD2.45	DISCOVERY_MCO	X	PC9	MCO2	X	X	X
JD2.47	DISCOVERY_DAC_ MCLK	X	PC7	I2S3_MCK	X	X	X
JD2.49	X	X	GND	X	X	X	X
JD2.2	GND	P2.1	GND	GND	CN4.39	GND	GND
JD2.4	X	P2.3	5V	X	CN4.37	PA15	X
JD2.6	X	P2.5	3V	X	CN4.35	PC11	X
JD2.8	EVAL_UART5_CTS	P2.7	PH0	X	CN4.33	PD0	GPIO
JD2.10	EVAL_UART5_RX	P2.9	PC14	X	CN4.31	PD2	USART5_RX
JD2.12	EVAL_CC_nSHUTD	P2.11	PE6	X	CN4.29	PD3	GPIO
JD2.14	X	P2.13	PE4	X	CN4.27	PD5	X
JD2.16	X	P2.15	PE2	X	CN4.25	PD7	X
JD2.18	X	P2.17	PE0	X	CN4.23	PG10	X
JD2.20	X	P2.19	PB8	X	CN4.21	PG12	X
JD2.22	X	P2.21	BOOT0	X	CN4.19	GND	X
JD2.24	DISCOVERY_I2C1_ SCL	P2.23	PB6	I2C1_SCL	CN4.17	PG15	X
JD2.26	DISCOVERY_ I2S3ext_SD	P2.25	PB4	I2S3ext_SD	CN4.15	PB4	X
JD2.28	EVAL_I2C1_SCL	P2.27	PD7	X	CN4.13	PB6	I2C1_SCL
JD2.30	X	P2.29	PD5	X	CN4.11	BOOT0	X
JD2.32	DISCOVERY_CP_ RST	P2.31	PD3	GPIO	CN4.9	PB8	X
JD2.34	X	P2.33	PD1	X	CN4.7	PE0	X
JD2.36	DISCOVERY _DAC_DIN	P2.35	PC12	I2S3_SD / GPIO	CN4.5	PI4	X

Table 2-4. Table of Pins JD2 (continued)

CC256XEM-STADAPT		STM32F4DISCOVERY			STM3240G-EVAL		
Pin	Function	Pin	MCU Pin	Function	Pin	MCU Pin	Function
JD2.38	DISCOVERY _I2S3_CK	P2.37	PC10	I2S3_SCK / UART4_TX	CN4.3	PI6	X
JD2.40	X	P2.39	PA14	X	CN4.1	GND	X
JD2.42	X	P2.41	PA10	X	X	X	X
JD2.44	X	P2.43	PA8	X	X	X	X
JD2.46	X	P2.45	PC8	X	X	X	X
JD2.48	X	P2.47	PC6	X	X	X	X
JD2.50	X	P2.49	GND	X	X	X	X

2.2.3 JE3 Headers

The JE3 headers is the 2×50 header perpendicular to the other two on the bottom of the board. The CC256XEM-STADAPT can connect to a STM3240G-EVAL board by connecting JE3 and JD2 into the CN3 and CN4 headers, respectively.

Table 2-5. Table of Pins JE3

CC256XEM-STADAPT		STM3240G-EVAL		
Pin	**Function**	**Pin**	**MCU Pin**	**Function**
JE3.1	GND	CN3.1	GND	GND
JE3.3	EVAL_I2S2_CK_PI1	CN3.3	PI1	I2S2_CK
JE3.5	X	CN3.5	PH15	X
JE3.7	X	CN3.7	PH13	X
JE3.9	X	CN3.9	PC13	X
JE3.11	X	CN3.11	RESET	X
JE3.13	X	CN3.13	PA11	X
JE3.15	X	CN3.15	VBUS	X
JE3.17	EVAL_MCO	CN3.17	PC9	MCO2
JE3.19	X	CN3.19	EMU	X
JE3.21	EVAL_DAC_MCLK	CN3.21	PC6	I2S2_MCK / GPIO
JE3.23	X	CN3.23	PG7	X
JE3.25	X	CN3.25	PG5	X
JE3.27	X	CN3.27	PG3	X
JE3.29	X	CN3.29	PD15	X
JE3.31	X	CN3.31	PD14	X
JE3.33	X	CN3.33	PD12	X
JE3.35	X	CN3.35	PD10	X
JE3.37	X	CN3.37	PD8	X
JE3.39	GND	CN3.39	GND	GND
JE3.41	EVAL_I2S2_CK_PB13	CN3.41	PB13	I2S2_CK
JE3.43	X	CN3.43	PH12	X
JE3.45	X	CN3.45	NC	X
JE3.47	X	CN3.47	EMU	X
JE3.49	X	CN3.49	EMU_5	X
JE3.2	EVAL_I2S2ext_SD_PI2	CN3.2	PI2	I2S2ext_SD
JE3.4	EVAL_I2S2_WS_PI0	CN3.4	PI0	I2S2_WS
JE3.6	X	CN3.6	PH14	X
JE3.8	X	CN3.8	PA13	X
JE3.10	GND	CN3.10	GND	GND
JE3.12	X	CN3.12	PA12	X
JE3.14	X	CN3.14	PA10	X
JE3.16	X	CN3.16	PA8	X
JE3.18	X	CN3.18	PC8	X
JE3.20	EVAL_USART6_RX	CN3.20	PC7	USART6_RX
JE3.22	EVAL_USART6_RTS	CN3.22	PG8	USART6_RTS
JE3.24	X	CN3.24	PG6	X
JE3.26	X	CN3.26	PG4	X
JE3.28	X	CN3.28	PG2	X
JE3.30	GND	CN3.30	GND	GND
JE3.32	X	CN3.32	PD13	X
JE3.34	X	CN3.34	PD11	X

Table 2-5. Table of Pins JE3 (continued)

CC256XEM-STADAPT		STM3240G-EVAL		
Pin	**Function**	**Pin**	**MCU Pin**	**Function**
JE3.36	X	CN3.36	PD9	X
JE3.38	EVAL_I2S2_SD	CN3.38	PB15	I2S2_SD
JE3.40	EVAL_I2S2ext_SD_PB14	CN3.40	PB14	I2S2ext_SD
JE3.42	EVAL_I2S2_WS_PB12	CN3.42	PB12	I2S2_WS
JE3.44	X	CN3.44	NC	X
JE3.46	X	CN3.46	NC	X
JE3.48	EVAL_VCC	CN3.48	APP_3V3	VDD
JE3.50	GND	CN3.50	GND	GND

Refer to Chapter 3 for the schematics of the CC256XEM-STADAPT board.

2.3 UART Selection

The headers J1 through J6 have associated jumpers that connect two adjacent pins, such as pin 1 to 2 or pin 2 to 3. This is to direct the UART signals from the CC256X EM to the desired STM32 board. Thus, when the CC256XEM-STADAPT is mounted on the STM3240G-EVAL, all 6 jumpers should be connecting pins 1 and 2. When mounted on the STM32F4DISCOVERY, the jumpers should be connecting pins 2 and 3.

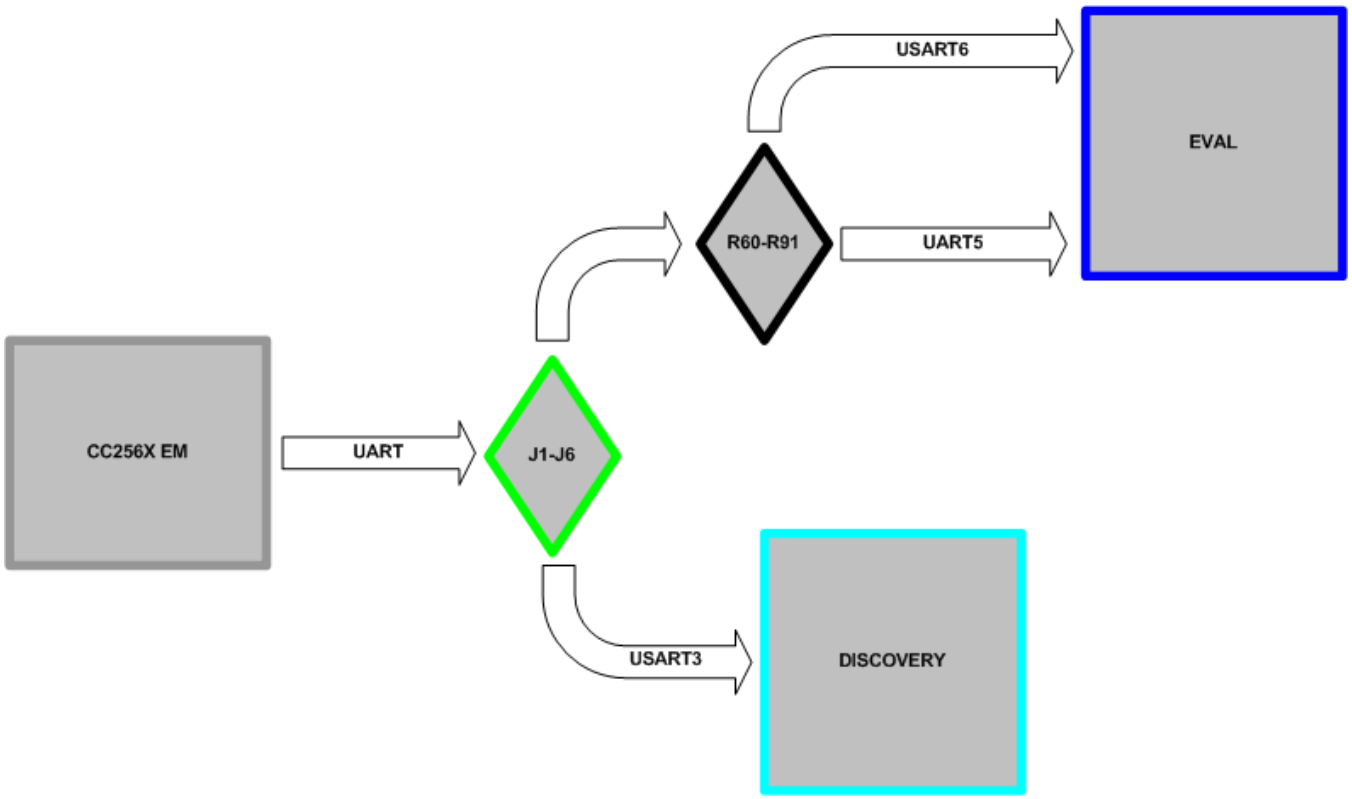


Figure 2-2. Block Diagram of UART Connections

Table 2-6. UART Connections

Connection	STM3240G-EVAL UART5	STM3240G-EVAL USART6	STM32F4DISCOVERY USART3
J1-J6	1 and 2	1 and 2	2 and 3
R60, R70, R80, R90	Connected	Unconnected	N/A
R61, R71, R81, R91	Unconnected	Connected	N/A

There are only two configurations – STM32F4DISCOVERY USART3 and STM3240G-EVAL USART6 – necessary to run all of the demo programs that only require UART communication. In all of these, the resistors R61, R71, R81, and R91 are always connected, while R60, R70, R80, and R90 are not. However, the STM3240G-EVAL board provides the option of using UART5 for digital communication instead of USART6. For these applications, the connections for the resistors must be swapped.

2.4 PCM/I2S Selection

Several empty resistor pads are available for configuration. Zero-ohm resistors can be soldered onto them to complete the connections, which are necessary for applications that require I2S communication. These include A3DPDemo_SNK and HFPAGDemo (see Section 5, Settings, of the *Quick Start Guide*, SWRU416, for the full list).

There are four different configurations – two per board – that can be used to run all of the demo programs. R31, R41, or R43 are not populated in any of these configurations. However, for other applications that might require connection of other signals such as EVAL_I2S2ext_SDPI2, the user may make these connections.

2.5 32.768-KHz Clock

Next to the CC256X EM connectors is a 32.768-KHz crystal oscillator circuit. This provides the slow clock for the CC256X EM.

Schematics

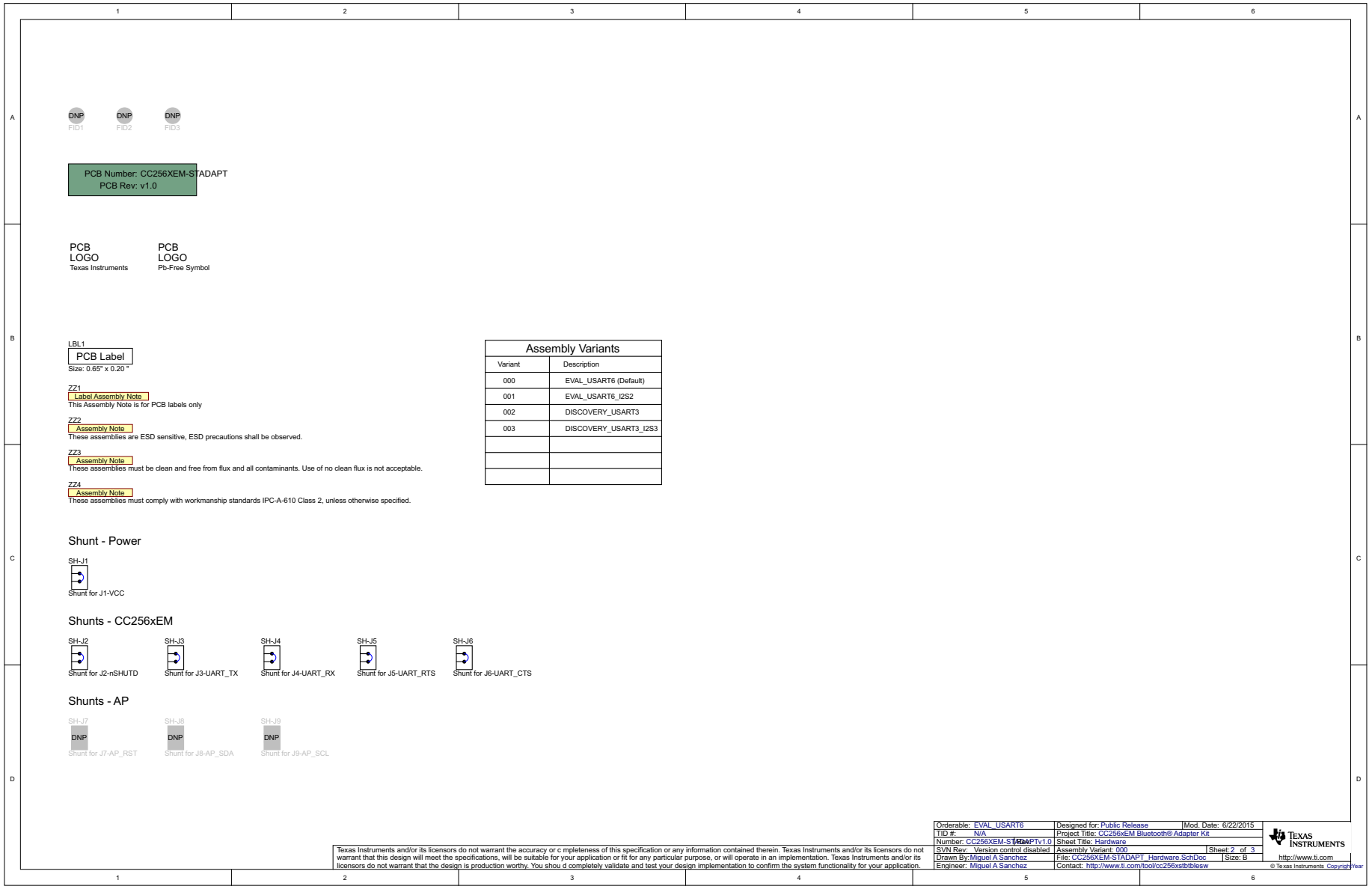


Figure 3-1. Schematic 1

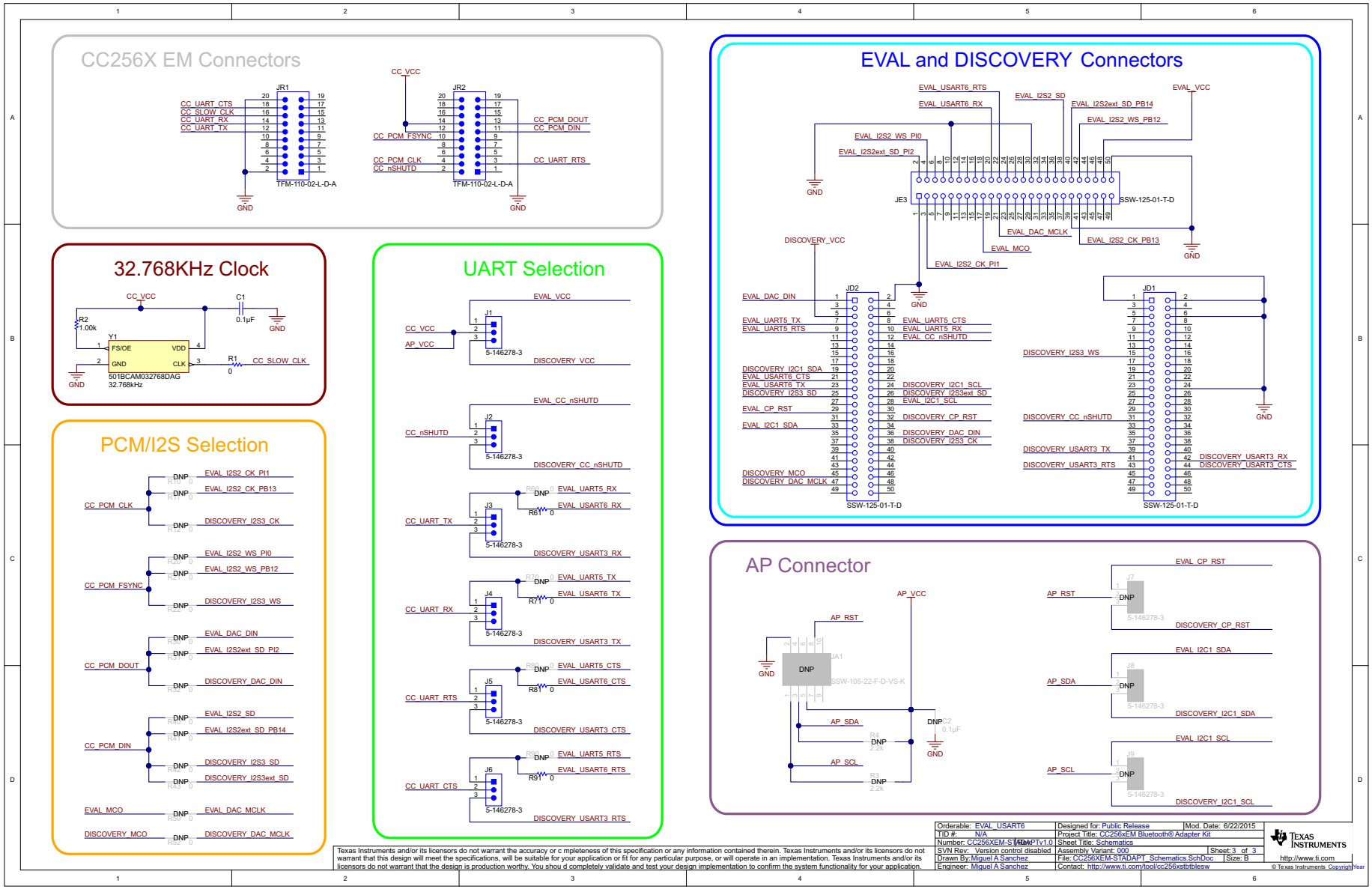


Figure 3-2. Schematic 2

Bill of Materials

Table 4-1. BOM

Designator	Quantity	Value	Description	Package Reference	Part Number	Manufacturer	Alternate Part Number[1]	Alternate Manufacturer
!PCB	1		Printed Circuit Board		CC256XEM-STADAPT	Any		
C1	1	0.1 µF	CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0603	0603	GRM188R71C104KA01D	MuRata		
J1, J2, J3, J4, J5, J6	6		Header, 100mil, 3x1, Tin, TH	Header, 3x1, 100mil, TH	5-146278-3	TE Connectivity		
JD1, JD2, JE3	3		Receptacle, 2.54 mm, 2x25, TH	Receptacle, 2.54mm, 2x25, TH	SSW-125-01-T-D	Samtec		
JR1, JR2	2		Straight Low Profile Header, 10x2 Position,1.27-mm Pitch, SMT	10x2 SMT, 15.88x6.35x 5.72 mm	TFM-110-02-L-D-A	Samtec		
LBL1	1		Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650"H x 0.200"W	THT-14-423-10	Brady		
R1, R61, R71, R81, R91	5	0	RES, 0, 5%, 0.1 W, 0603	0603	RC0603JR-070RL	Yageo America		
R2	1	1.00 k	RES, 1.00 k, 1%, 0.1 W, 0603	0603	RC0603FR-071KL	Yageo America		
SH-J1, SH-J2, SH-J3, SH-J4, SH-J5, SH-J6	6	1x2	Shunt, 100mil, Gold plated, Black	Shunt	969102-0000-DA	3M	SNT-100-BK-G	Samtec
Y1	1		OSC, 32.768 kHz, 3.3 V, SMD	2.5x0.9x2.0 mm	501BCAM032768DAG	Silicon Laboratories		
C2	0	0.1 µF	CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0603	0603	GRM188R71C104KA01D	MuRata		
FID1, FID2, FID3	0		Fiducial mark. There is nothing to buy or mount.	Fiducial	N/A	N/A		
J7, J8, J9	0		Header, 100mil, 3x1, Tin, TH	Header, 3x1, 100mil, TH	5-146278-3	TE Connectivity		
JA1	0		Connector, Header, 10-Pos (5x2), Receptacle, 100x100-mil Pitch	5x2 Receptacle	SSW-105-22-F-D-VS-K	Samtec		
R3, R4	0	2.2k	RES, 2.2 k, 5%, 0.1 W, 0603	0603	RC0603JR-072K2L	Yageo America		
R10, R11, R12, R20, R21, R22, R30, R31, R32, R40, R41, R42, R43, R50, R52, R60, R70, R80, R90	0	0	RES, 0, 5%, 0.1 W, 0603	0603	RC0603JR-070RL	Yageo America		
SH-J7, SH-J8, SH-J9	0	1x2	Shunt, 100mil, Gold plated, Black	Shunt	969102-0000-DA	3M	SNT-100-BK-G	Samtec

(1) Unless otherwise noted in the Alternate PartNumber and/or Alternate Manufacturer columns, all parts may be substituted with equivalents.

Layout

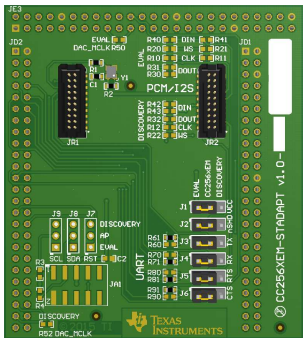


Figure 5-1. PCB 3D Print (Top)

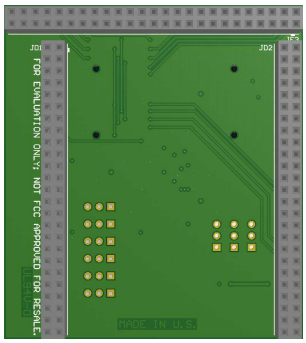
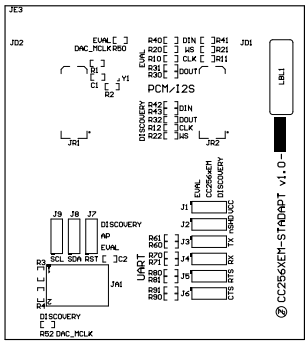
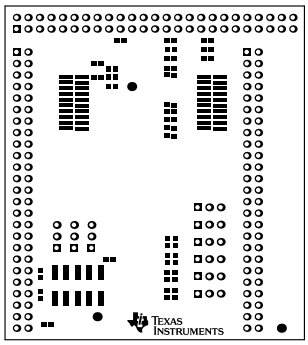


Figure 5-2. PCB 3D Print (Bottom)



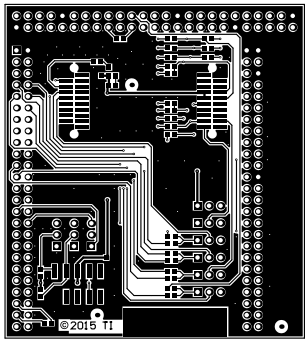
ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAPT	REV: v1.0	SVN REV: Not In VersionControl
LAYER NAME = Top Overlay			
PLOT NAME = Top Overlay	GENERATED : 6/23/2015 8:35:53 AM		TEXAS INSTRUMENTS

Figure 5-3. Top Overlay



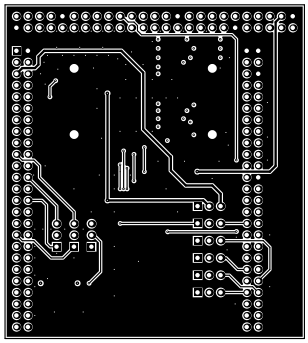
ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0		SVN REV: Not In VersionControl
LAYER NAME = Top Solder			
PLOT NAME = Top Solder Mask	GENERATED : 6/23/2015 8:35:54 AM		TEXAS INSTRUMENTS

Figure 5-4. Top Solder Mask



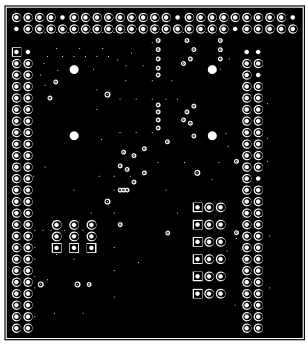
ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0		SVN REV: Not In VersionControl
LAYER NAME = Top Layer			
PLOT NAME = Top Layer	GENERATED : 6/23/2015 8:35:56 AM		TEXAS INSTRUMENTS

Figure 5-5. Top Layer



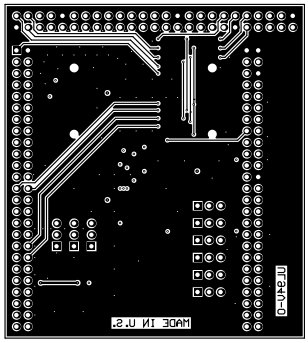
ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0		SVN REV: Not In VersionControl
LAYER NAME =			
PLOT NAME = MidLayer1	GENERATED : 6/23/2015 8:35:58 AM		TEXAS INSTRUMENTS

Figure 5-6. Mid Layer 1



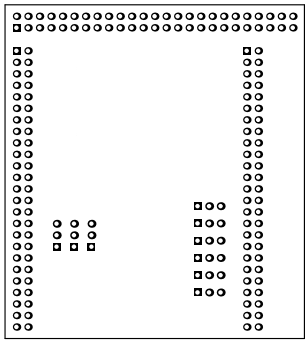
ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0		SVN REV: Not In VersionControl
LAYER NAME =			
PLOT NAME = MidLayer2	GENERATED : 6/23/2015 8:36:00 AM		TEXAS INSTRUMENTS

Figure 5-7. Mid Layer 2



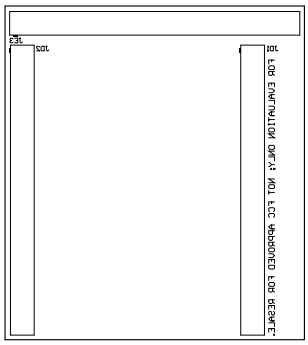
ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0		SVN REV: Not In VersionControl
LAYER NAME = Bottom Layer			
PLOT NAME = Bottom Layer	GENERATED : 6/23/2015 8:36:02 AM		TEXAS INSTRUMENTS

Figure 5-8. Bottom Layer



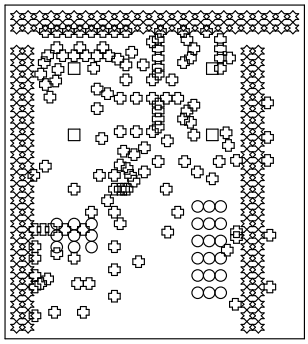
ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0		SVN REV: Not In VersionControl
LAYER NAME = Bottom Solder			
PLOT NAME = Bottom Solder Mask	GENERATED : 6/23/2015 8:36:03 AM		TEXAS INSTRUMENTS

Figure 5-9. Bottom Solder Mask



ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0	SVN REV: Not In VersionControl
LAYER NAME = Bottom Overlay		
PLOT NAME = Bottom Overlay	GENERATED : 6/23/2015 8:36:05 AM	TEXAS INSTRUMENTS

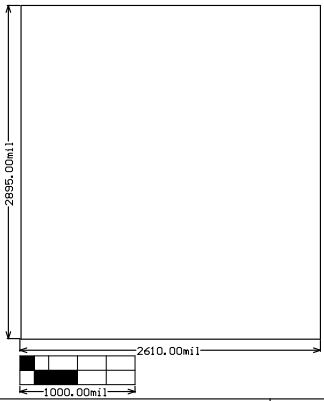
Figure 5-10. Bottom Overlay



Symbol	Quantity	Finished Hole Size	Plated	Hole Type
□	4	57.09mil (1.450mm)	NPTH	Round
✪	134	10.00mil (0.254mm)	PTH	Round
○	27	39.37mil (1.000mm)	PTH	Round
✿	150	40.94mil (1.040mm)	PTH	Round
	315 Total			

ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0	SVN REV: Not In VersionControl
LAYER NAME = Drill Drawing		
PLOT NAME = Drill Drawing	GENERATED : 6/23/2015 8:36:06 AM	TEXAS INSTRUMENTS

Figure 5-11. Drill Drawing



ALL ARTWORK VIEWED FROM TOP SIDE	BOARD #: CC256XEM-STADAREV: v1.0	SVN REV: Not In VersionControl
LAYER NAME = M2 Board Dimensions		
PLOT NAME = Board Dimensions	GENERATED : 6/23/2015 8:36:08 AM	TEXAS INSTRUMENTS

Figure 5-12. Board Dimensions

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