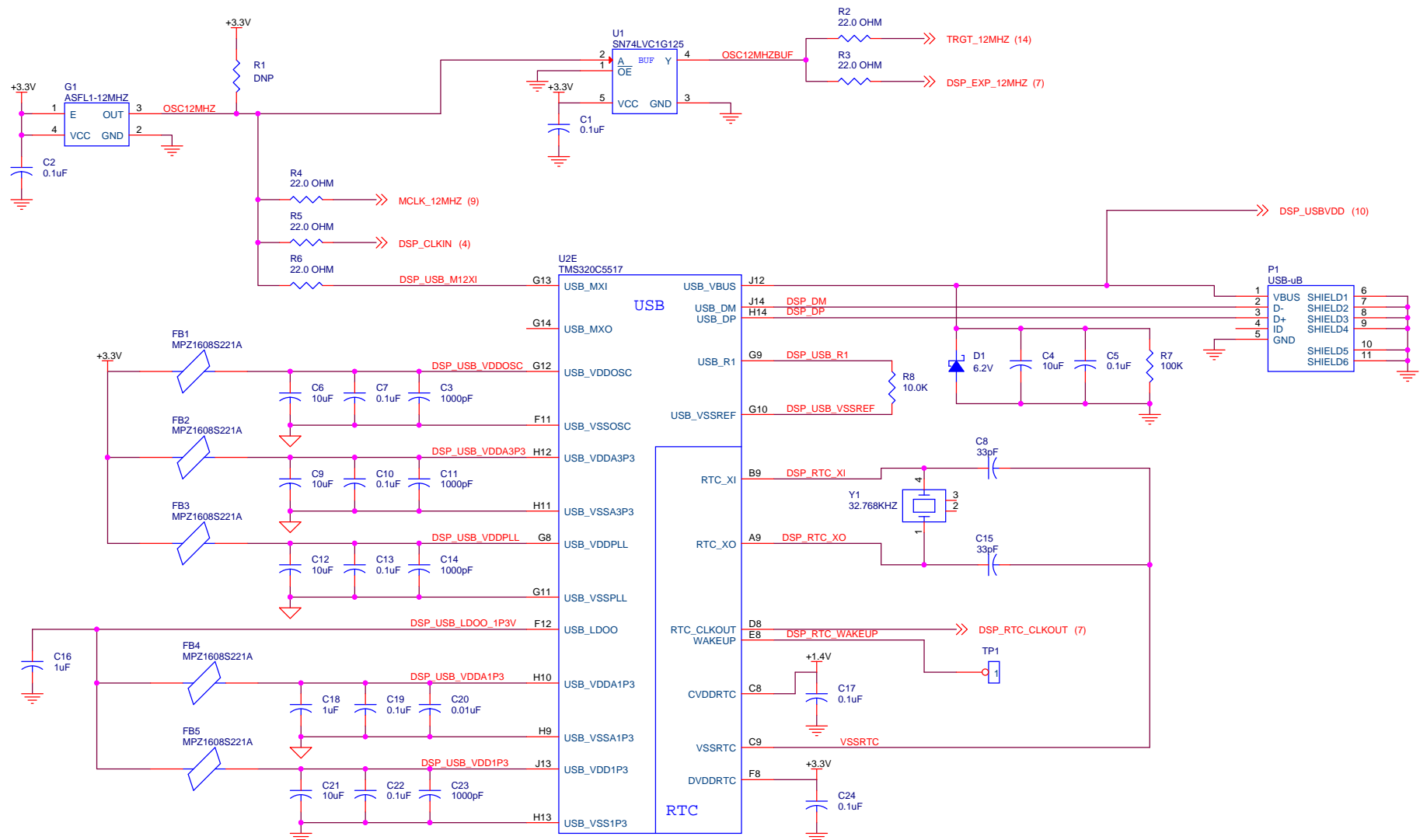


NOTES:

SHEET DESCRIPTIONS:

- 01: ESD TITLE PAGE
- 02: C5517 USB, RTC, OSC
- 03: C5517 PERIPHERALS
- 04: C5517 CLK, JTAG, I2C, GPAIN
- 05: C5517 EMIF, SDRAM, BOOTMODE
- 06: C5517 CORE AND IO POWER
- 07: DSP EXPANSION CONNECTOR
- 08: OLED, SDCARD, GPIO, DIPSW
- 09: TLV320AIC3204 CODEC
- 10: VOLTAGE REGULATORS, SVS
- 11: ARDUINO INTERFACE 1
- 12: ARDUINO INTERFACE 2
- 13: ARDUINO INTERFACE 3
- 14: XDS100-V2 INTERFACE

TEXAS INSTRUMENTS DALLAS, TEXAS	TEXAS INSTRUMENTS KILBY LABS 13560 North Central Expressway Dallas, TX 75243 MS 3747			
	ELECTRONIC SCHEMATIC DIAGRAM			
ENGR D. GARCIA	Size B	CAGE Code	DWG NO C5517 DSPSHIELD	Rev A
RoHS COMPLIANT YES	Scale	Monday, October 26, 2015	Sheet 1	of 14



TEXAS INSTRUMENTS DALLAS, TEXAS		Title		C5517 USB, RTC, OSC	
		Size	CAGE Code	DWG NO	Rev
		B		C5517 DSPSHIELD	A
Scale		Monday, October 26, 2015		Sheet 2 of 14	

U2C
TMS320C5517

GROUP 2

MMC1_CLK_MCSPI_CLK_GP6
MMC1_CMD_MCSPI_CS0_GP7
MMC1_DO_MCSPI_SIMO_GP8
MMC1_D1_MCSPI_SOMI_GP9
MMC1_D2_MCSPI_CS1_GP10
MMC1_D3_MCSPI_CS2_GP11

M13 >>> MMC1_CLK_MCSPI_CLK_GP6 (8)
L14 >>> MMC1_CMD_MCSPI_CS0_GP7 (8)
M14 >>> MMC1_DO_MCSPI_SIMO_GP8 (8)
M12 >>> MMC1_D1_MCSPI_SOMI_GP9 (8)
K14 >>> MMC1_D2_MCSPI_CS1_GP10 (8)
L13 >>> MMC1_D3_MCSPI_CS2_GP11 (8)

GROUP 3

MMC0_CLK_I2S0_CLK_GP0_MCBSP_CLKX
MMC0_CMD_I2S0_FS_GP1_MCBSP_FSX
MMC0_DO_I2S0_DX_GP2_MCBSP_DX
MMC0_D1_I2S0_RX_GP3_MCBSP_DR
MMC0_D2_GP4_MCBSP_FSR
MMC0_D3_GP5_MCBSP_CLKR_CLKS

L10 >>> X_MMC0_CLK_I2S0_CLK_GP0_MCBSP_CLKX (7,8)
M11 >>> X_MMC0_CMD_I2S0_FS_GP1_MCBSP_FSX (7,8)
L9 >>> X_MMC0_DO_I2S0_DX_GP2_MCBSP_DX (7,8)
M10 >>> X_MMC0_D1_I2S0_RX_GP3_MCBSP_DR (7,8)
L12 >>> X_MMC0_D2_GP4_MCBSP_FSR (7,8)
L11 >>> X_MMC0_D3_GP5_MCBSP_CLKR_CLKS (7,8)

GROUP 1

SPI_TX_UHPL_HD1
SPI_RX_UHPL_HD0
SPI_CS3_UHPL_HRDY
SPI_CS2_UHPL_HR_NW
SPI_CS1_UHPL_HCNTL1
SPI_CS0_UHPL_HCNTL0
SPI_CLK_UHPL_HINT

N6 >>> X_SPI_TX_UHPL_HD1 (7)
P6 >>> X_SPI_RX_UHPL_HD0 (7)
N5 >>> X_SPI_CS3_UHPL_HRDY (7)
P5 >>> X_SPI_CS2_UHPL_HR_NW (7)
N4 >>> X_SPI_CS1_UHPL_HCNTL1 (7)
P4 >>> X_SPI_CS0_UHPL_HCNTL0 (7)
N3 >>> X_SPI_CLK_UHPL_HINT (7)

GP12_UHPL_HD2
GP13_UHPL_HD3
GP14_UHPL_HD4
GP15_UHPL_HD5
GP16_UHPL_HD6
GP17_UHPL_HD7

P7 >>> X_GP12_UHPL_HD2 (7)
N7 >>> X_GP13_UHPL_HD3 (7)
N8 >>> X_GP14_UHPL_HD4 (7)
P9 >>> X_GP15_UHPL_HD5 (7)
N9 >>> X_GP16_UHPL_HD6 (7)
P10 >>> X_GP17_UHPL_HD7 (7)

I2S2_FS_UHPL_HD9_GP19_SPI_CS0
I2S2_CLK_UHPL_HD8_GP18_SPI_CLK
I2S2_DX_UHPL_HD11_GP27_SPI_TX
I2S2_RX_UHPL_HD10_GP20_SPI_RX

P11 >>> I2S2_FS_UHPL_HD9_GP19_SPI_CS0
N10 >>> I2S2_CLK_UHPL_HD8_GP18_SPI_CLK
P12 >>> I2S2_DX_UHPL_HD11_GP27_SPI_TX
N11 >>> I2S2_RX_UHPL_HD10_GP20_SPI_RX

UART_RTS_UHPL_HD12_GP28_I2S3_CLK
UART_CTS_UHPL_HD13_GP29_I2S3_FS
UART_RXD_UHPL_HD14_GP30_I2S3_RX
UART_TXD_UHPL_HD15_GP31_I2S3_DX

N12 >>> UART_RTS_UHPL_HD12_GP28_I2S3_CLK
P13 >>> UART_CTS_UHPL_HD13_GP29_I2S3_FS
N13 >>> UART_RXD_UHPL_HD14_GP30_I2S3_RX
P14 >>> UART_TXD_UHPL_HD15_GP31_I2S3_DX

R9 0.0 OHM

R10 0.0 OHM

R11 0.0 OHM

R12 0.0 OHM

>>> DSP_MCSPI_CLK (11)
>>> DSP_MCSPI_CS0 (11)
>>> DSP_MCSPI_SIMO (11)
>>> DSP_MCSPI_SOMI (11)

U3
SN74CB3Q3257

1A 1B1 >>> X_I2S2_FS_UHPL_HD9_GP19_SPI_CS0 (7)
2A 2B1 >>> X_I2S2_CLK_UHPL_HD8_GP18_SPI_CLK (7)
3A 3B1 >>> X_I2S2_DX_UHPL_HD11_GP27_SPI_TX (7)
4A 4B1 >>> X_I2S2_RX_UHPL_HD10_GP20_SPI_RX (7)

1B2 >>> AIC_I2S2_FS (9)
2B2 >>> AIC_I2S2_CLK (9)
3B2 >>> AIC_I2S2_DX (9)
4B2 >>> AIC_I2S2_RX (9)

U4
SN74CB3Q3257

1A 1B1 >>> X_UART_RTS_UHPL_HD12_GP28_I2S3_CLK (7)
2A 2B1 >>> X_UART_CTS_UHPL_HD13_GP29_I2S3_FS (7)
3A 3B1 >>> X_UART_RXD_UHPL_HD14_GP30_I2S3_RX (7)
4A 4B1 >>> X_UART_TXD_UHPL_HD15_GP31_I2S3_DX (7)

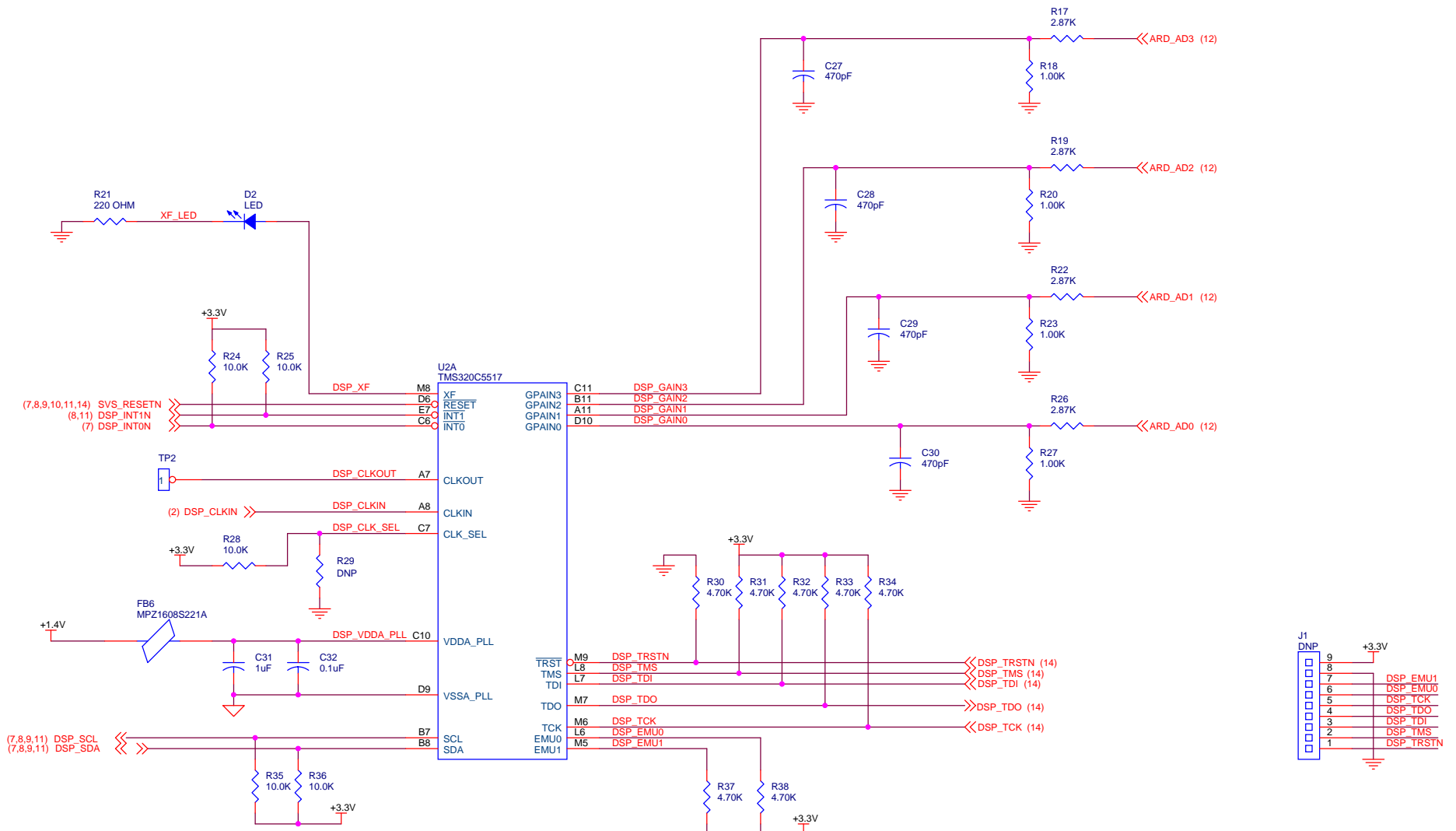
1B2 >>> DSP_RTS (14)
2B2 >>> DSP_CTS (14)
3B2 >>> DSP_RXD (12)
4B2 >>> DSP_TXD (12)

(8) GPIO3V3_04 >>> +3.3V
R13 10.0K
R14 DNP
C25 0.1uF

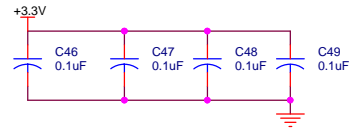
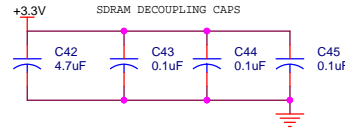
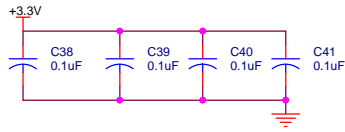
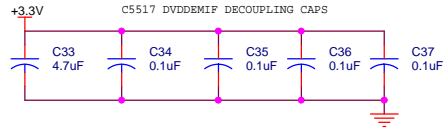
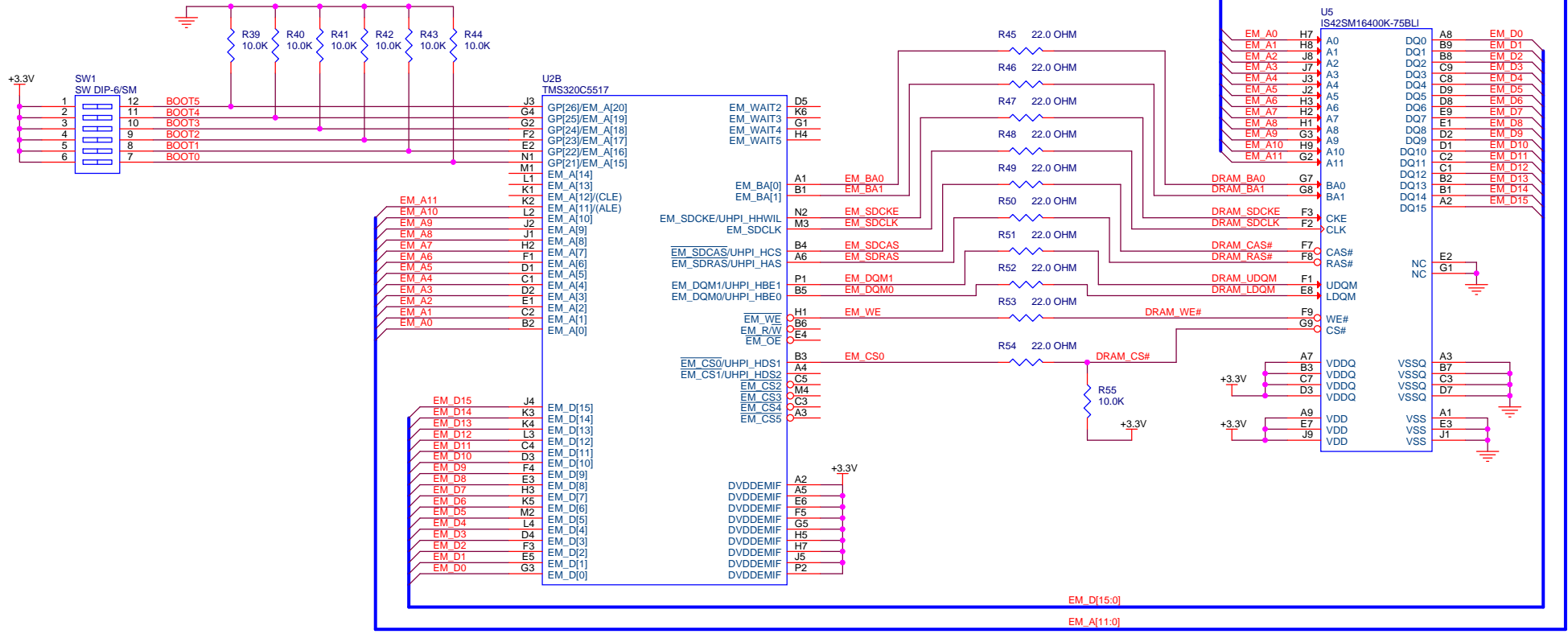
(8) GPIO3V3_05 >>> +3.3V
R15 10.0K
R16 DNP
C26 0.1uF

**TEXAS
INSTRUMENTS**
DALLAS, TEXAS

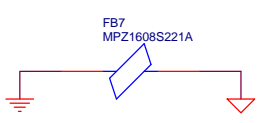
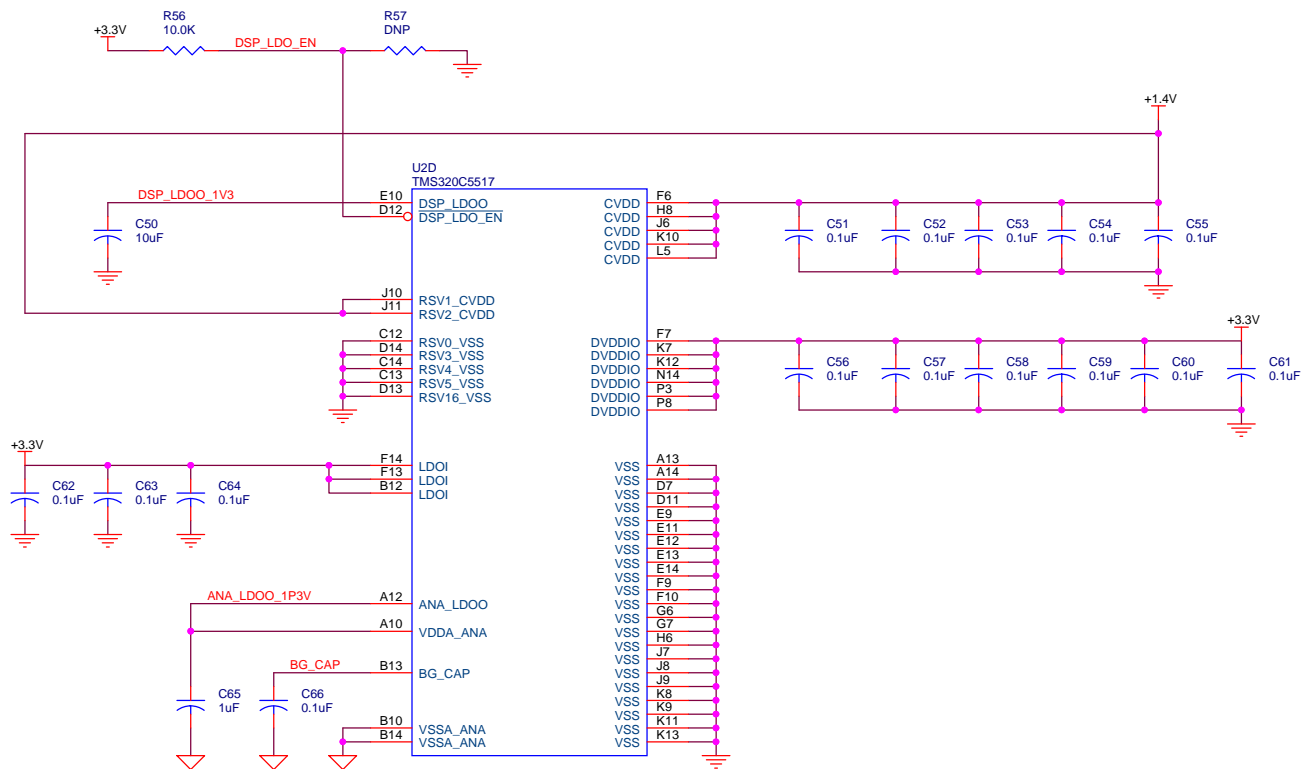
Title C5517 PERIPHERALS			
Size B	CAGE Code	DWG NO C5517 DSPSHIELD	Rev A
Scale	Monday, October 26, 2015	Sheet 3	of 14



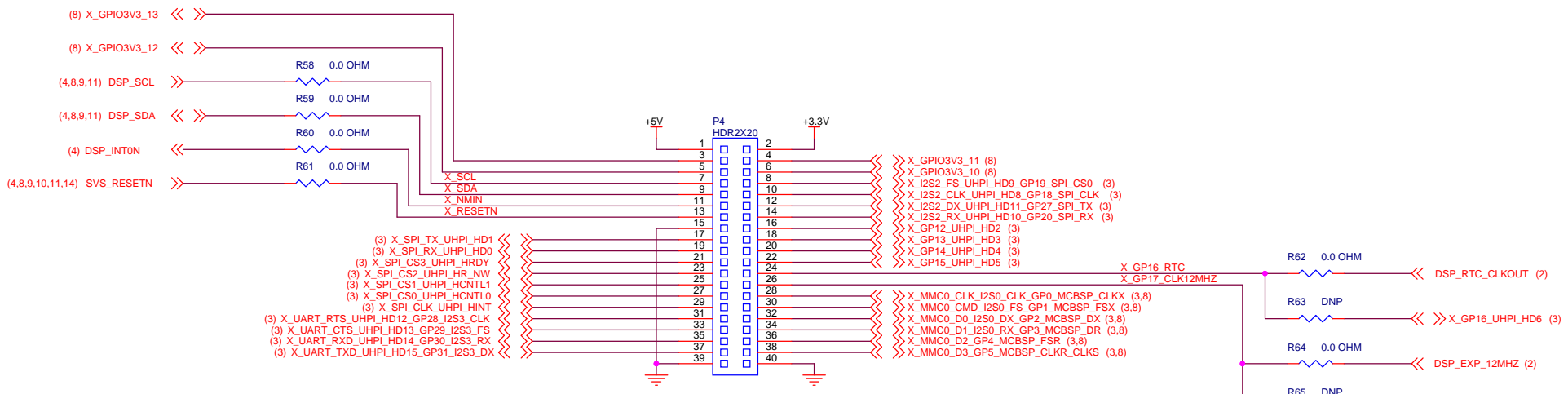
<h1 style="text-align: center;">TEXAS INSTRUMENTS</h1> <p style="text-align: center;">DALLAS, TEXAS</p>		Title		C5517 CLK, JTAG, I2C, GPAIN	
		Size	CAGE Code	DWG NO	Rev
B		C5517 DSPSHIELD		A	
Scale	Monday, October 26, 2015	Sheet	4 of 14		



TEXAS INSTRUMENTS DALLAS, TEXAS	Title C5517 EMIF, SDRAM, BOOTMODE		
	Size B	CAGE Code	Rev *.1
	DWG NO C5517 DSPSHIELD		Scale
	Monday, October 26, 2015		Sheet 5 of 14

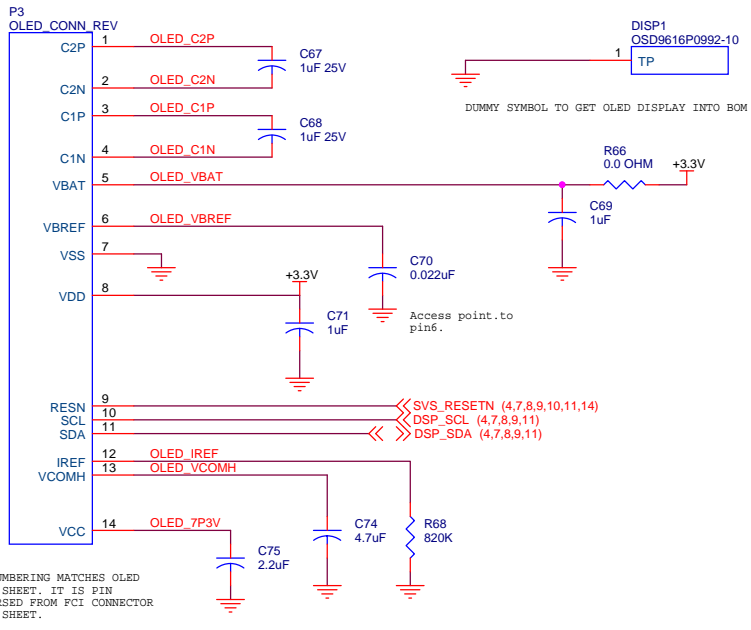


TEXAS INSTRUMENTS DALLAS, TEXAS		Title		C5517 CORE AND IO POWER	
		Size	CAGE Code	DWG NO	Rev
		B		C5517 DSPSHIELD	A
Scale		Monday, October 26, 2015		Sheet	6 of 14

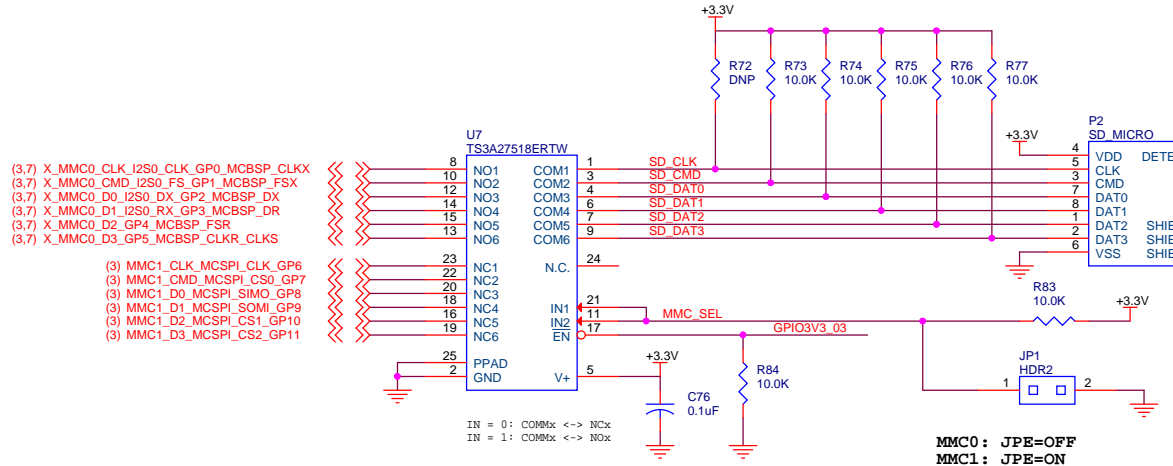
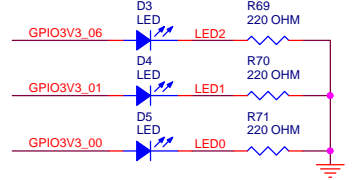
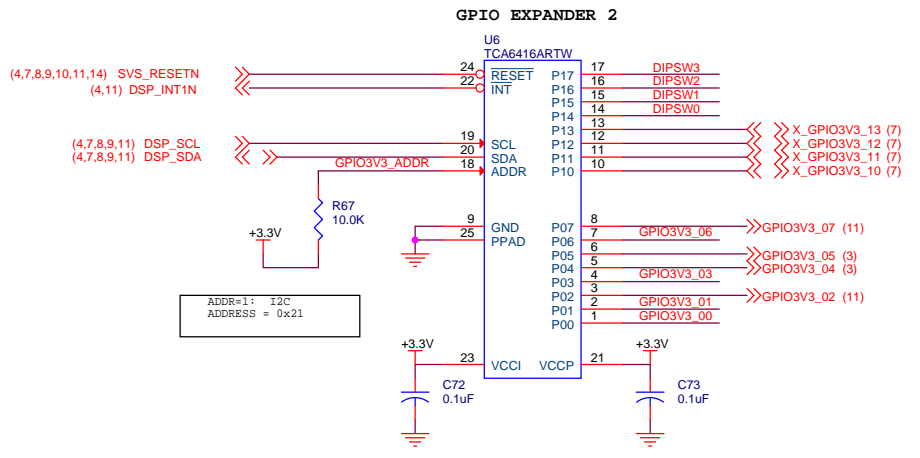


FEMALE RECEPTACLE WITH CORRESPONDING MIRROR PIN NUMBERING.

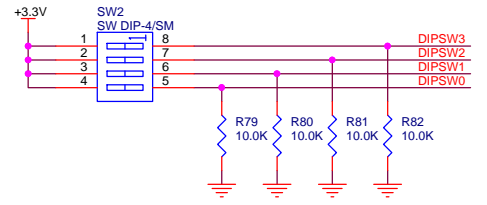
TEXAS INSTRUMENTS DALLAS, TEXAS		Title DSP EXPANSION CONNECTOR		
		Size B	CAGE Code	DWG NO C5517 DSPSHIELD
Scale		Monday, October 26, 2015	Sheet 7 of 14	



P3 NUMBERING MATCHES OLED DATA SHEET. IT IS PIN REVERSED FROM FCI CONNECTOR DATA SHEET.

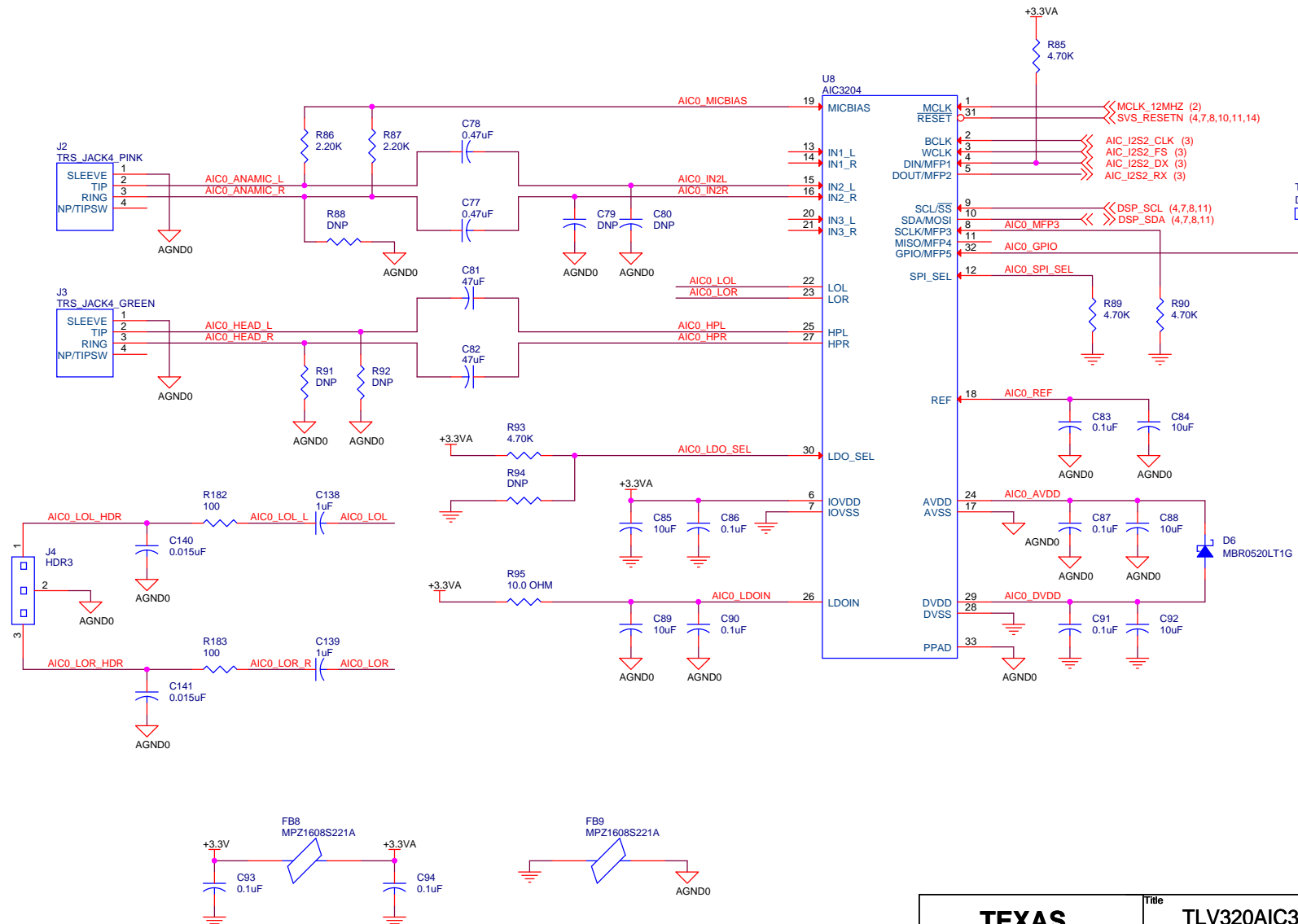


MMC0: JPE=OFF
MMC1: JPE=ON

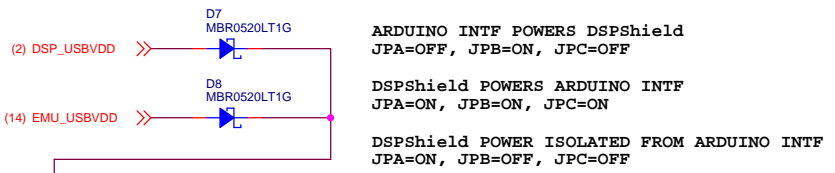


TEXAS INSTRUMENTS
DALLAS, TEXAS

Title OLED, SDCARD, GPIO, DIPSW			
Size B	CAGE Code	DWG NO C5517 DSPSHIELD	Rev A
Scale	Monday, October 26, 2015	Sheet 8	of 14



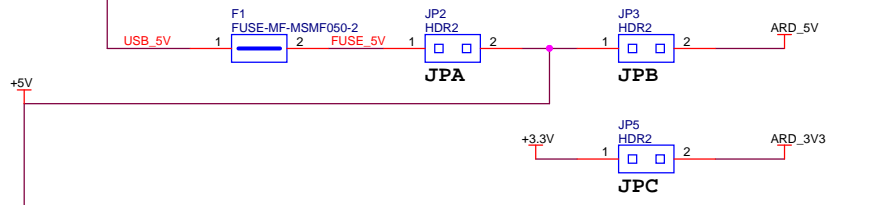
TEXAS INSTRUMENTS DALLAS, TEXAS		Title TLV320AIC3204 CODEC		
		Size B	CAGE Code	DWG NO C5517 DSPSHIELD
Scale		Thursday, October 29, 2015	Sheet 9 of 14	



ARDUINO INTF POWERS DSPShield
 JPA=OFF, JPB=ON, JPC=OFF

DSPShield POWERS ARDUINO INTF
 JPA=ON, JPB=ON, JPC=ON

DSPShield POWER ISOLATED FROM ARDUINO INTF
 JPA=ON, JPB=OFF, JPC=OFF

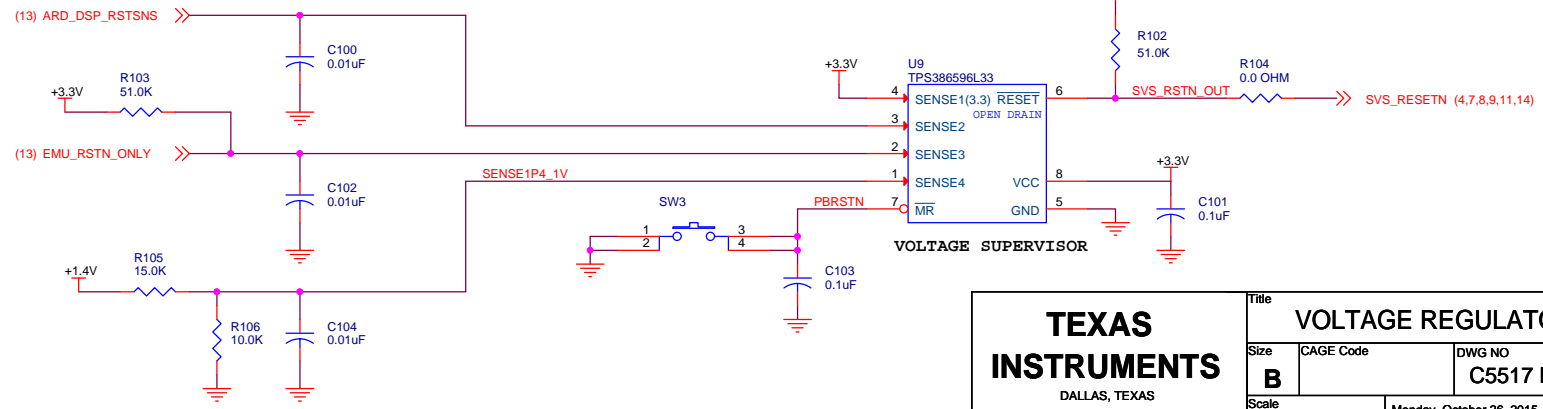
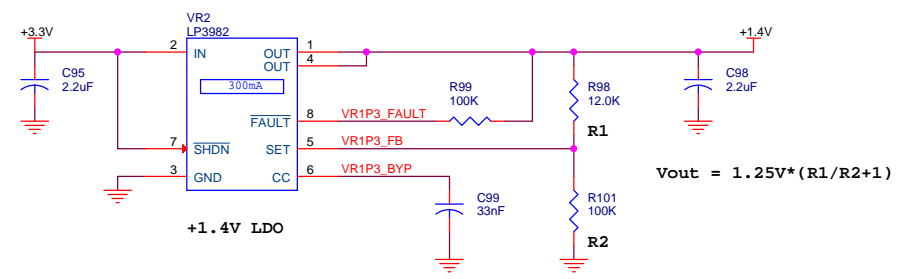
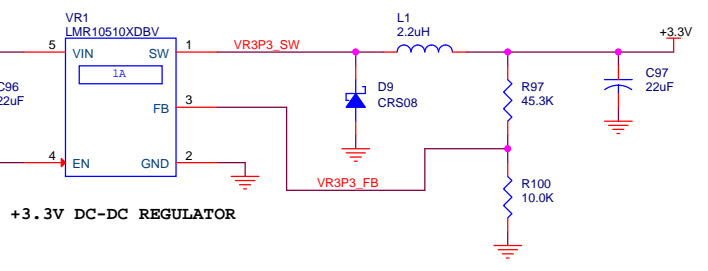
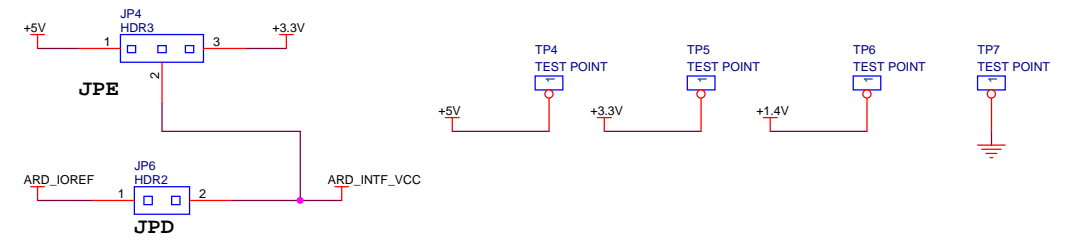


ARDUINO INTF LOGIC LEVEL SELECT.

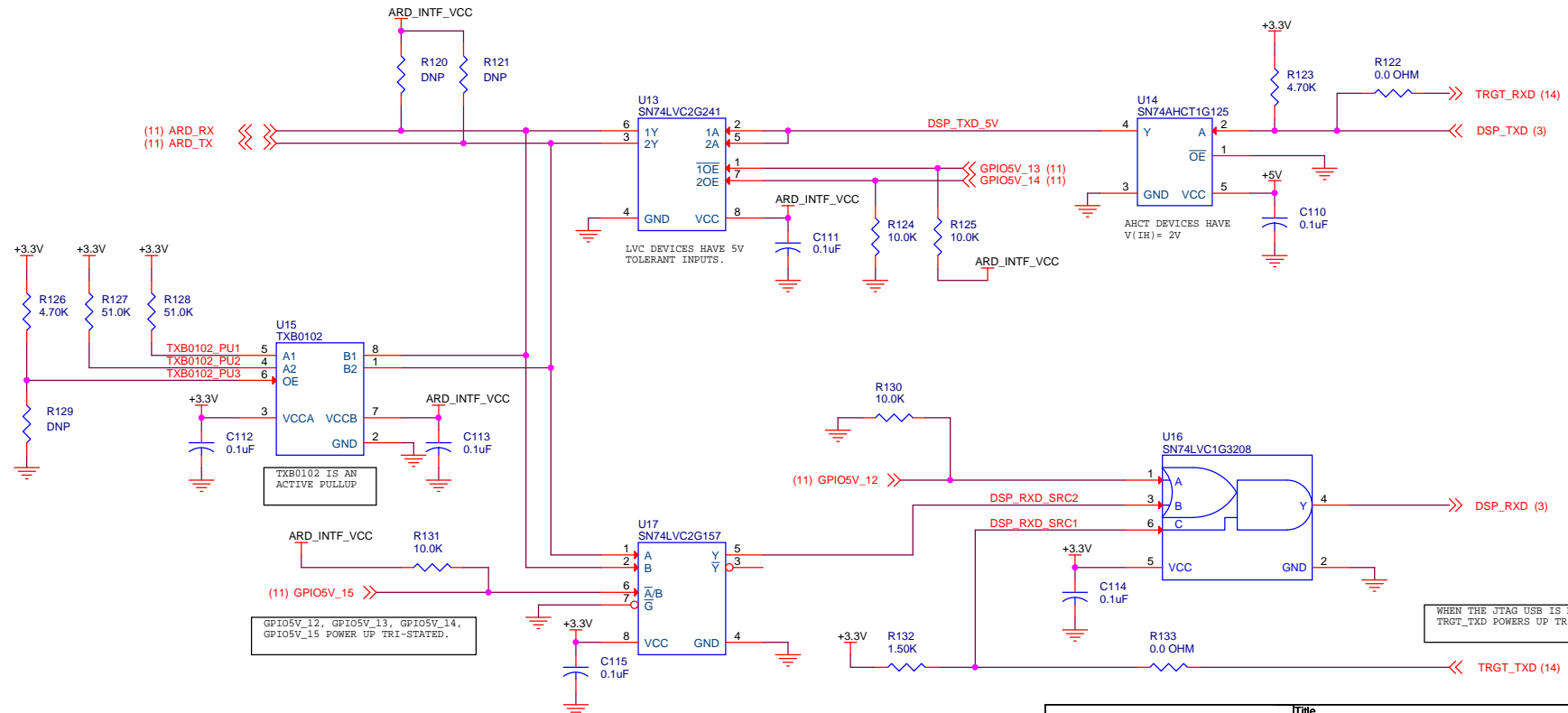
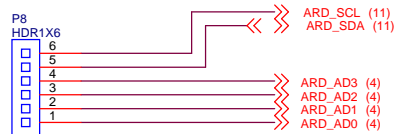
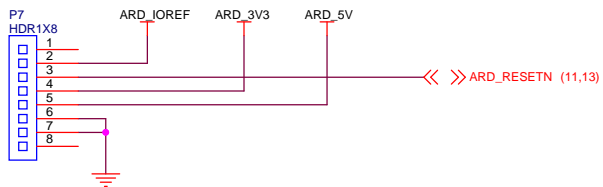
JPD=ON, JPE = OFF: SOURCE EXTERNAL, ARD_IOREF POWERS ARD_INTF_VCC.

JPD=OFF JPE = ON: SOURCE INTERNAL, JPE[1-2] = +5V, JPE[2-3] = +3.3V.

JPD=ON JPE = ON: DSPShield POWERS ARD_IOREF WITH VOLTAGE BASED ON JPE.



TEXAS INSTRUMENTS DALLAS, TEXAS		Title VOLTAGE REGULATORS, SVS		
		Size B	CAGE Code	Rev A
		DWG NO C5517 DSPSHIELD		
Scale	Monday, October 26, 2015	Sheet	10 of 14	



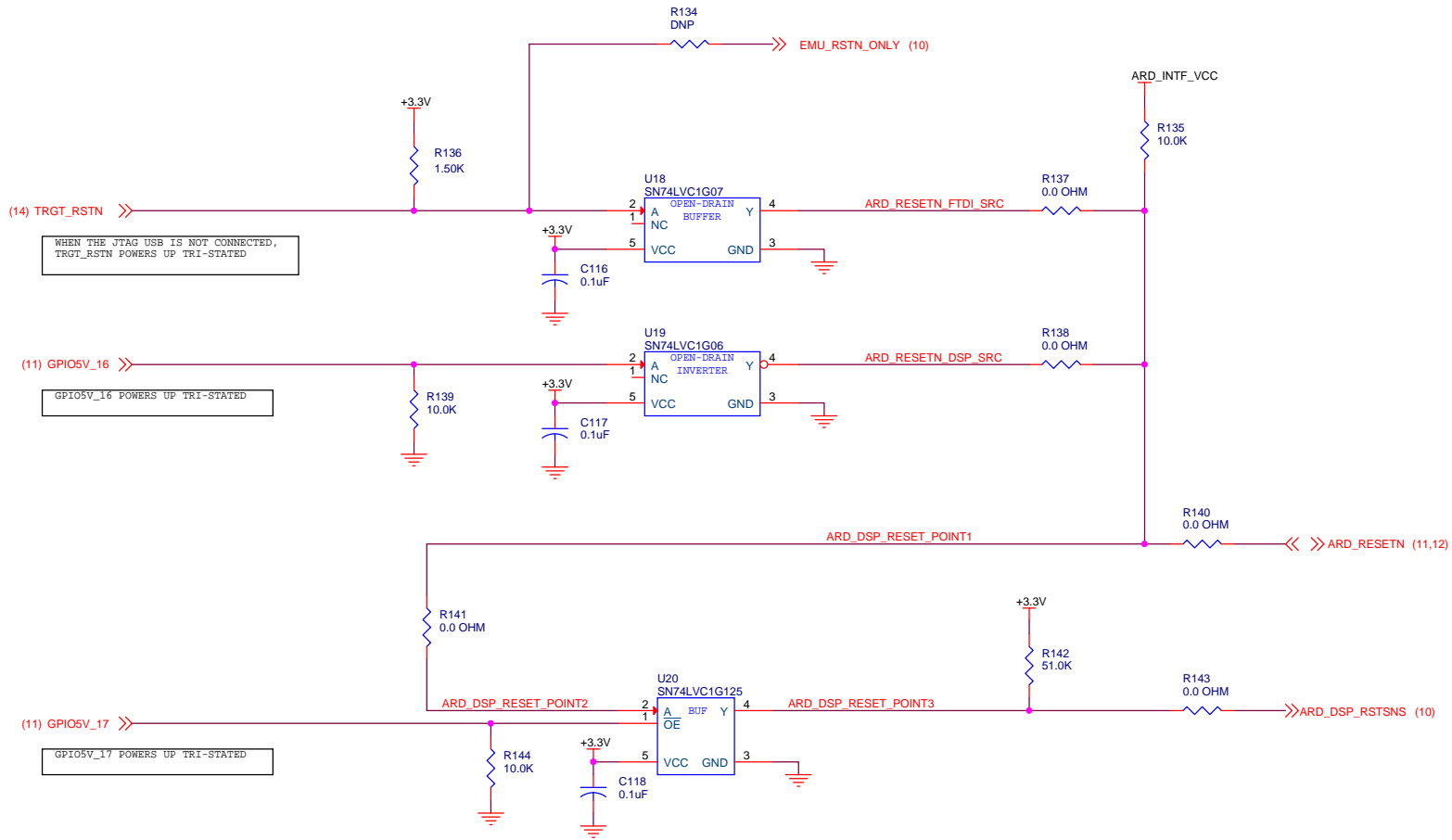
TXB0102 IS AN ACTIVE PULLUP

GPIO5V_12, GPIO5V_13, GPIO5V_14, GPIO5V_15 POWER UP TRI-STATED.

WHEN THE JTAG USB IS NOT CONNECTED, TRGT_TXD POWERS UP TRI-STATED.

ARDUINO/DSP/FTDI UART MULTIPLEXING

TEXAS INSTRUMENTS DALLAS, TEXAS		Title ARDUINO INTERFACE 2	
		Size B	Rev A
CAGE Code		DWG NO C5517 DSPSHIELD	
Scale		Monday, October 26, 2015	Sheet 12 of 14



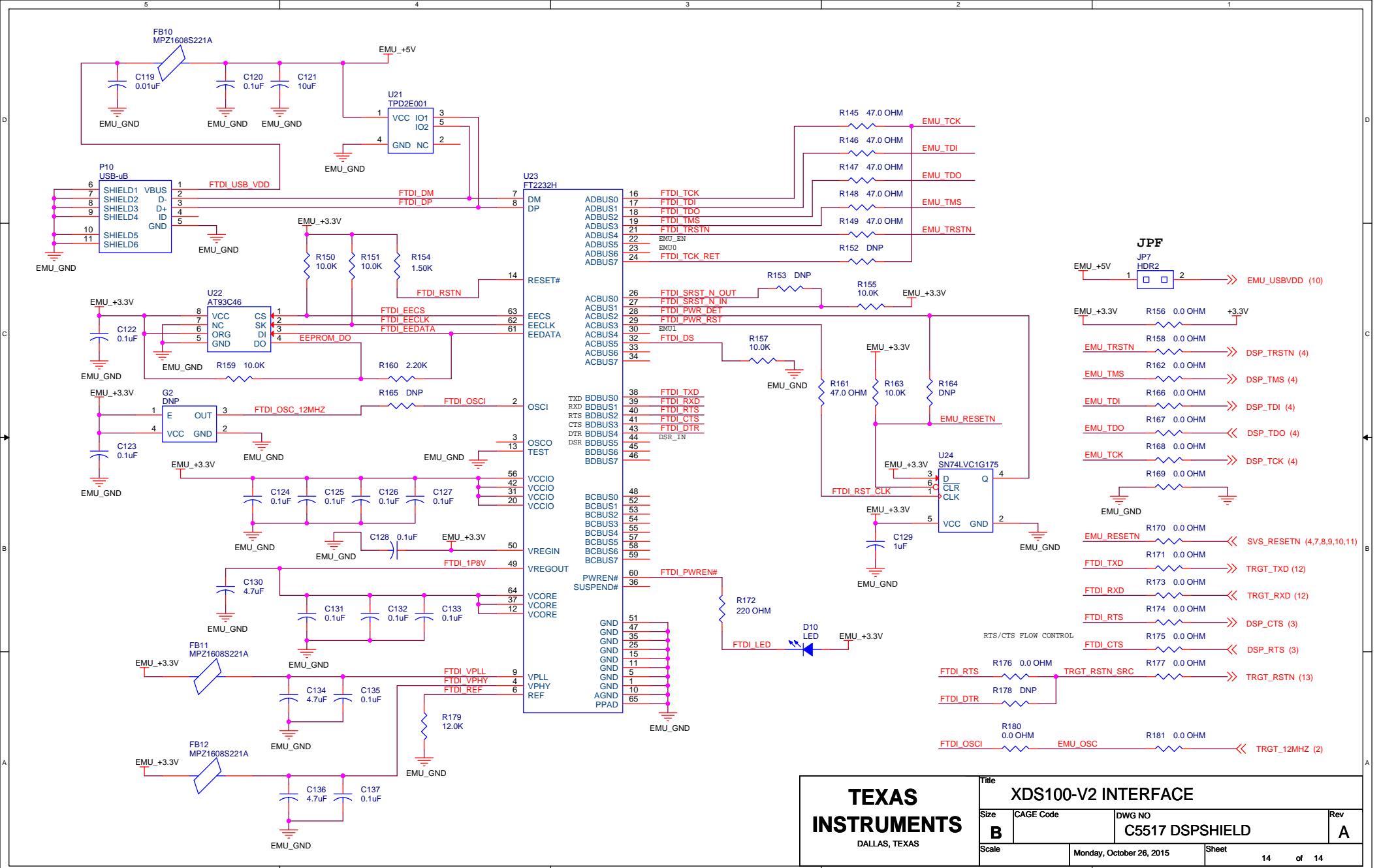
WHEN THE JTAG USB IS NOT CONNECTED,
TRGT_RSTN POWERS UP TRI-STATED

GPIO5V_16 POWERS UP TRI-STATED

GPIO5V_17 POWERS UP TRI-STATED

ARDUINO/DSP/FTDI RESET

TEXAS INSTRUMENTS DALLAS, TEXAS	Title ARDUINO INTERFACE 3		
	Size B	CAGE Code	Rev A
	DWG NO C5517 DSPSHIELD		Scale
	Monday, October 26, 2015		Sheet 13 of 14



TEXAS INSTRUMENTS DALLAS, TEXAS		Title XDS100-V2 INTERFACE		
		Size B	CAGE Code	DWG NO C5517 DSPSHIELD
Scale		Monday, October 26, 2015	Sheet 14 of 14	