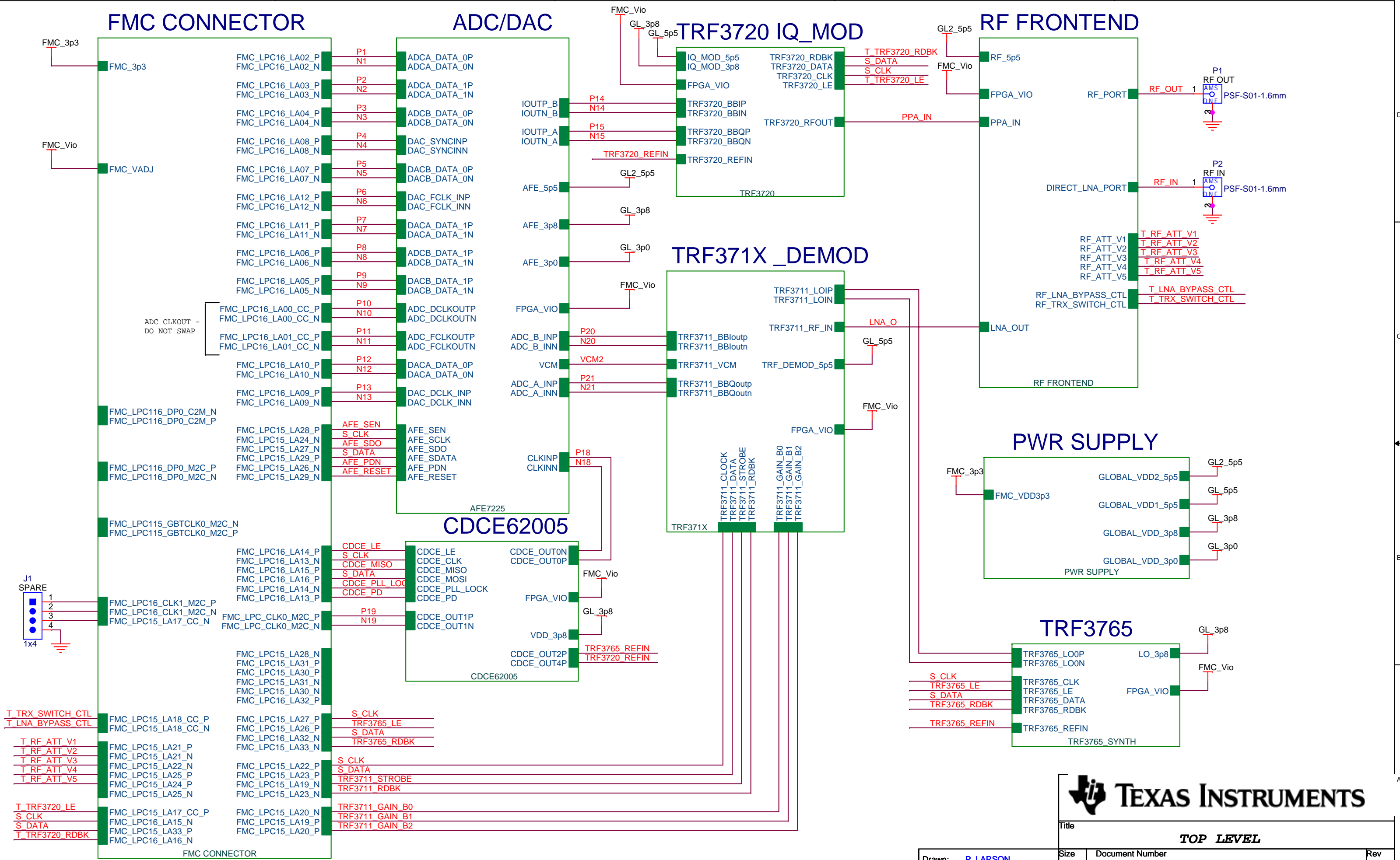


# FMC CONNECTOR

# ADC/DAC

# TRF3720 IQ\_MOD

# RF FRONTEND



**TEXAS INSTRUMENTS**

Title: **TOP LEVEL**

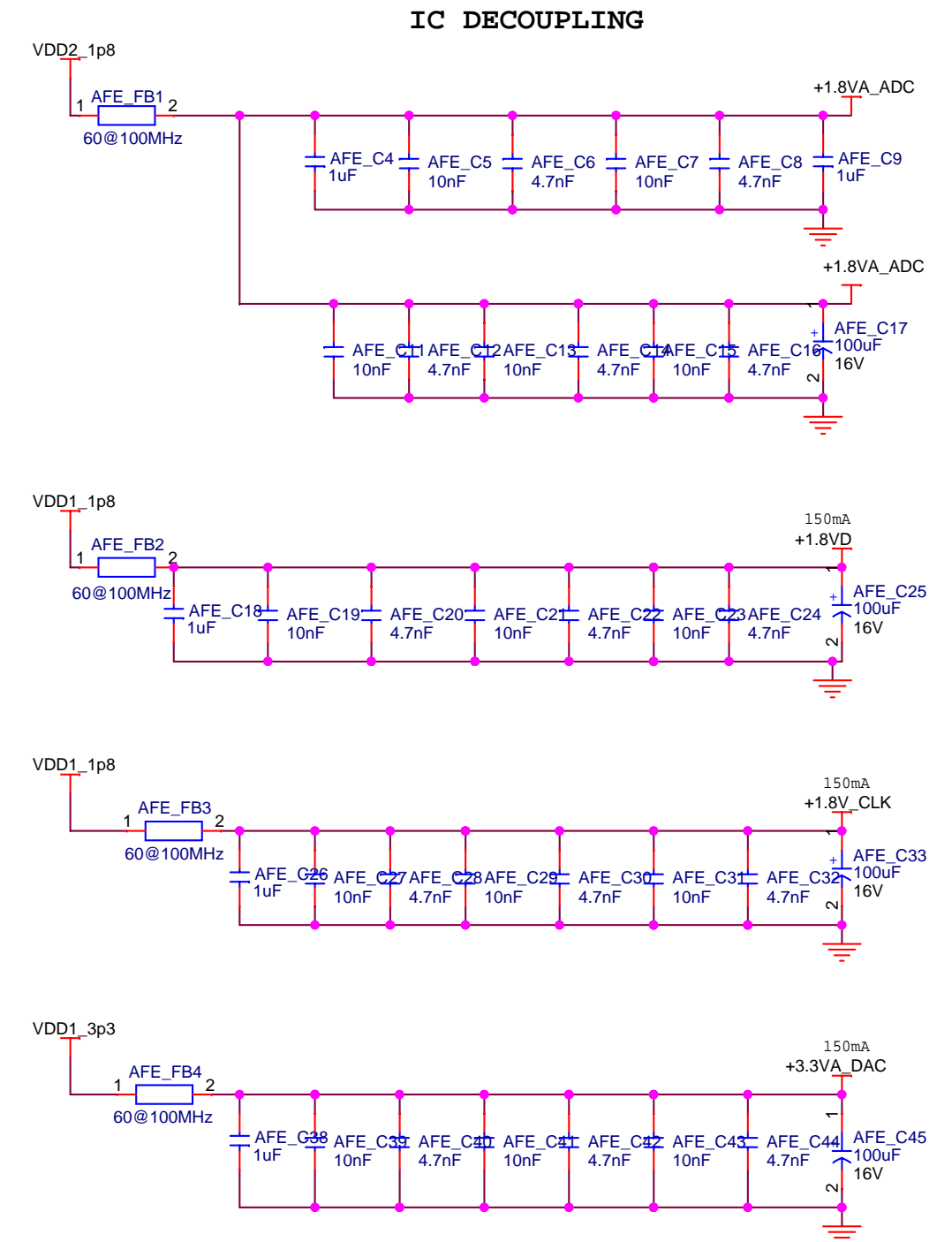
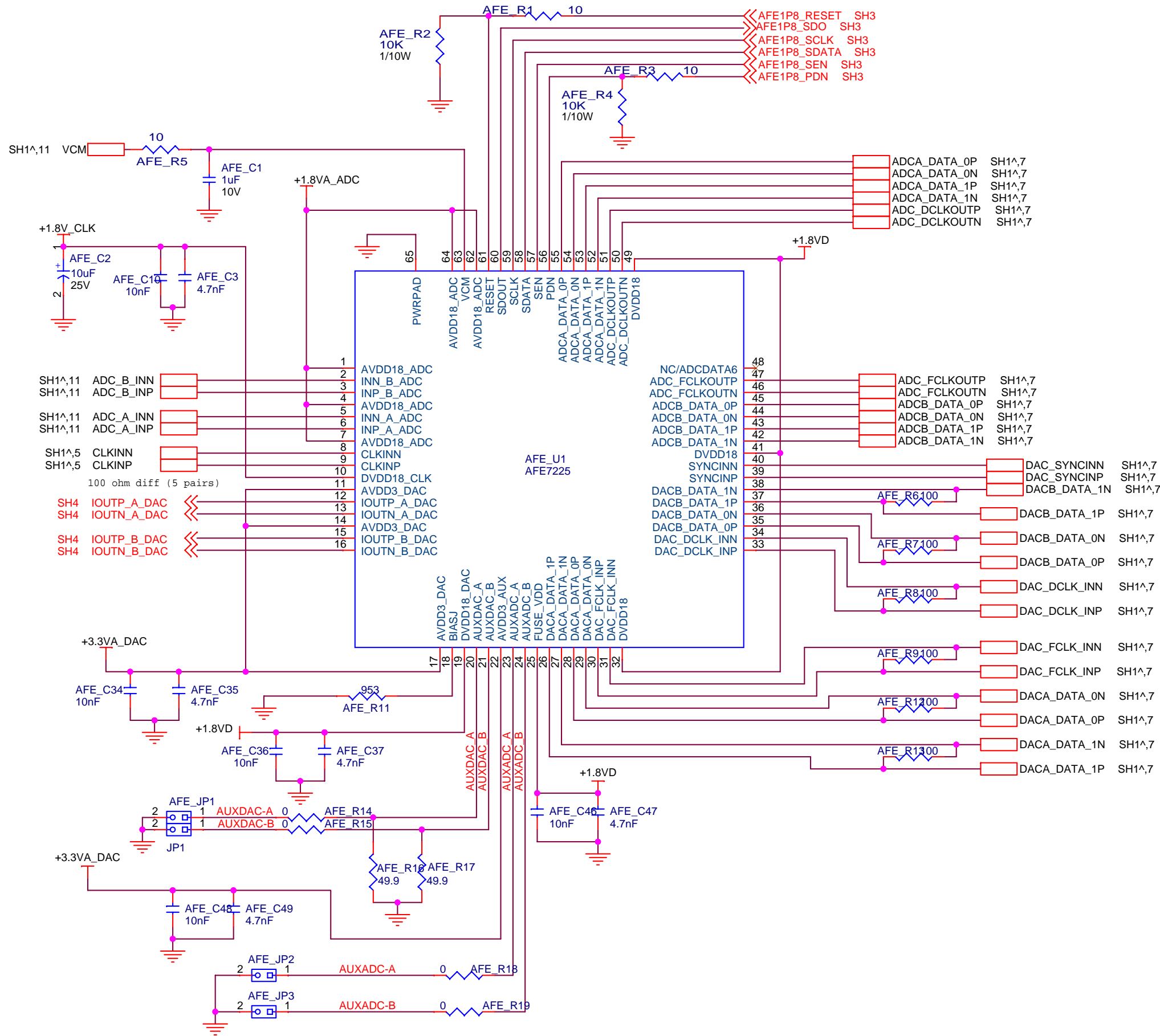
Size: **B** | Document Number: **TSW4300** | Rev: **A**

Drawn: **P. LARSON** | Engineer: **P. HANISH**

Date: **Friday, July 08, 2011** | Sheet: **1** of **17**

NOTE: DNI = DO NOT INSTALL

# High speed DAC/ADC solution based on AFE7225

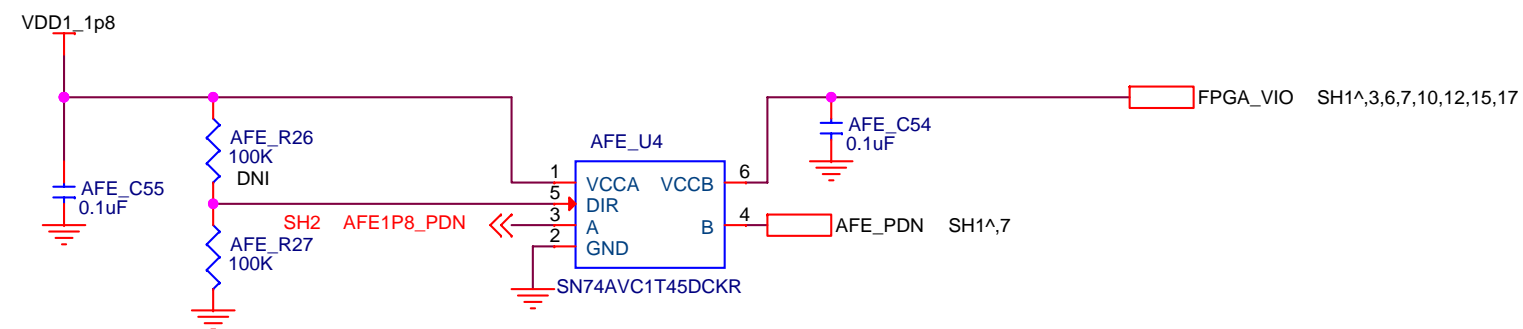
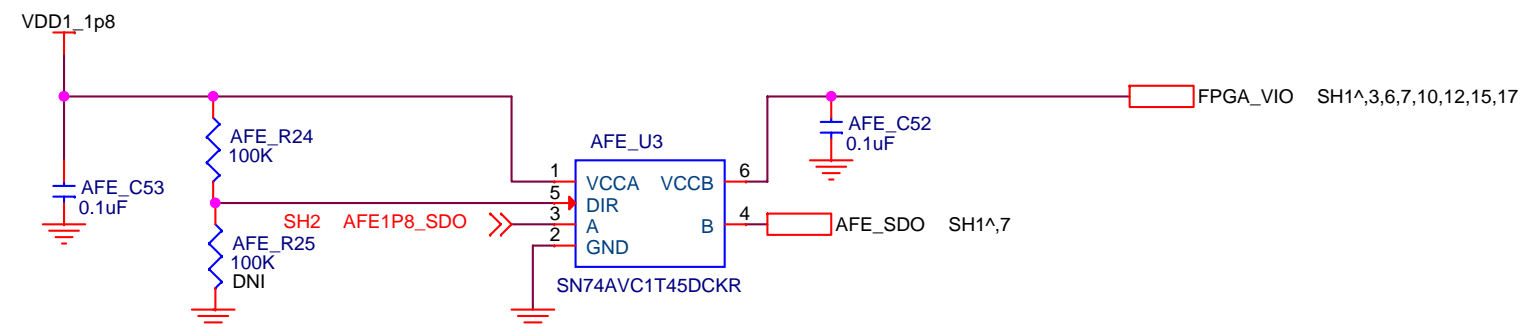
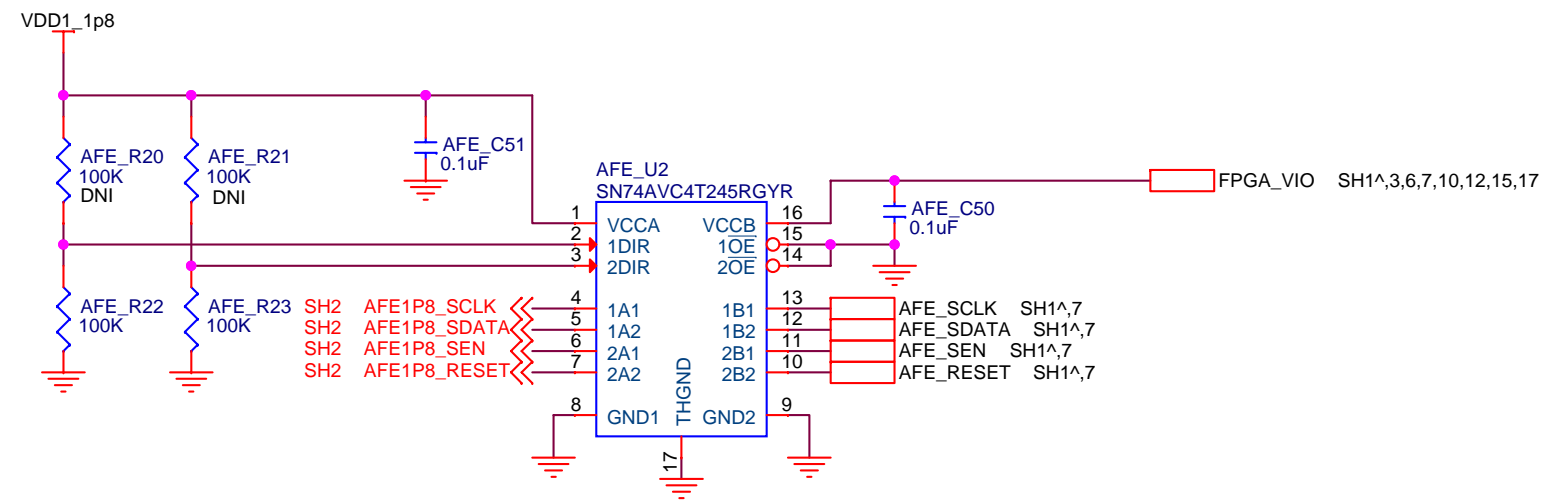


**TEXAS INSTRUMENTS**

Title		
<b>AFE7225</b>		
Size	Document Number	Rev
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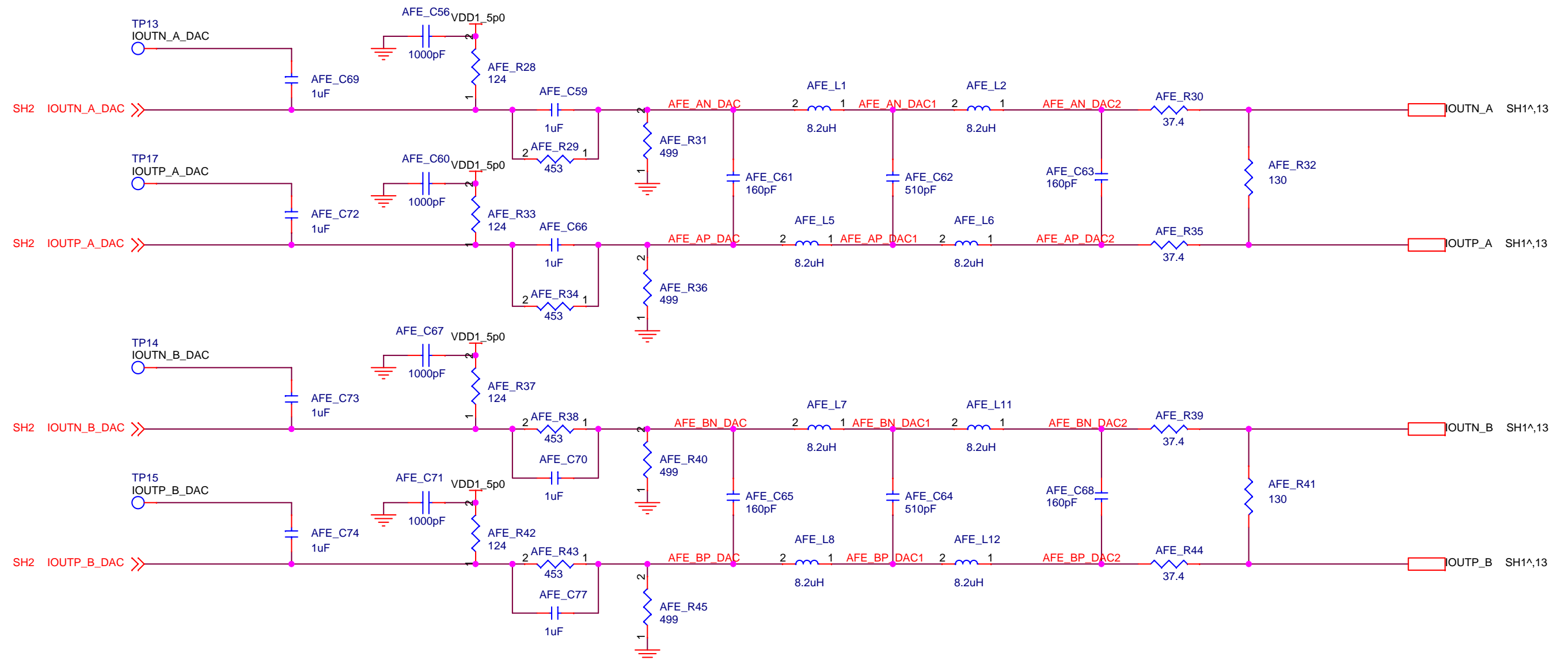
NOTE: DNI = DO NOT INSTALL

# Level shifters for AFE7225



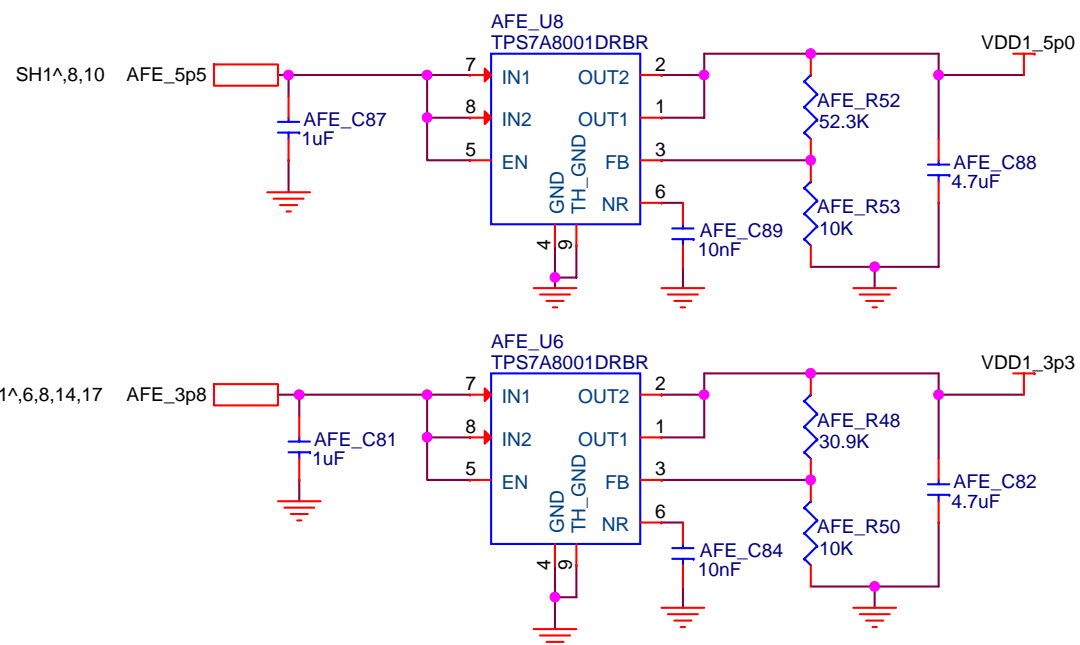
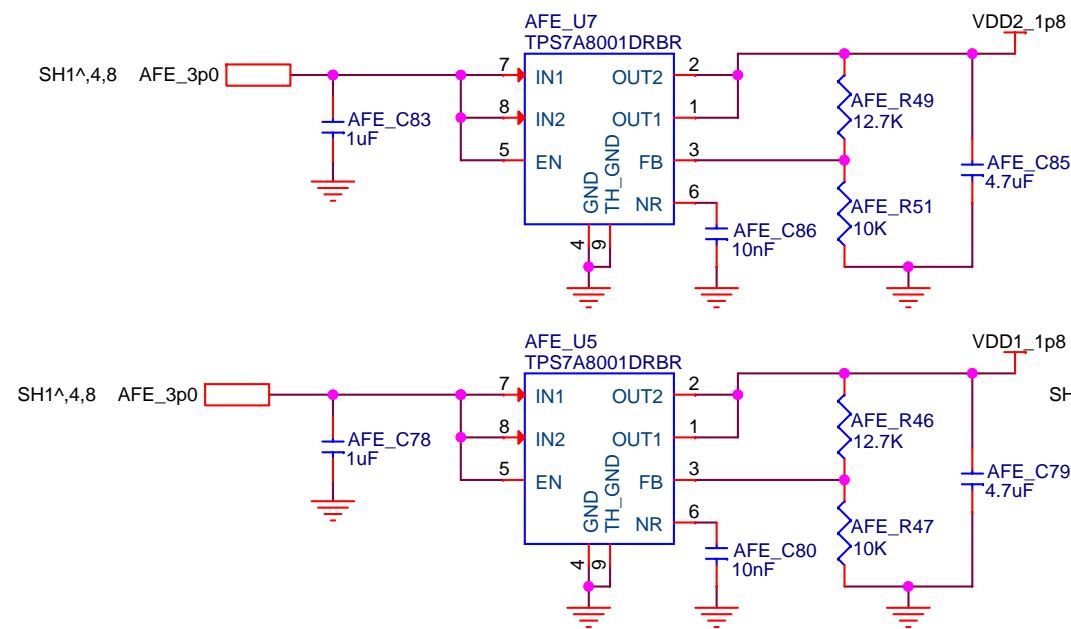
Title		
AFE7225		
Size	Document Number	Rev
B	TSW4300	A
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# Antialiasing filters for DAC outputs & local LDO's



## Local 1.8 LDO's

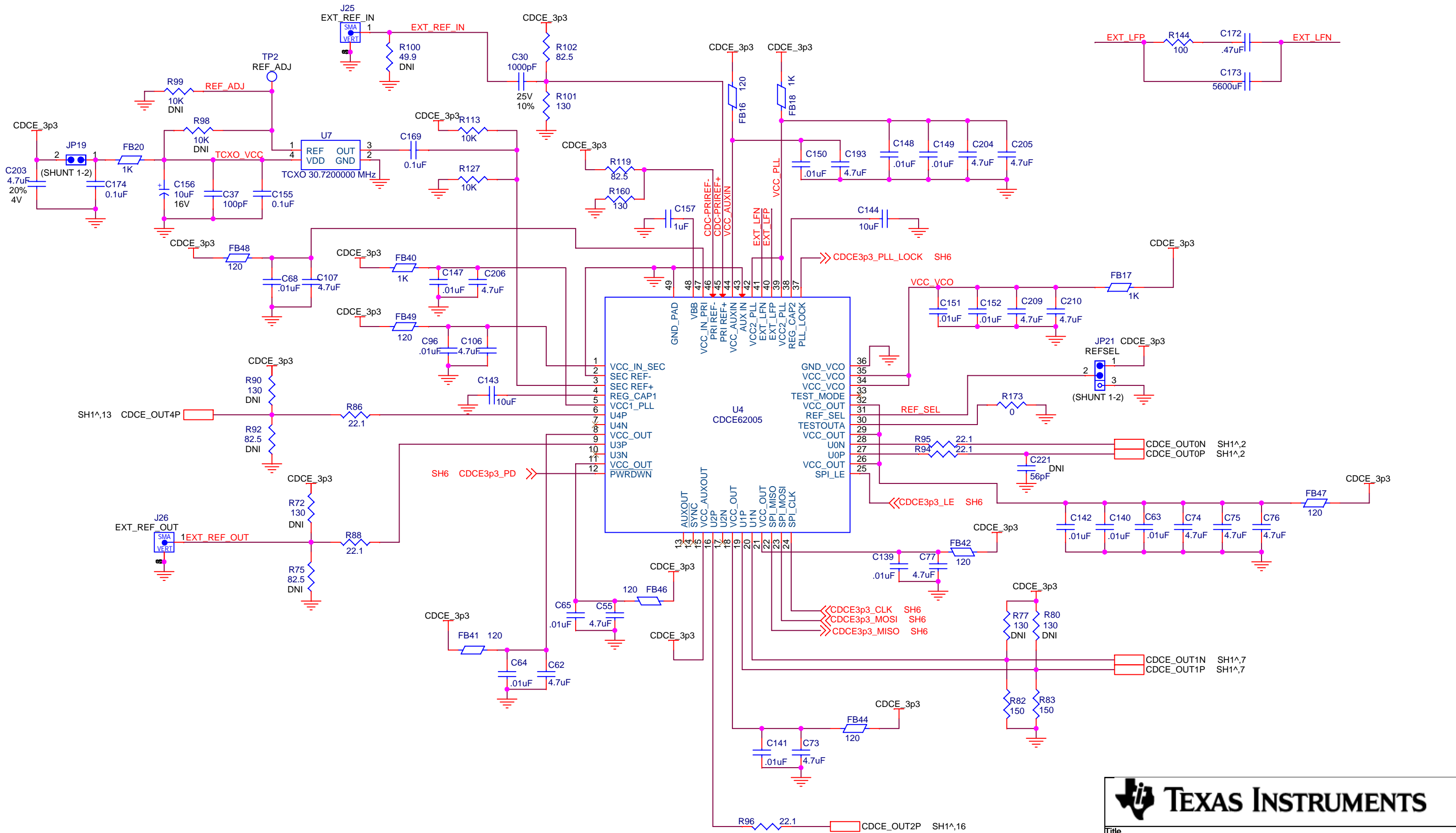
## Local 3.3 and 5.0V LDO's



Title <b>DAC Antialiasing filter for AFE7225</b>		
Size <b>B</b>	Document Number <b>TSW4300</b>	Rev <b>A</b>
Date: Friday, July 08, 2011	Sheet 4	of 17

NOTE: DNI = DO NOT INSTALL

# CDCE62005 clock gen



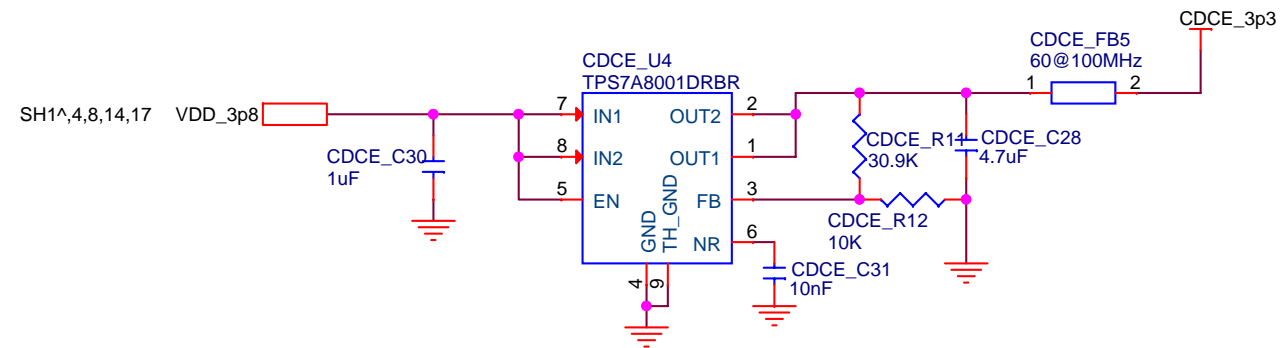
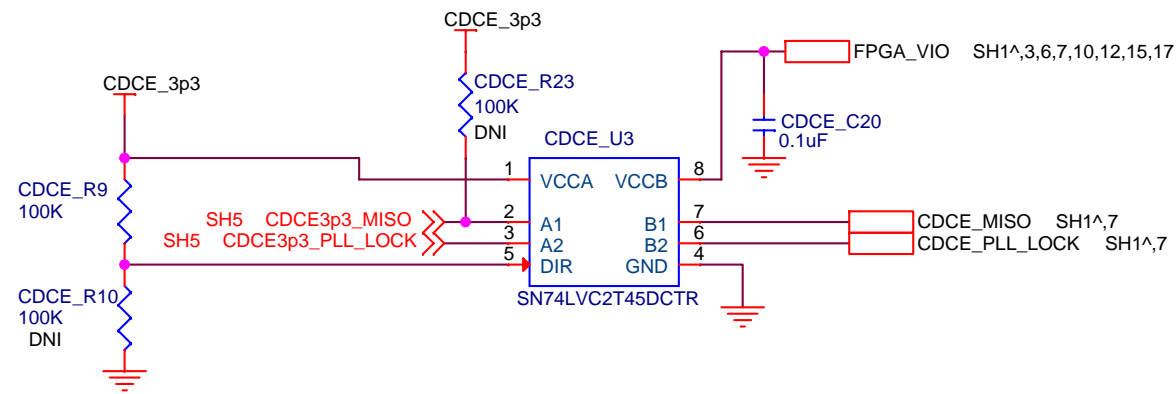
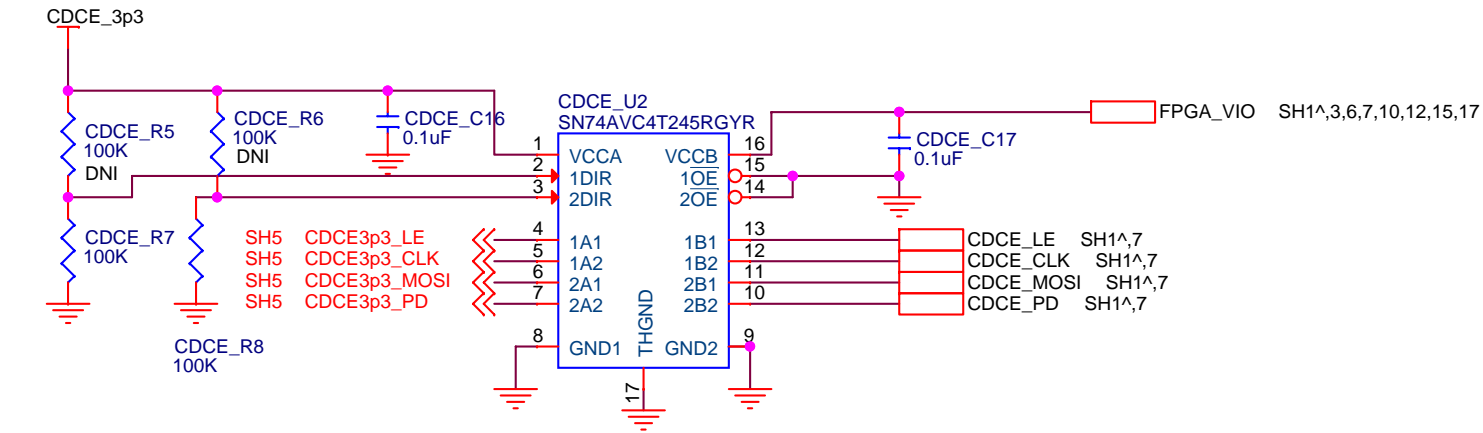
**TEXAS INSTRUMENTS**

Title: **CDCE62005 CLOCK GEN**

Size: <b>B</b>	Document Number: <b>TSW4300</b>	Rev: <b>A</b>
Date: Friday, July 08, 2011	Sheet: 5	of 17

NOTE: DNI = DO NOT INSTALL

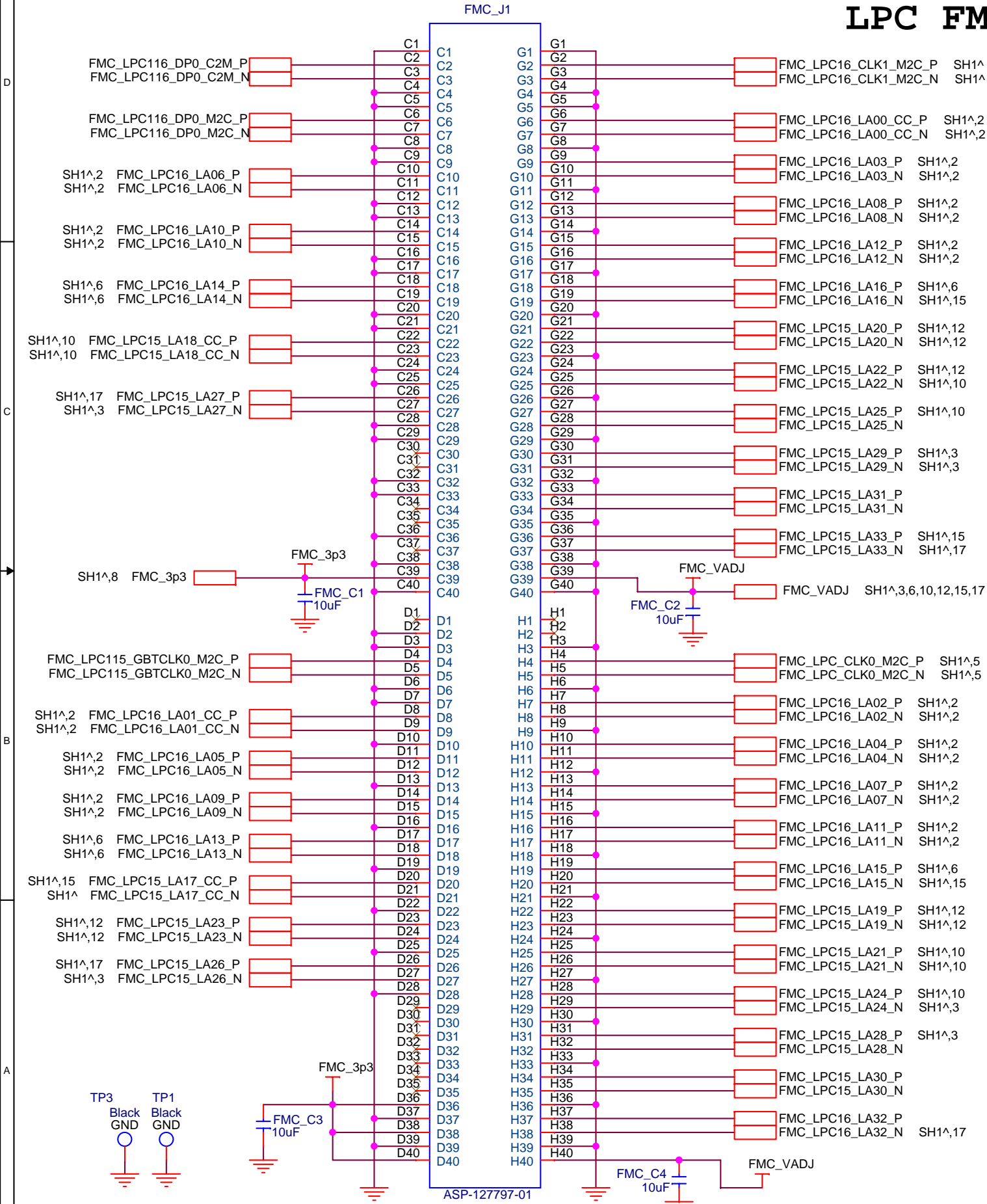
# Level shifters and power for CDCE62005



Title <b>CDCE62005 Level Shifters and PSU</b>		
Size <b>B</b>	Document Number <b>TSW4300</b>	Rev <b>A</b>
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# Xilinx FMC connector (LPC version)

## LPC FMC



LPC PIN ASSIGNMENTS TAKEN FROM PAGE 64, 65 OF ML605 HARDWARE USER GUIDE, UG534, MAY18, 2010  
IO BANK ASSIGNMENTS WERE TABULATED BY HAND USING XTP052\_ML605\_SCHEMATICS.PDF

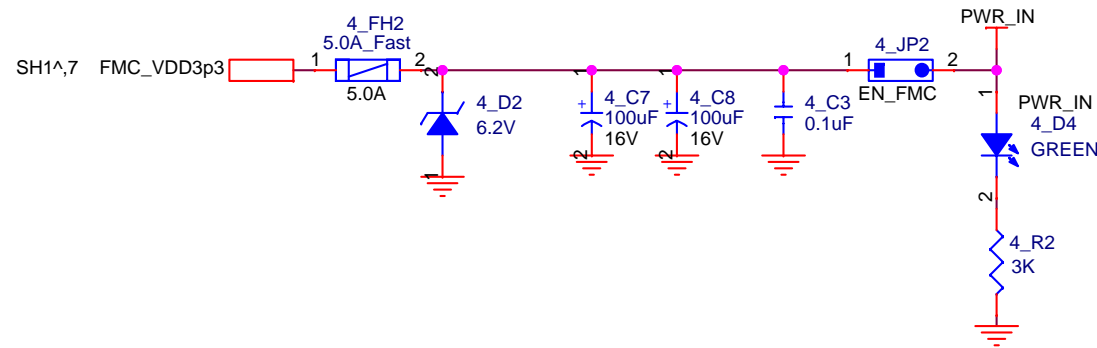
J63_FMC_LPC_Pin	Schematic_Net_Name	U1_FPGA_Pin	IO BANK	J63_FMC_LPC_Pin	Schematic_Net_Name	U1_FPGA_Pin	IO BANK
C2	FMC_LPC_DP0_C2M_P	D1	116	D4	FMC_LPC_GBTCLK0_M2C_P	M6	115
C3	FMC_LPC_DP0_C2M_N	D2	116	D5	FMC_LPC_GBTCLK0_M2C_N	M5	115
C6	FMC_LPC_DP0_M2C_P	G3	116	D8	FMC_LPC_LA01_CC_P	F31	16
C7	FMC_LPC_DP0_M2C_N	G4	116	D9	FMC_LPC_LA01_CC_N	E31	16
C10	FMC_LPC_LA06_P	K33	16	D11	FMC_LPC_LA05_P	H34	16
C11	FMC_LPC_LA06_N	J34	16	D12	FMC_LPC_LA05_N	H33	16
C14	FMC_LPC_LA10_P	F30	16	D14	FMC_LPC_LA09_P	L25	16
C15	FMC_LPC_LA10_N	G30	16	D15	FMC_LPC_LA09_N	L26	16
C18	FMC_LPC_LA14_P	C33	16	D17	FMC_LPC_LA13_P	D34	16
C19	FMC_LPC_LA14_N	B34	16	D18	FMC_LPC_LA13_N	C34	16
C22	FMC_LPC_LA18_CC_P	L29	15	D20	FMC_LPC_LA17_CC_P	N28	15
C23	FMC_LPC_LA18_CC_N	L30	15	D21	FMC_LPC_LA17_CC_N	N29	15
C26	FMC_LPC_LA27_P	R31	15	D23	FMC_LPC_LA23_P	R28	15
C27	FMC_LPC_LA27_N	R32	15	D24	FMC_LPC_LA23_N	R27	15
				D26	FMC_LPC_LA26_P	L33	15
				D27	FMC_LPC_LA26_N	M32	15
G2	FMC_LPC_CLK1_M2C_P	F33	16	H2	FMC_LPC_PRSNT_M2C_L	AD9	34
G3	FMC_LPC_CLK1_M2C_N	G33	16	H4	FMC_LPC_CLK0_M2C_P	A10	34
G6	FMC_LPC_LA00_CC_P	K26	16	H5	FMC_LPC_CLK0_M2C_N	B10	34
G7	FMC_LPC_LA00_CC_N	K27	16	H7	FMC_LPC_LA02_P	G31	16
G9	FMC_LPC_LA03_P	J31	16	H8	FMC_LPC_LA02_N	H30	16
G10	FMC_LPC_LA03_N	J32	16	H10	FMC_LPC_LA04_P	K28	16
G12	FMC_LPC_LA08_P	J30	16	H11	FMC_LPC_LA04_N	J29	16
G13	FMC_LPC_LA08_N	K29	16	H13	FMC_LPC_LA07_P	G32	16
G15	FMC_LPC_LA12_P	E32	16	H14	FMC_LPC_LA07_N	H32	16
G16	FMC_LPC_LA12_N	E33	16	H16	FMC_LPC_LA11_P	D31	16
G18	FMC_LPC_LA16_P	A33	16	H17	FMC_LPC_LA11_N	D32	16
G19	FMC_LPC_LA16_N	B33	16	H19	FMC_LPC_LA15_P	C32	16
G21	FMC_LPC_LA20_P	P29	15	H20	FMC_LPC_LA15_N	B32	16
G22	FMC_LPC_LA20_N	R29	15	H22	FMC_LPC_LA19_P	M30	15
G24	FMC_LPC_LA22_P	N27	15	H23	FMC_LPC_LA19_N	N30	15
G25	FMC_LPC_LA22_N	P27	15	H25	FMC_LPC_LA21_P	R26	15
G27	FMC_LPC_LA25_P	P31	15	H26	FMC_LPC_LA21_N	T26	15
G28	FMC_LPC_LA25_N	P30	15	H28	FMC_LPC_LA24_P	N32	15
G30	FMC_LPC_LA29_P	N34	15	H29	FMC_LPC_LA24_N	P32	15
G31	FMC_LPC_LA29_N	P34	15	H31	FMC_LPC_LA28_P	N33	15
G33	FMC_LPC_LA31_P	M31	15	H32	FMC_LPC_LA28_N	M33	15
G34	FMC_LPC_LA31_N	L31	15	H34	FMC_LPC_LA30_P	M26	15
G36	FMC_LPC_LA33_P	K32	15	H35	FMC_LPC_LA30_N	M27	15
G37	FMC_LPC_LA33_N	K31	15	H37	FMC_LPC_LA32_P	N25	15
H38	FMC_LPC_LA32_N	M25	15				

### TEXAS INSTRUMENTS

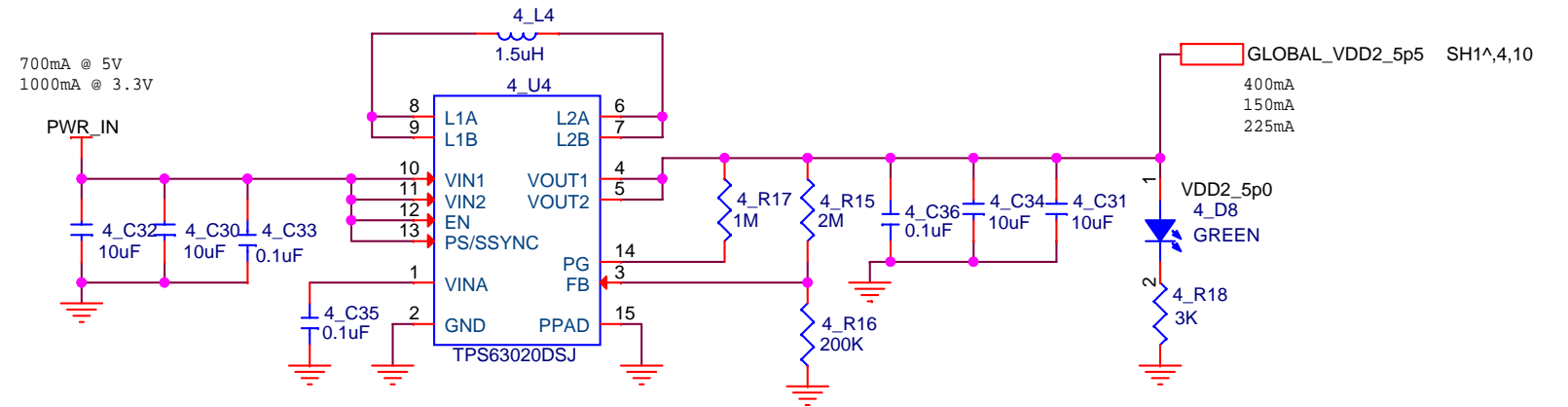
Title		
<b>FMC connector interface</b>		
Size	Document Number	Rev
<b>B</b>	<b>TSW4300</b>	<b>A</b>
Date:	Friday, July 08, 2011	Sheet 7 of 17

# Global power supply

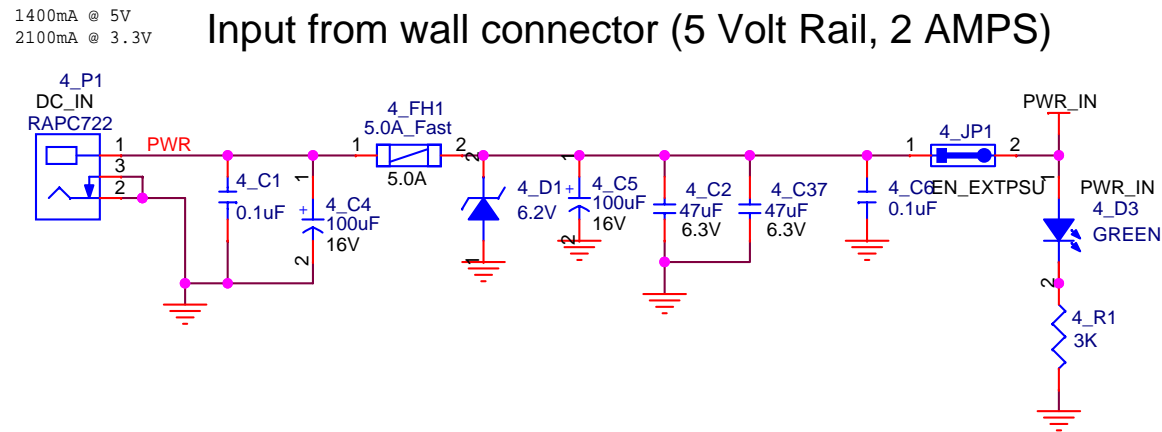
Input from FMC connector (3.3 Volt Rail, 3 AMPS)



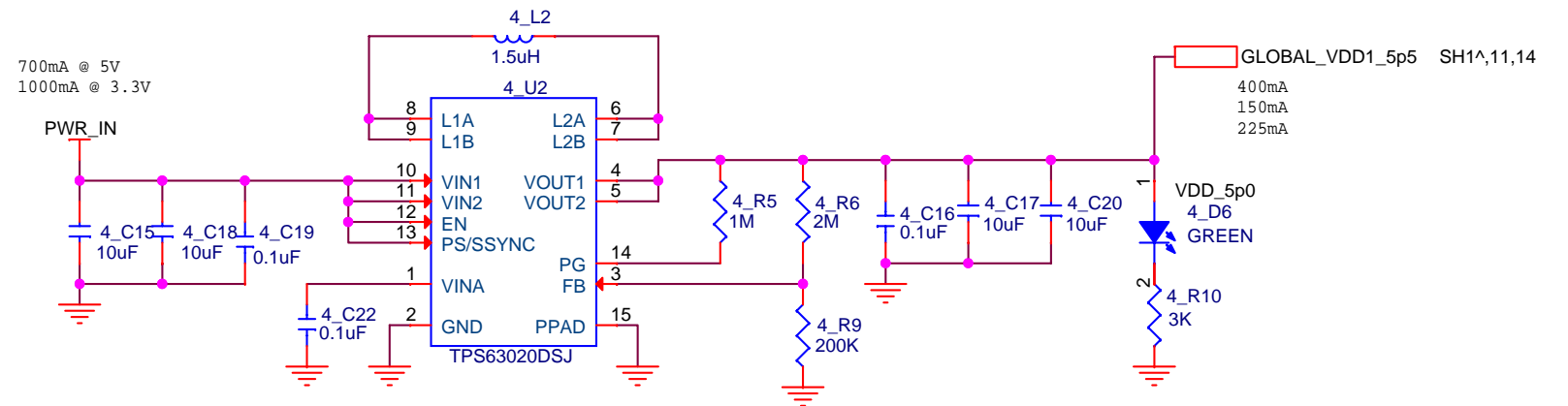
Generate 5.5V from Wall input 1.8-6.5V



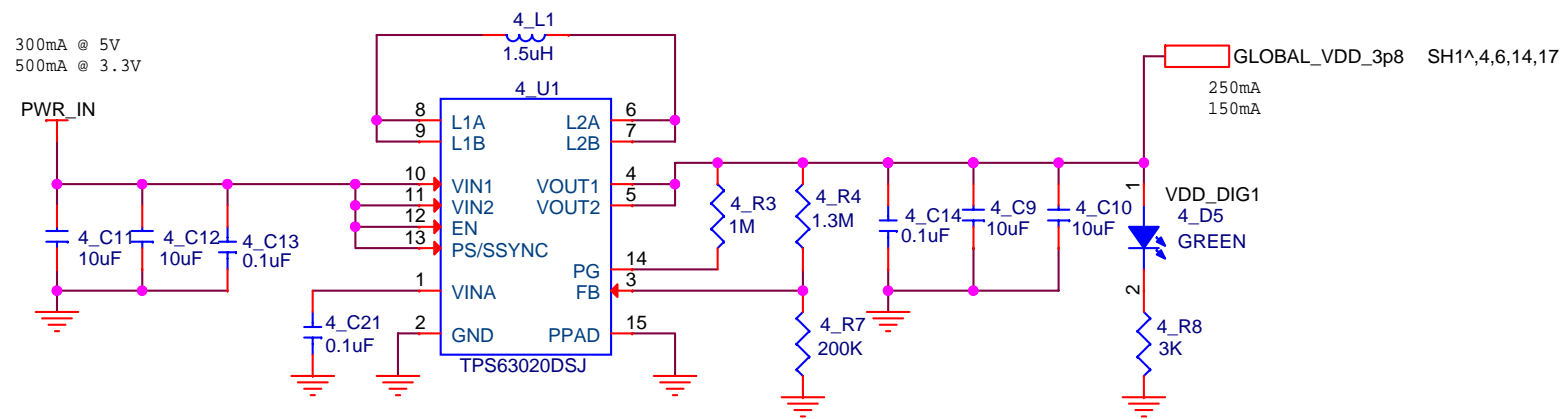
Input from wall connector (5 Volt Rail, 2 AMPS)



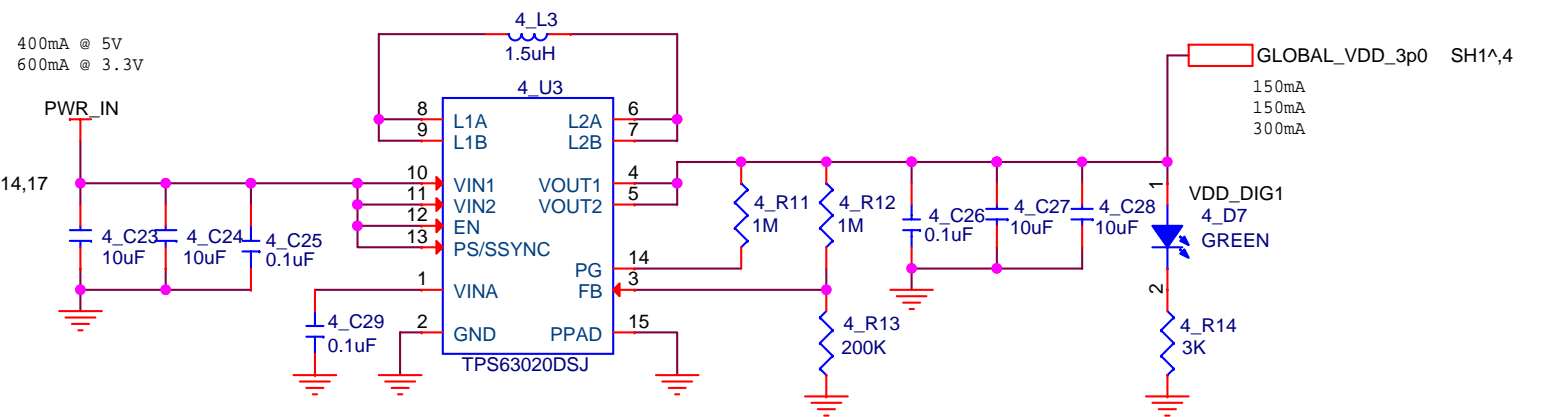
Generate 5.5V from Wall input 1.8-6.5V



Generate 3.8V from Wall input 1.8-6.5V



Generate 2.5V from Wall input 1.8-6.5V

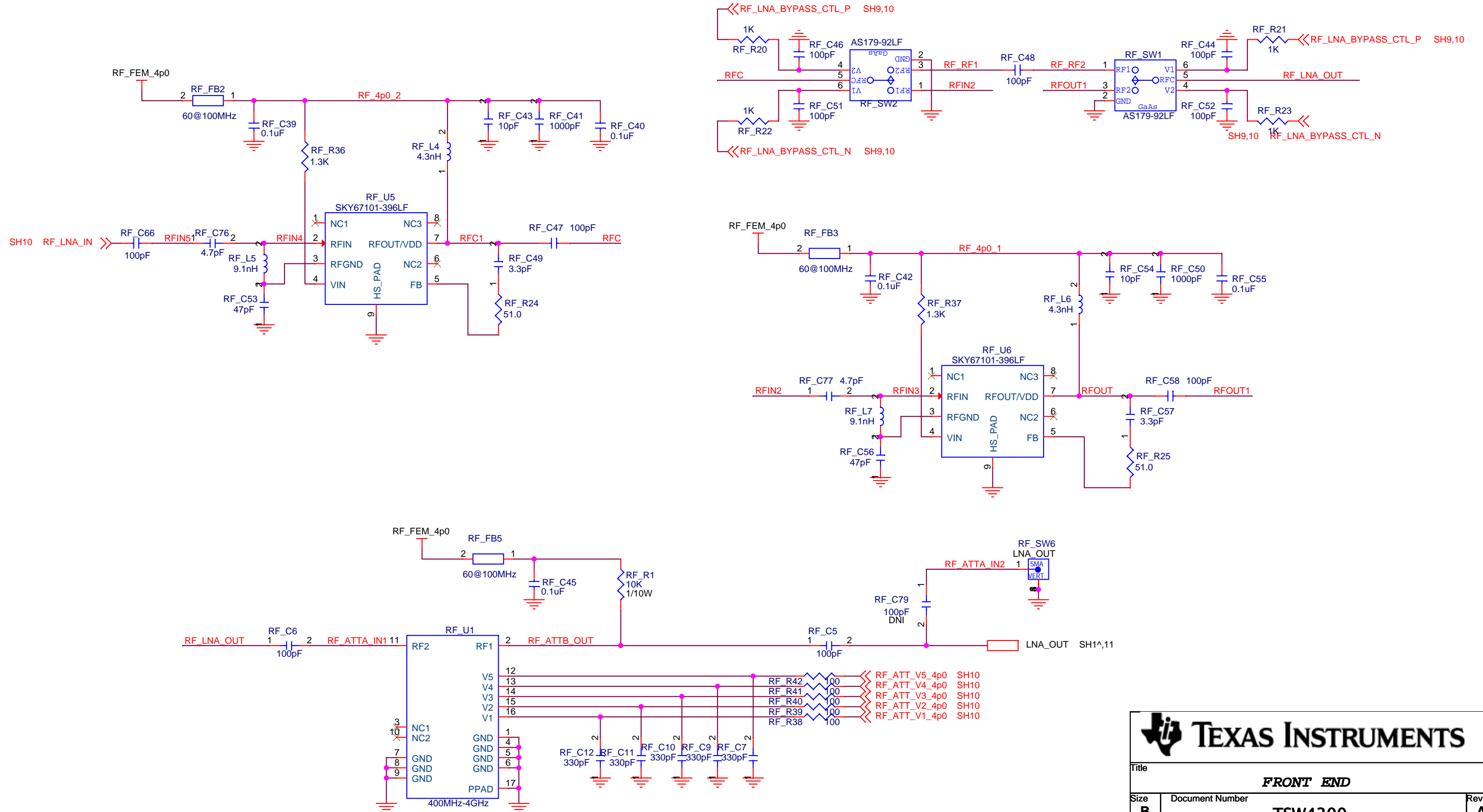


Title		
GLOBAL POWER SUPPLY		
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B	TSW4300	A
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NOTE: DNI = DO NOT INSTALL

# 2 Fixed gain LNA's, 1 bypass on second stage (<1dB NF, 36dB gain)



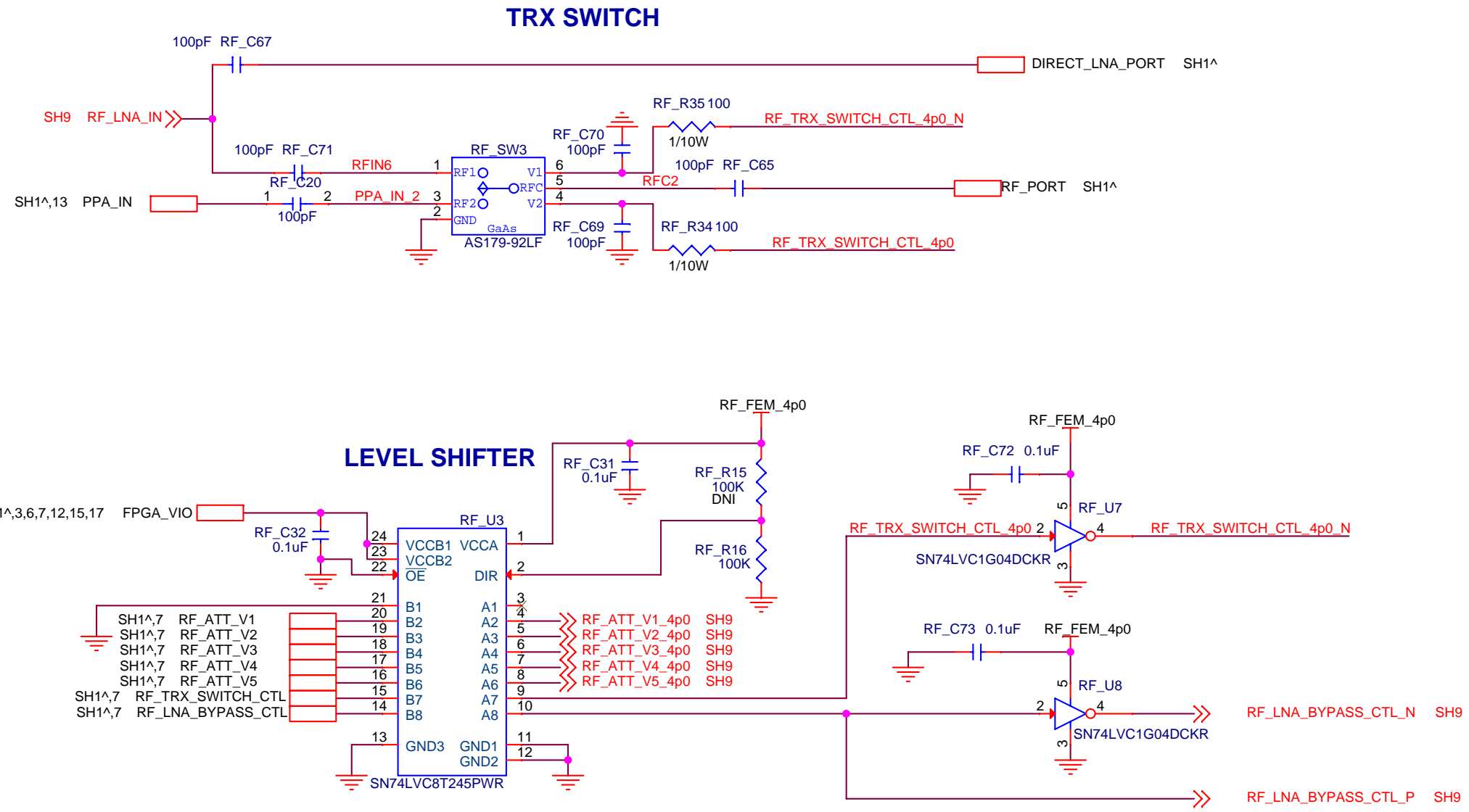
**TEXAS INSTRUMENTS**

Title: **FRONT END**

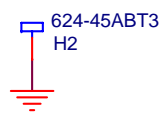
Size: <b>B</b>	Document Number: <b>TSW4300</b>	Rev: <b>A</b>
Date: Friday, July 08, 2011	Sheet: 9	of 17

NOTE: DNI = DO NOT INSTALL

# Level shifters for RF Frontend



## Heat Sink

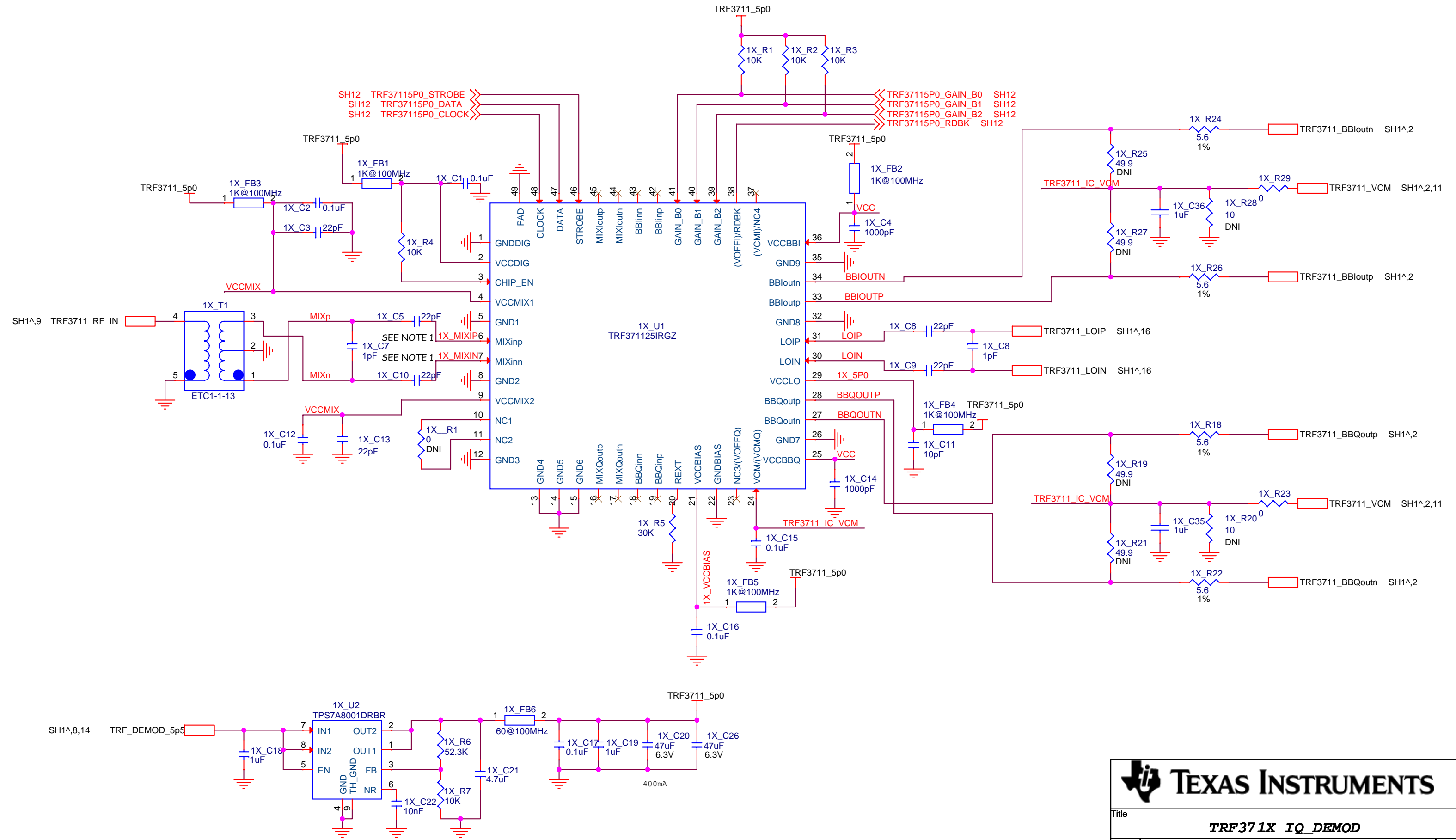


**TEXAS INSTRUMENTS**

Title		
FRONT END		
Size	Document Number	Rev
B	TSW4300	A
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NOTE: DNI = DO NOT INSTALL

# IQ DEMOD based on TRF3711xx



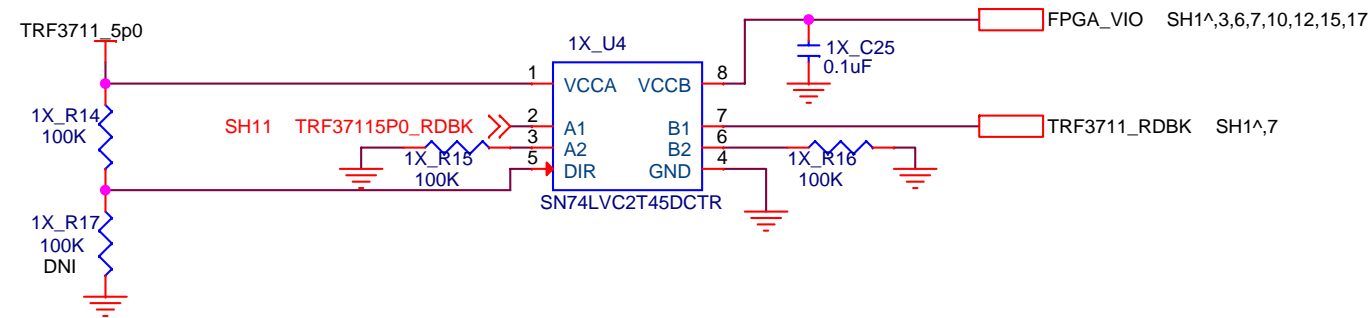
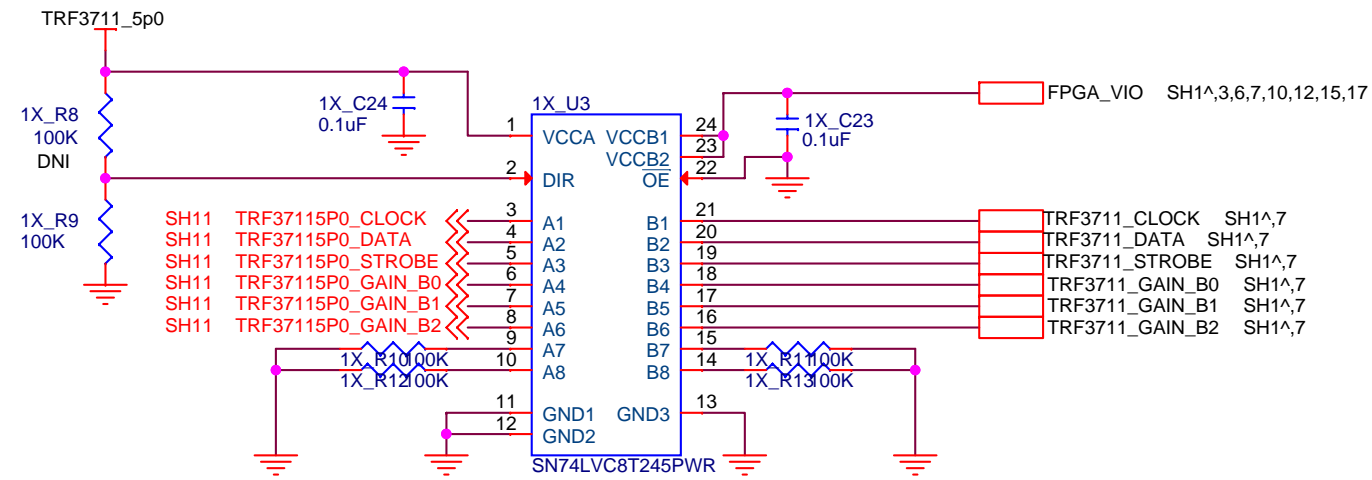
**TEXAS INSTRUMENTS**

Title: **TRF371X IQ DEMOD**

Size: <b>B</b>	Document Number: <b>TSW4300</b>	Rev: <b>A</b>
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NOTE: DNI = DO NOT INSTALL

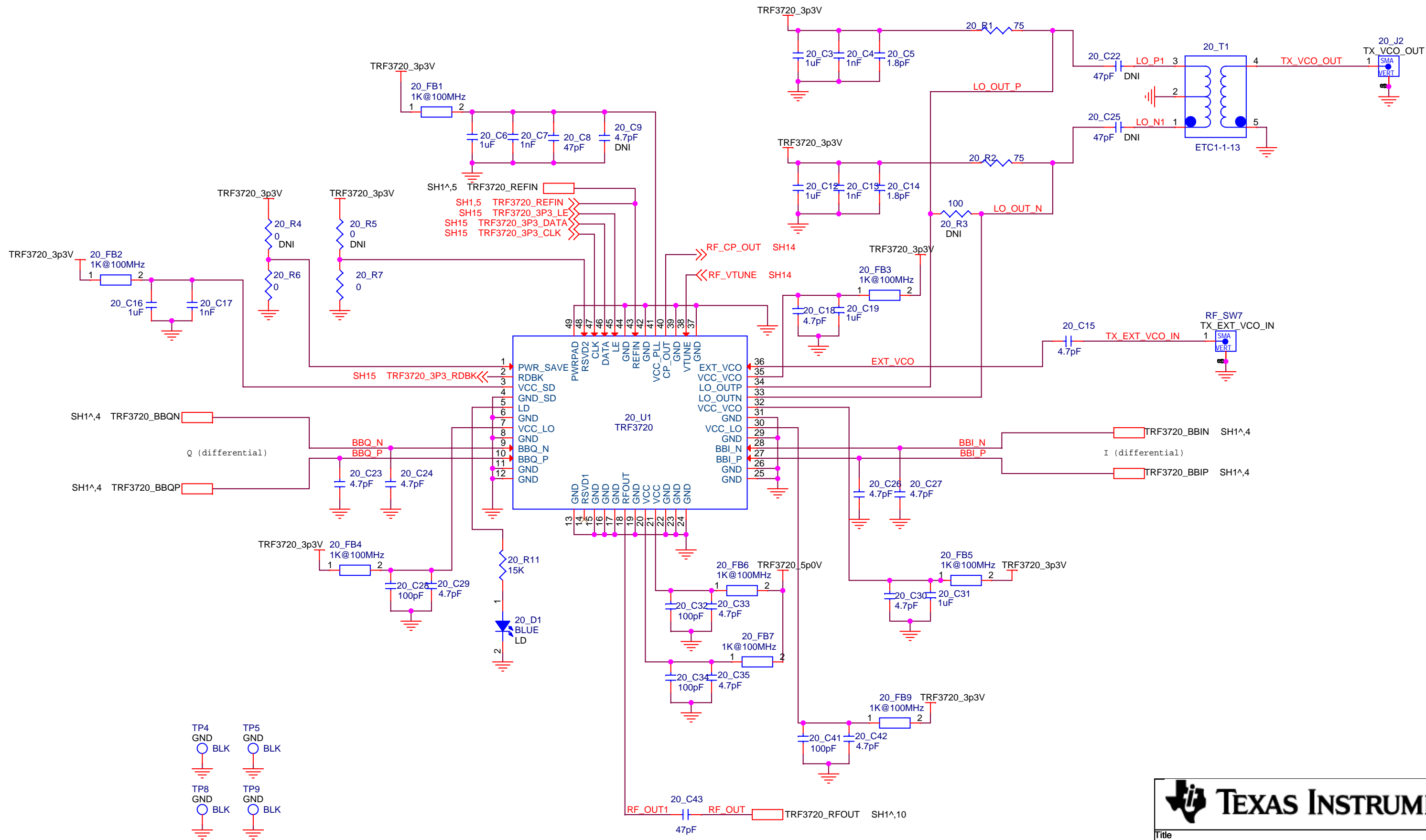
# Level shifters for TRF3711xx



Title		
Level shifters for TRF3711		
Size	Document Number	Rev
B	TSW4300	A
Date:	Friday, July 08, 2011	Sheet 12 of 17

NOTE: DNI = DO NOT INSTALL

# IQ modulator based on TRF3720



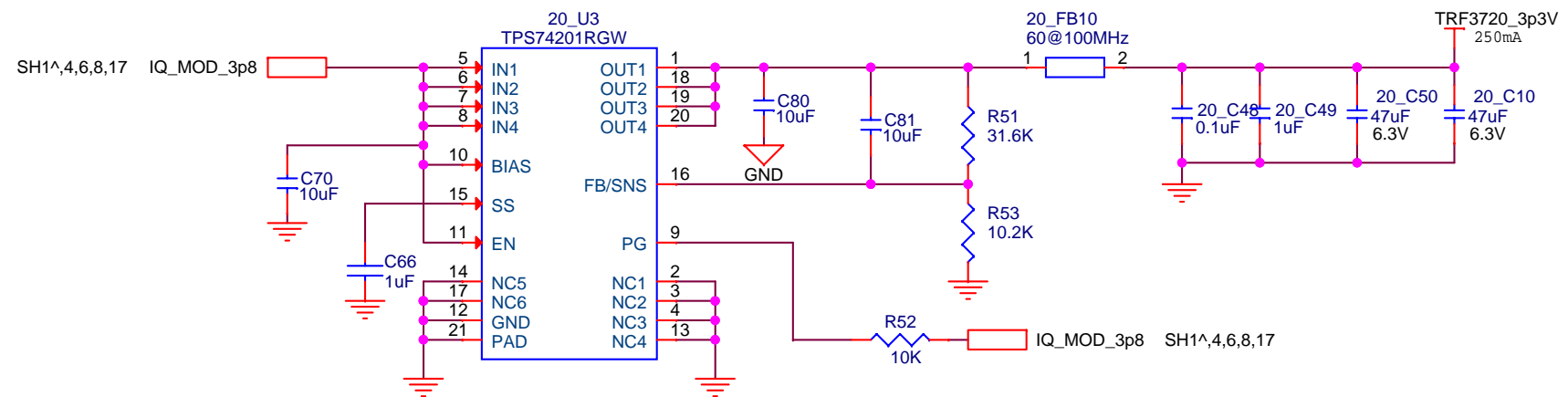
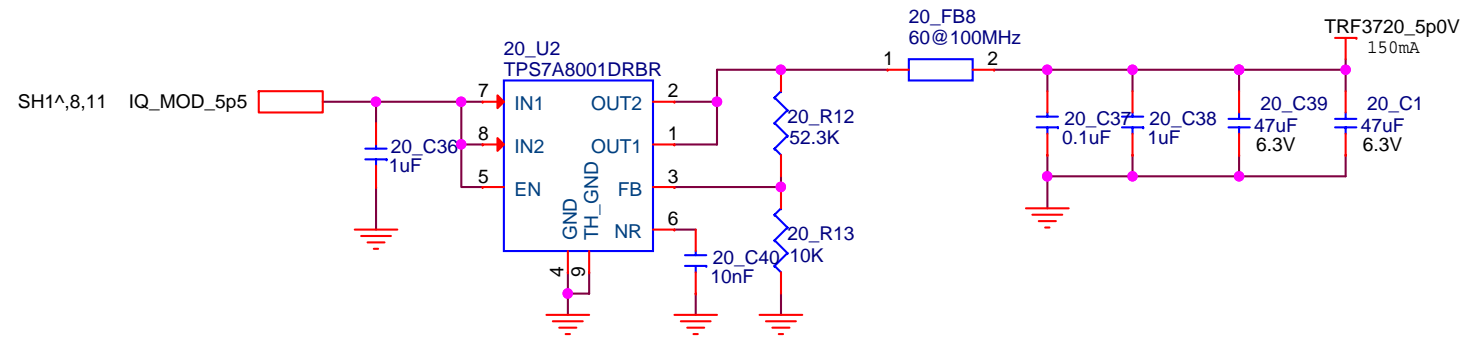
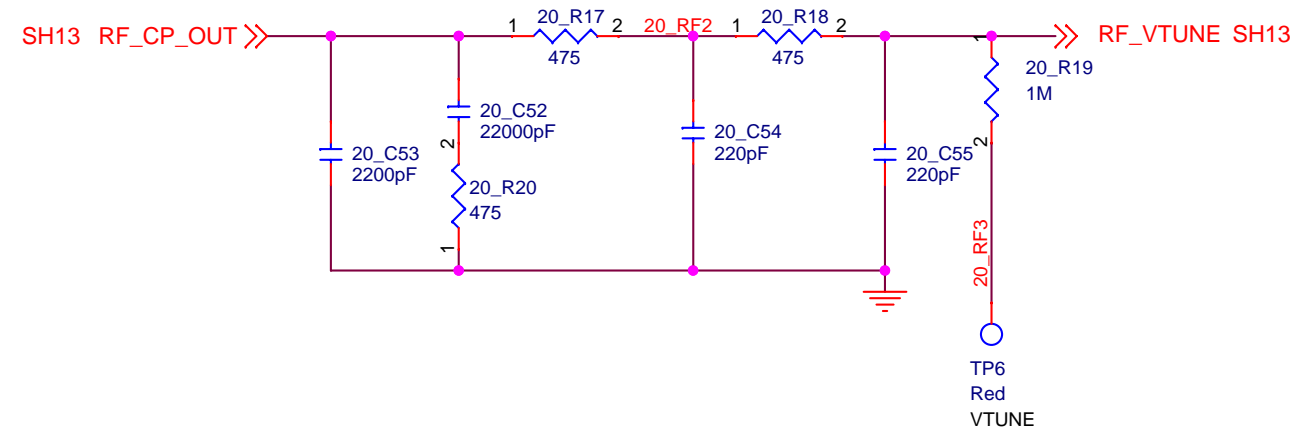
**TEXAS INSTRUMENTS**

Title: **TRF3720 IQ\_MOD**

Size <b>B</b>	Document Number <b>TSW4300</b>	Rev <b>A</b>
Date: Friday, July 08, 2011	Sheet 13 of 17	

# TRF3720 PLL filter and local LDO's

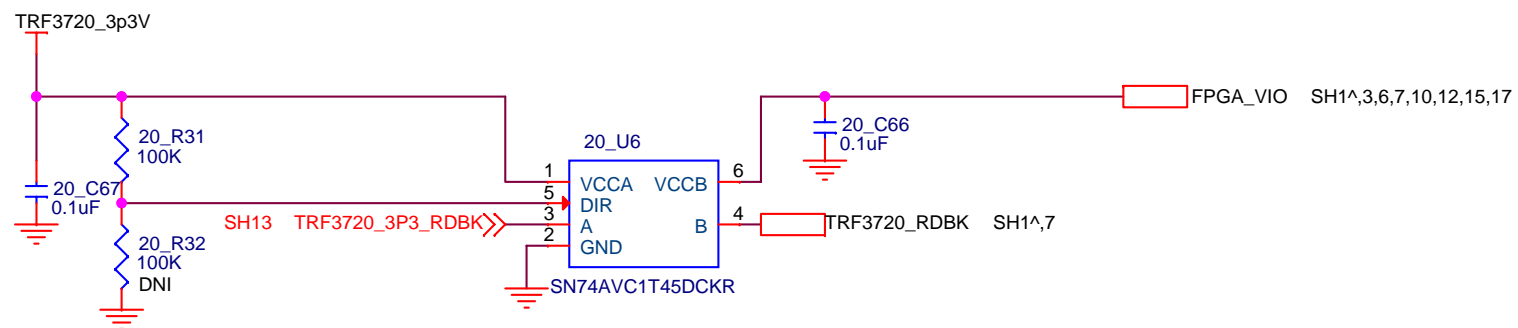
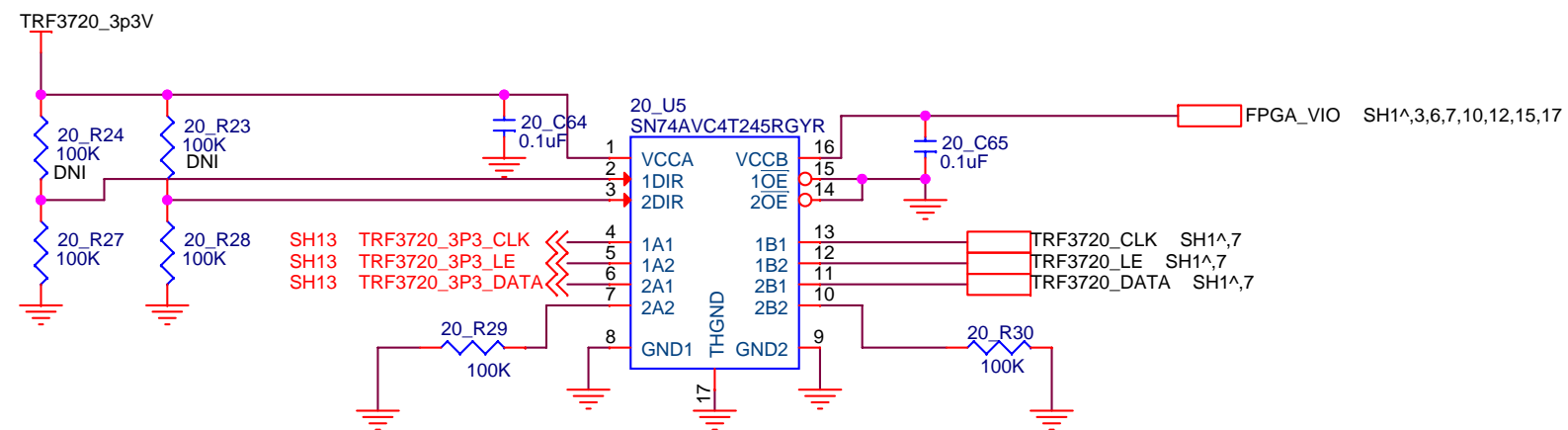
## RF VCO SELECT



Title <b>TRF3720 Reference and Loop filter</b>		
Size <b>B</b>	Document Number <b>TSW4300</b>	Rev <b>A</b>
Date: Friday, July 08, 2011	Sheet 14 of 17	

NOTE: DNI = DO NOT INSTALL

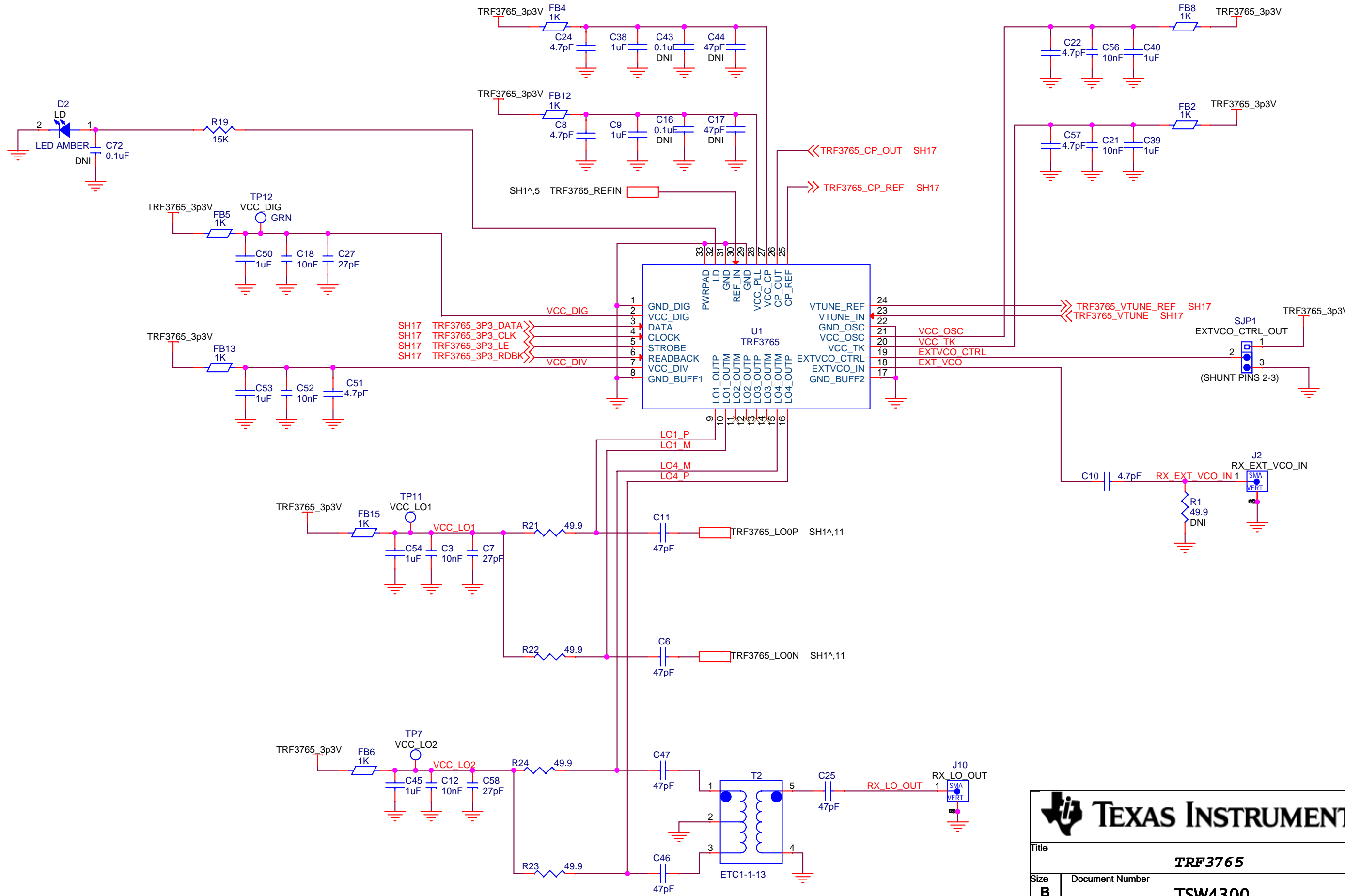
# Level shifters for TRF3720



Title		
TRF3720 Level shifters		
Size	Document Number	Rev
B	TSW4300	A
Date:	Friday, July 08, 2011	Sheet 15 of 17

NOTE: DNI = DO NOT INSTALL

# Synthesizer based on TRF3765



**TEXAS INSTRUMENTS**

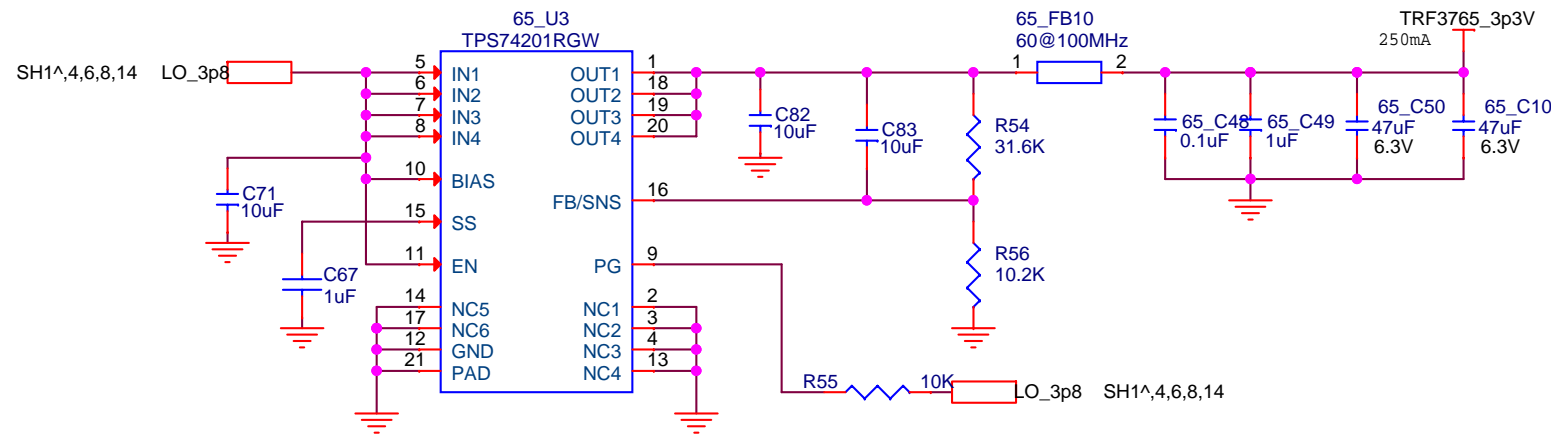
Title: **TRF3765**

Size: <b>B</b>	Document Number: <b>TSW4300</b>	Rev: <b>A</b>
Date: Friday, July 08, 2011	Sheet: 16	of 17

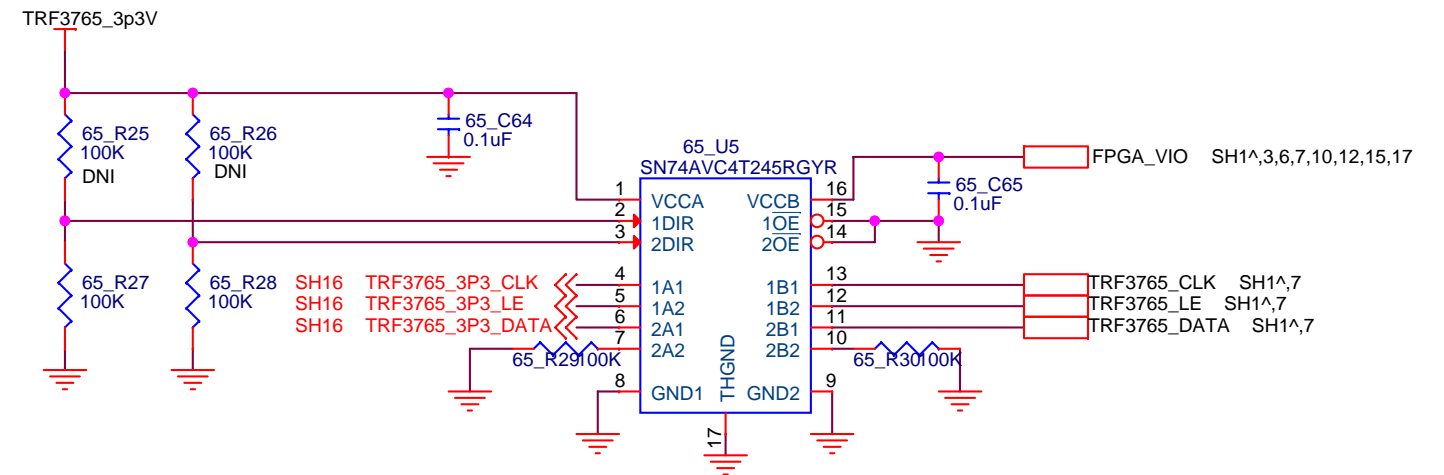


NOTE: DNI = DO NOT INSTALL

# PLL filter and local LDO's



# Level shifters for TRF3765



# RF VCO Select

