

A

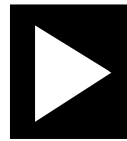
B

C

D

EV-21593-SOM

ADSP-21593 System On Module

		ANALOG DEVICES		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
Title		ADSP-21593 System on Module TITLE BLOCK			
Size C	Board No.	EV-21593-SOM		Rev A	
Date	4/16/2020	Sheet	1	of	13

A

B

C

D

1

1

2

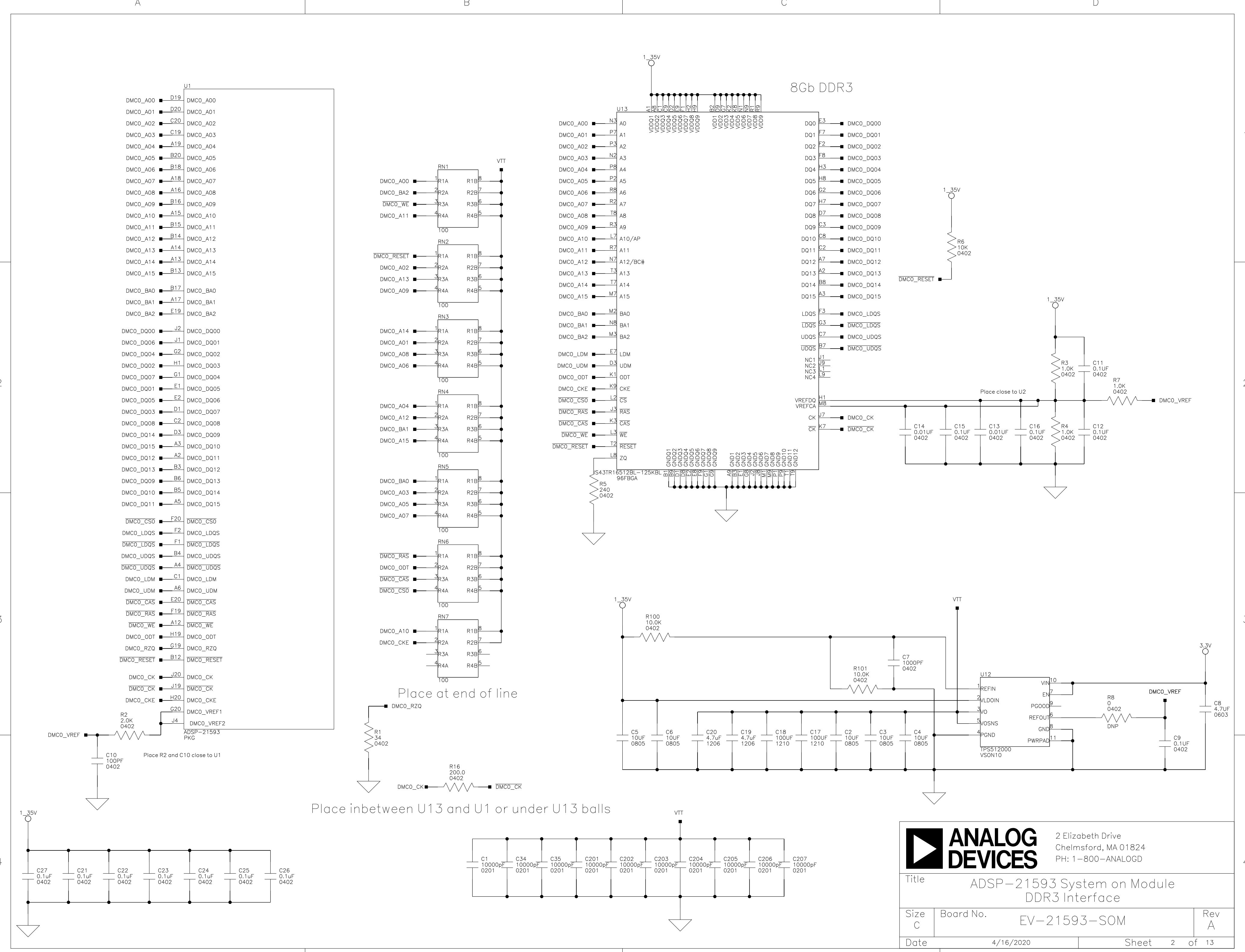
2

3

3

4

4



U1

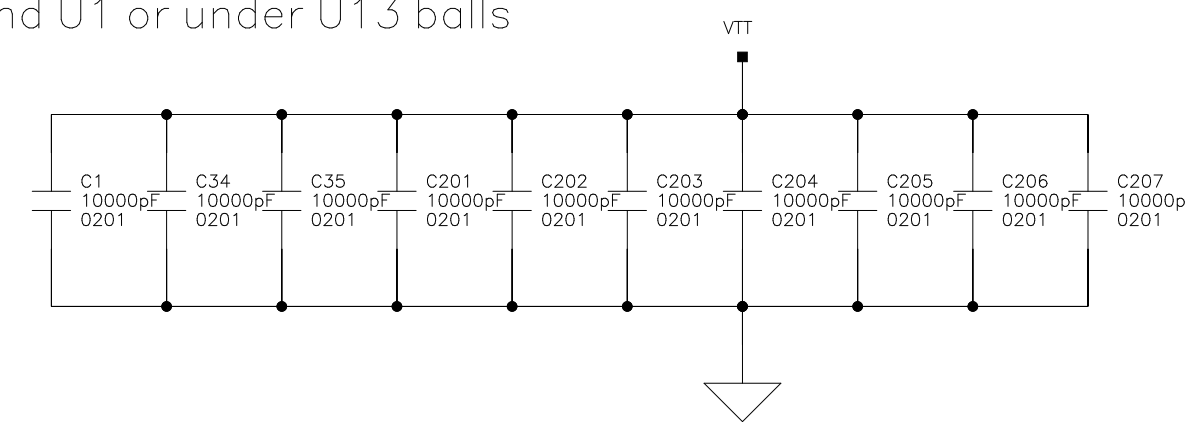
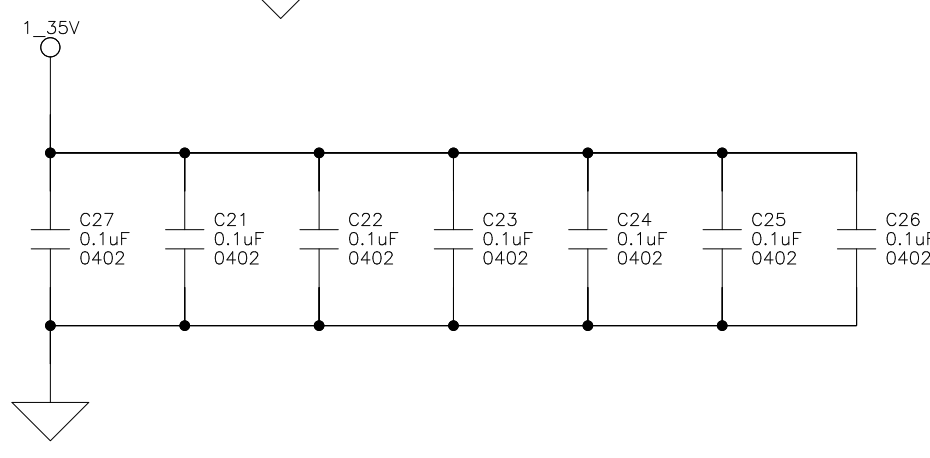
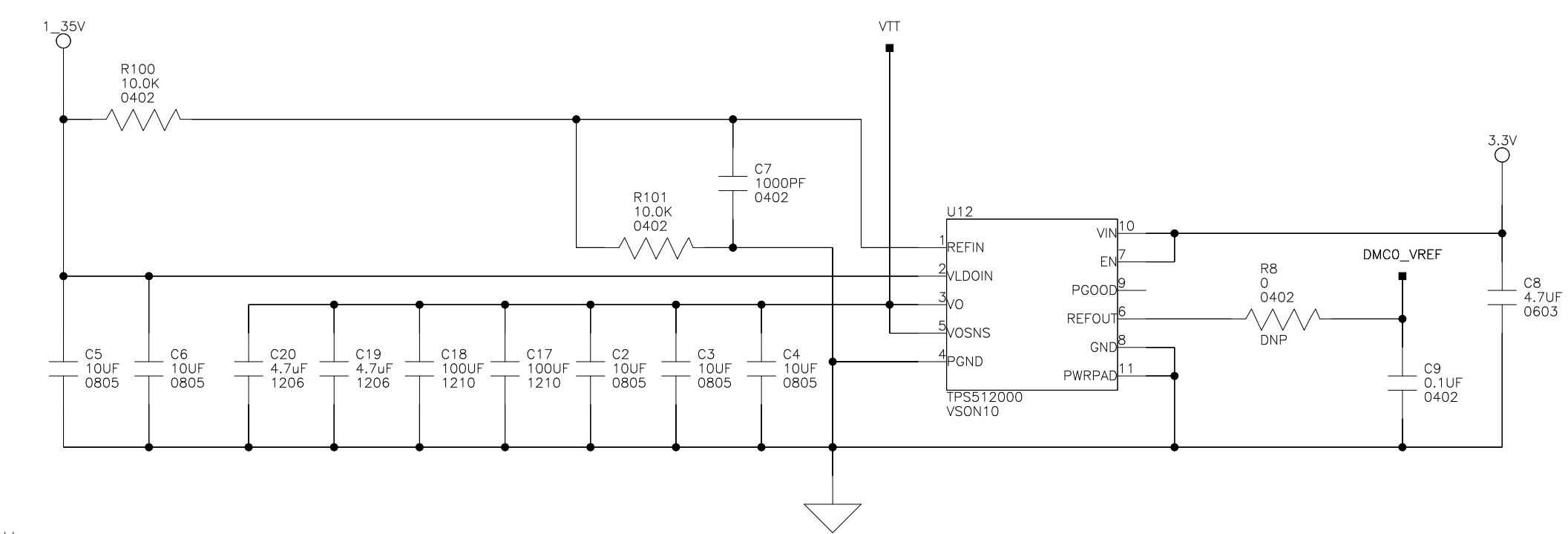
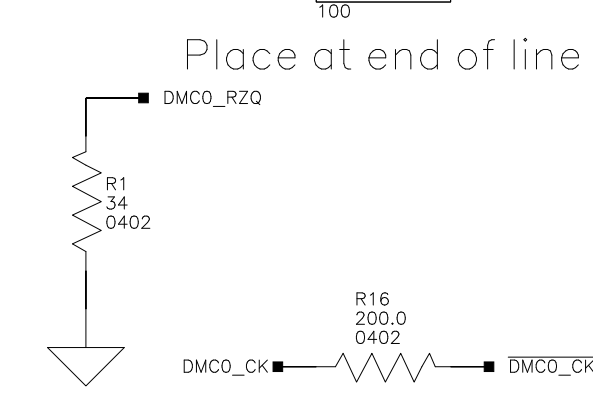
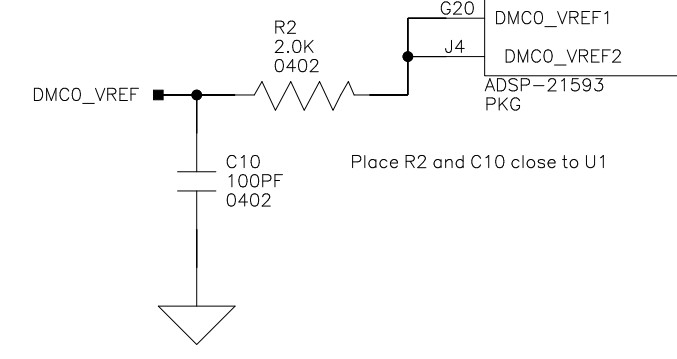
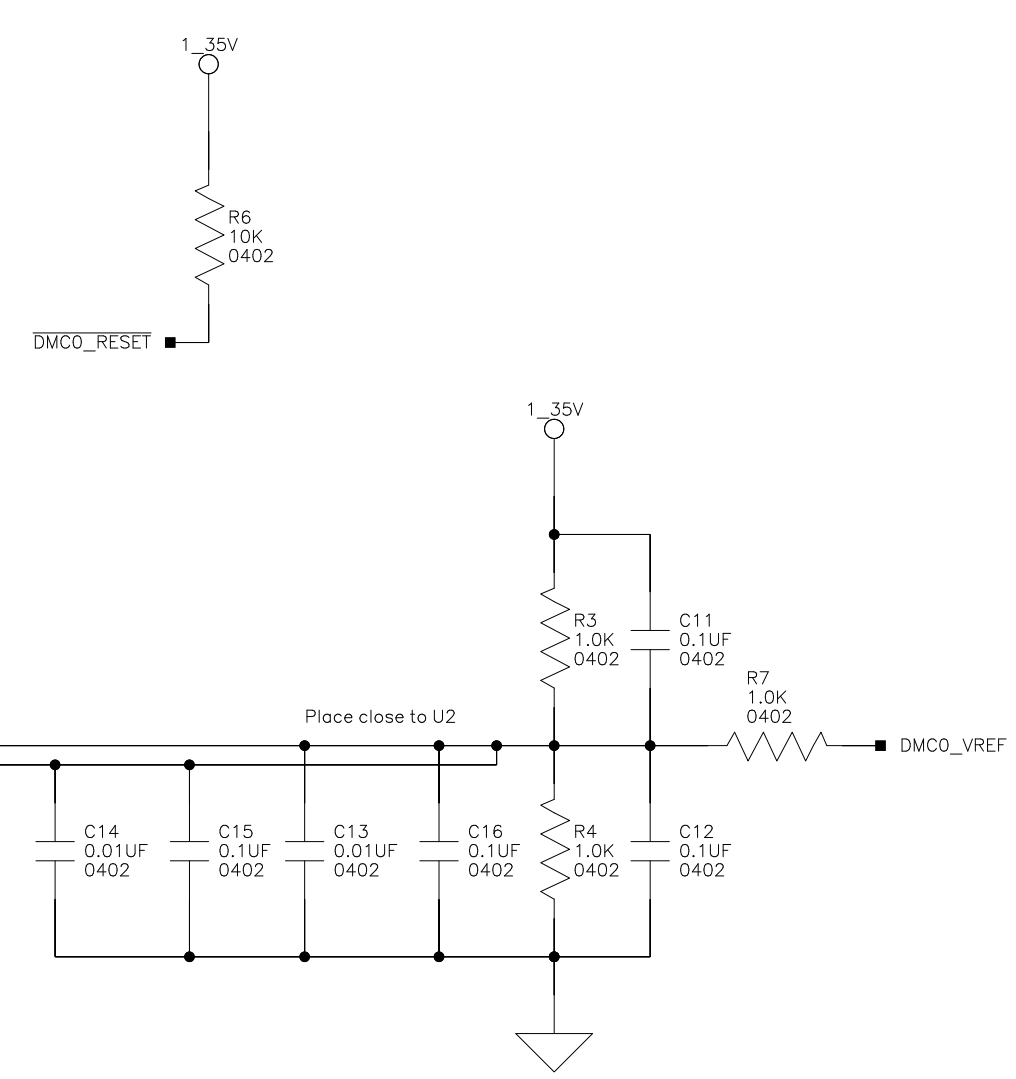
DMCO_A00	D19	DMCO_A00
DMCO_A01	D20	DMCO_A01
DMCO_A02	C20	DMCO_A02
DMCO_A03	C19	DMCO_A03
DMCO_A04	A19	DMCO_A04
DMCO_A05	B20	DMCO_A05
DMCO_A06	B18	DMCO_A06
DMCO_A07	A18	DMCO_A07
DMCO_A08	A16	DMCO_A08
DMCO_A09	B16	DMCO_A09
DMCO_A10	A15	DMCO_A10
DMCO_A11	B15	DMCO_A11
DMCO_A12	B14	DMCO_A12
DMCO_A13	A14	DMCO_A13
DMCO_A14	A13	DMCO_A14
DMCO_A15	B13	DMCO_A15
DMCO_BA0	B17	DMCO_BA0
DMCO_BA1	A17	DMCO_BA1
DMCO_BA2	E19	DMCO_BA2
DMCO_DQ00	J2	DMCO_DQ00
DMCO_DQ06	J1	DMCO_DQ01
DMCO_DQ04	G2	DMCO_DQ02
DMCO_DQ02	H1	DMCO_DQ03
DMCO_DQ07	G1	DMCO_DQ04
DMCO_DQ01	E1	DMCO_DQ05
DMCO_DQ05	E2	DMCO_DQ06
DMCO_DQ03	D1	DMCO_DQ07
DMCO_DQ08	C2	DMCO_DQ08
DMCO_DQ14	D3	DMCO_DQ09
DMCO_DQ15	A3	DMCO_DQ10
DMCO_DQ12	A2	DMCO_DQ11
DMCO_DQ13	B3	DMCO_DQ12
DMCO_DQ09	B6	DMCO_DQ13
DMCO_DQ10	B5	DMCO_DQ14
DMCO_DQ11	A5	DMCO_DQ15
DMCO_CS0	F20	DMCO_CS0
DMCO_LDQS	F2	DMCO_LDQS
DMCO_LDQS	F1	DMCO_LDQS
DMCO_UDQS	B4	DMCO_UDQS
DMCO_UDQS	A4	DMCO_UDQS
DMCO_LDM	C1	DMCO_LDM
DMCO_UDM	A6	DMCO_UDM
DMCO_CAS	E20	DMCO_CAS
DMCO_RAS	F19	DMCO_RAS
DMCO_WE	A12	DMCO_WE
DMCO_ODT	H19	DMCO_ODT
DMCO_RZQ	G19	DMCO_RZQ
DMCO_RESET	B12	DMCO_RESET
DMCO_CK	J20	DMCO_CK
DMCO_CK	J19	DMCO_CK
DMCO_CKE	H20	DMCO_CKE
DMCO_VREF1	G20	DMCO_VREF1
DMCO_VREF2	J4	DMCO_VREF2

ADSP-21593 PKG

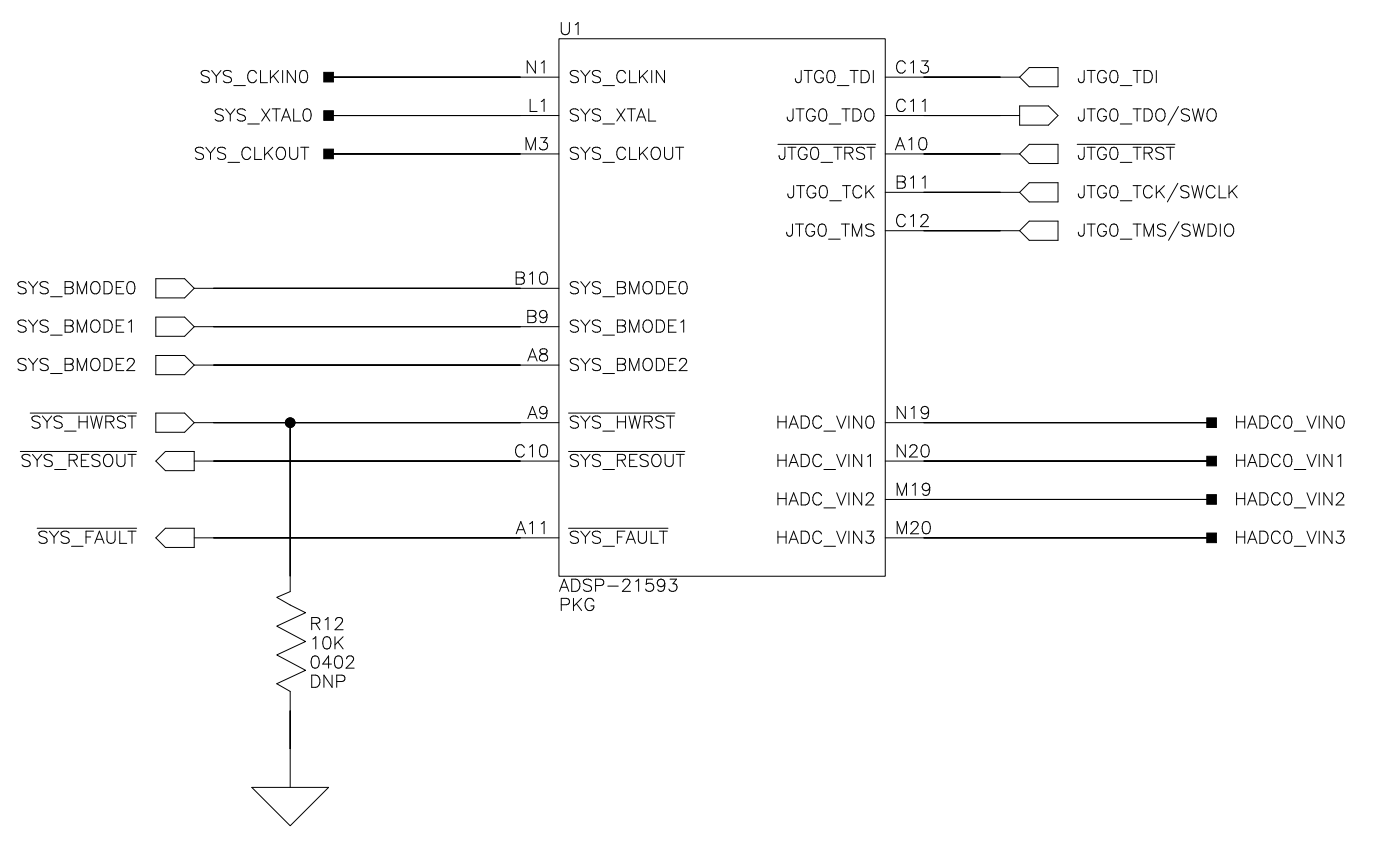
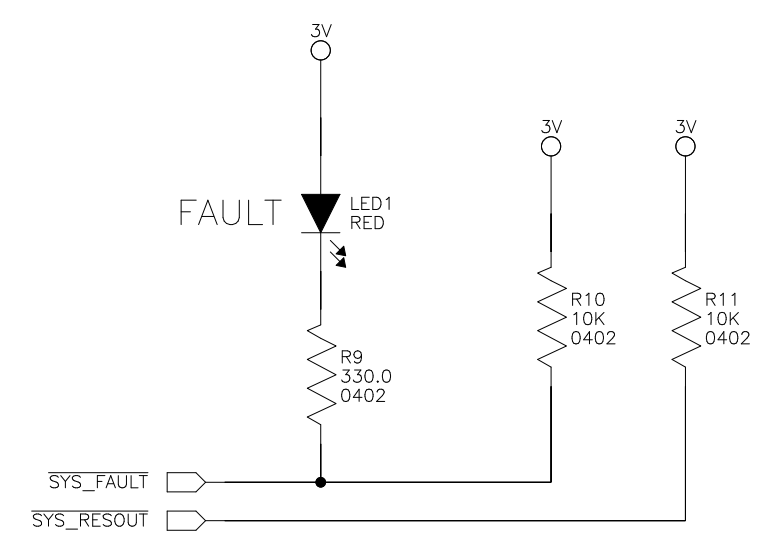
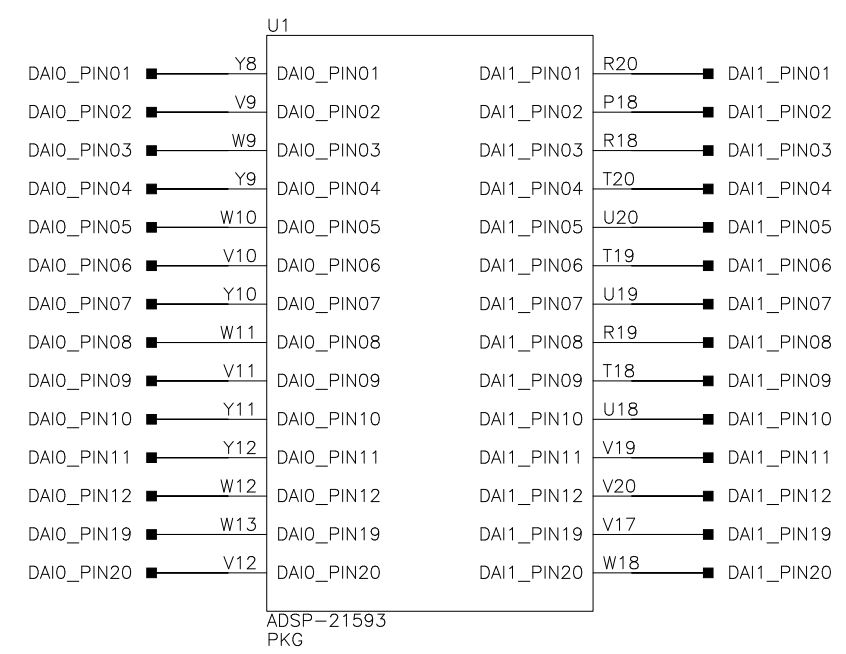
U13

DMCO_A00	N3	A0
DMCO_A01	P7	A1
DMCO_A02	P3	A2
DMCO_A03	N2	A3
DMCO_A04	P8	A4
DMCO_A05	P2	A5
DMCO_A06	R8	A6
DMCO_A07	R2	A7
DMCO_A08	T8	A8
DMCO_A09	R3	A9
DMCO_A10	L7	A10/AP
DMCO_A11	R7	A11
DMCO_A12	N7	A12/BC#
DMCO_A13	T3	A13
DMCO_A14	T7	A14
DMCO_A15	M7	A15
DMCO_BA0	M2	BA0
DMCO_BA1	N8	BA1
DMCO_BA2	M3	BA2
DMCO_LDM	E7	LDM
DMCO_UDM	D3	UDM
DMCO_ODT	K1	ODT
DMCO_CKE	K9	CKE
DMCO_CS0	L2	CS
DMCO_RAS	J3	RAS
DMCO_CAS	K3	CAS
DMCO_WE	L3	WE
DMCO_RESET	T2	RESET
	L8	ZQ

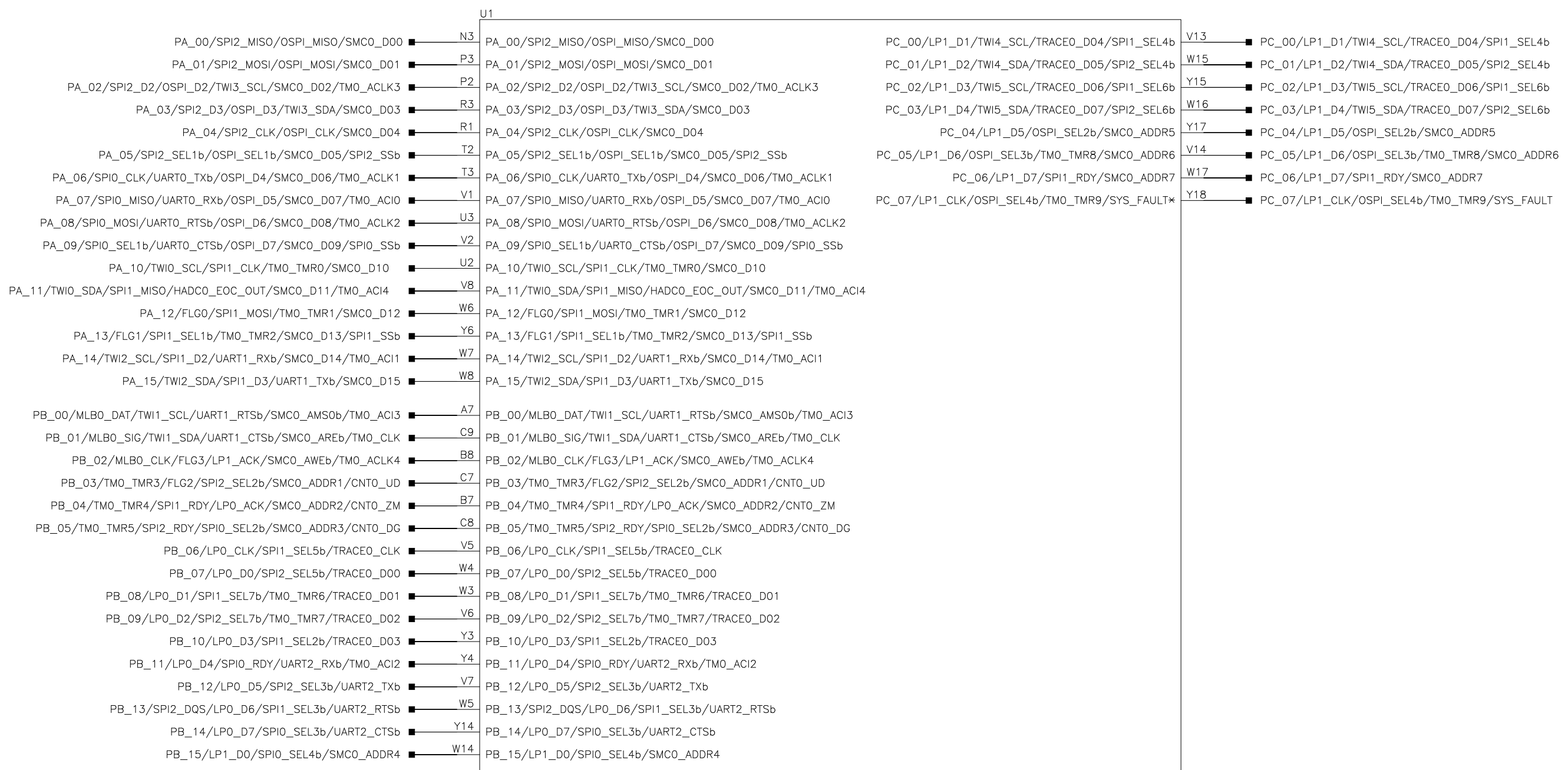
8Gb DDR3



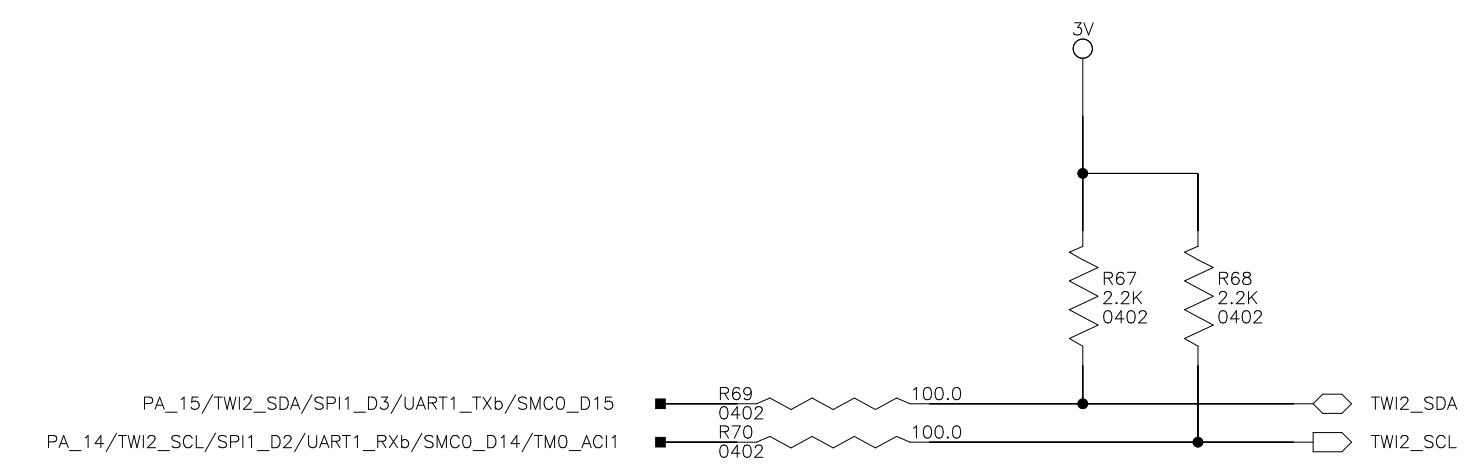
		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
		Title ADSP-21593 System on Module DDR3 Interface	
Size C	Board No. EV-21593-SOM	Rev A	
Date 4/16/2020	Sheet 2 of 13		




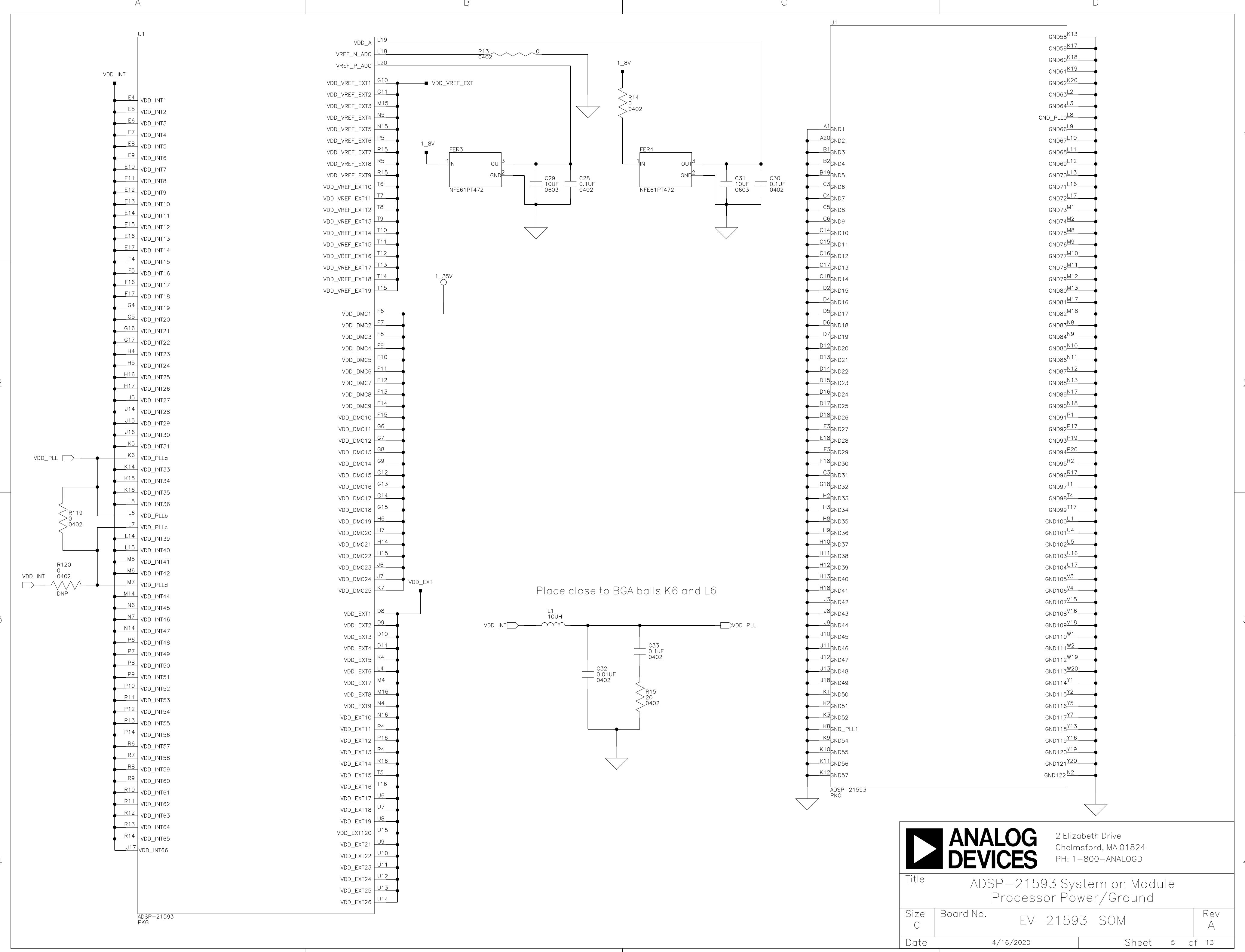
		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
Title ADSP-21593 System on Module Non-Mux Ports			
Size C	Board No.	EV-21593-SOM	Rev A
Date	4/16/2020	Sheet 3 of 13	




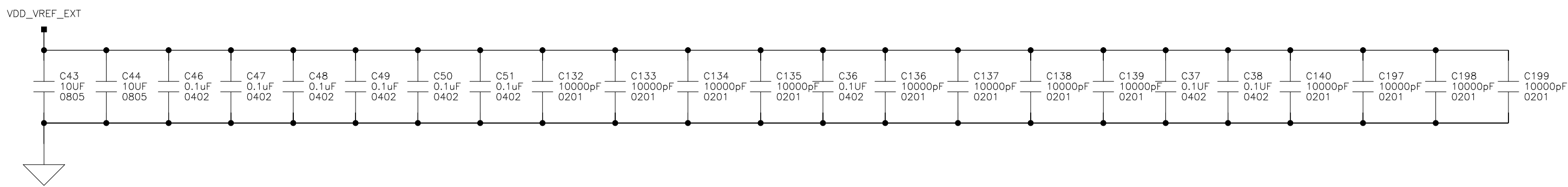
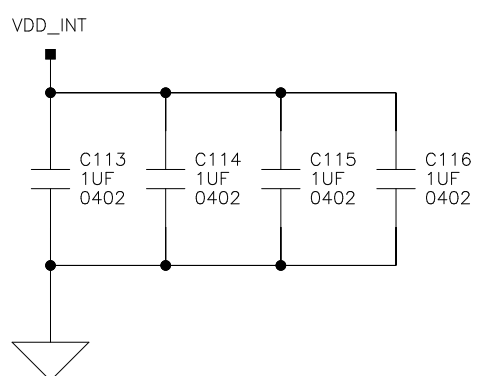
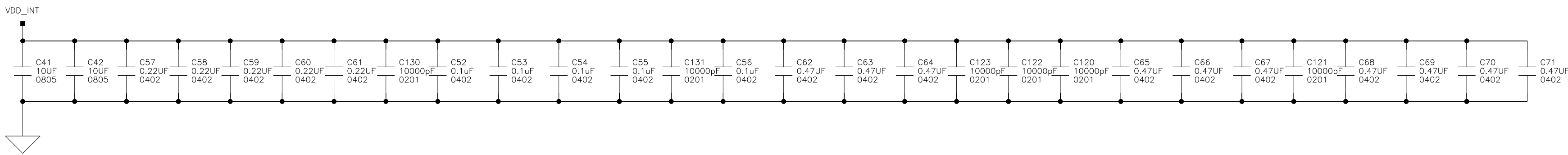
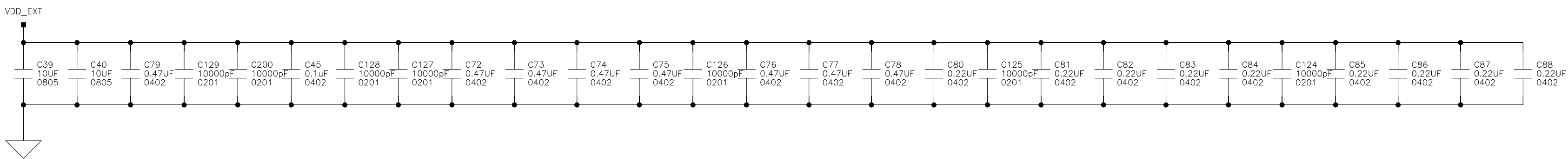
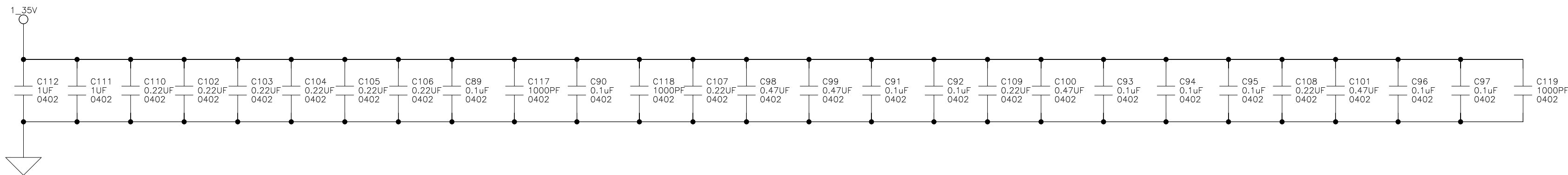
ADSP-21593
PKG




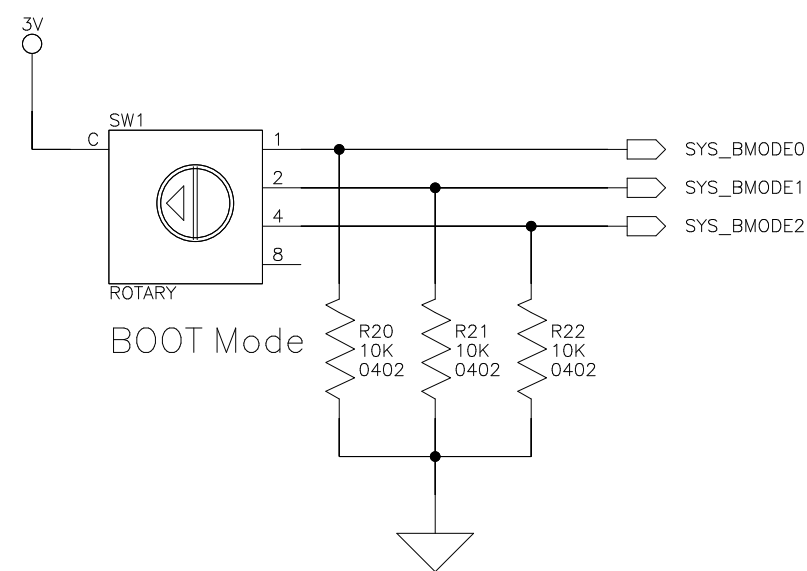
		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
Title ADSP-21593 System on Module Mux Ports			
Size C	Board No.	EV-21593-SOM	Rev A
Date	4/16/2020	Sheet 4	of 13



		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
		Title ADSP-21593 System on Module Processor Power/Ground	
Size C	Board No. EV-21593-SOM	Rev A	
Date	4/16/2020	Sheet	5 of 13

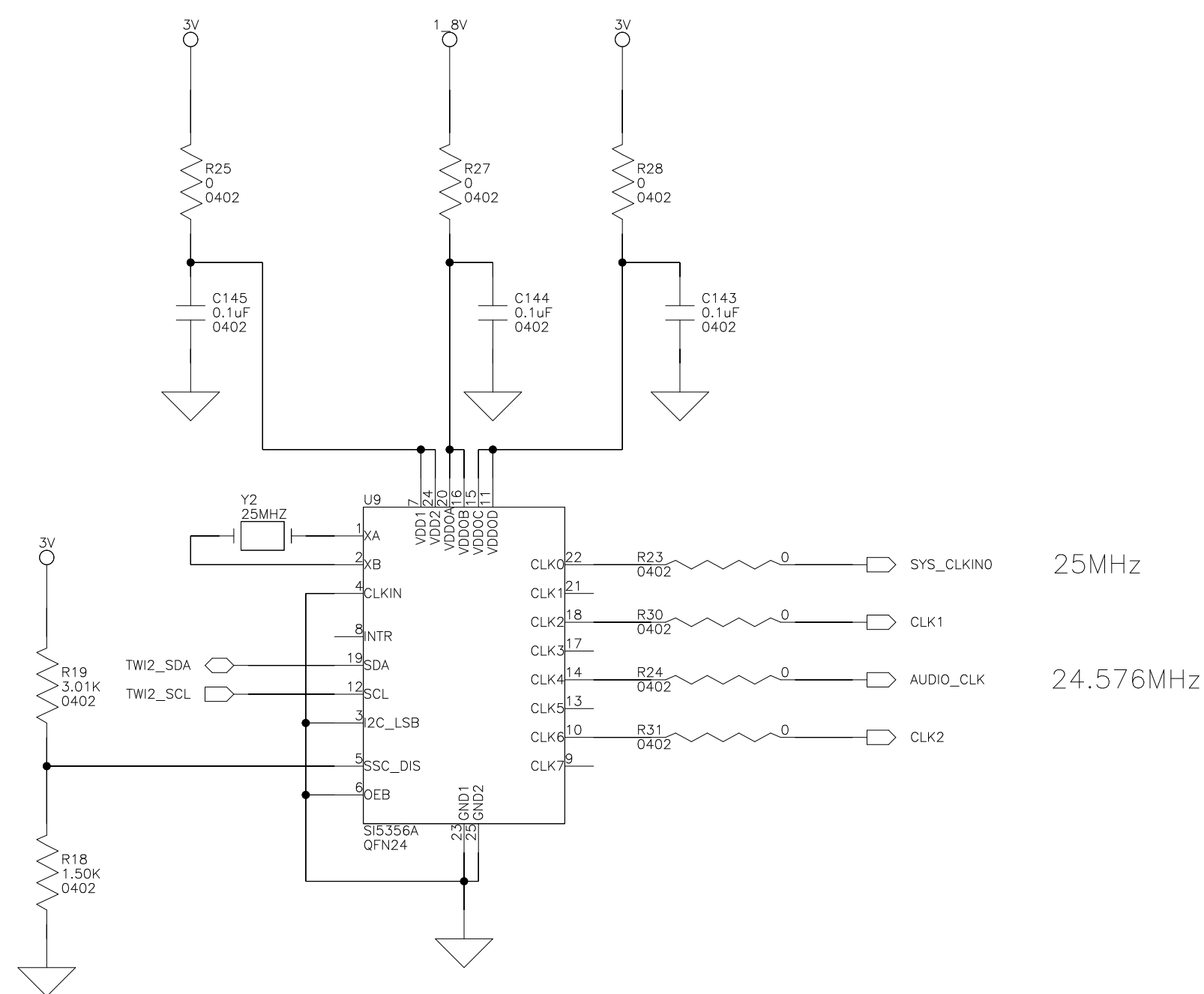


		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOG	
Title		ADSP-21593 System on Module Proc Bypass Caps	
Size C	Board No.	EV-21593-SOM	Rev A
Date	4/16/2020	Sheet	6 of 13



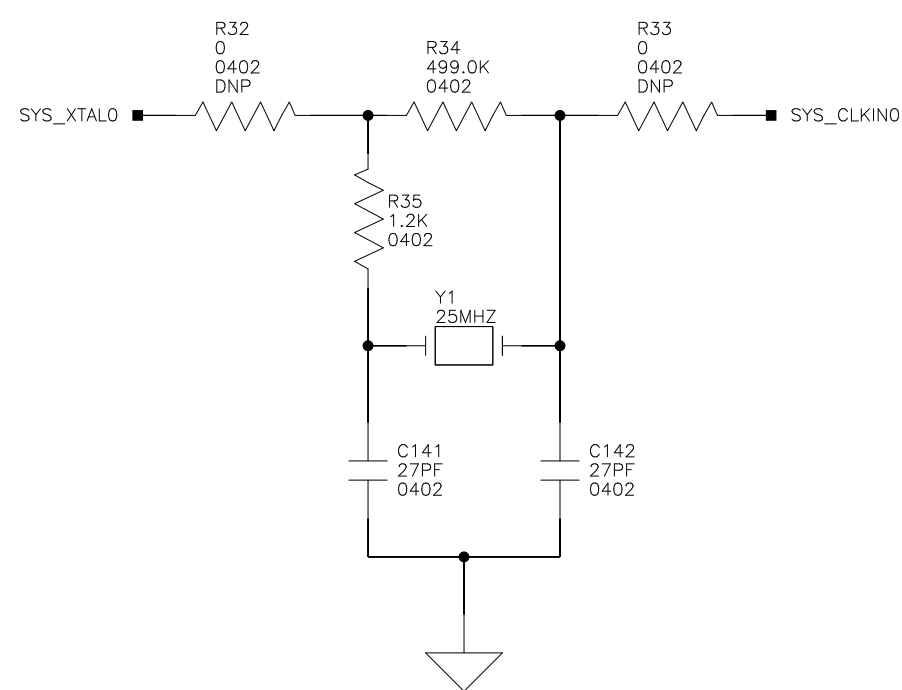
SW1: Boot mode selection switch

BMODE[2:0]	Boot Source	
000	No boot/Custom ROM	
001	SPI2 master boot	DEFAULT
010	SPI2 slave boot	
011	UART0 slave boot	
100	LP0 slave boot	
101	OSPI Boot	
110	Reserved	
111	Reserved	



OPTIONAL DSP CRYSTALS

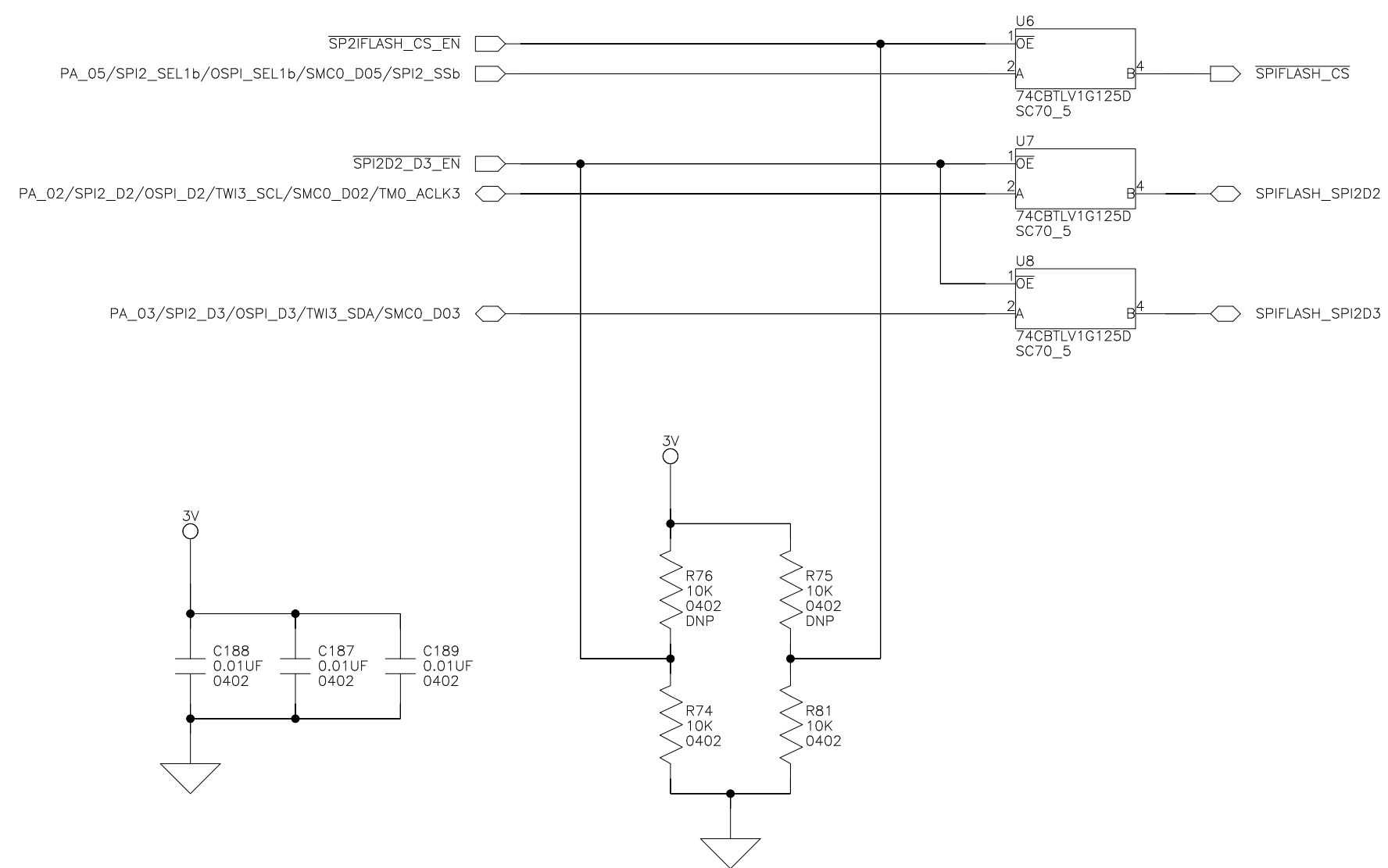
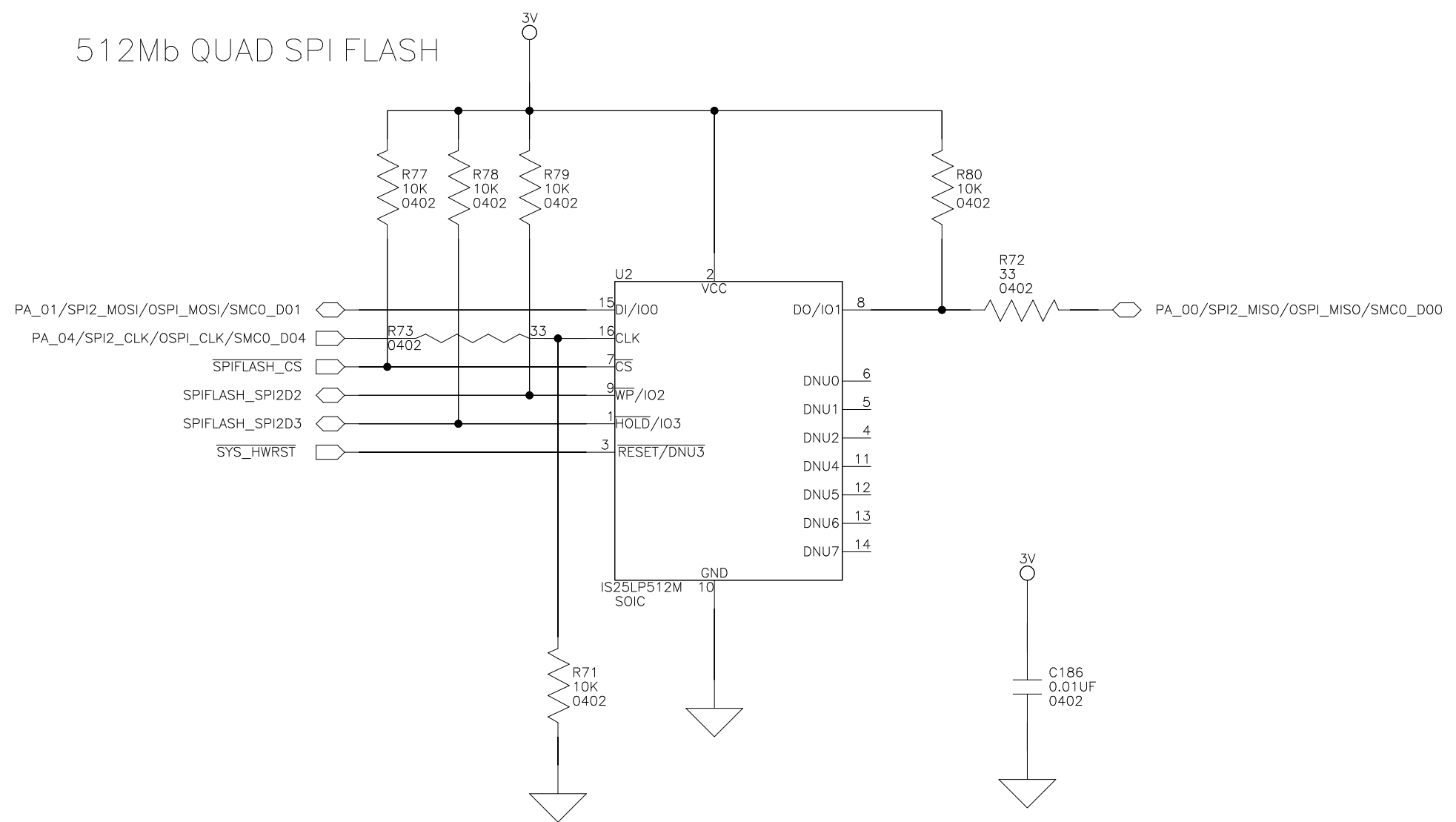
R23 should be depopulated when using the optional circuit




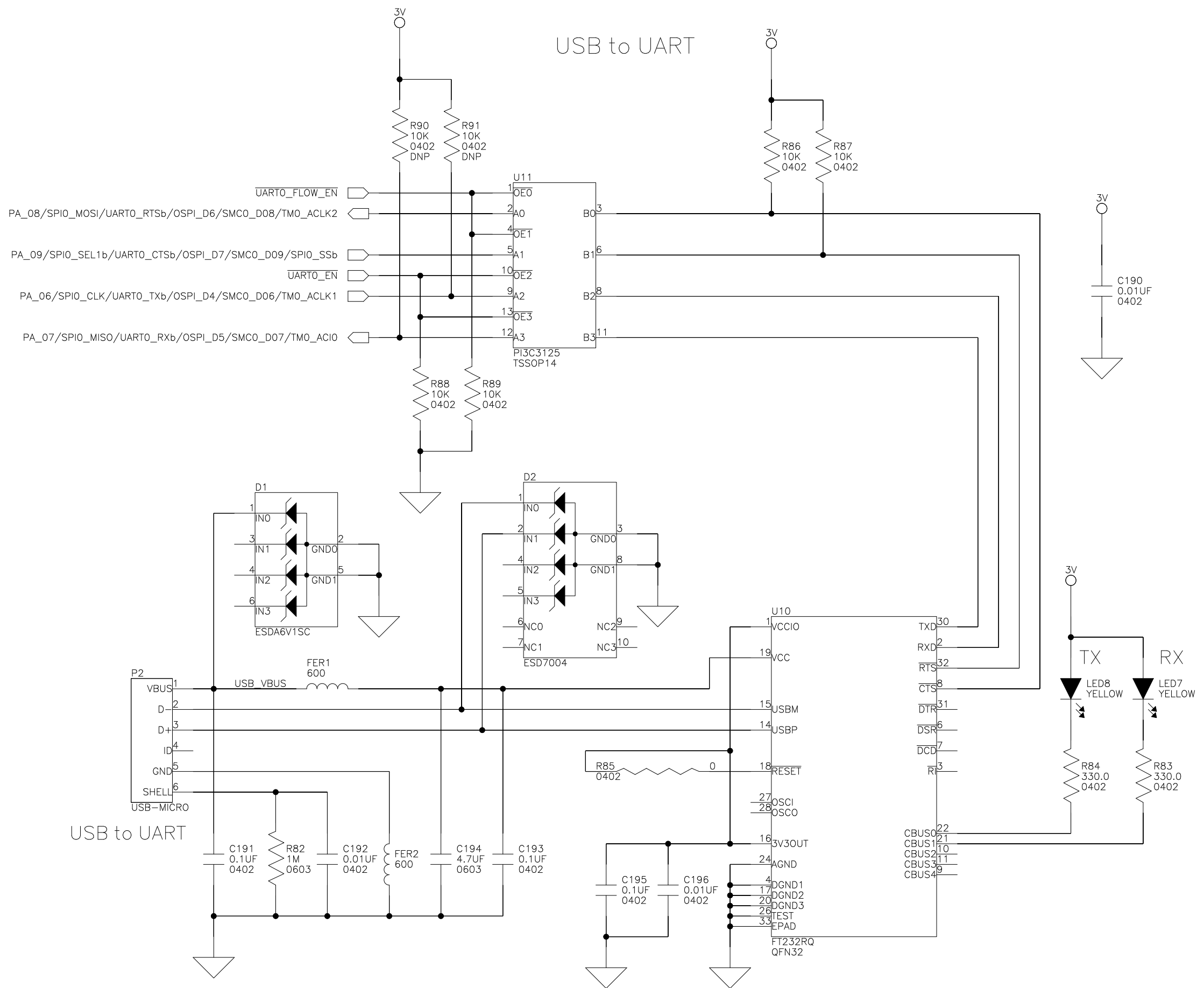
TWI Address 1110000x
x is the R/W bit. Read - 1, Write - 0

		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD
Title ADSP-21593 System on Module Clocks/Boot Mode		
Size C	Board No. EV-21593-SOM	Rev A
Date	4/16/2020	Sheet 7 of 13

512Mb QUAD SPI FLASH



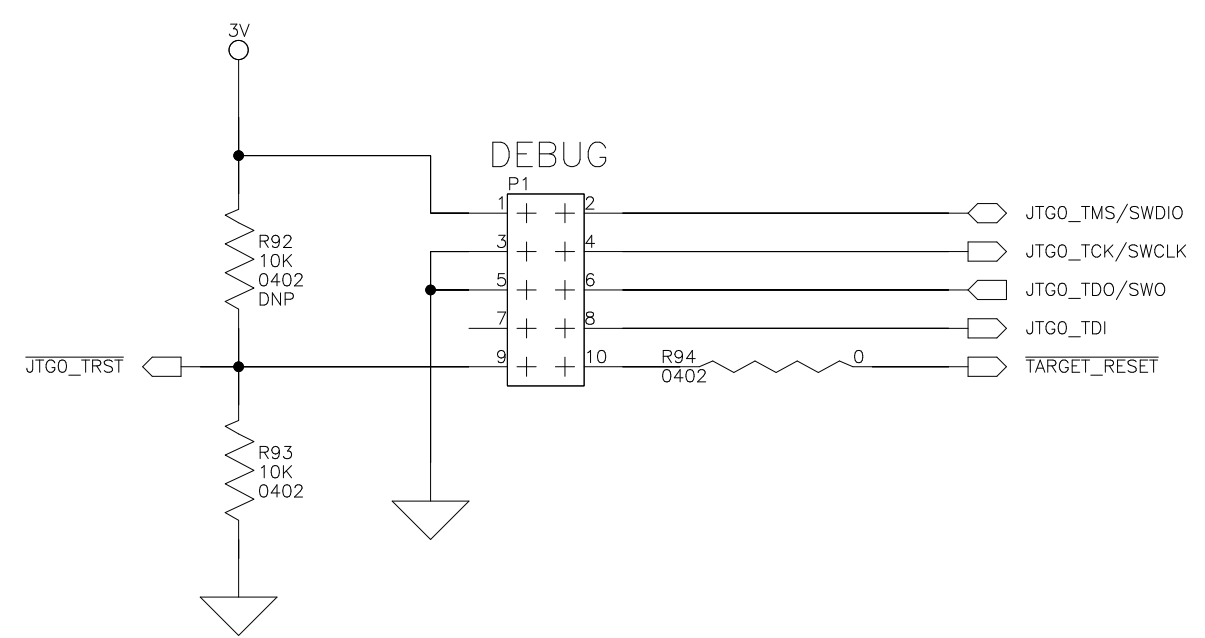
		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD
Title ADSP-21593 System on Module SPI Flash		
Size C	Board No. EV-21593-SOM	Rev A
Date	4/16/2020	Sheet 8 of 13




USB to UART

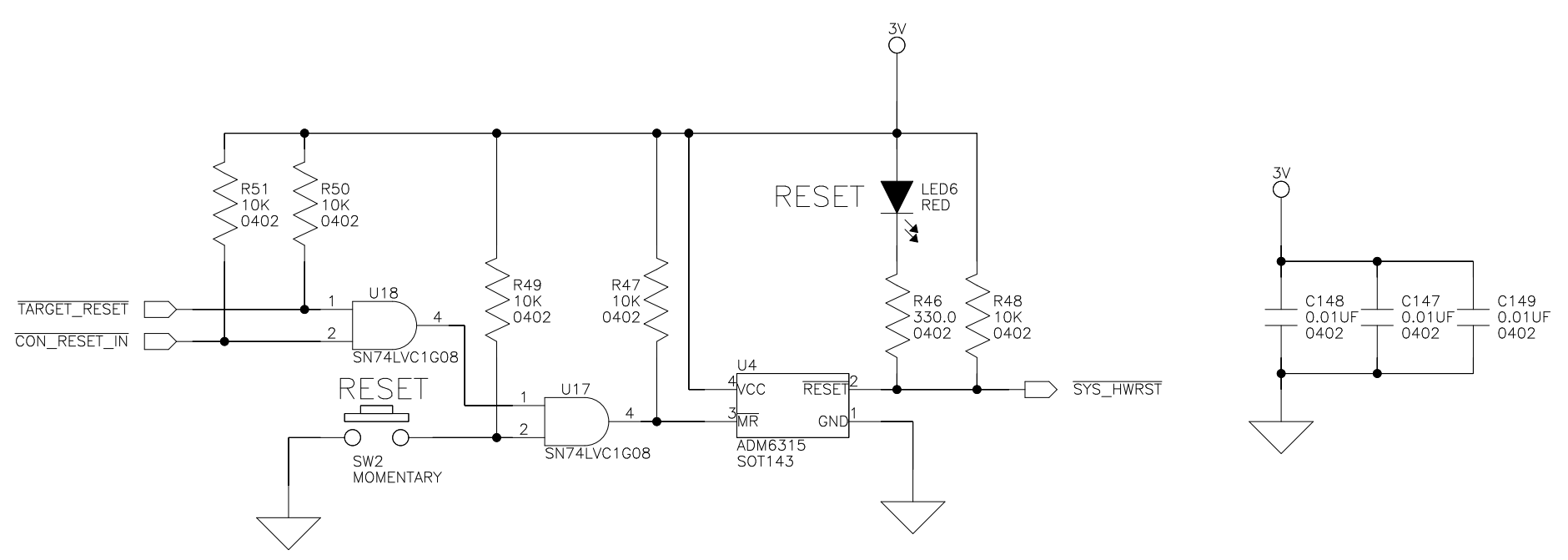
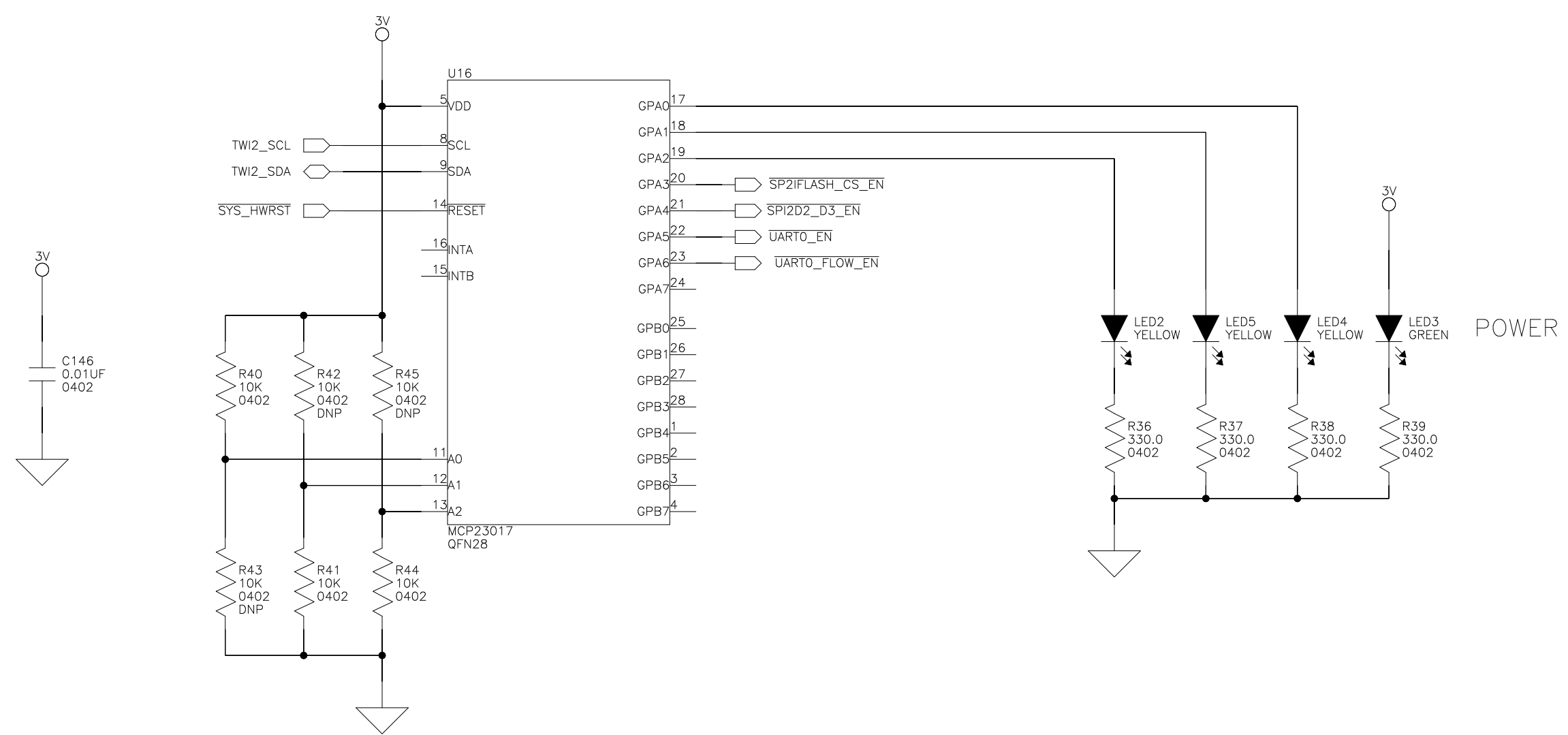
USB to UART


DEBUG



		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
Title ADSP-21593 System on Module UART/JTAG			
Size C	Board No. EV-21593-SOM	Rev A	
Date 4/16/2020	Sheet 9 of 13		

TWI Address 0100001x
 x is the R/W bit. Read - 1, Write - 0



		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
		Title ADSP-21593 System on Module LEDs/Reset/SoftConfig	
Size C	Board No. EV-21593-SOM	Rev A	
Date 4/16/2020	Sheet 10 of 13		

A

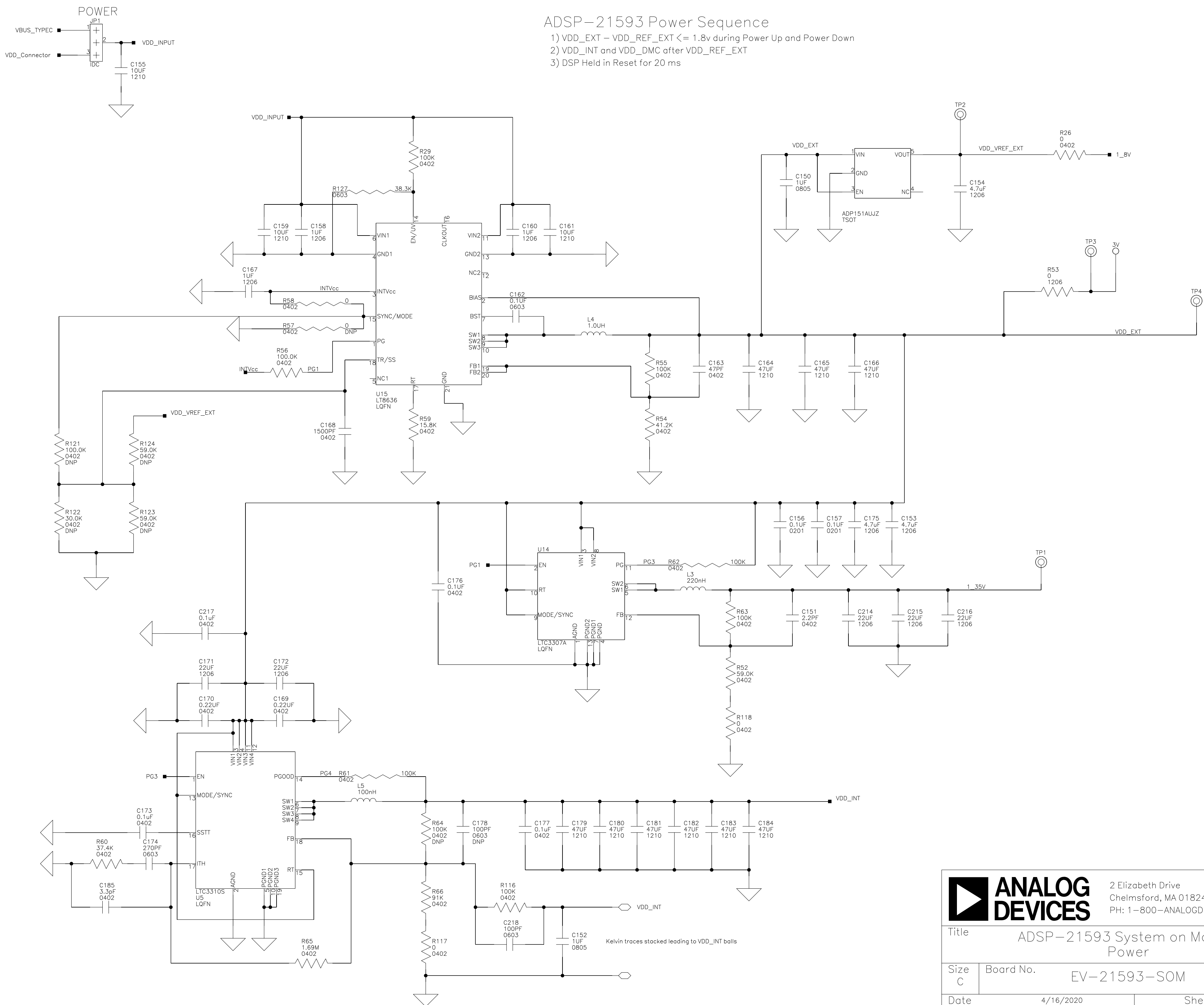
B


C

D

ADSP-21593 Power Sequence

- 1) VDD_EXT - VDD_REF_EXT <= 1.8v during Power Up and Power Down
- 2) VDD_INT and VDD_DMC after VDD_REF_EXT
- 3) DSP Held in Reset for 20 ms



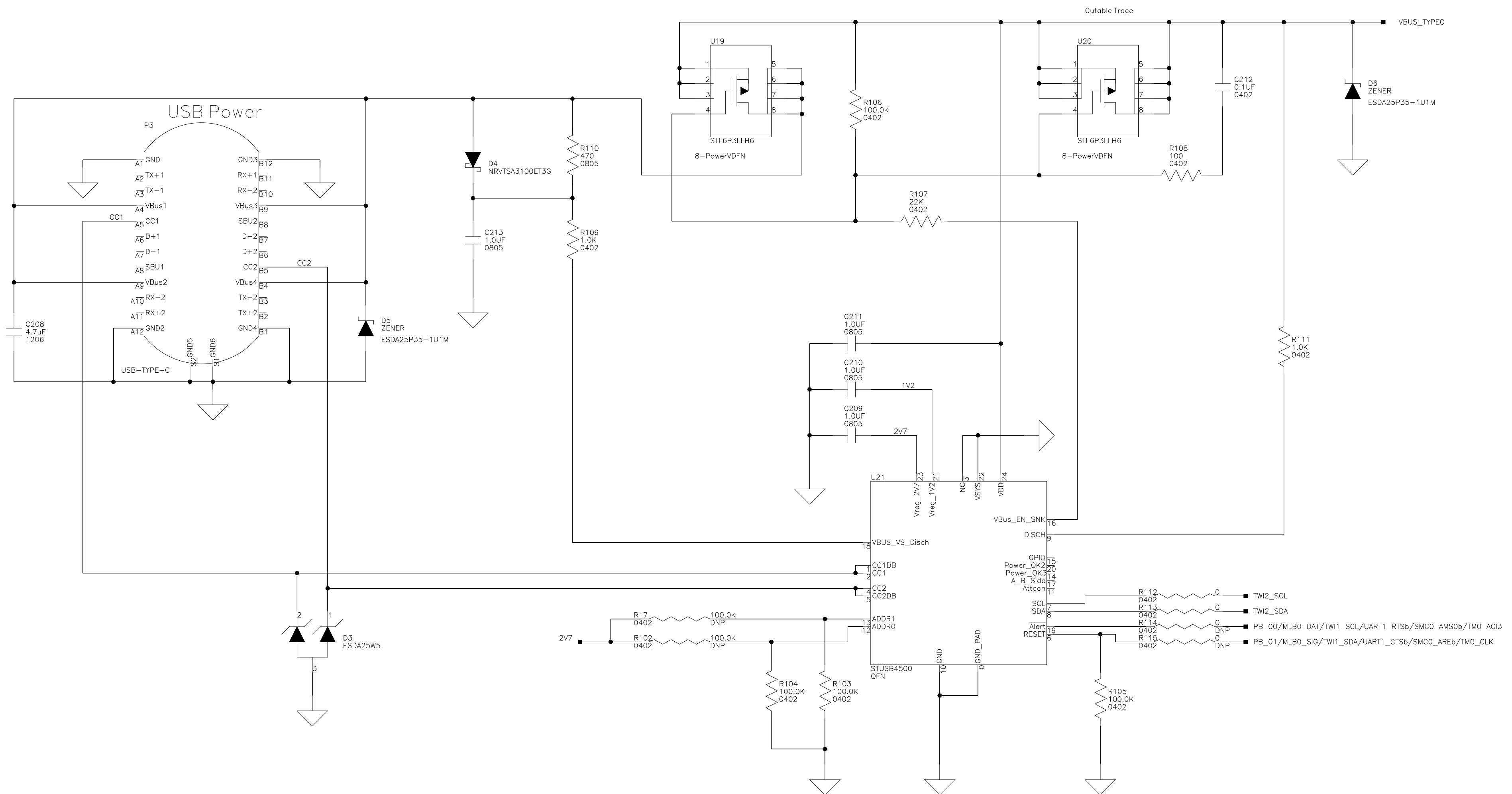
		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
		Title ADSP-21593 System on Module Power	
Size C	Board No.	EV-21593-SOM	Rev A
Date	4/16/2020	Sheet 11 of 13	


A

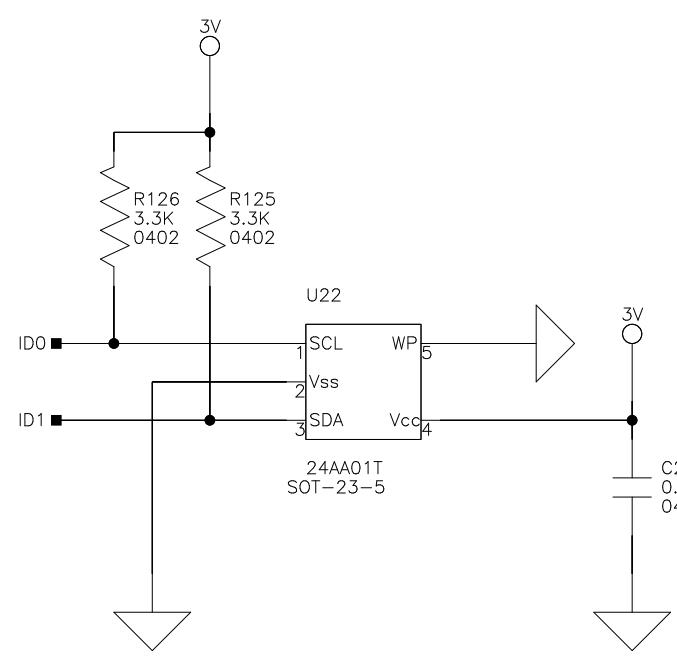
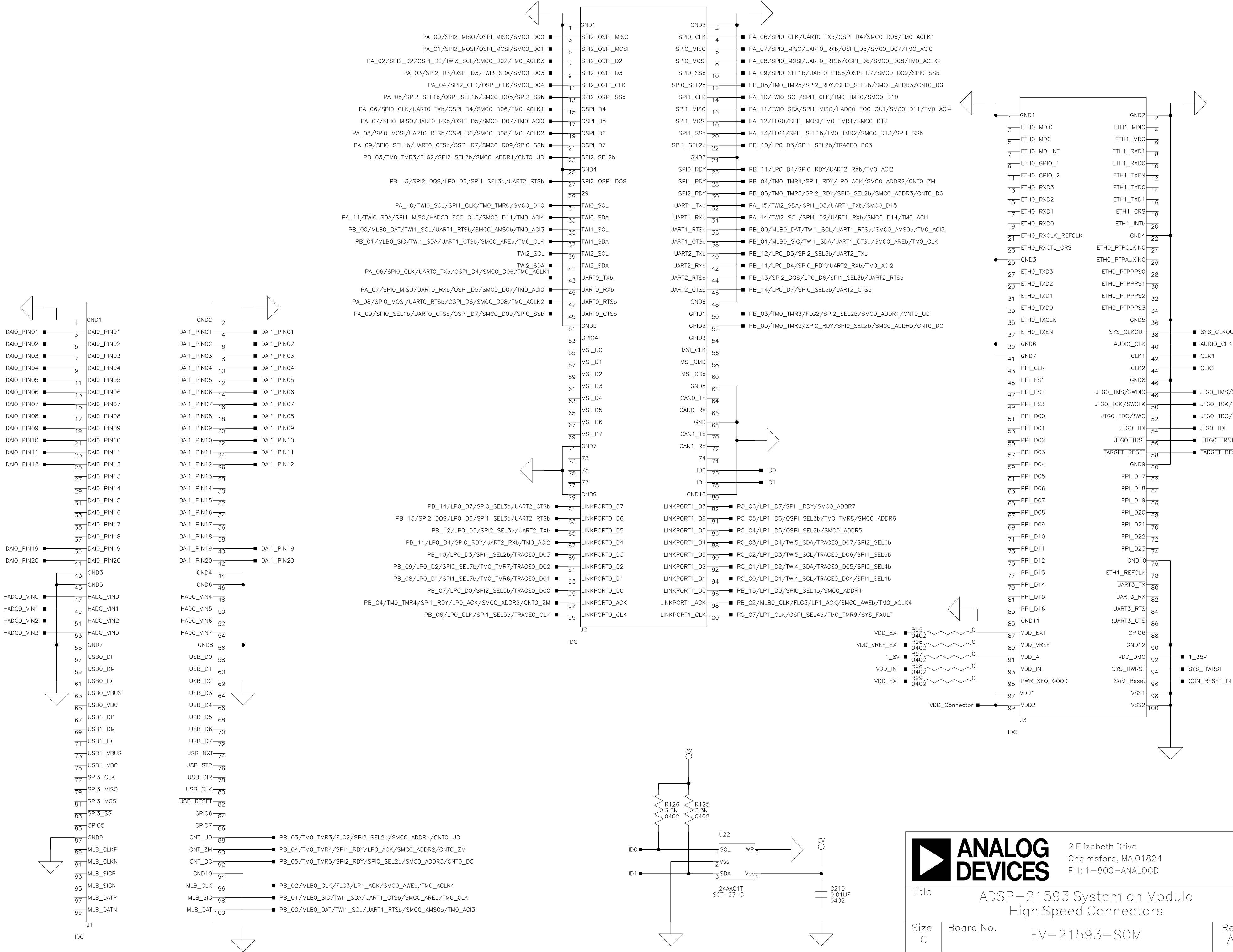
B

C

D



		2 Elizabeth Drive Chelmsford, MA 01824 PH: 1-800-ANALOGD	
		Title ADSP-21593 System on Module USB Type C PD	
Size C	Board No.	EV-21593-SOM	Rev A
Date	4/16/2020	Sheet	12 of 13



2 Elizabeth Drive
Chelmsford, MA 01824
PH: 1-800-ANALOGD

Title			ADSP-21593 System on Module High Speed Connectors		
Size	Board No.	EV-21593-SOM			Rev
C					A
Date	4/16/2020	Sheet	13	of	13