

Ti180M484 DEVELOPMENT BOARD

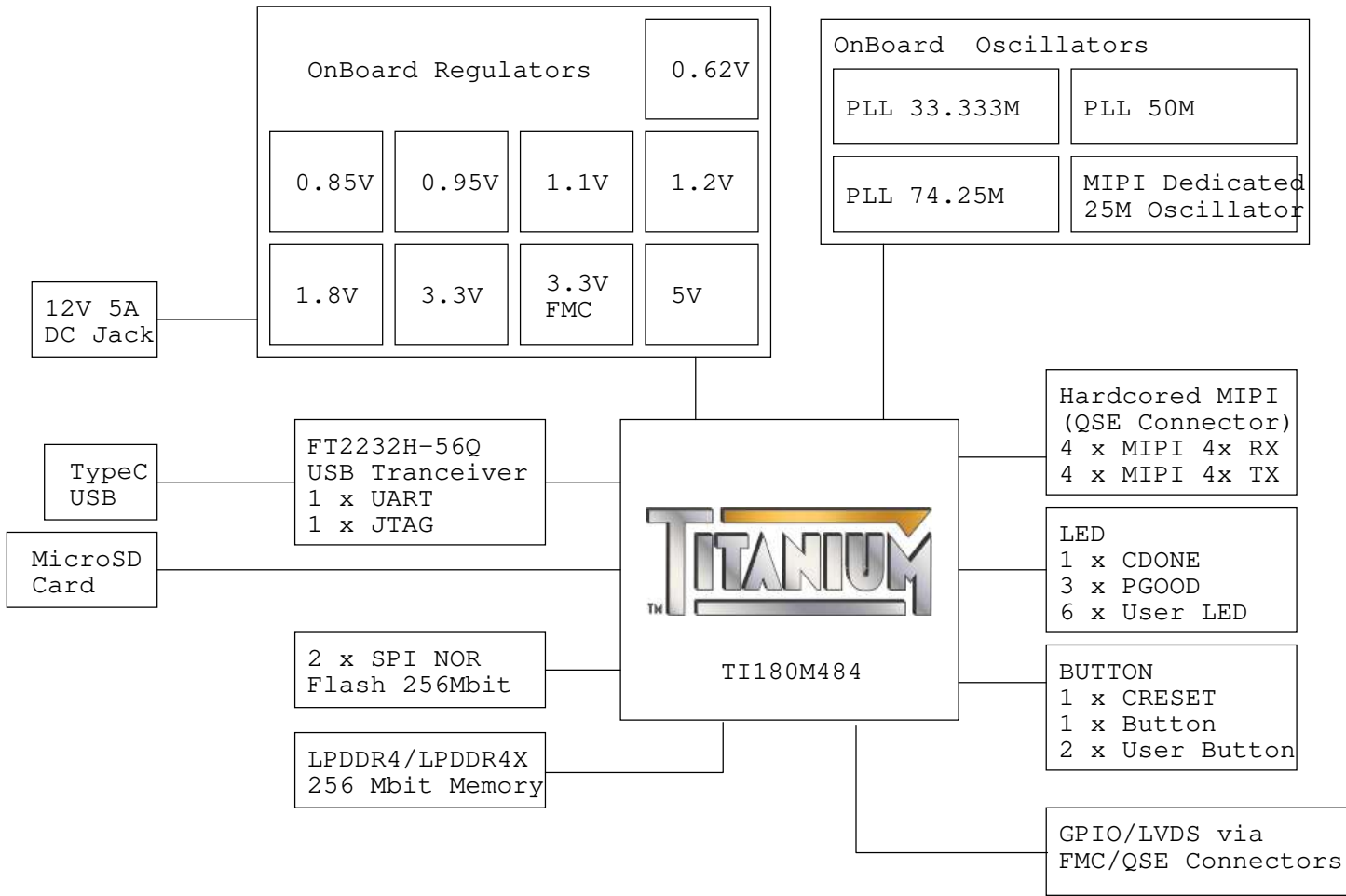
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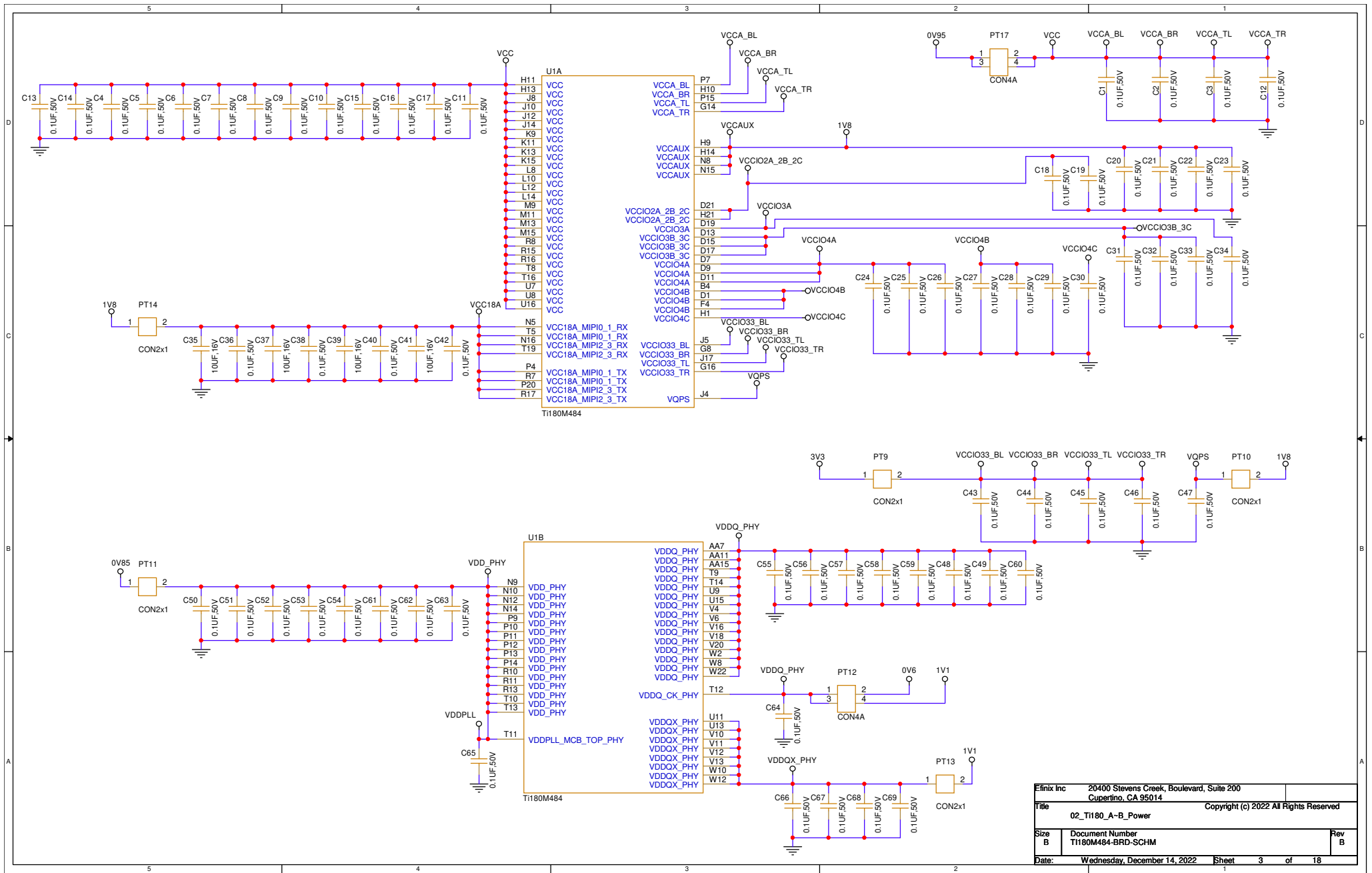
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REVISION HISTORY

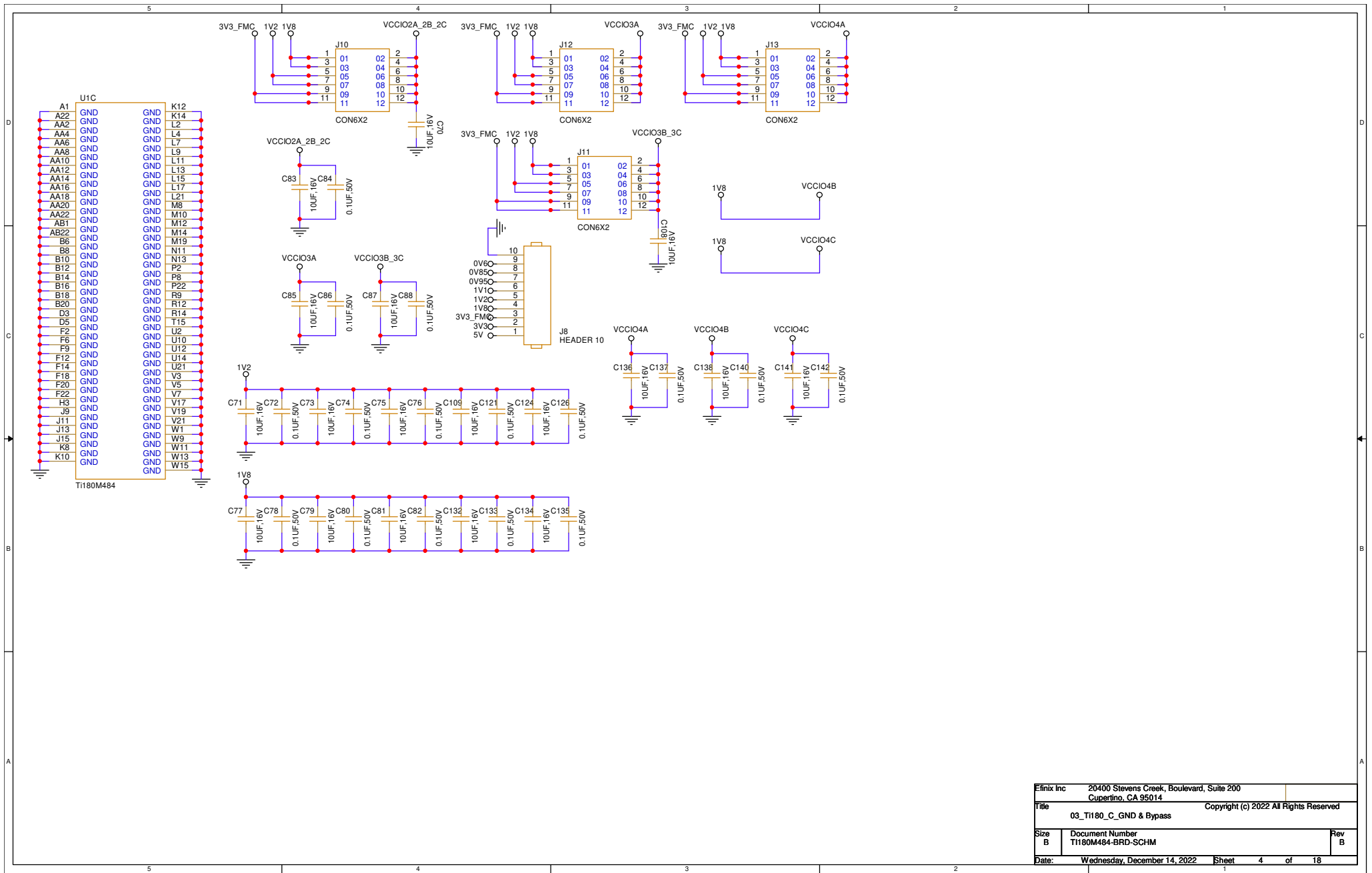
0.1	11/03/2022		Initial Release
1.0	22/07/2022		Production Release
1.1	30/09/2022	CFLEUNG	Parts update for official release
1.2	12/12/2022	CFLEUNG	Updated M484 DDR data width support

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00_Table of Contents			
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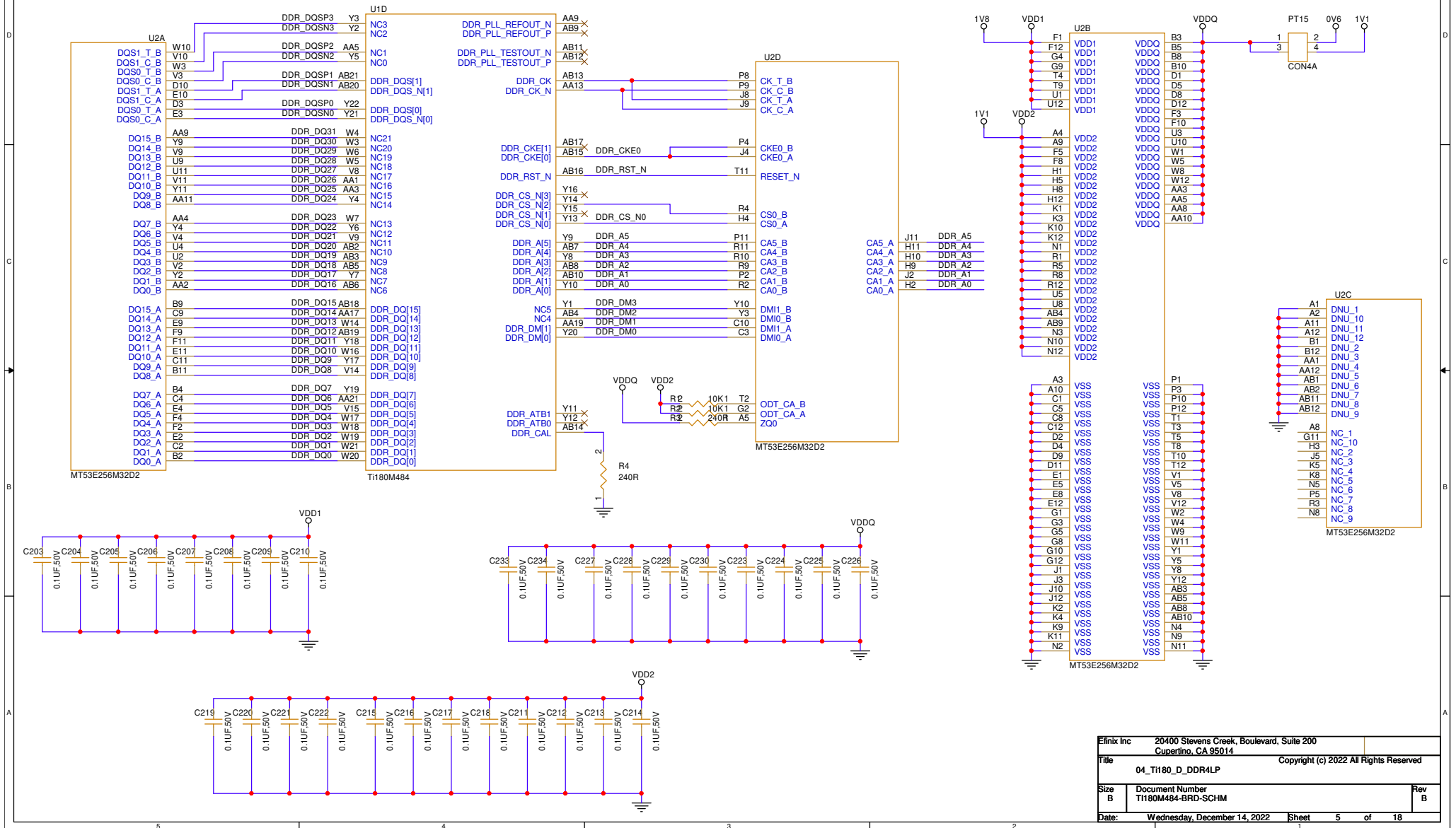


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02_TH180_A-B_Power			
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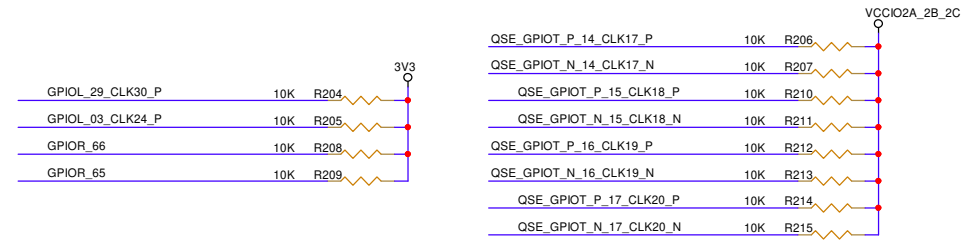
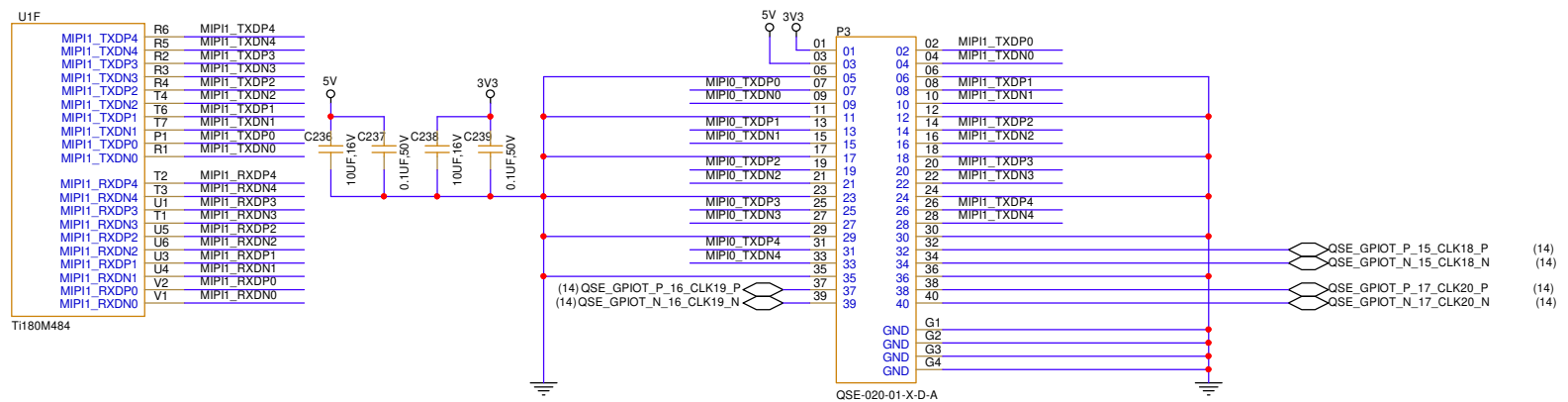
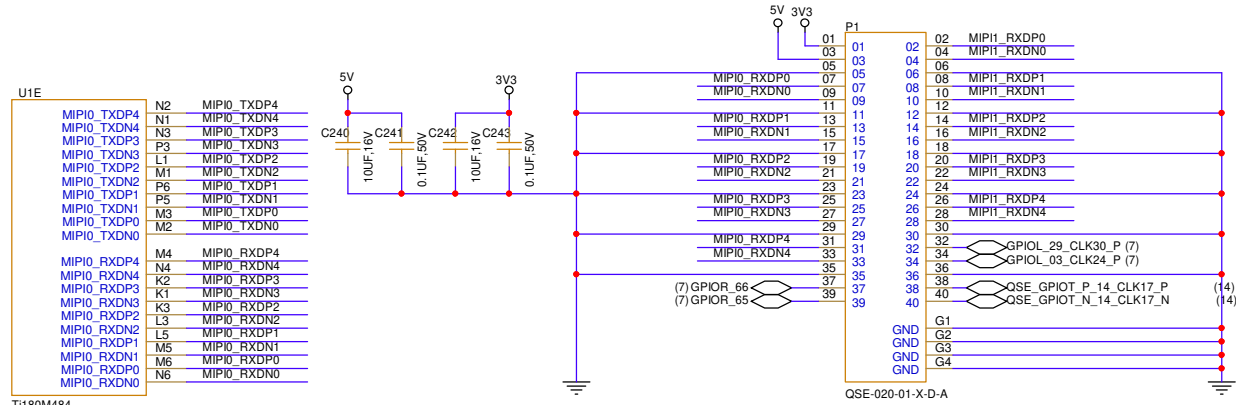


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03_TH180_C_GND & Bypass			
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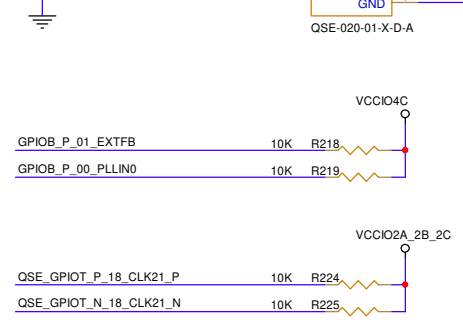
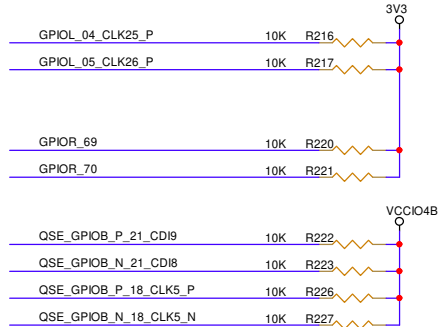
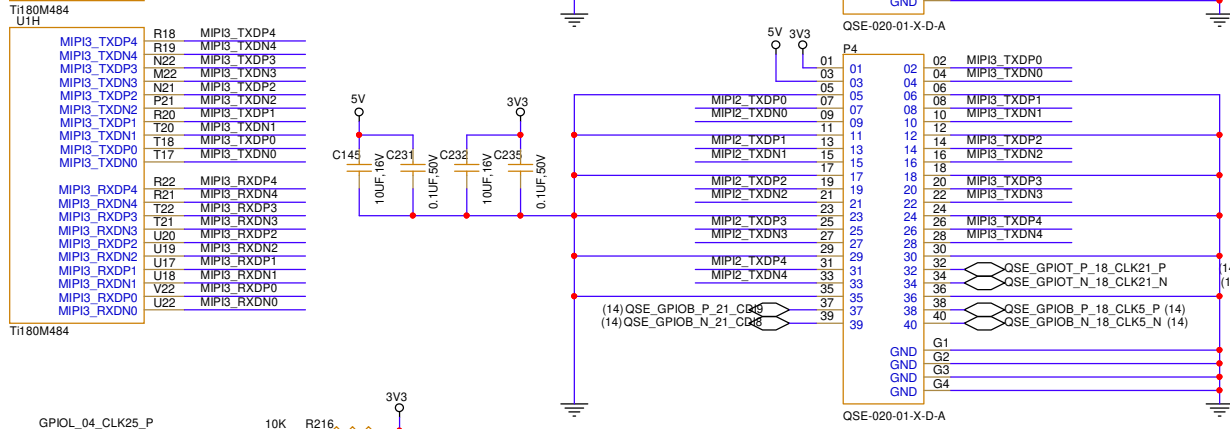
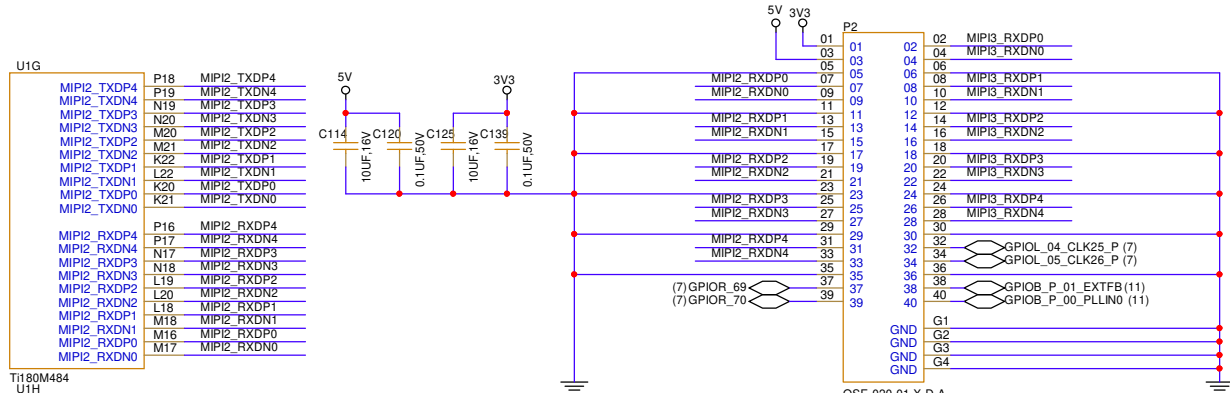
* T1180M484 supports x16 data width only.



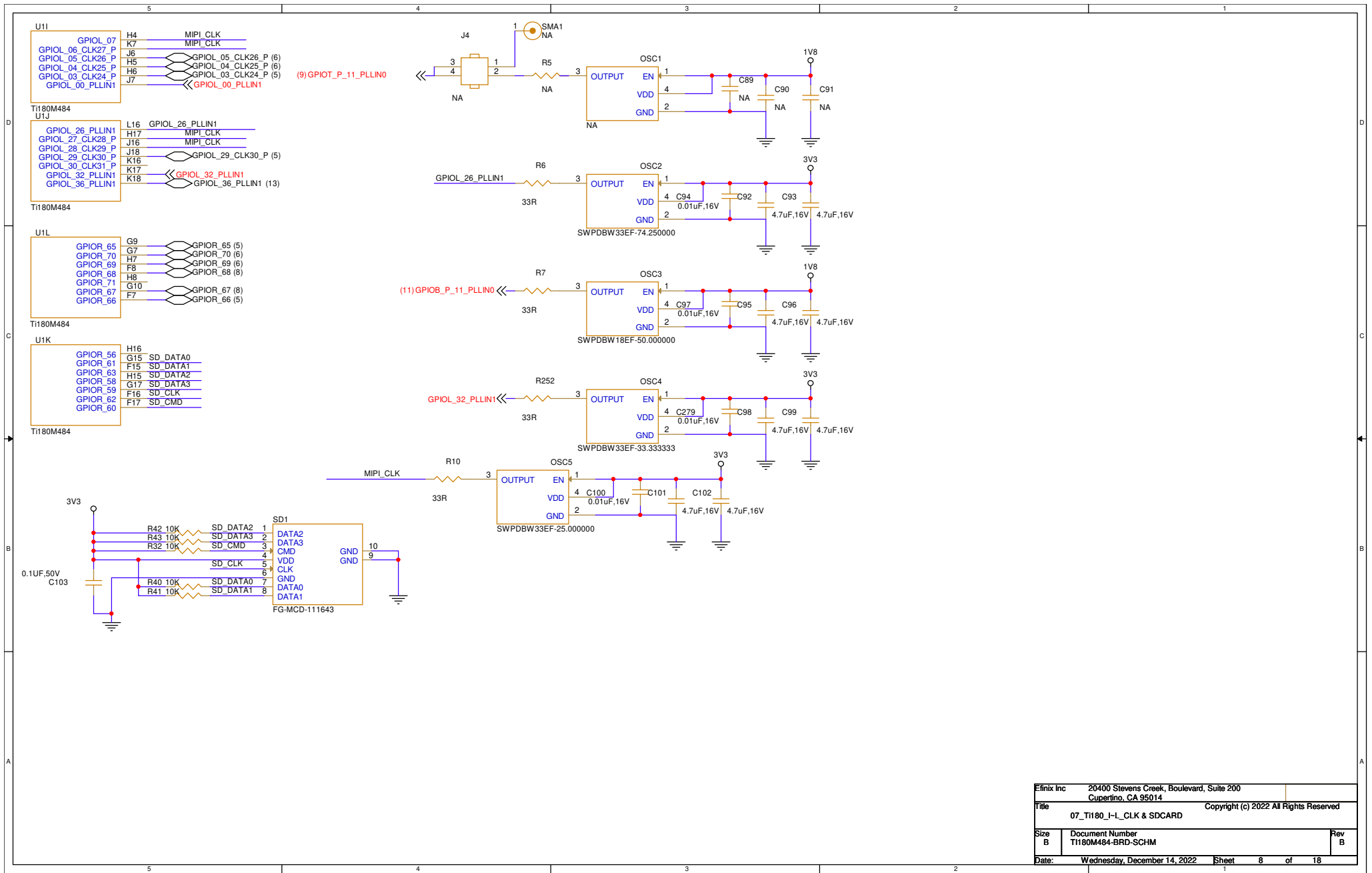
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04_TH180_D_DDR4LP			
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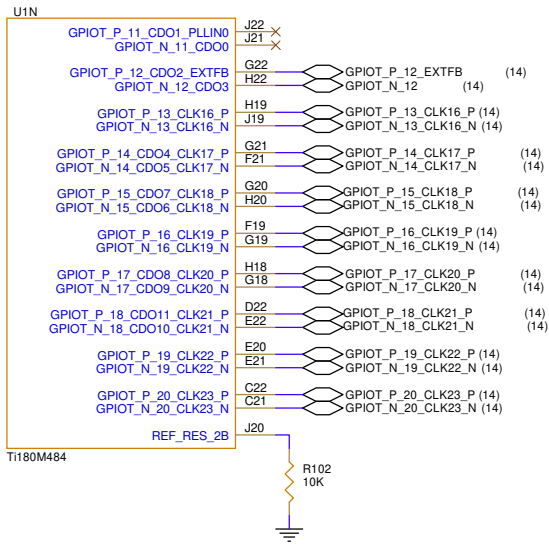
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		05_TH180_E-F_MIP1_1	
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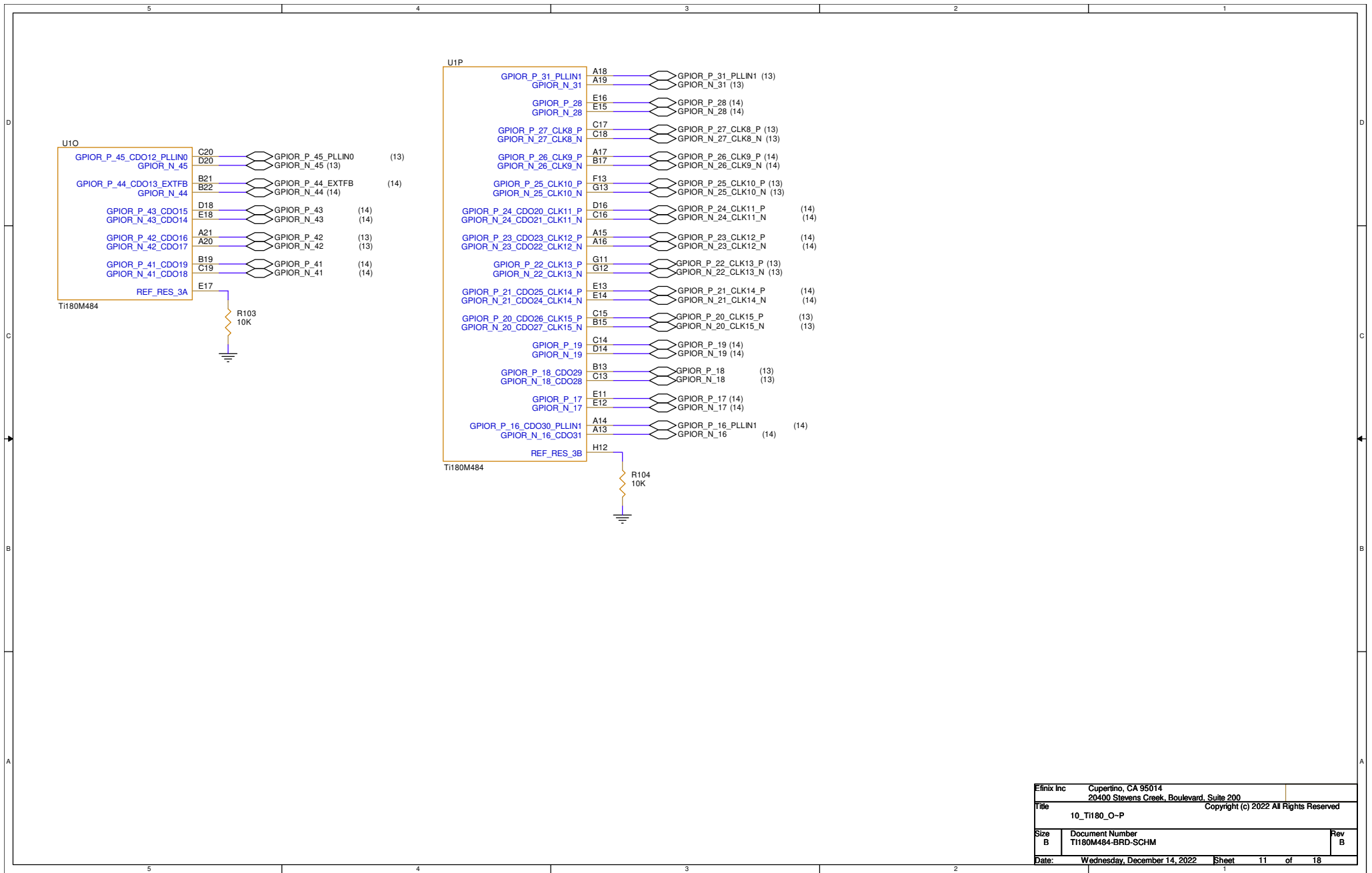
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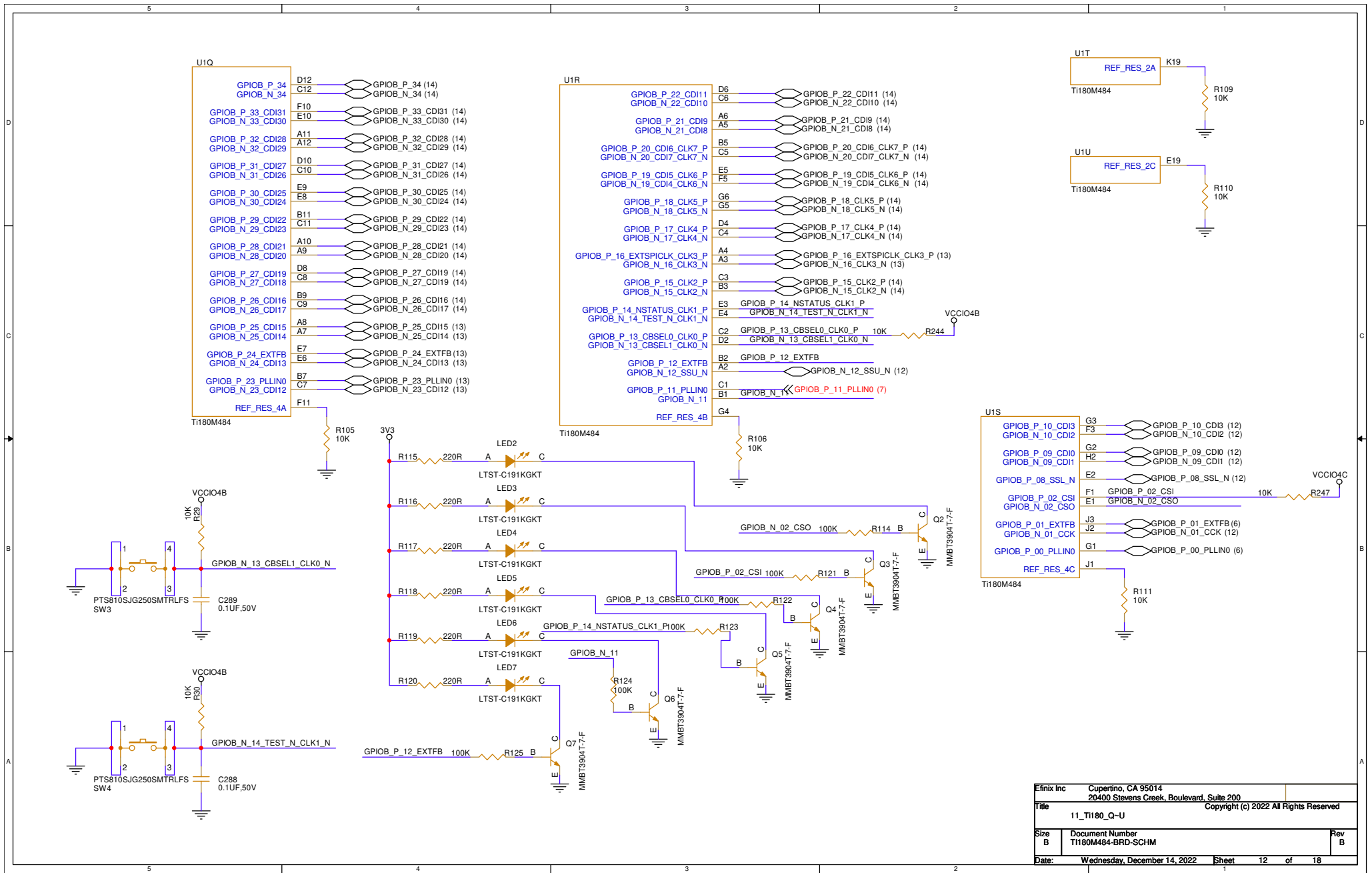
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		07_TH180_J-L_CLK & SDCARD	
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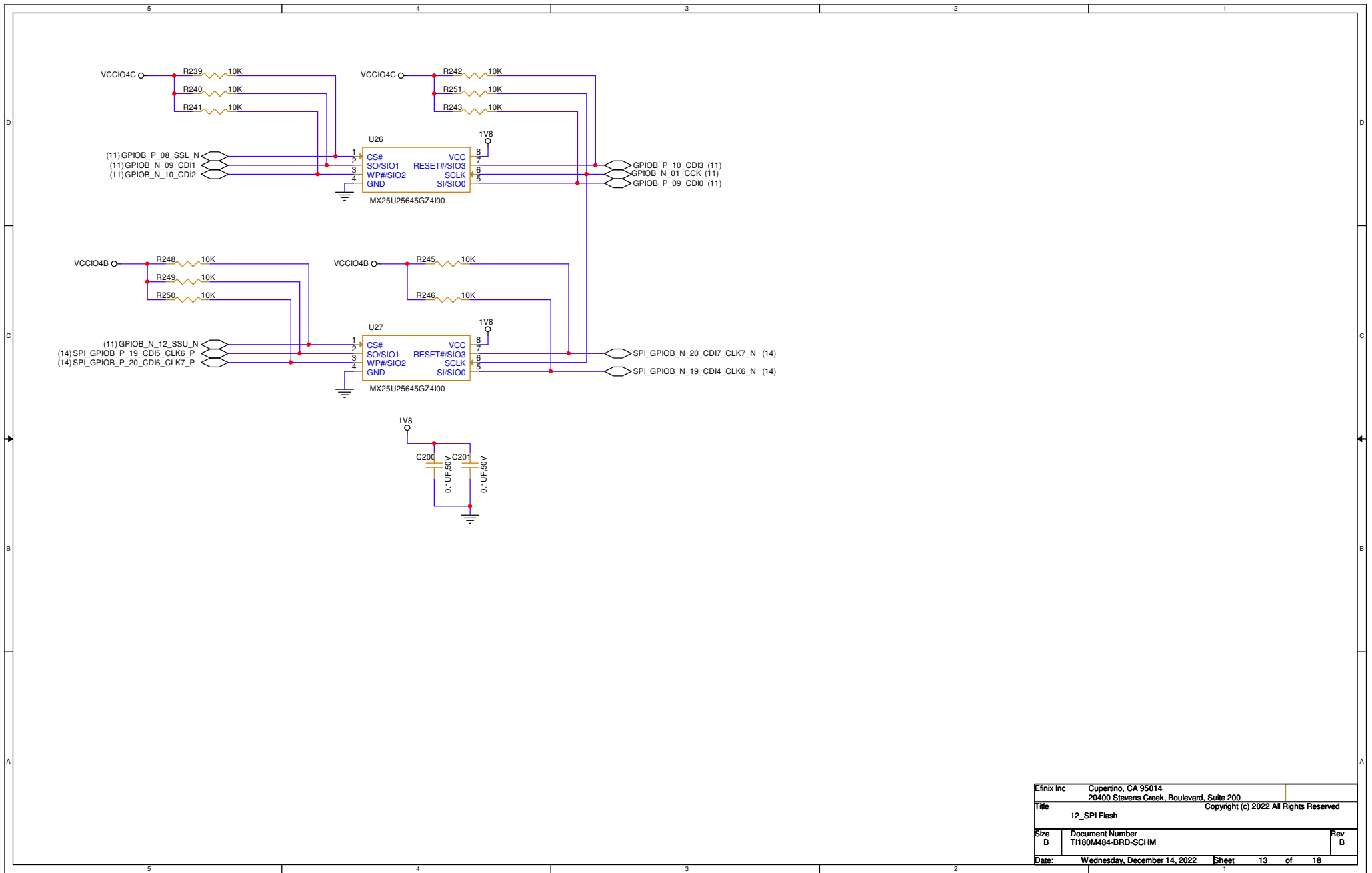
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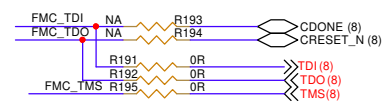
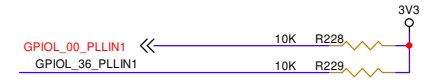
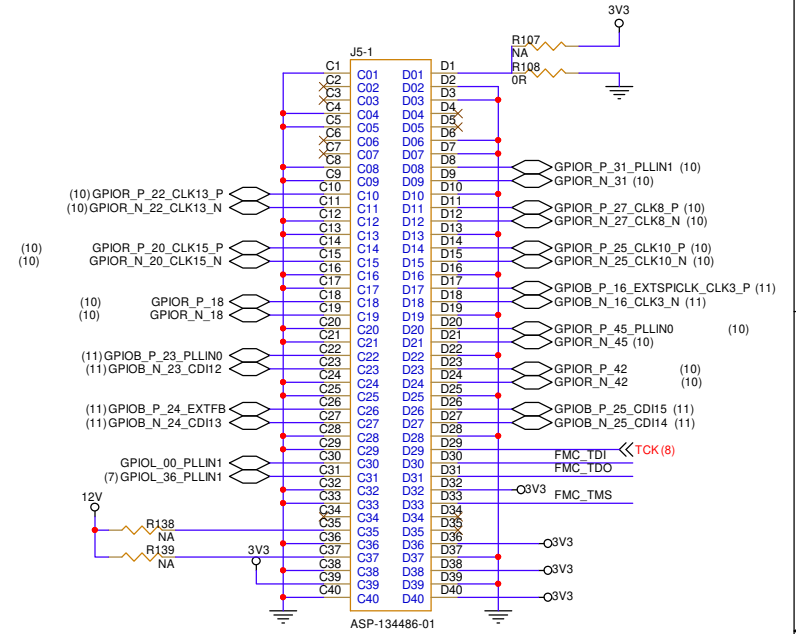
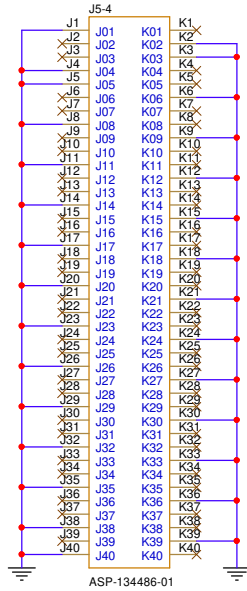
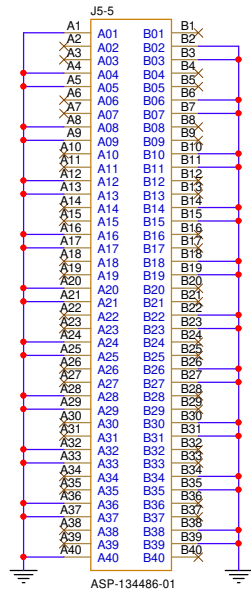
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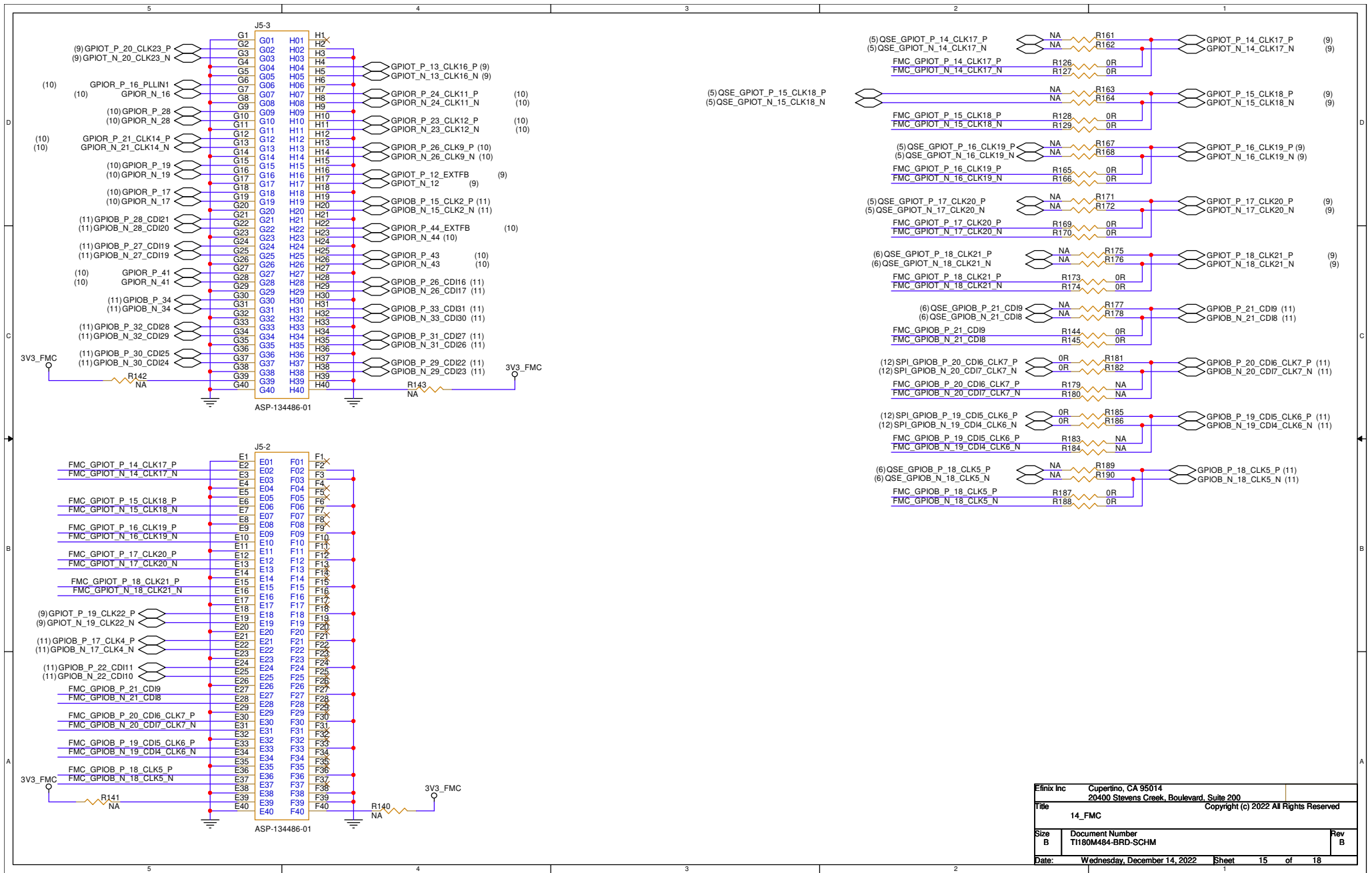
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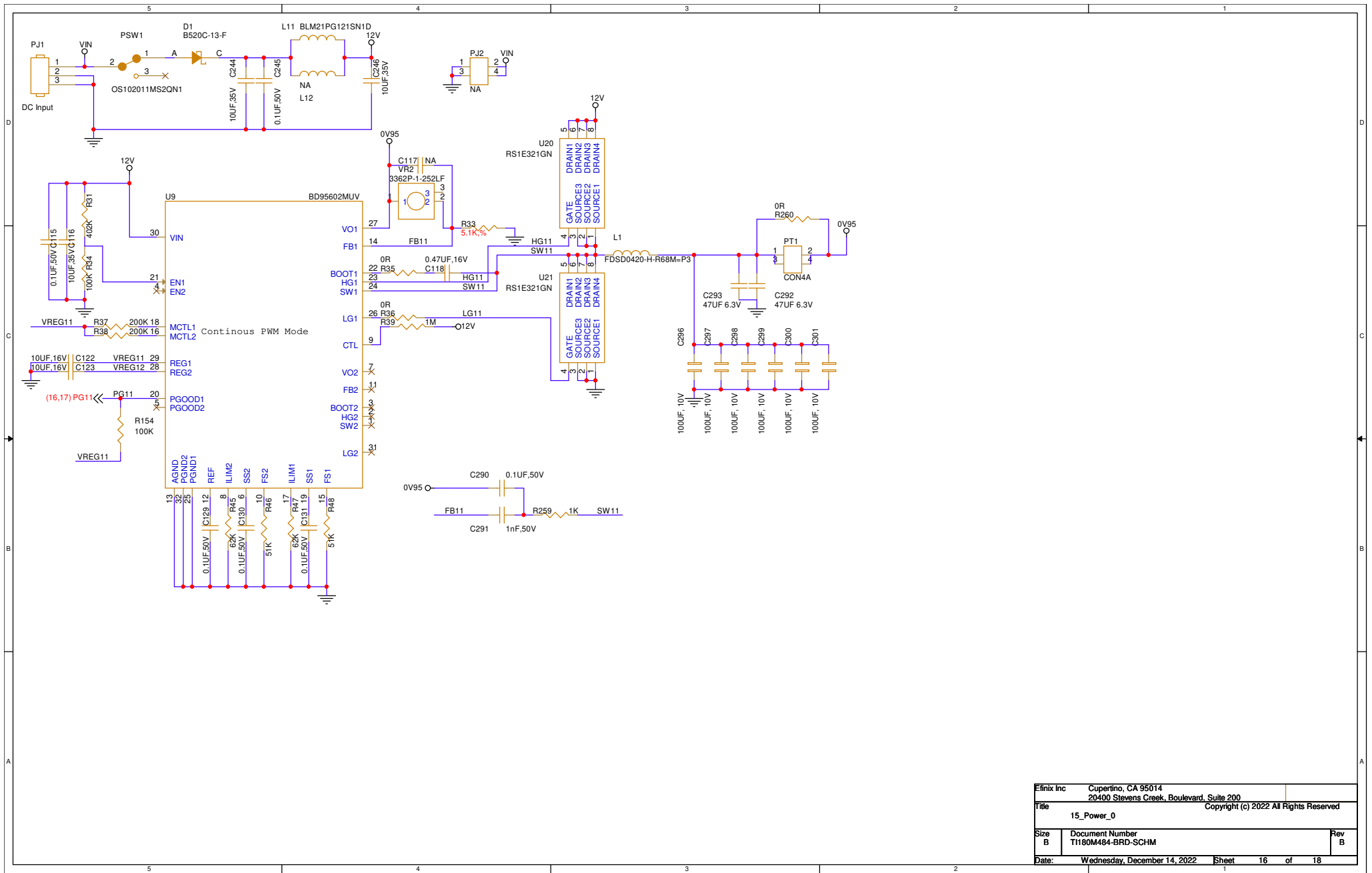
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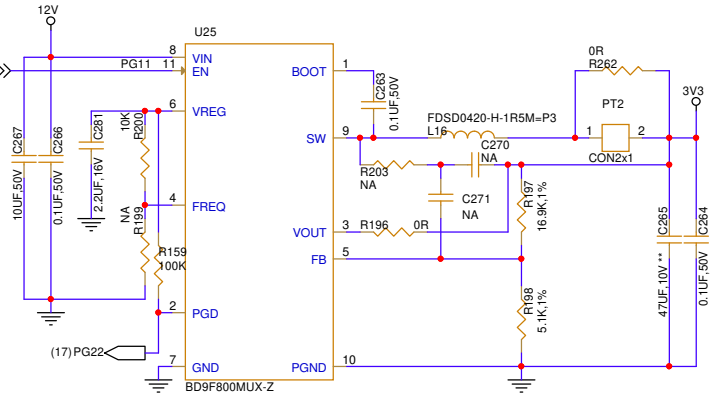
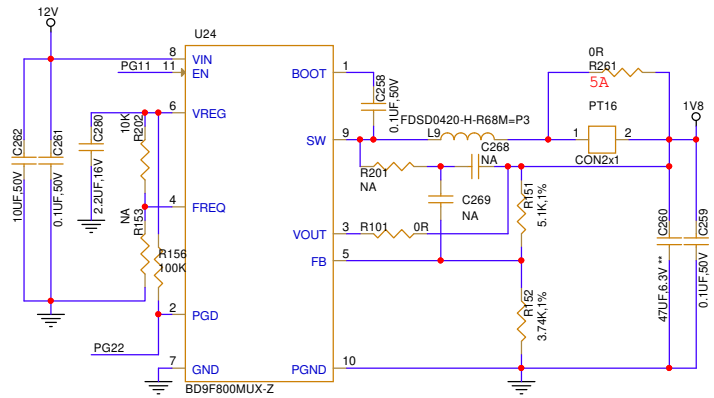
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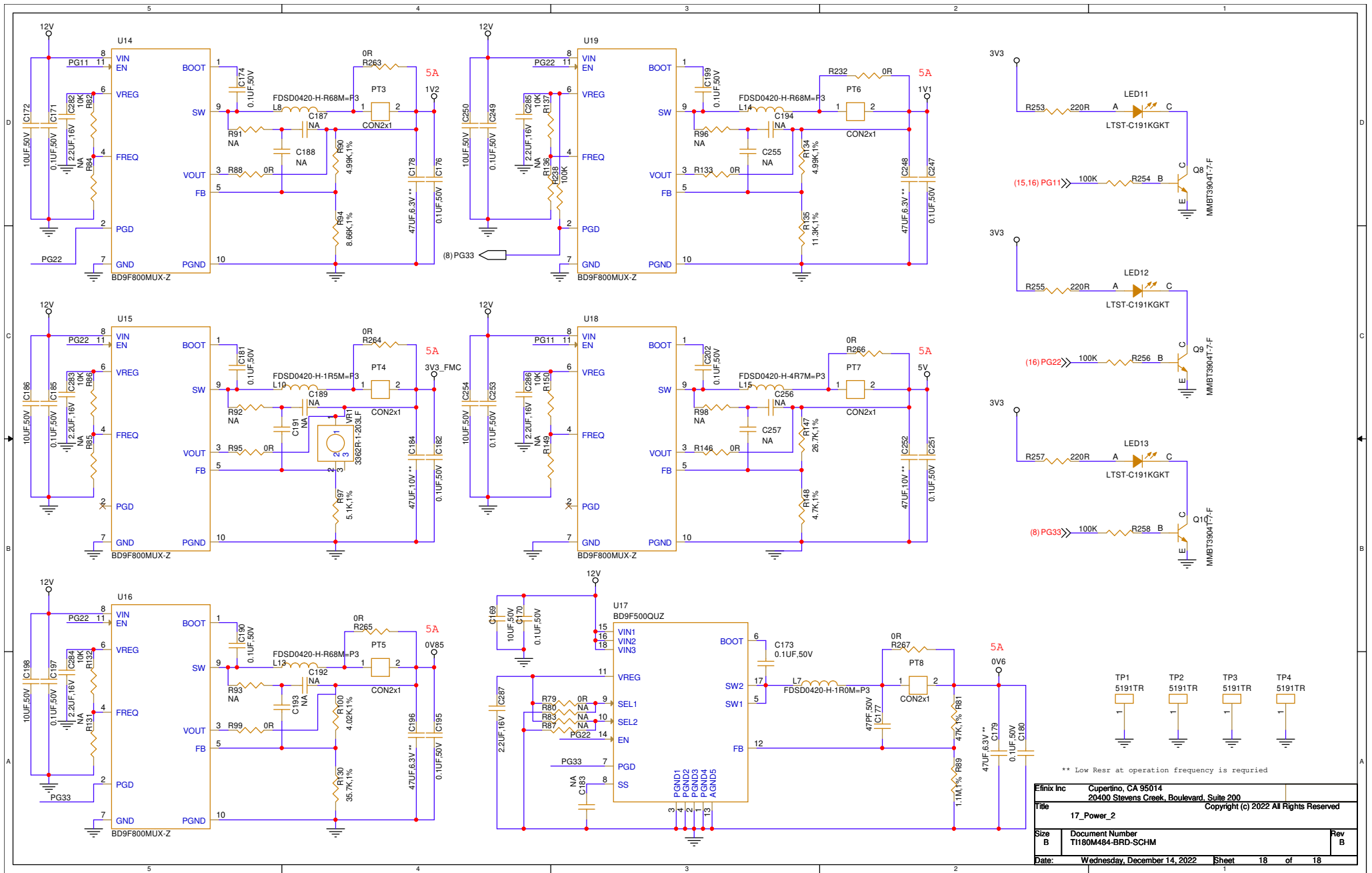


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** Low Resr at operation frequency is required

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16_Power_1			
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Title		17_Power_2	
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Item	Qty	Reference	Part	PCB Footprint
1	2	CR1,CR2	ESD Suppressor 24VDC 15kV	C0603
2	163	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,C17,C18,C19,C20,C21,C22,C23,C24,C25,C26,C27,C28,C29,C30,C31,C32,C33,C34,C36,C38,C40,C42,C43,C44,C45,C46,C47,C48,C49,C50,C51,C52,C53,C54,C55,C56,C57,C58,C59,C60,C61,C62,C63,C64,C65,C66,C67,C68,C69,C72,C74,C76,C78,C80,C82,C84,C86,C88,C103,C107,C112,C115,C120,C121,C126,C129,C130,C131,C133,C135,C137,C139,C140,C142,C170,C171,C173,C174,C176,C180,C181,C182,C185,C190,C195,C197,C199,C200,C201,C202,C203,C204,C205,C206,C207,C208,C209,C210,C211,C212,C213,C214,C215,C216,C217,C218,C219,C220,C221,C222,C223,C224,C225,C226,C227,C228,C229,C230,C231,C233,C234,C235,C237,C239,C241,C243,C245,C247,C249,C251,C253,C258,C259,C261,C263,C264,C266,C272,C273,C274,C275,C276,C277,C278,C288,C289,C290	0.1UF±10% 50V	C0402
3	32	C35,C37,C39,C41,C70,C71,C73,C75,C77,C79,C81,C83,C85,C87,C108,C109,C114,C122,C123,C124,C125,C132,C134,C136,C138,C141,C145,C232,C236,C238,C240,C242	10uF ±20% 16V	C0603
4	1	C179	47uF 6.3VDC 0603	C0603
5	9	C92,C93,C95,C96,C98,C99,C101,C102,C104	4.7uF ±10% 16V	C0603
6	4	C94,C97,C100,C279	0.01uF ±10% 50V	C0402
7	1	C105	3.3uF ±10% 10V	C0603
8	2	C110,C111	10pF ±5% 50V	C0402
9	1	C118	0.47UF ±10% 25V	C0402
10	1	C143	4.7nF ±10% 200V	C1206
11	3	C184, C252, C265	47uF 10VDC 1210	C1210
12	11	C116,C244,C246,C169,C172,C186,C198,C250,C254,C262,C267	10uF ±10% 50V	C1206
13	4	C178, C196, C248, C260	47uF 6.3VDC 1206	C1206
14	1	C177	47pF C0G 0402	C0402
15	8	C280,C281,C282,C283,C284,C285,C286,C287	2.2uF ±10% 16V	C0402
16	1	C291	1nF ±10% 50V	C0402
17	2	C292,C293	47uF ±20% 6.3V	C0805
18	6	C296,C297,C298,C299,C300,C301	100uF ±20% 10V	C1210

19	1	D1	Schottky Barrier Rectifier 20V 5A	DO-SMC
20	28	PT1,PT2,PT3,PT4,PT5,PT6,PT7,PT8,PT9,PT10,PT11,PT12,PT13,PT14,PT15,PT16,PT17,J4,J10,J11,J12,J13	Jumper (Busbar), Mini Shunt Jumper, 2 Ways, 2.54 mm, 2228 Series	Shunt
21	1	J8	HEADER 10	SIP10-2.54
22	1	J9	CON10A	CON5X2-2.54A
23	4	J10,J11,J12,J13	TSW-106-05-G-D	CON6X2-2.54A-TSW-106-05-G-D
24	10	LED1,LED2,LED3,LED4,LED5,LED6,LED7,LED11,LED12,LED13	Green	LED-0603
25	1	L7	1uH 0420	L-4.2X4.2-FDSD0420
26	5	L1,L8,L9,L13,L14	680nH 4.2mmx4.2mm -20%~20% 6500mA 2mm	L-4.2X4.2-FDSD0420
27	2	L10 L16	1.5uH 4.2mmx4.2mm -20%~20% 4300mA 2mm	L-4.2X4.2-FDSD0420
28	1	L11	Chip Ferrite Bead 120Ω@100MHz 3000mA	L0805
29	1	L15	4.7uH 4.2mmx4.2mm -20%~20% 2700mA 2mm	L-4.2X4.2-FDSD0420
30	1	OSC1	CRY-2520-4P25M	CRY-2520-4P
31	1	OSC2	CRY-2520-4P 74.25M	CRY-2520-4P
32	1	OSC3	CRY-2520-4P 50M	CRY-2520-4P
33	1	OSC4	CRY-2520-4P 33.333333M	CRY-2520-4P
34	1	OSC5	CRY-2520-4P 25M	CRY-2520-4P
35	1	PJ1	2.5 x 6.3 mm, 5.0 A, Horizontal, Surface Mount (SMT), Dc Power Jack Connector	DC-PJ-037BH-SMT
36	1	PSW1	SPDT 100mA (DC) 12V 4.00mm Thru-hole PC 2.00mm	SW-3P-SPDT-OS102011MS2QN1
37	4	PT1,PT17, PT15,PT12	CON2X2-2.54A 2*2P	CON2X2-2.54A
38	13	PT2,PT3,PT4,PT5,PT6,PT7,PT8,PT9,PT10,PT11,PT13,PT14,PT16	SIP2-2.54 2*1P	SIP2-2.54
39	4	P1,P2,P3,P4	CONN RCPT 40POS SMD GOLD	CON20X2-QSE02001XXXDA-2HOLD
40	1	J5	□ VITA 57 CONN ARRAY RCPT 400pin 1.27mm	ASP-134486-01-FMCHUB
41	10	Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9,Q10	NPN 200mA 40V 0.3V@5mA,50mA - 100@10mA,1V - 55°C~150°C(TJ) SOT-523	SOT523-EBC
42	68	R1,R2,R11,R12,R13,R14,R27,R29,R30,R32,R40,R41,R42,R43,R82,R86,R102,R103,R104,R105,R106,R109,R110,R111,R132,R137,R150,R200,R202,R204,R205,R206,R207,R208,R209,R210,R211,R212,R213,R214,R215,R216,R217,R218,R219,R220,R221,R222,R223,R224,R225,R226,R227,R228,R229,R239,R240,R241,R242,R243,R244,R245,R246,R247,R248,R249,R250,R251	10kΩ ±1% 1/16W	R0402
43	2	R3,R4	240Ω ±1% 1/16W	R0402

44	4	R6,R7,R10,R252	33Ω ±1% 1/16W	R0402
45	2	R15,R16	10Ω ±1% 1/16W	R0402
46	17	R17,R26,R28,R34,R114,R121,R122,R123,R124,R125,R154,R156,R159,R238,R254,R256,R258	100kΩ ±1% 1/16W	R0402
47	1	R18	12kΩ ±1% 1/16W	R0402
48	3	R19,R20,R21	10kΩ ±0.1% 1/16W	R0402
49	1	R22	2.2kΩ ±1% 1/16W	R0402
50	6	R23,R24,R33.R97,R151,R198	5.1kΩ ±1% 1/16W	R0402
51	10	R25,R115,R116,R117,R118,R119,R120,R253,R255,R257	220Ω ±1% 1/16W	R0402
52	1	R31	402kΩ ±1% 1/16W	R0402
53	40	R35,R36,R79,R88,R95,R99,R101,R108,R126,R127,R128,R129,R133,R144,R145,R146,R165,R166,R169,R170,R173,R174,R181,R182,R185,R186,R187,R188,R191,R192,R195,R196,R260,R261,R262,R263,R264,R265,R266,R267	0Ω ±1% 1/16W	R0402
54	2	R37,R38	200kΩ ±1% 1/16W	R0402
55	1	R39	1MΩ ±1% 1/16W	R0402
56	2	R45,R47	62kΩ ±1% 1/16W	R0402
57	2	R46,R48	51kΩ ±1% 1/16W	R0402
58	1	R49	1MΩ ±5% 250mW	R1206
59	1	R81	47K 1% 0402	R0402
60	1	R89	1.1M 1% 0402	R0402
61	2	R90,R134	4.99kΩ ±1% 1/16W	R0402
62	1	R94	8.66kΩ ±1% 1/16W	R0402
63	1	R100	4.02kΩ ±1% 1/16W	R0402
64	1	R130	35.7kΩ ±1% 1/16W	R0402
65	1	R135	11.3kΩ ±1% 1/16W	R0402
66	1	R147	26.7kΩ ±1% 1/16W	R0402
67	1	R148	4.7kΩ ±1% 1/16W	R0402
68	1	R152	3.74kΩ ±1% 1/16W	R0402
69	1	R197	16.9kΩ ±1% 1/16W	R0402
70	1	R232	0mΩ 0.125W,1/8W -5%~5%	R0805
71	1	R259	1KΩ -1%~1% 0.063W,1/16W	R0402

72	1	SD1	MicroSD Card Sockets Connectors	SD-FG-MCD-111643
73	1	SMA1	0 Ohms, SMA PCB Jack Receptacle, Vertical, with Standoffs	SMA-CON-V-SD-73391-007
74	4	SW1,SW2,SW3,SW4	SPST-NO Tactile Switches 4.2mmx3.2mm - 400gf	SW-4.2X3.2-PTS810
75	1	USB1	USB - Type C Female 16 SMT USB Connectors	USB-TYPEC-U262-16XN-4BVC11
76	4	TP1, TP2, TP3, TP4		
77	1	U1	Ti180M484 BGA484-18X18-.8-SOCKET	BGA484-18X18-.8-SOCKET
78			Ti180L484 BGA484-18X18-.8-SOCKET	
79	1	U2	DRAM Chip Mobile LPDDR4 SDRAM	WFBGA200-10X14.5-.8X.65
80	1	U4	USB UART USB 2.0 70mA 64-LQFP 3 V ~ 3.6 V	QFN56-0808-.5TH6.1
81	1	U28	Supervisor IC, Voltage Detector, Reset IC Series for Automotive Application	SOT23-5
82	1	U6	EEPROM 2Kb (128 x 16) 2MHz SPI SOT-23-6 2.5 V ~ 5.5 V	SOT23-6
83	1	U9	5.5V to 28V Input, 2ch Synchronous Buck DC/DC Controller	QFN32-0505-.5TH3.4
84	7	U14,U15,U16,U18,U19,U24,U25	1 Adjustable 8000mA 600(Typ)kHz 4.5V 28V	VQFN11-3.5X3.5-BD9F800MUX-Z
85	1	U17	Positive Buck Adjustable 1 0.6V 14V 5000mA 600kHz, 1KHz, 2.2MHz 16-XFQFN Exposed Pad 4.5V 36V	QFN16-0303-.5-2pad
86	2	U20,U21	Power MOSFET 30V 20V,-20V 34W -55°C~150°C	HSOP8-6X5-1.27TH4.21X3.5
87	2	U26,U27	NOR Flash Serial (SPI, Dual SPI, Quad SPI) 1.8V 256M-bit 256M/128M/64M x 1/2-bit/4-bit 5ns 8-Pin WSON EP	WSON8-6X5-1.27TH4X3.4
88	1	VR1	Trimmer Resistors - Through Hole 1/4"SQ 20KOHMS 10% 0.5WATTS	VR-3362R
89	1	VR2	Trimmer Resistors - Through Hole TRIMMER - 1/4" SQ ST CERMET	VR-3362R
90	1	Y1	12000000Hz -40°C~85°C 3225-4 12pF	CRY-3.2-2.5-4P



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