

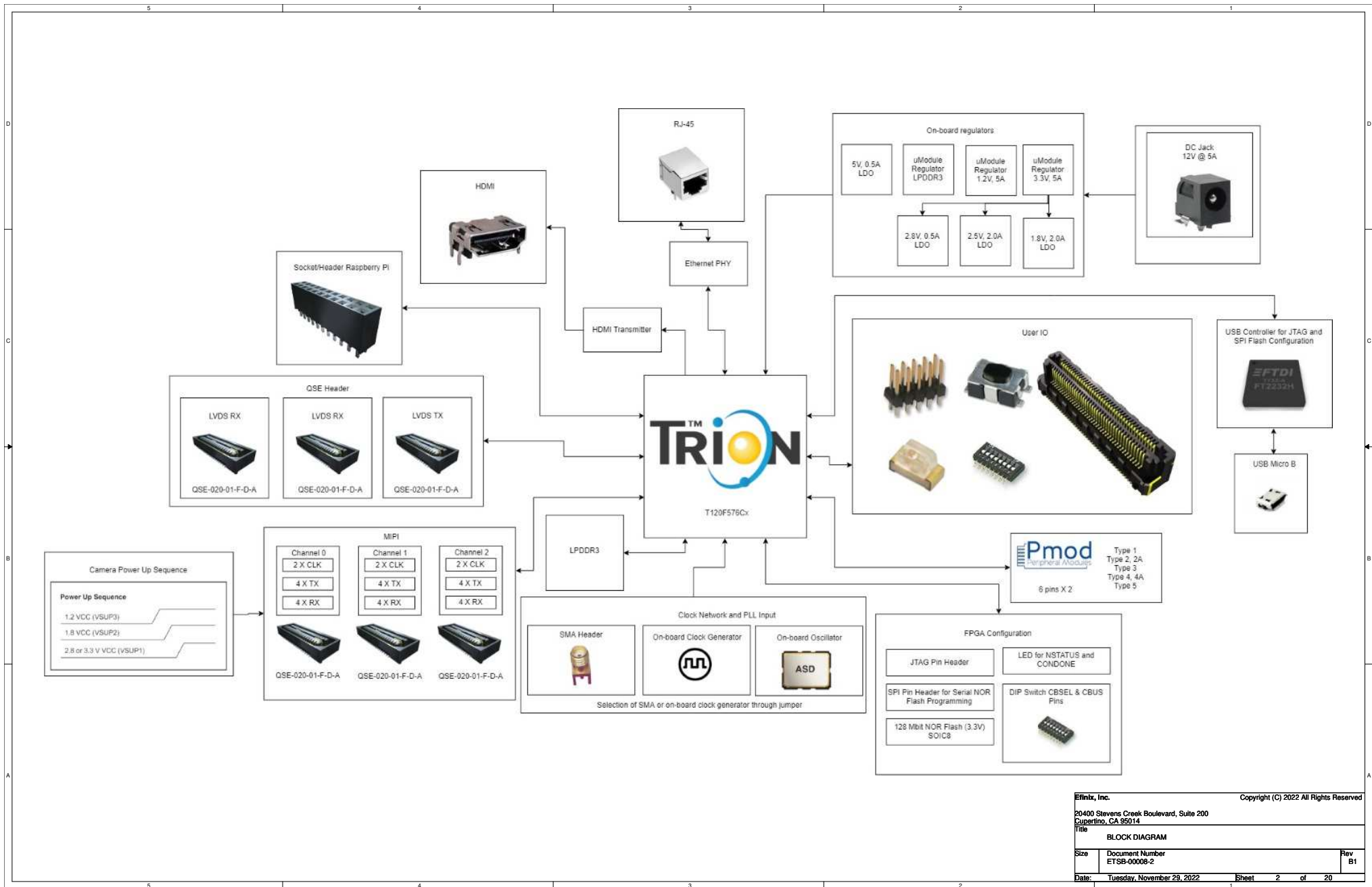
T120F576 DEVELOPMENT BOARD

CONTENTS

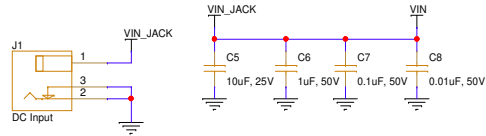
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DOCUMENT VERSION HISTORY

VER	DATE	EDITOR	DESCRIPTION
1A	10/10/19	KJOOI	Initial Creation
2A	01/07/20	KJOOI	Updated DDIO pins to DDIO, updated netlist, added regulator for ethernet PHY
3A	05/22/20	KCLEE	Updated clock source table
4.0	24/11/22	CFLEUNG	Rev B1 release Update U14 clock generate circuit Update document version format

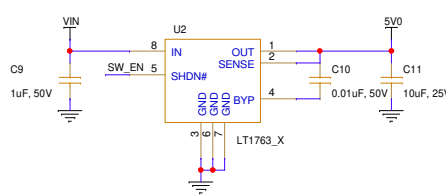


Board Input Jack
DC Jack (5- 12V) @ 10A

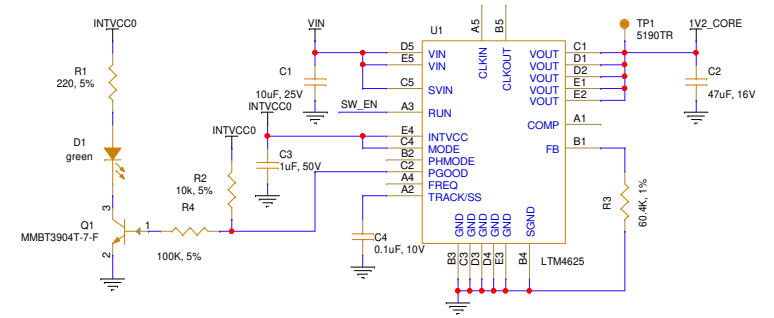


Supply front-end filter

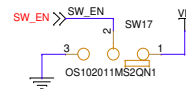
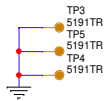
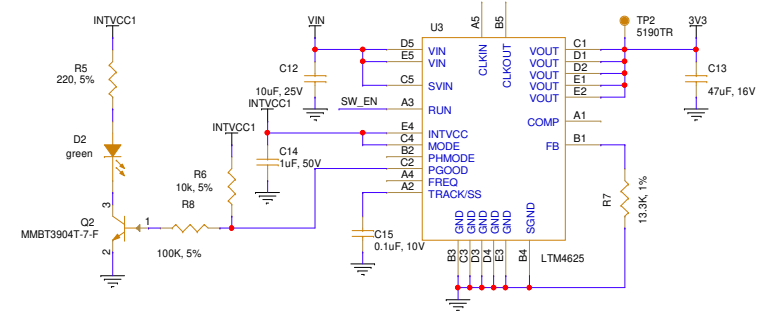
5V @ 0.5A supply for daughter card
and MIPI camera



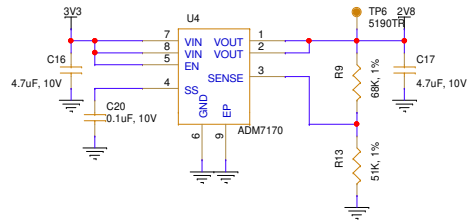
1.2V @ 5A supply for FPGA VCC,
FPGA MIPI and FPGA AVCC



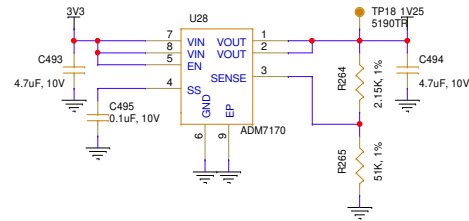
3.3V @ 5A supply for LDOs
HDMI and PMOD



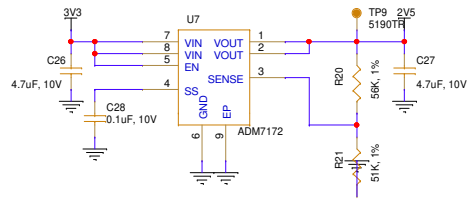
2.8V @ 0.5A supply for MIPI Camera



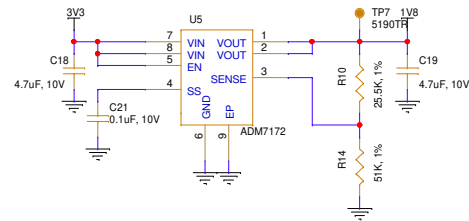
1.25V @ 0.5A supply for Ethernet PHY



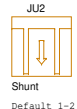
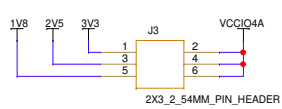
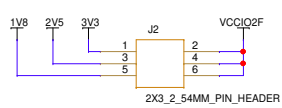
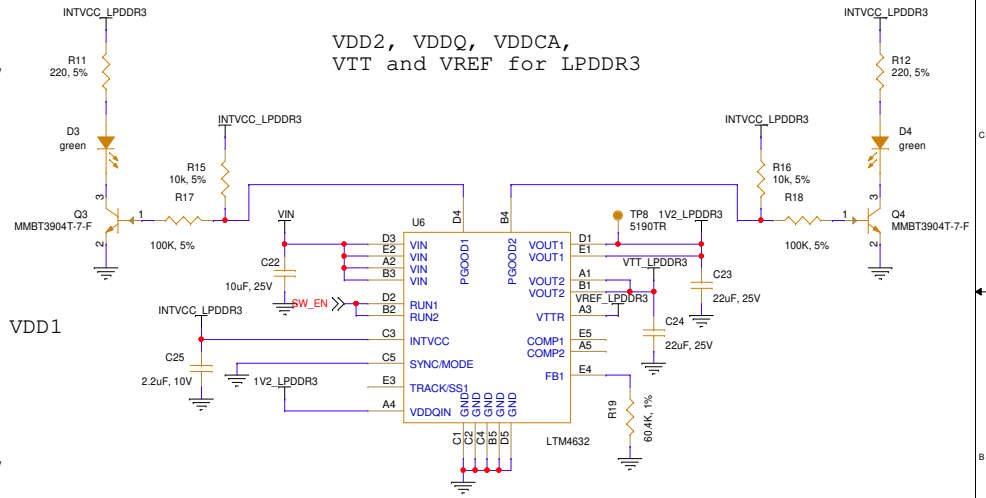
2.5V @ 2.0A supply for FPGA MIPI, VCCIO2F and VCCIO4A

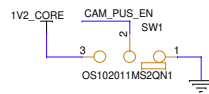
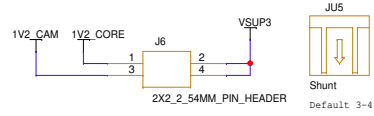
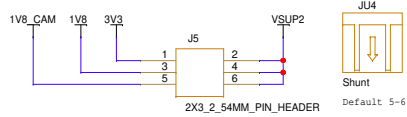
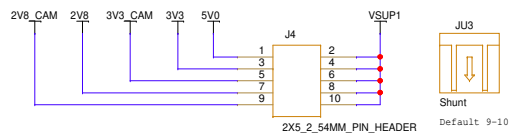


1.8V @ 2.0A supply for LPDDR3 VDD1, VCCIO2F, VCCIO4A and HDMI

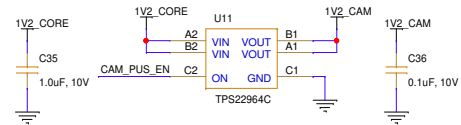
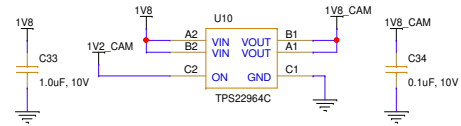
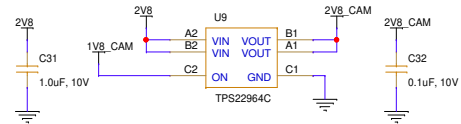
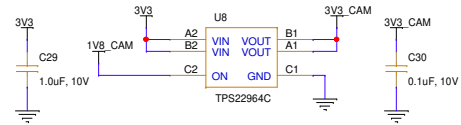


VDD2, VDDQ, VDDCA, VTT and VREF for LPDDR3

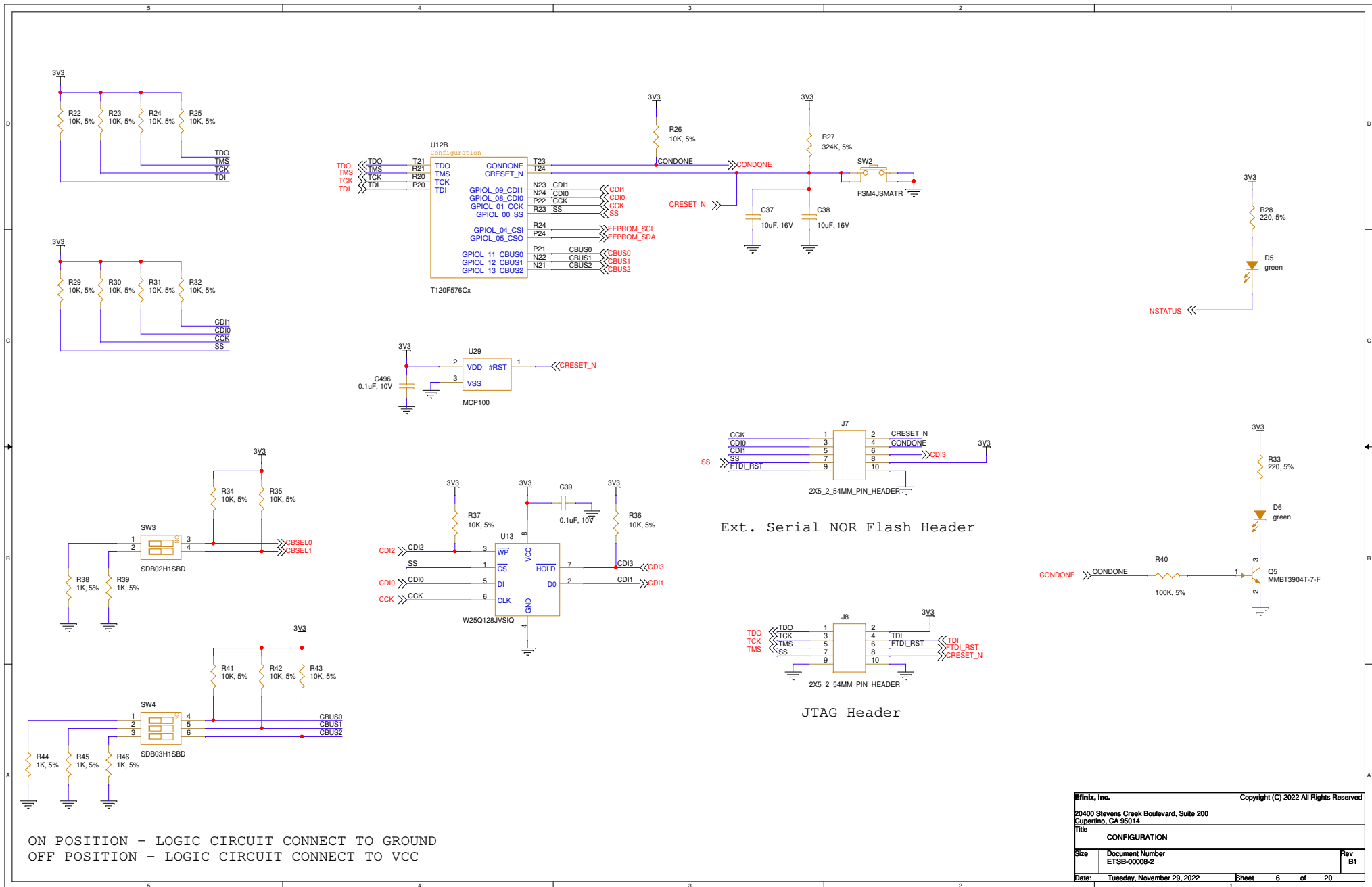


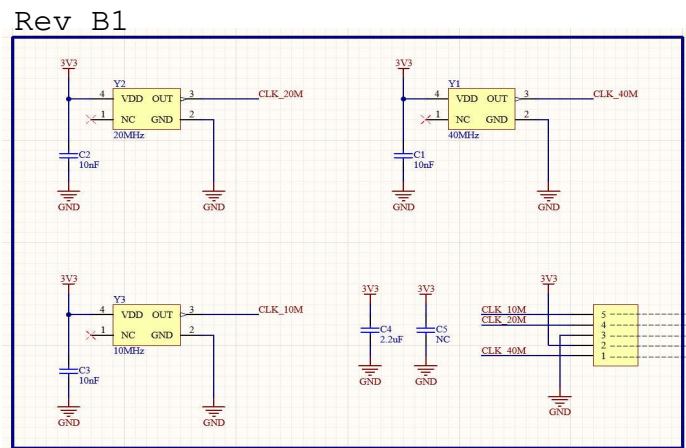
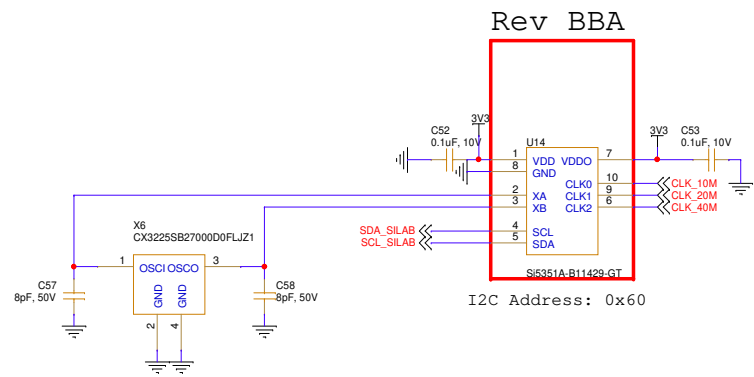
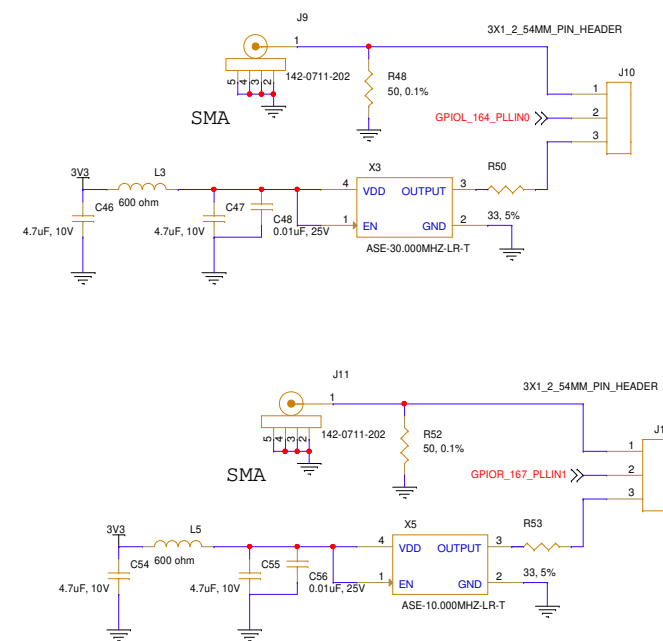
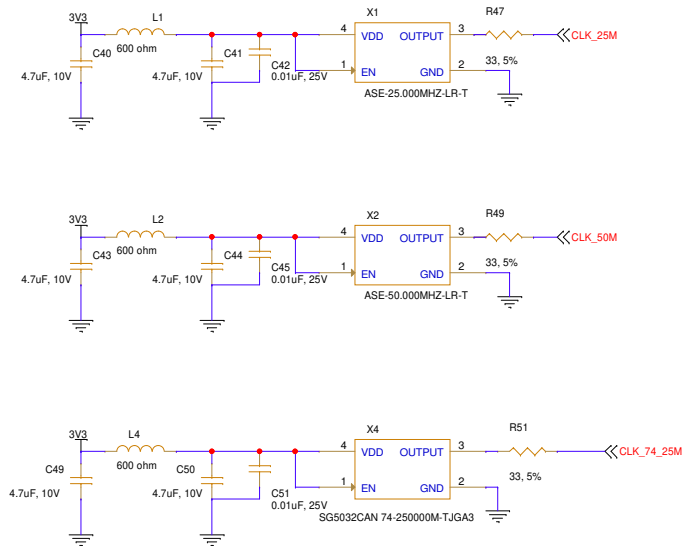


1-2 POSITION - DISABLE CAMERA PUS (DEFAULT)
 2-3 POSITION - ENABLE CAMERA PUS



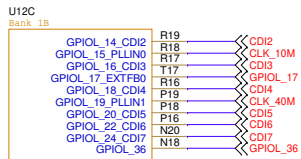
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20400 Stevens Creek Boulevard, Suite 200 Cupertino, CA 95014		
Title MIPI CAMERA SUPPLY		
Size	Document Number ETSB-00008-2	Rev B1
Date:	Tuesday, November 29, 2022	Sheet 5 of 20



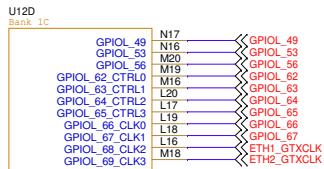


Trion Clock Pin	Frequency (MHz)
GPIOL_15_PLLIN0	10
GPIOR_187_PLLIN1	20
GPIOL_19_PLLIN1	40

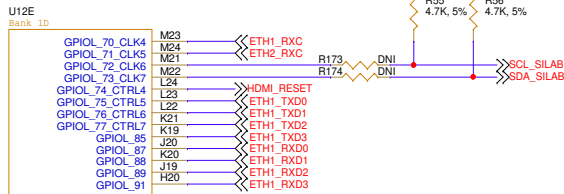
Correspond to U14
 5 -> Pin 10
 4 -> Pin 9
 3 -> Pin 8
 2 -> Pin 7
 1 -> Pin 6



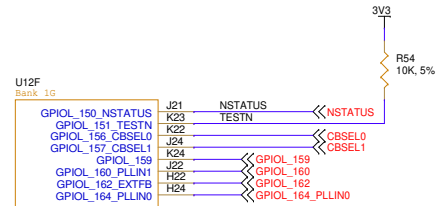
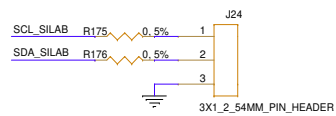
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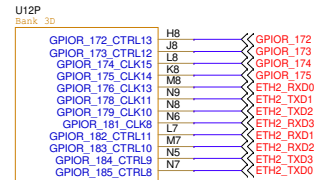
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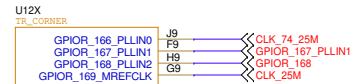
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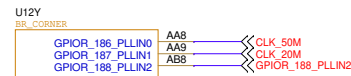
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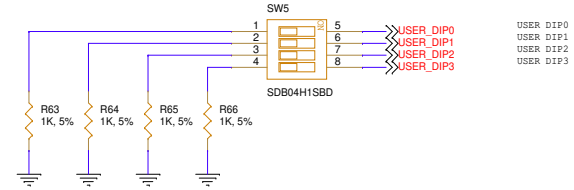


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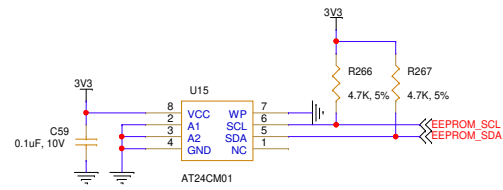
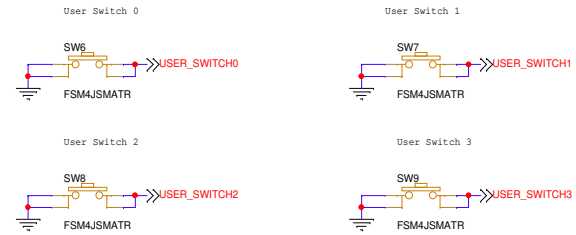
User LEDs



User DIP Switches

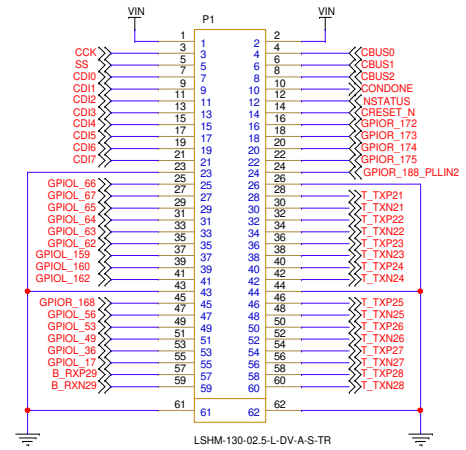
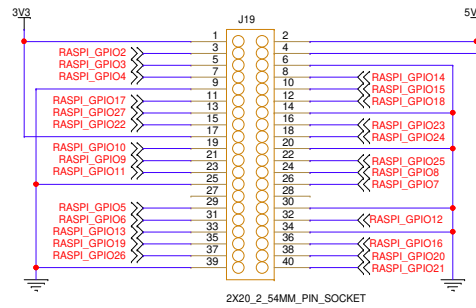
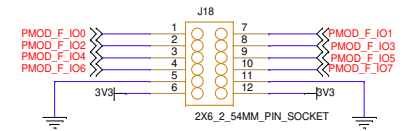
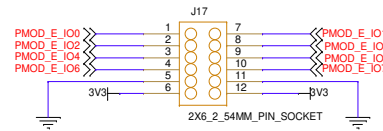
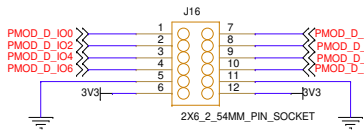
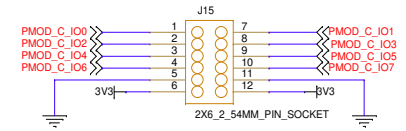
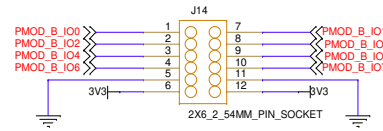
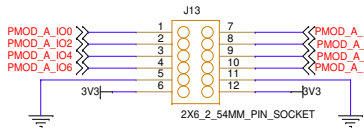


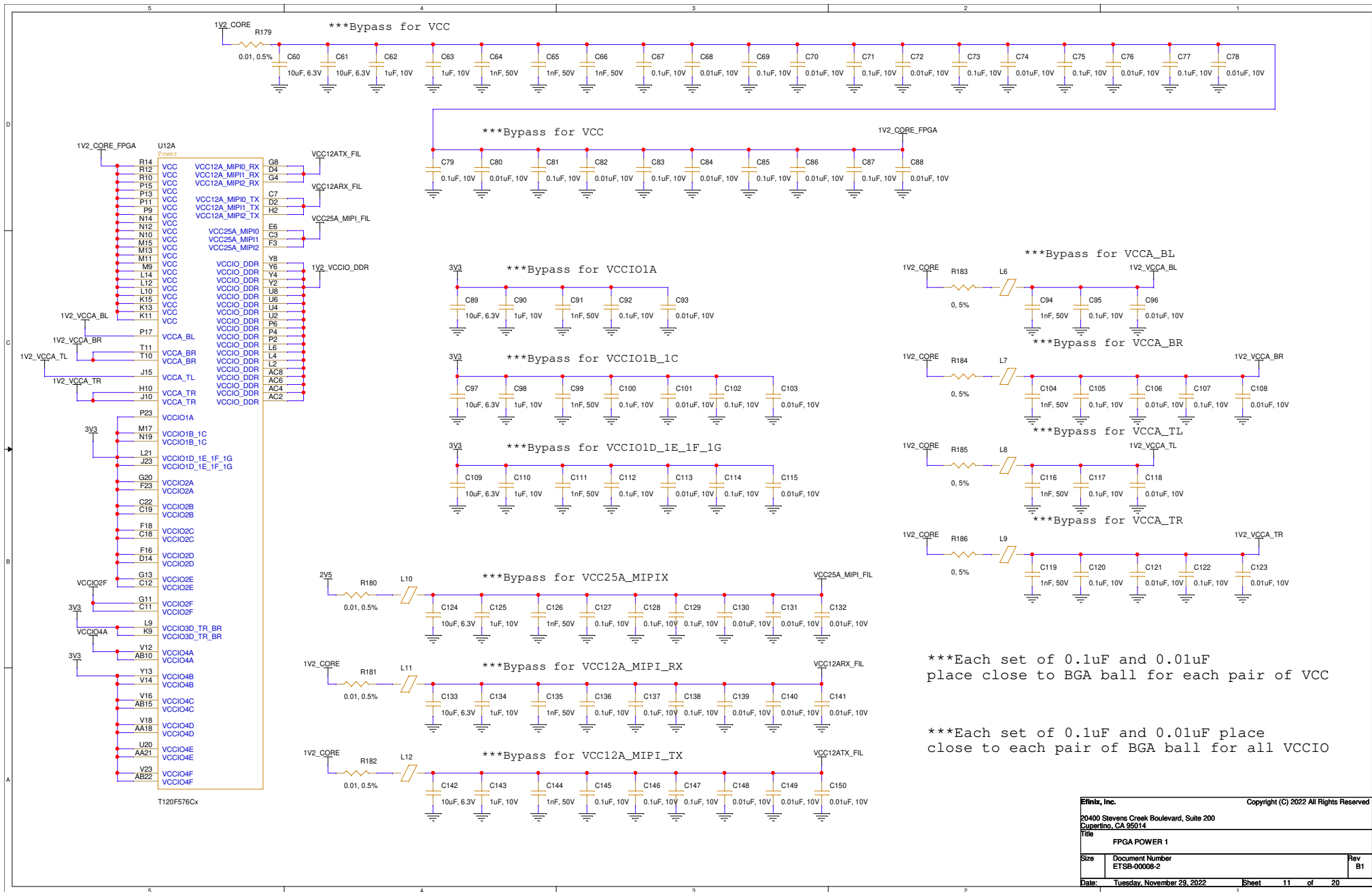
User DIP Buttons



I2C Address: 0x50

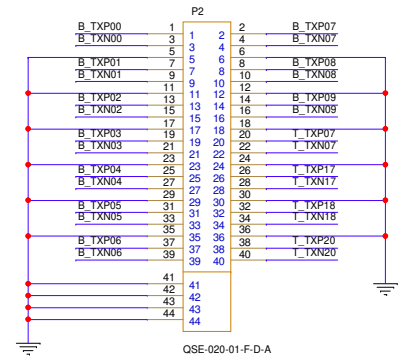
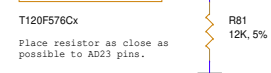
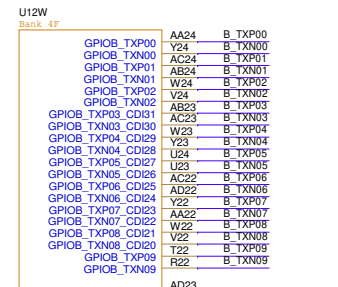
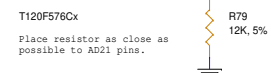
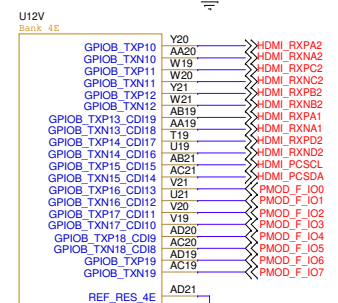
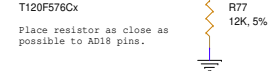
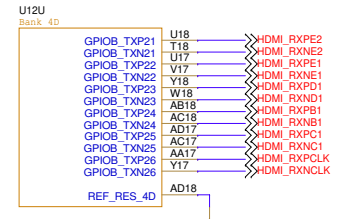
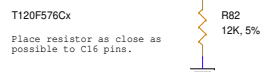
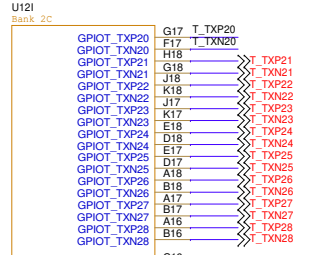
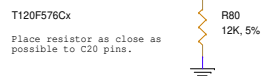
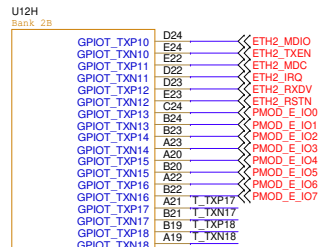
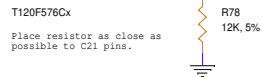
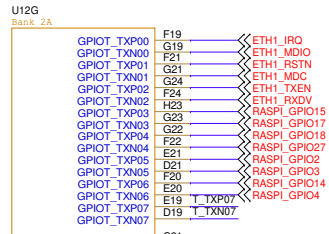
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20400 Stevens Creek Boulevard, Suite 200 Cupertino, CA 95014			
Title USER LED, DIP, SWITCH & EEPROM			
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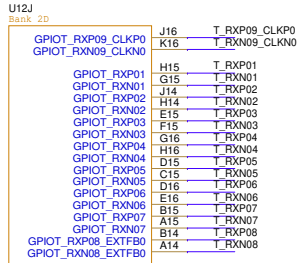




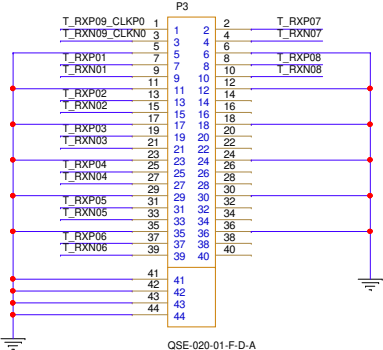
***Each set of 0.1uF and 0.01uF place close to BGA ball for each pair of VCC

***Each set of 0.1uF and 0.01uF place close to each pair of BGA ball for all VCCIO

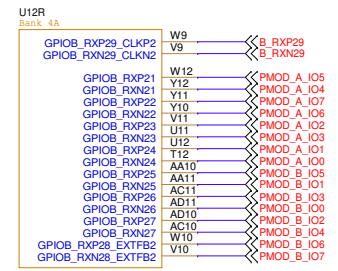




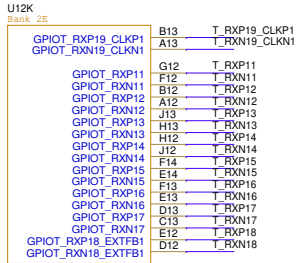
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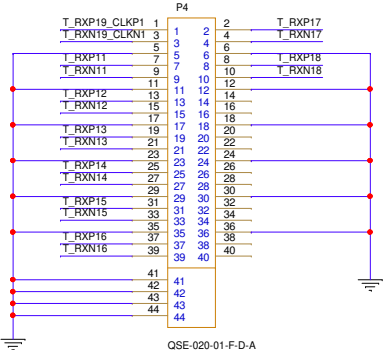
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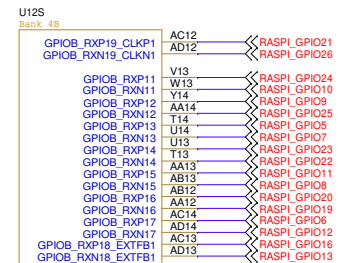
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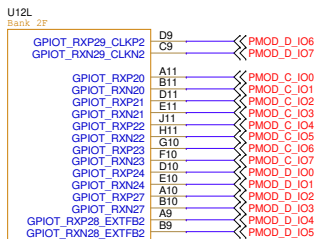
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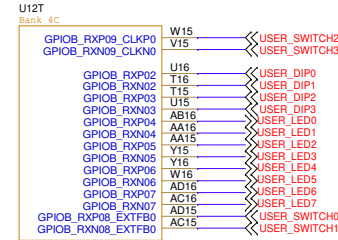
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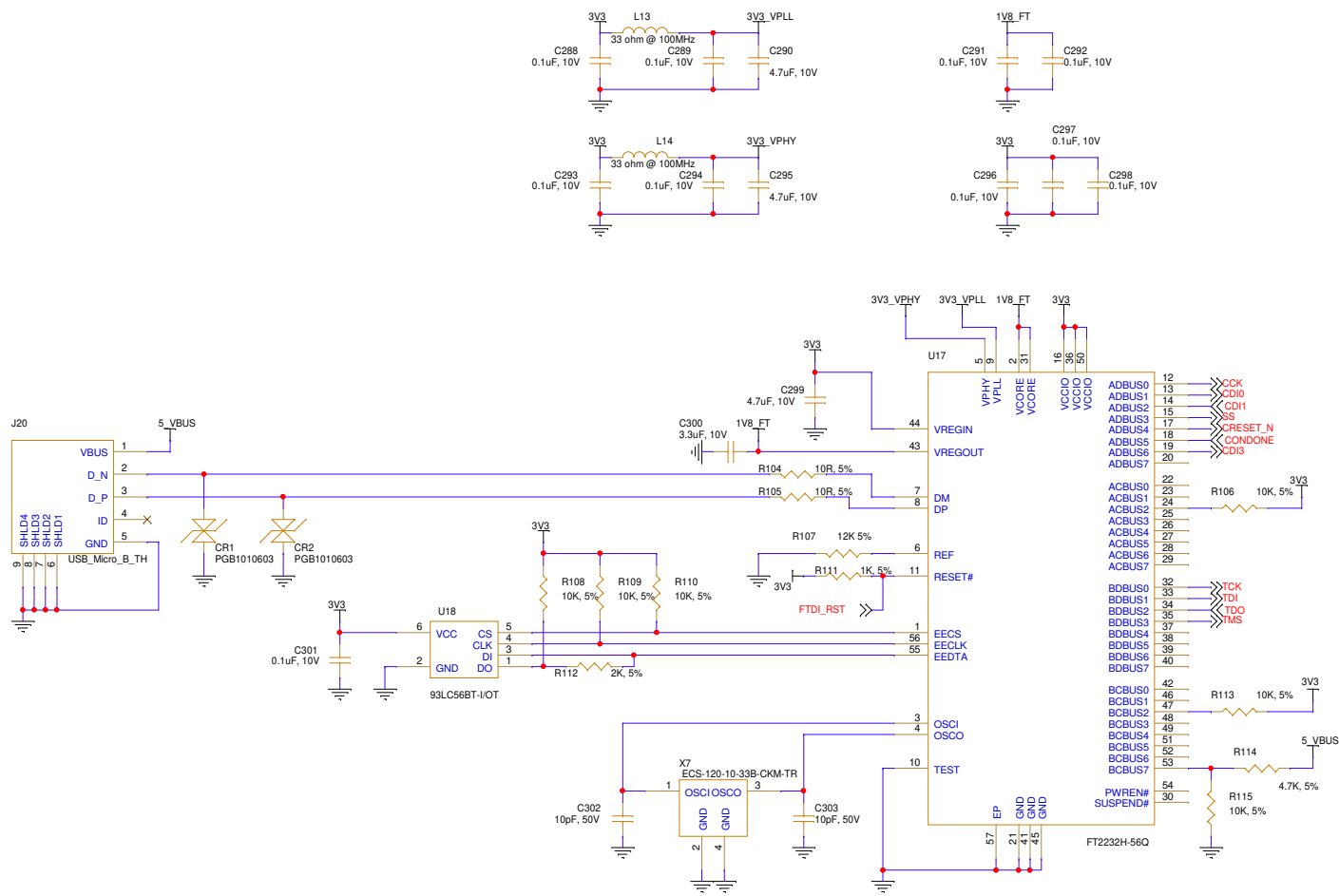
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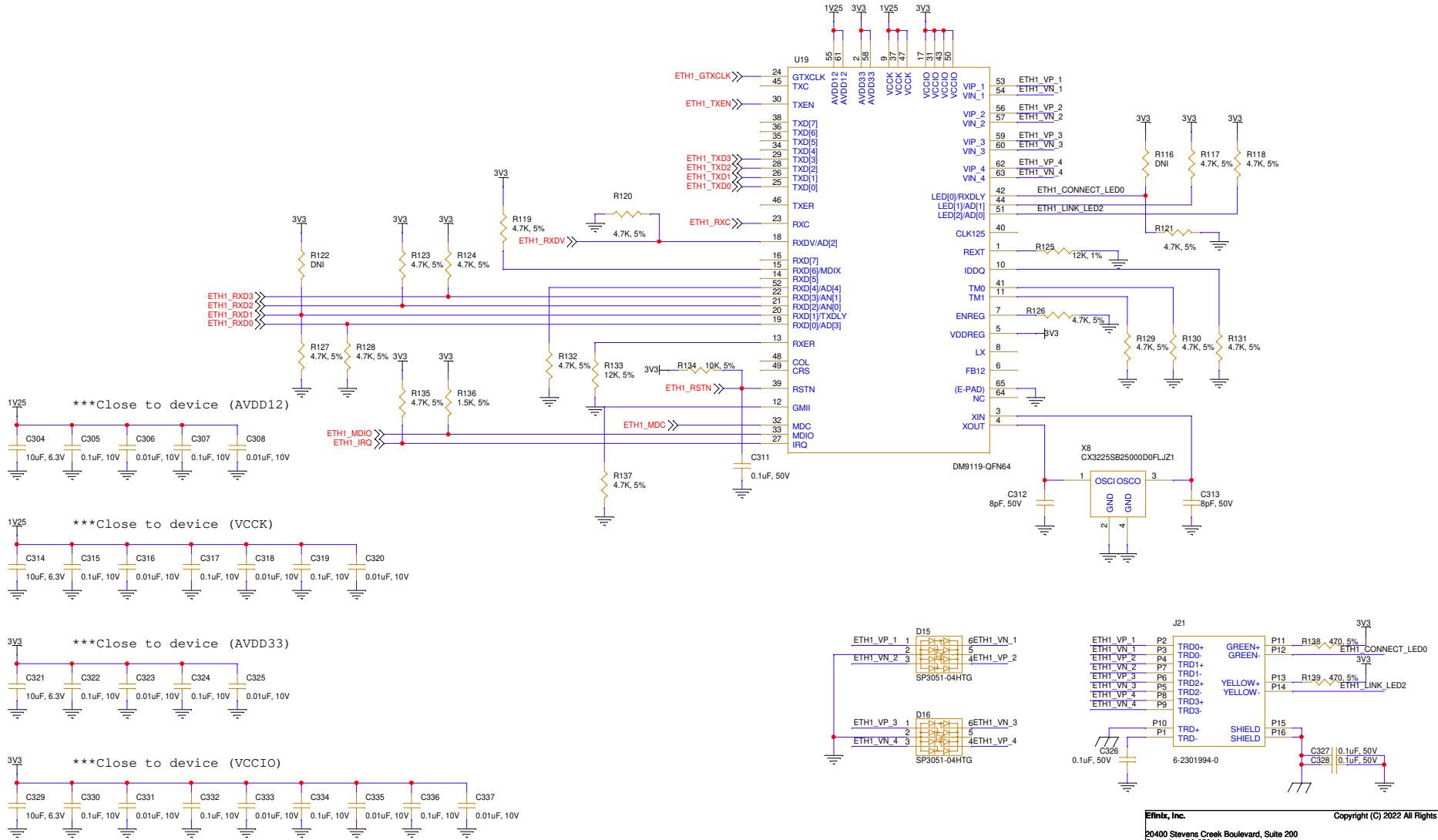


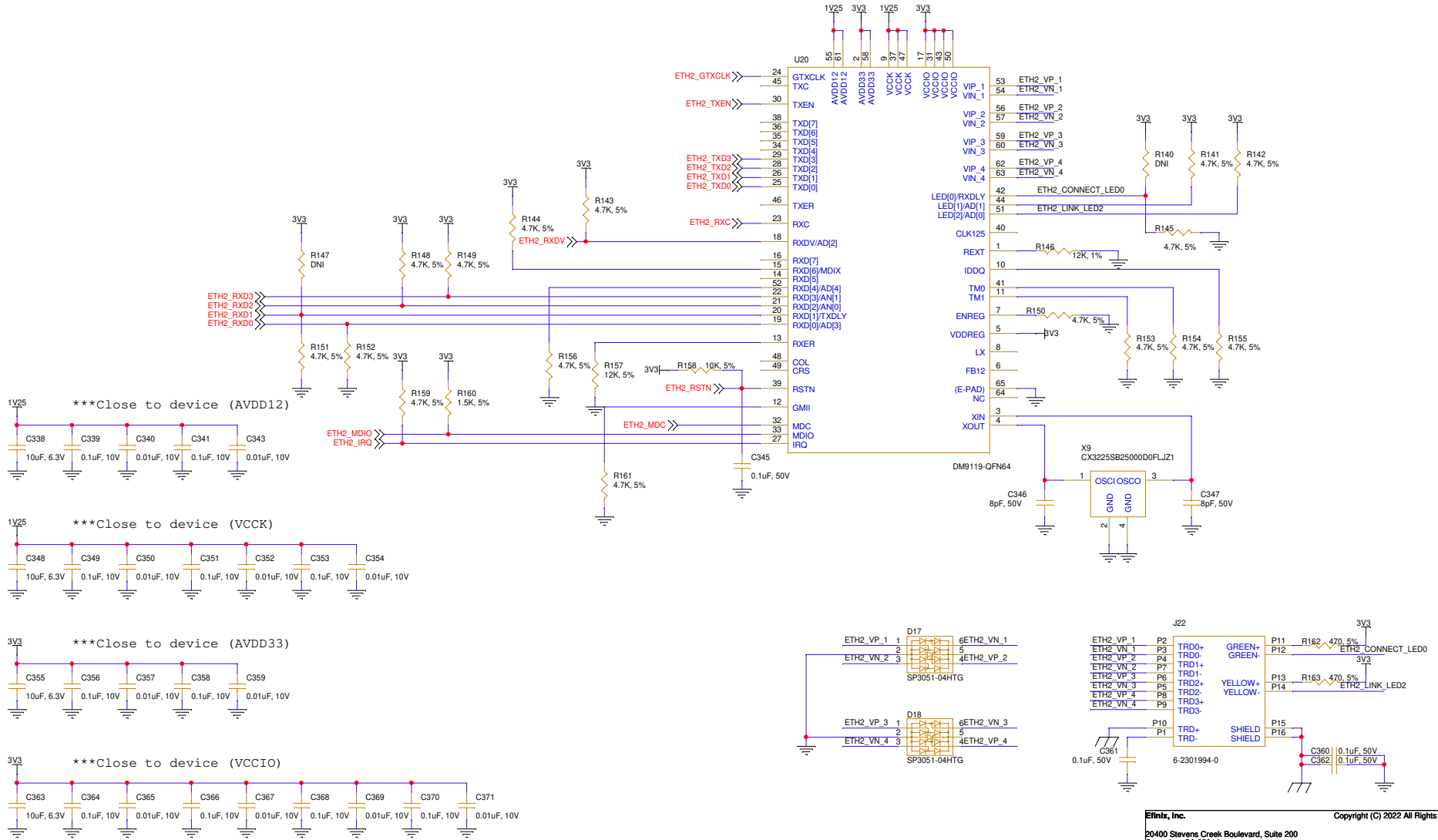
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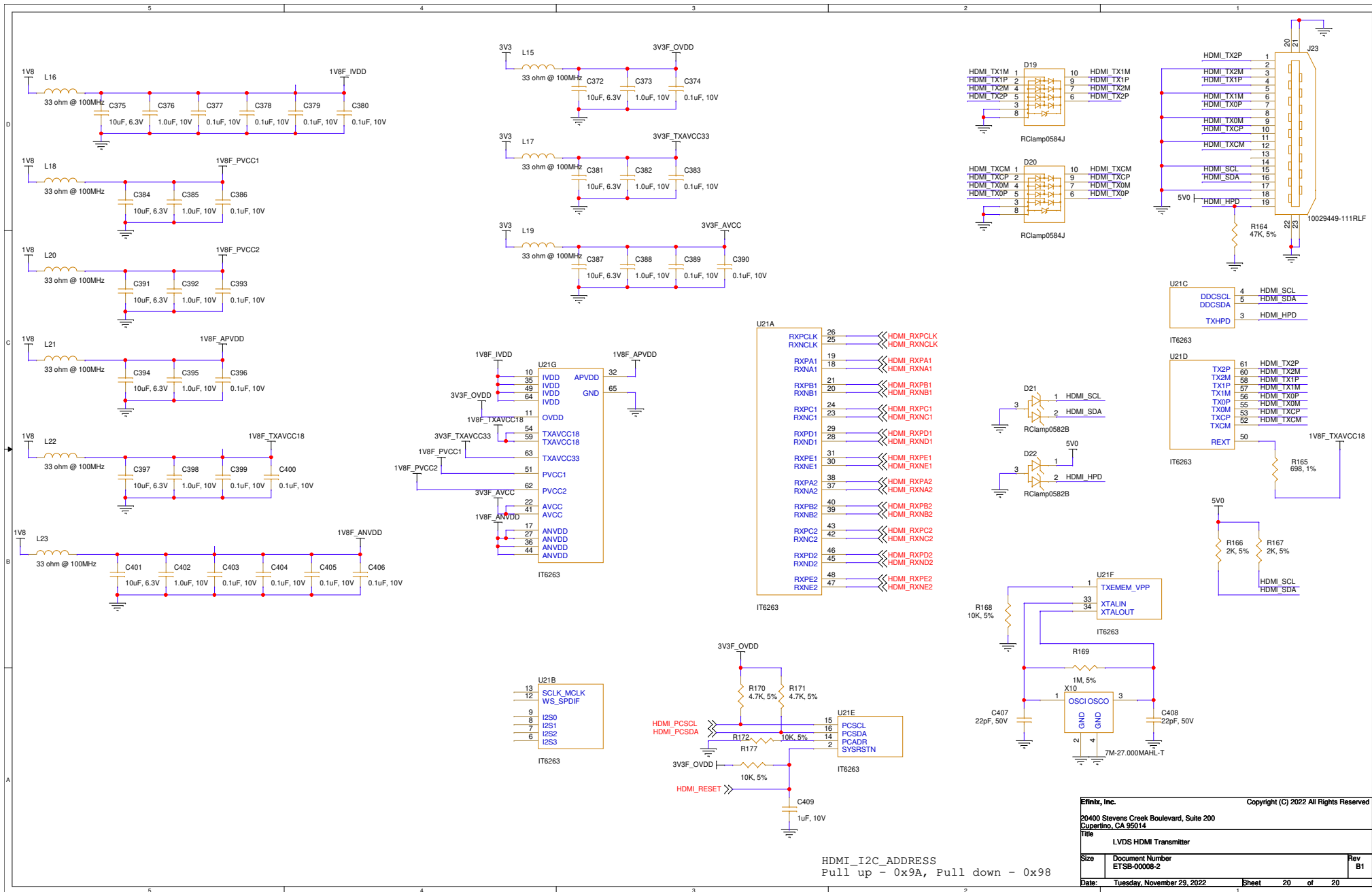


T120F576Cx









HDMI_I2C_ADDRESS
 Pull up - 0x9A, Pull down - 0x98



Item	Quantity	Reference	Part
1	2	CN1,CN2	0.1uF, 10%
2	2	CR1,CR2	PGB1010603
3	5	C1,C5,C11,C12,C22	10uF, 25V
4	2	C2,C13	47uF, 16V
5	4	C3,C6,C9,C14	1uF, 50V
6	136	C4,C15,C20,C21,C28,C30,C32,C34,C36,C39,C52,C53,C59,C67,C69,C71,C73,C75,C77,C79,C81,C83,C85,C87,C92,C95,C100,C102,C105,C107,C112,C114,C117,C120,C122,C127,C128,C129,C136,C137,C138,C145,C146,C147,C155,C157,C159,C164,C166,C169,C171,C176,C180,C185,C187,C192,C194,C199,C201,C206,C208,C213,C215,C220,C222,C227,C229,C234,C236,C241,C243,C248,C250,C256,C257,C259,C265,C266,C268,C274,C275,C277,C283,C284,C286,C288,C289,C291,C292,C293,C294,C296,C297,C298,C301,C305,C307,C315,C317,C319,C322,C324,C330,C332,C334,C336,C339,C341,C349,C351,C353,C356,C358,C364,C366,C368,C370,C374,C377,C378,C379,C380,C383,C386,C389,C390,C393,C396,C399,C400,C403,C404,C405,C406,C495,C496	0.1uF, 10V
7	9	C7,C311,C326,C327,C328,C345,C360,C361,C362	0.1uF, 50V
8	2	C8,C10	0.01uF, 50V
9	21	C16,C17,C18,C19,C26,C27,C40,C41,C43,C44,C46,C47,C49,C50,C54,C55,C290,C295,C299,C493,C494	4.7uF, 10V
10	2	C23,C24	22uF, 25V
11	1	C25	2.2uF, 10V
12	13	C29,C31,C33,C35,C373,C376,C382,C385,C388,C392,C395,C398,C402	1.0uF, 10V
13	2	C37,C38	10uF, 16V
14	5	C42,C45,C48,C51,C56	0.01uF, 25V
15	6	C57,C58,C312,C313,C346,C347	8pF, 50V
16	44	C60,C61,C89,C97,C109,C124,C133,C142,C151,C152,C161,C168,C173,C182,C189,C196,C203,C210,C217,C224,C231,C238,C245,C252,C261,C270,C279,C304,C314,C321,C329,C338,C348,C355,C363,C372,C375,C381,C384,C387,C391,C394,C397,C401	10uF, 6.3V
17	27	C62,C63,C90,C98,C110,C125,C134,C143,C153,C162,C174,C178,C183,C190,C197,C204,C211,C218,C225,C232,C239,C246,C255,C264,C273,C282,C409	1uF, 10V
18	27	C64,C65,C66,C91,C94,C99,C104,C111,C116,C119,C126,C135,C144,C154,C163,C175,C179,C184,C191,C198,C205,C212,C219,C226,C233,C240,C247	1nF, 50V
19	90	C68,C70,C72,C74,C76,C78,C80,C82,C84,C86,C88,C93,C96,C101,C103,C106,C108,C113,C115,C118,C121,C123,C130,C131,C132,C139,C140,C141,C148,C149,C150,C156,C158,C160,C165,C167,C170,C172,C177,C181,C186,C188,C193,C195,C200,C202,C207,C209,C214,C216,C221,C223,C228,C230,C235,C237,C242,C244,C249,C251,C258,C260,C267,C269,C276,C278,C285,C287,C306,C308,C316,C318,C320,C323,C325,C331,C333,C335,C337,C340,C343,C350,C352,C354,C357,C359,C365,C367,C369,C371	0.01uF, 10V
20	8	C253,C254,C262,C263,C271,C272,C280,C281	4.7uF, 6.3V
21	1	C300	3.3uF, 10V
22	2	C302,C303	10pF, 50V
23	2	C407,C408	22pF, 50V

24	14	D1,D2,D3,D4,D5,D6,D7,D8,D9,D10,D11,D12,D13,D14	green
25	4	D15,D16,D17,D18	SP3051-04HTG
26	2	D19,D20	RClamp0584J
27	2	D21,D22	RClamp0582B
28	5	JU1,JU2,JU3,JU4,JU5	Shunt
29	1	J1	DC Input
30	3	J2,J3,J5	2X3_2_54MM_PIN_HEADER
31	3	J4,J7,J8	2X5_2_54MM_PIN_HEADER
32	1	J6	2X2_2_54MM_PIN_HEADER
33	2	J9,J11	142-0711-202
34	3	J10,J12,J24	3X1_2_54MM_PIN_HEADER
35	6	J13,J14,J15,J16,J17,J18	2X6_2_54MM_PIN_SOCKET
36	1	J19	2X20_2_54MM_PIN_SOCKET
37	1	J20	USB_Micro_B_TH
38	2	J21,J22	6-2301994-0
39	1	J23	10029449-111RLF
40	4	L1,L2,L3,L5	600 ohm
41	1	L4	600 ohm
42	7	L6,L7,L8,L9,L10,L11,L12	220 ohm
43	11	L13,L14,L15,L16,L17,L18,L19,L20,L21,L22,L23	33 ohm @ 100MHz
44	1	P1	LSHM-130-02.5-L-DV-A-S-TR
45	9	P2,P3,P4,P5,P6,P7,P8,P9,P10	QSE-020-01-F-D-A
46	13	Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9,Q10,Q11,Q12,Q13	MMBT3904T-7-F
47	2	RN1,RN2	51, 5%
48	14	R1,R5,R11,R12,R28,R33,R57,R58,R61,R62,R69,R70,R73,R74	220, 5%
49	23	R2,R6,R15,R16,R22,R23,R24,R25,R26,R29,R30,R32,R34,R35,R41,R42,R43,R54,R134,R158,R168,R172,R177	10K, 5%
50	2	R3,R19	60.4K, 1%
51	13	R4,R8,R17,R18,R40,R59,R60,R67,R68,R71,R72,R75,R76	100K, 5%
52	1	R7	13.3K, 1%
53	1	R9	68K, 1%
54	1	R10	25.5K, 1%
55	4	R13,R14,R21,R265	51K, 1%
56	1	R20	56K, 1%
57	1	R27	324K, 5%
58	9	R31,R36,R37,R106,R108,R109,R110,R113,R115	10K, 5%

59	9	R38,R39,R44,R45,R46,R63,R64,R65,R111	1K, 5%
60	5	R47,R49,R50,R51,R53	33, 5%
61	2	R48,R52	50, 0.1%
62	3	R55,R56,R114	4.7K, 5%
63	1	R66	1K, 5%
64	6	R77,R78,R79,R80,R81,R82	12K, 5%
65	22	R83,R84,R85,R86,R87,R88,R89,R90,R91,R92,R93,R94,R95,R96,R97,R98,R99,R100,R183,R184,R185,R186	0, 5%
66	1	R101	100, 1%
67	2	R102,R103	240, 0.1%
68	2	R104,R105	10R, 5%
69	1	R107	12K 5%
70	1	R112	2K, 5%
71	6	R116,R122,R140,R147,R173,R174	DNI
72	36	R117,R118,R119,R120,R121,R123,R124,R126,R127,R128,R129,R130,R131,R132,R135,R137,R141,R142,R143,R144,R145,R148,R149,R150,R151,R152,R153,R154,R155,R156,R159,R161,R170,R171,R266,R267	4.7K, 5%
73	2	R125,R146	12K, 1%
74	2	R133,R157	12K, 5%
75	2	R136,R160	1.5K, 5%
76	4	R138,R139,R162,R163	470, 5%
77	1	R164	47K, 5%
78	1	R165	698, 1%
79	2	R166,R167	2K, 5%
80	1	R169	1M, 5%
81	2	R175,R176	0, 5%
82	5	R178,R179,R180,R181,R182	0.01, 0.5%
83	1	R264	2.15K, 1%
84	2	SW1,SW17	OS102011MS2QN1
85	5	SW2,SW6,SW7,SW8,SW9	FSM4JSMATR
86	1	SW3	SDB02H1SBD
87	1	SW4	SDB03H1SBD
88	1	SW5	SDB04H1SBD
89	7	TP1,TP2,TP6,TP7,TP8,TP9,TP18	5190TR
90	3	TP3,TP4,TP5	5191TR
91	2	U1,U3	LTM4625
92	1	U2	LT1763_X
93	2	U4,U28	ADM7170

94	2	U5,U7	ADM7172
95	1	U6	LTM4632
96	4	U8,U9,U10,U11	TPS22964C
97	1	U12	T120F576Cx
98	1	U13	W25Q128JVS1Q
99	1	U14 (Rev BBA)	Si5351A-B11429-GT
		(Rev B1)	Replacement PCB with 3 fixed-freq oscillators
100	1	U15	AT24CM01
101	1	U16	MT52L256M32D1PF
102	1	U17	FT2232H-56Q
103	1	U18	93LC56BT-I/OT
104	2	U19,U20	DM9119-QFN64
105	1	U21	IT6263
106	1	U29	MCP100
107	1	X1	ASE-25.000MHZ-LR-T
108	1	X2	ASE-50.000MHZ-LR-T
109	1	X3	ASE-30.000MHZ-LR-T
110	1	X4	SG5032CAN 74-250000M-TJGA3
111	1	X5	ASE-10.000MHZ-LR-T
112	1	X6	CX3225SB27000D0FLJZ1
113	1	X7	ECS-120-10-33B-CKM-TR
114	2	X8,X9	CX3225SB25000D0FLJZ1
115	1	X10	7M-27.000MAHL-T



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