

# T120F324 DEVELOPMENT BOARD

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## REVISION HISTORY

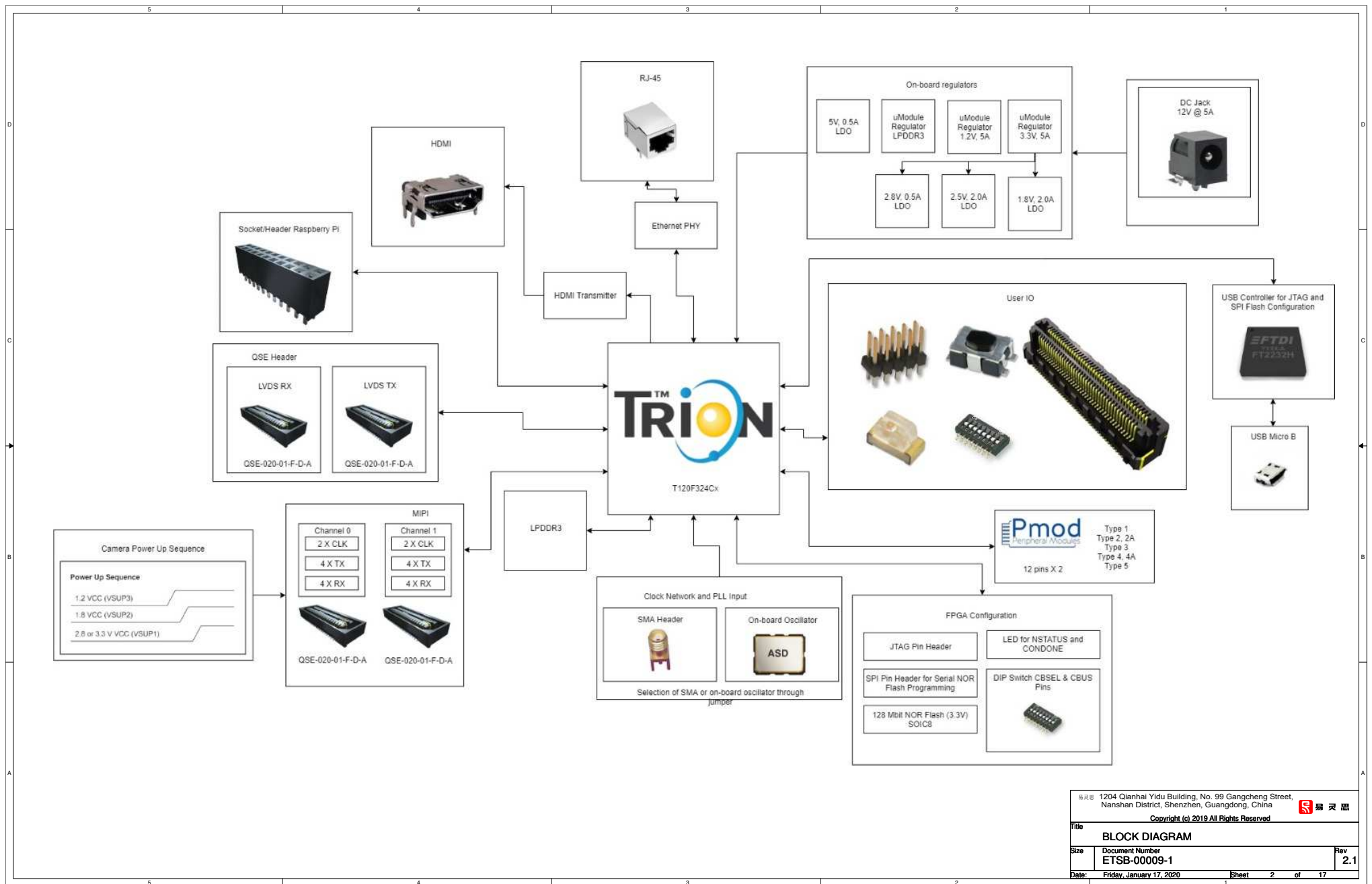
1A	11/05/2019		Initial Creation
2A	12/24/2019		Update DDIO pins to DDIO, adding sensing resistors, update netlist
2.1	12/17/2020	KCLEE	Updated new revision format

All material must comply with:

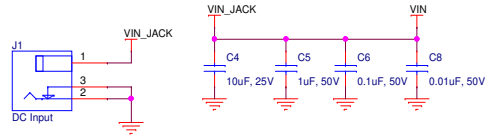
1. The requirements of the European Union RoHS 2 Directive 2017/2102 (Amendment to 2011/65/EU) with no exceptions unless authorized.
2. The requirements of EC 1907/2006 and not contain any of the Substances of Very High Concern (SVHC) listed under the latest REACH requirements. (Amendments EU 2017/999, EU 2017/1510, EU 2018/35).

No changes to 易灵思 bill of materials is allowed unless approved in writing by 易灵思 Product Engineer ring Group. These changes will be maintained in the document revision history via ECN.

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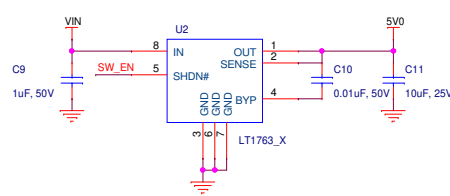


Board Input Jack  
DC Jack (5- 12V) @ 10A

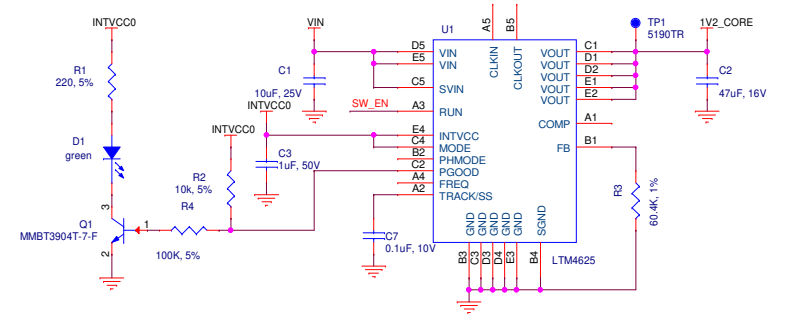


Supply front-end filter

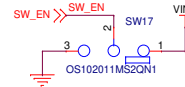
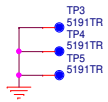
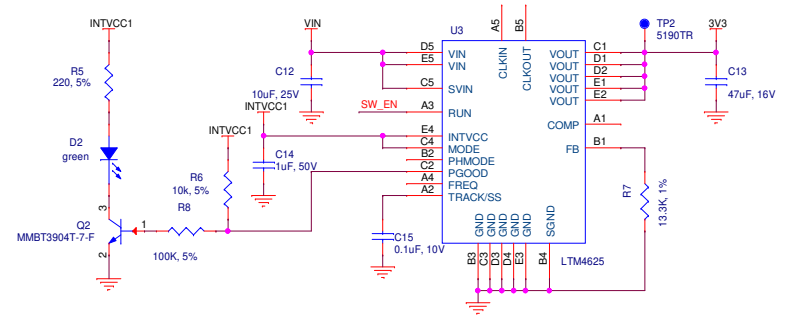
5V @ 0.5A supply for daughter card  
and MIPI camera



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

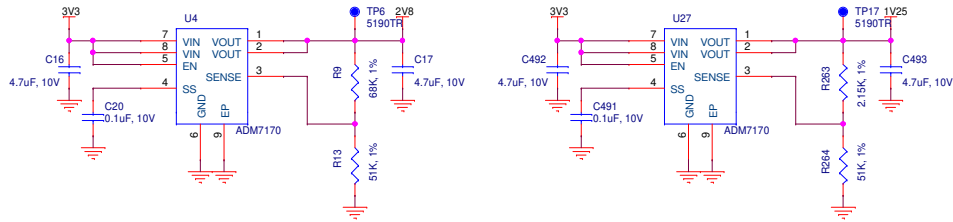


3.3V @ 5A supply for LDOS  
HDMI and PMOD

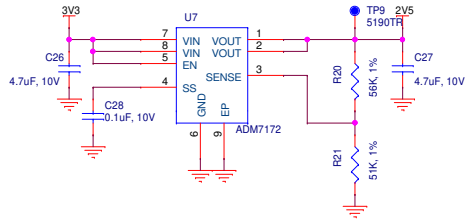


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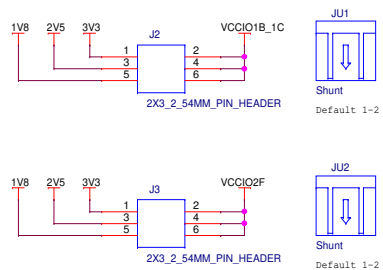
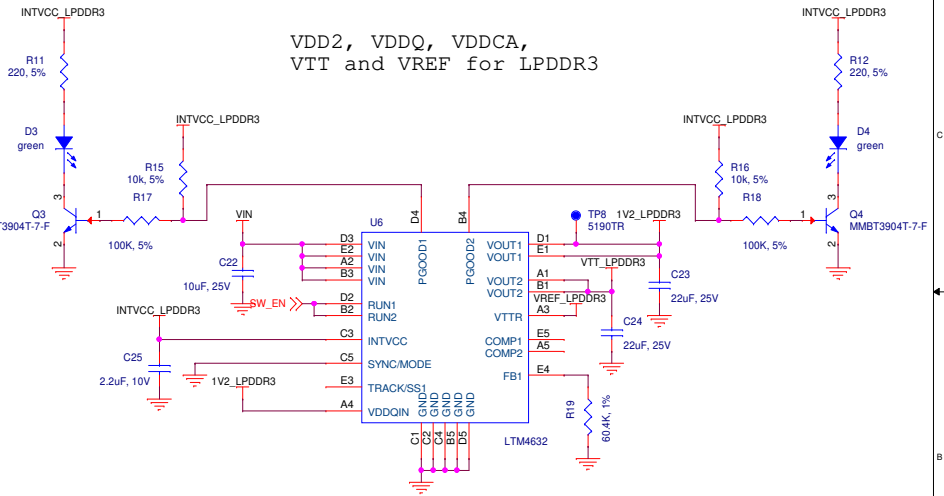
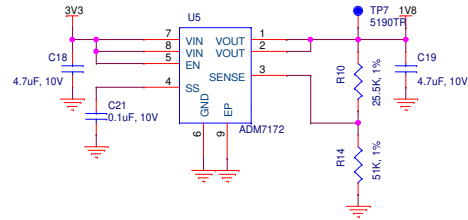
2.8V @ 0.5A supply for MIPI Camera 1.25V @ 0.5A supply for Ethernet PHY



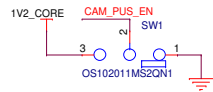
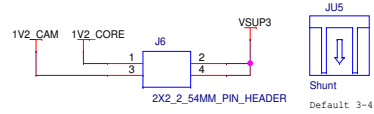
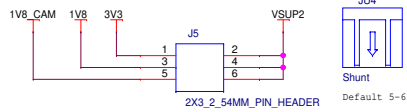
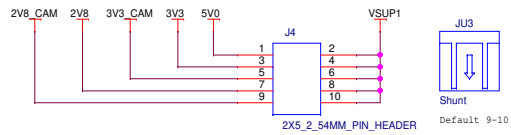
2.5V @ 2.0A supply for FPGA MIPI, VCCIO1B\_1C and VCCIO2F



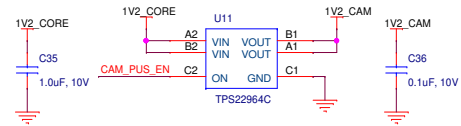
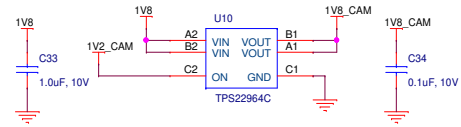
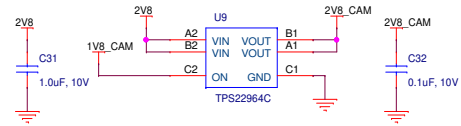
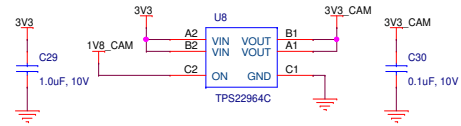
1.8V @ 2.0A supply for LPDDR3 VDD1, VCCIO1B\_1C, VCCIO2F and HDMI



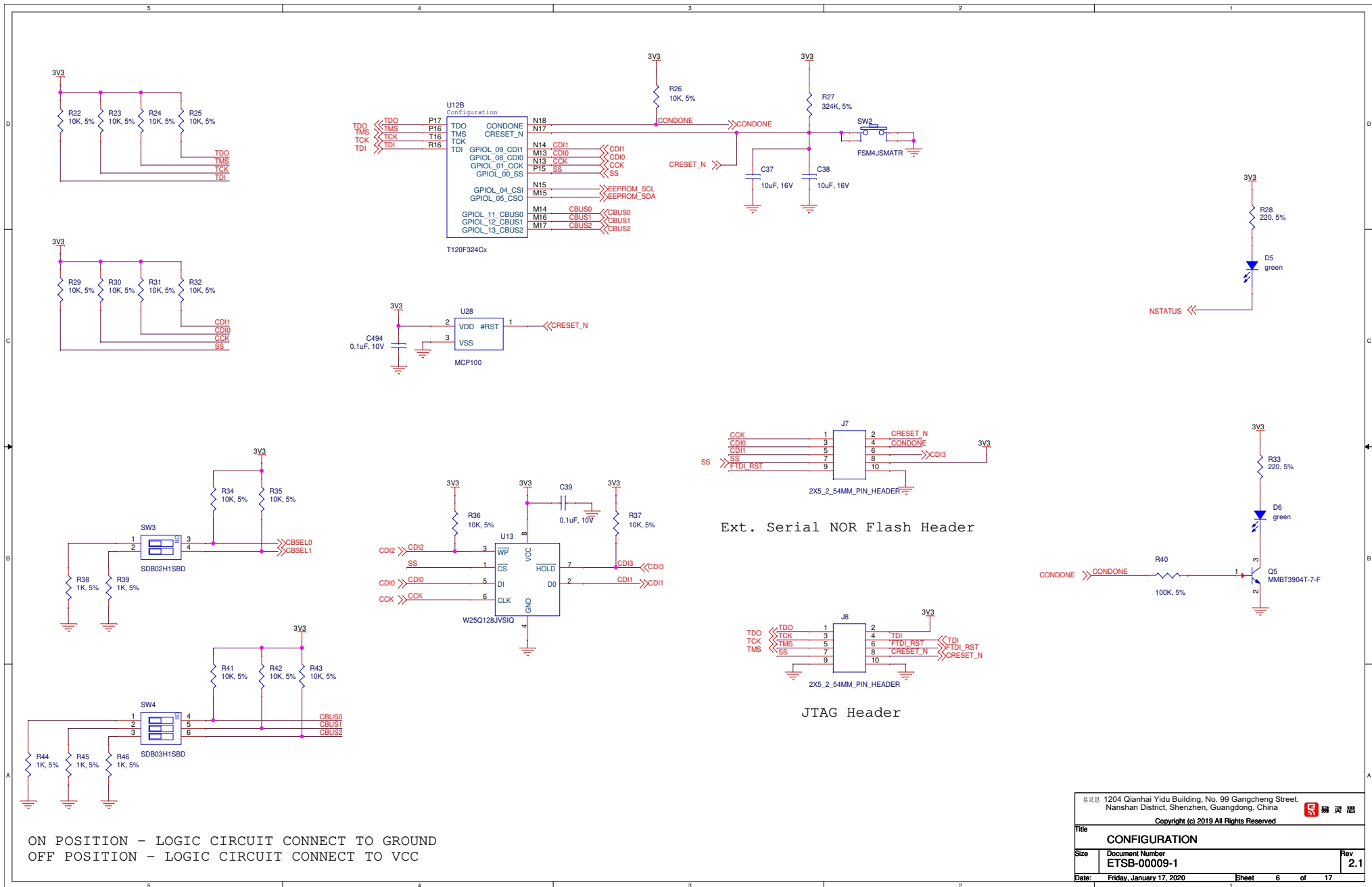
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<b>POWER INPUT 2</b>		
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1-2 POSITION - DISABLE CAMERA PUS (DEFAULT)  
 2-3 POSITION - ENABLE CAMERA PUS



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Title MIPI CAMERA SUPPLY		
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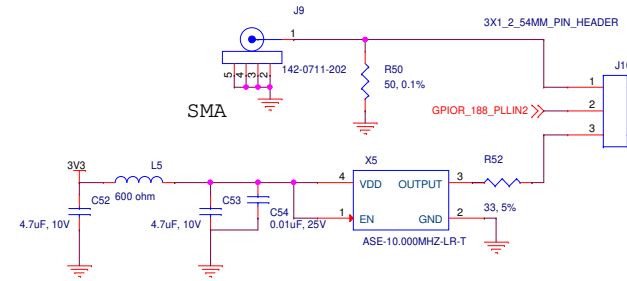
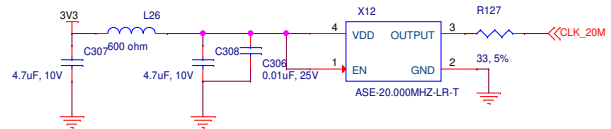
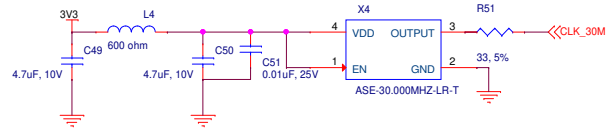
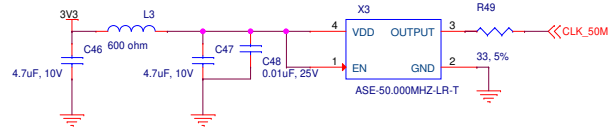
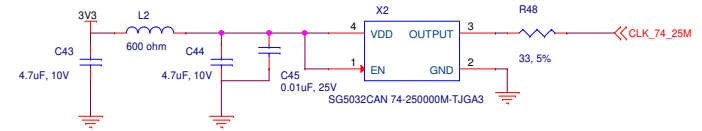
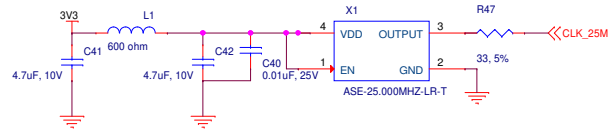



ON POSITION - LOGIC CIRCUIT CONNECT TO GROUND  
 OFF POSITION - LOGIC CIRCUIT CONNECT TO VCC

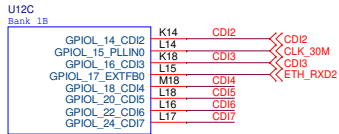
Ext. Serial NOR Flash Header

JTAG Header

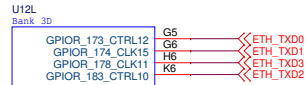
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<b>CONFIGURATION</b>		
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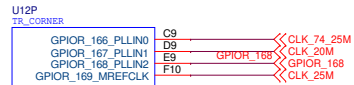
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<b>CLOCK SOURCE</b>		
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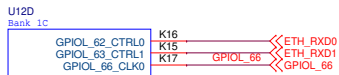
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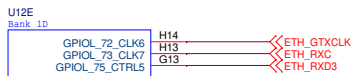
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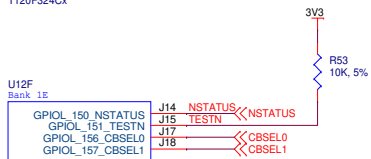
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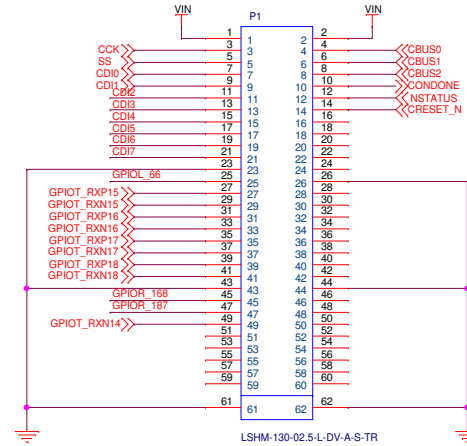
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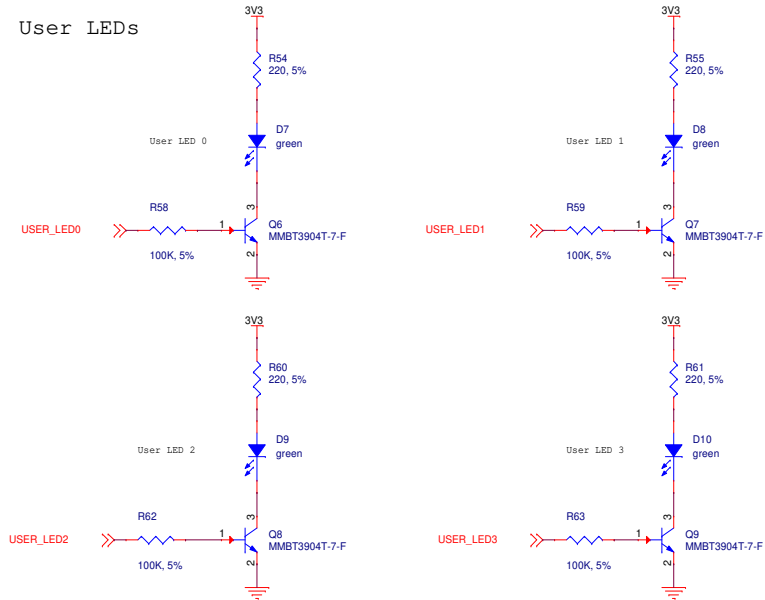


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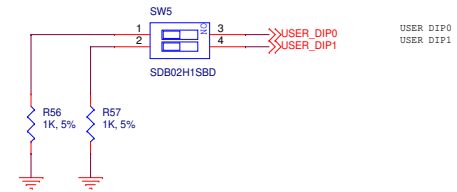




### User LEDs



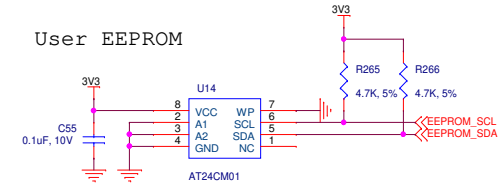
### User DIP Switches



### User DIP Buttons

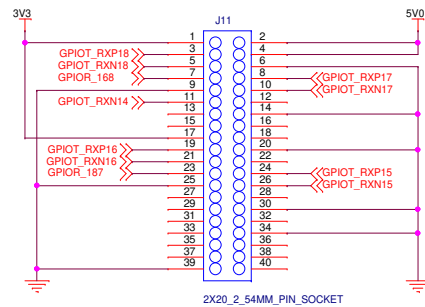


### User EEPROM



I2C Address: 0x50

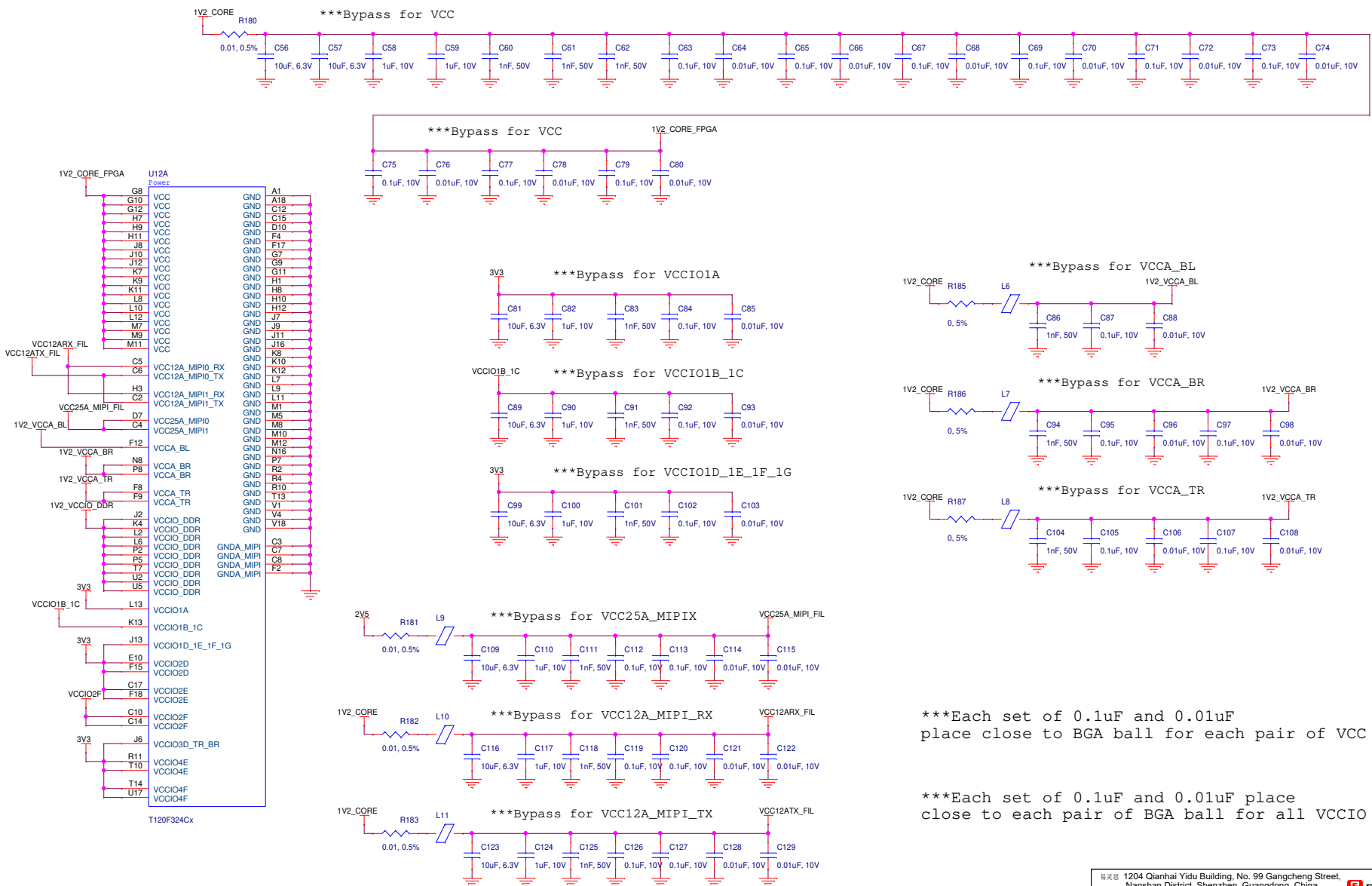
### Raspberry Pi Port



### User PMOD



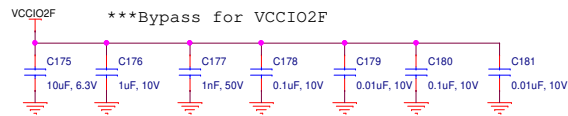
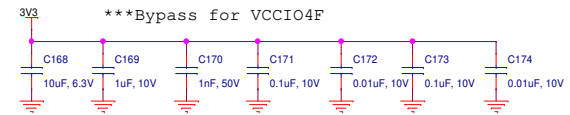
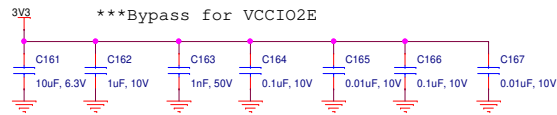
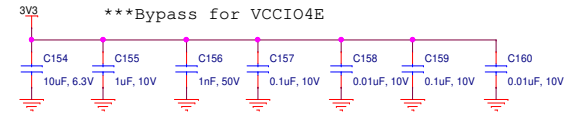
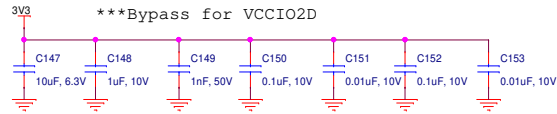
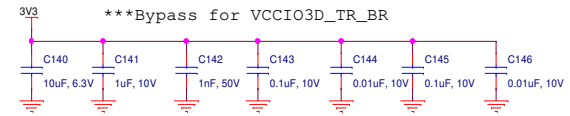
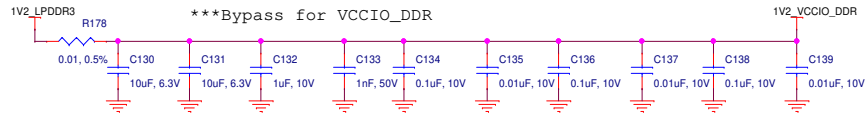
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<b>Title</b> USER PORT, LED, DIP, SWITCH & EEPROM		
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
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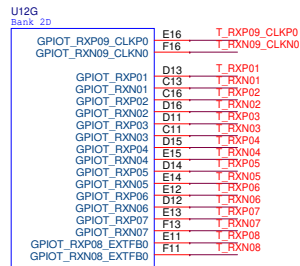
\*\*\*Each set of 0.1uF and 0.01uF place close to each pair of BGA ball for all VCCIO

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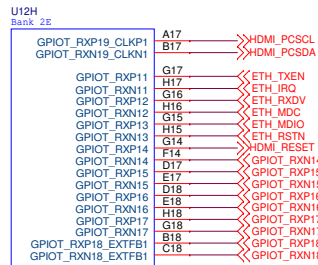


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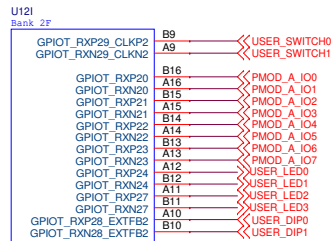
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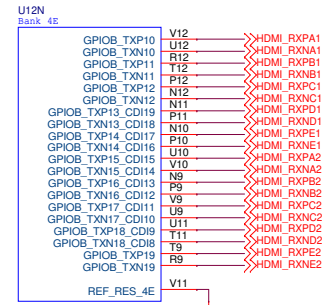
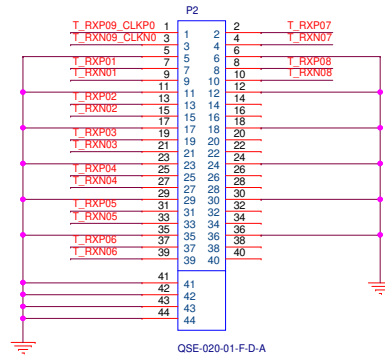
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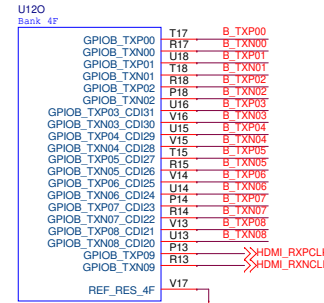
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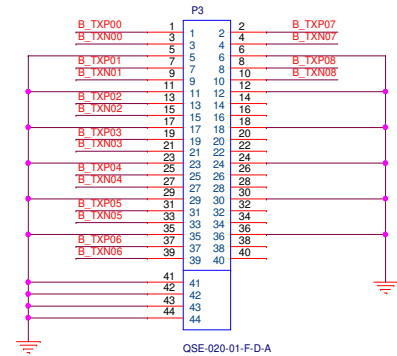
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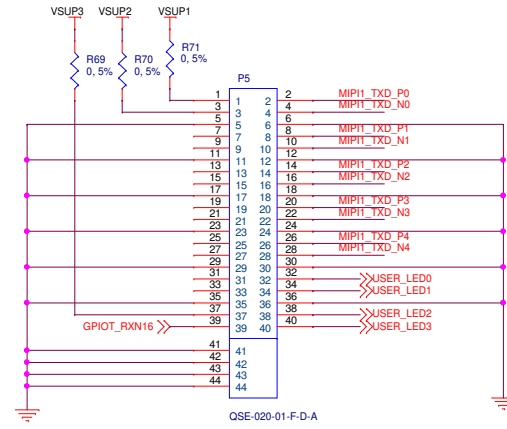
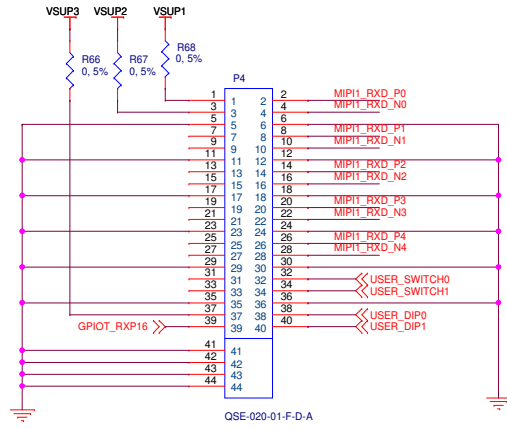


T120F324Cx  
Place resistor as close as possible to V11 pins.



T120F324Cx  
Place resistor as close as possible to V17 pins.



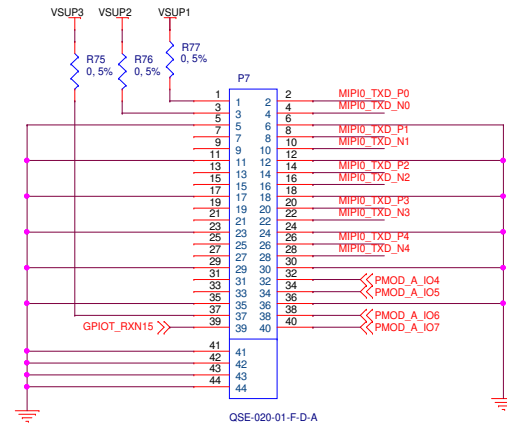
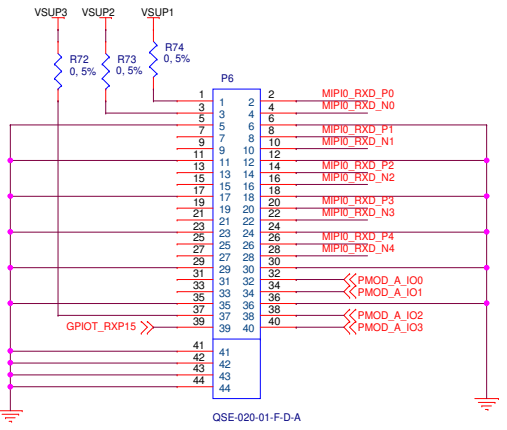


U12K  
MIF11

MIP1_TXDP0	B3	MIP1_TXD_P0
MIP1_TXDN0	A3	MIP1_TXD_N0
MIP1_TXDP1	B2	MIP1_TXD_P1
MIP1_TXDN1	A2	MIP1_TXD_N1
MIP1_TXDP2	C1	MIP1_TXD_P2
MIP1_TXDN2	B1	MIP1_TXD_N2
MIP1_TXDP3	B2	MIP1_TXD_P3
MIP1_TXDN3	E2	MIP1_TXD_N3
MIP1_TXDP4	E1	MIP1_TXD_P4
MIP1_TXDN4	D1	MIP1_TXD_N4
MIP1_RXDP0	D4	MIP1_RXD_P0
MIP1_RXDN0	E4	MIP1_RXD_N0
MIP1_RXDP1	F3	MIP1_RXD_P1
MIP1_RXDN1	G3	MIP1_RXD_N1
MIP1_RXDP2	G1	MIP1_RXD_P2
MIP1_RXDN2	F1	MIP1_RXD_N2
MIP1_RXDP3	H2	MIP1_RXD_P3
MIP1_RXDN3	G2	MIP1_RXD_N3
MIP1_RXDP4	D3	MIP1_RXD_P4
MIP1_RXDN4	E3	MIP1_RXD_N4

T120F324Cx

MIPI Channel 1

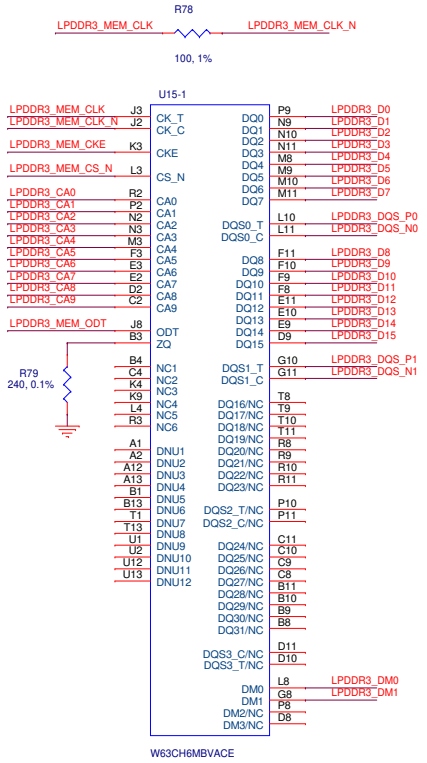
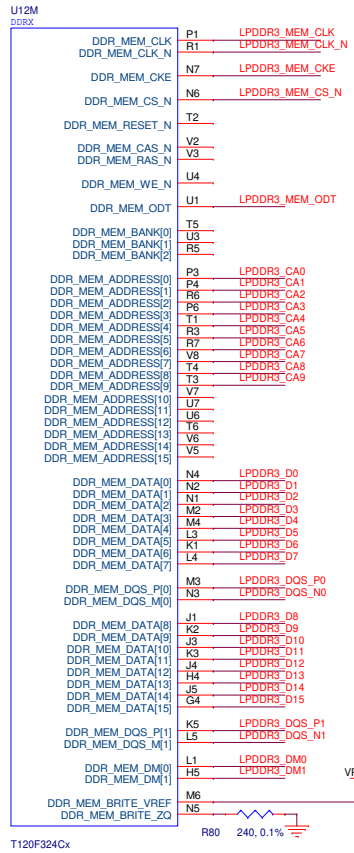


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MIF10

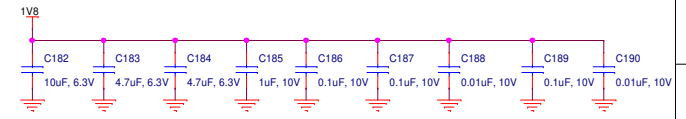
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MIP0_TXDN0	A6	MIP0_TXD_N0
MIP0_TXDP1	A7	MIP0_TXD_P1
MIP0_TXDN1	B7	MIP0_TXD_N1
MIP0_TXDP2	B8	MIP0_TXD_P2
MIP0_TXDN2	A5	MIP0_TXD_N2
MIP0_TXDP3	B5	MIP0_TXD_P3
MIP0_TXDN3	A4	MIP0_TXD_N3
MIP0_TXDP4	B4	MIP0_TXD_P4
MIP0_TXDN4	A4	MIP0_TXD_N4
MIP0_RXDP0	E5	MIP0_RXD_P0
MIP0_RXDN0	D5	MIP0_RXD_N0
MIP0_RXDP1	E8	MIP0_RXD_P1
MIP0_RXDN1	F6	MIP0_RXD_N1
MIP0_RXDP2	F5	MIP0_RXD_P2
MIP0_RXDN2	E6	MIP0_RXD_N2
MIP0_RXDP3	D6	MIP0_RXD_P3
MIP0_RXDN3	E7	MIP0_RXD_N3
MIP0_RXDP4	F7	MIP0_RXD_P4
MIP0_RXDN4	F7	MIP0_RXD_N4

T120F324Cx

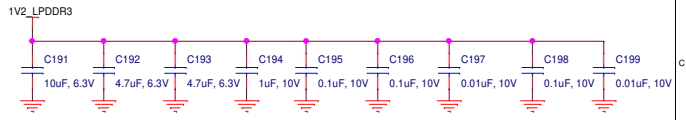
MIPI Channel 0



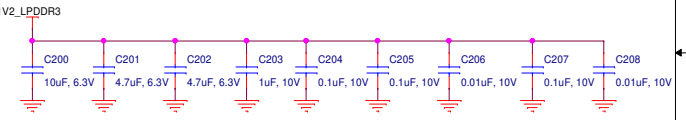
1.8 V for VDD1



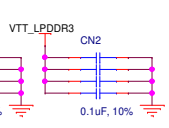
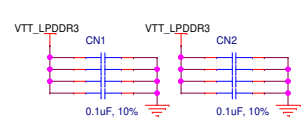
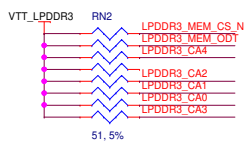
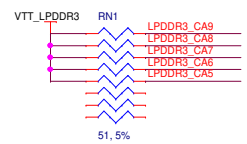
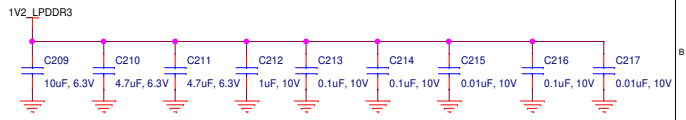
1.2 V for VDD2

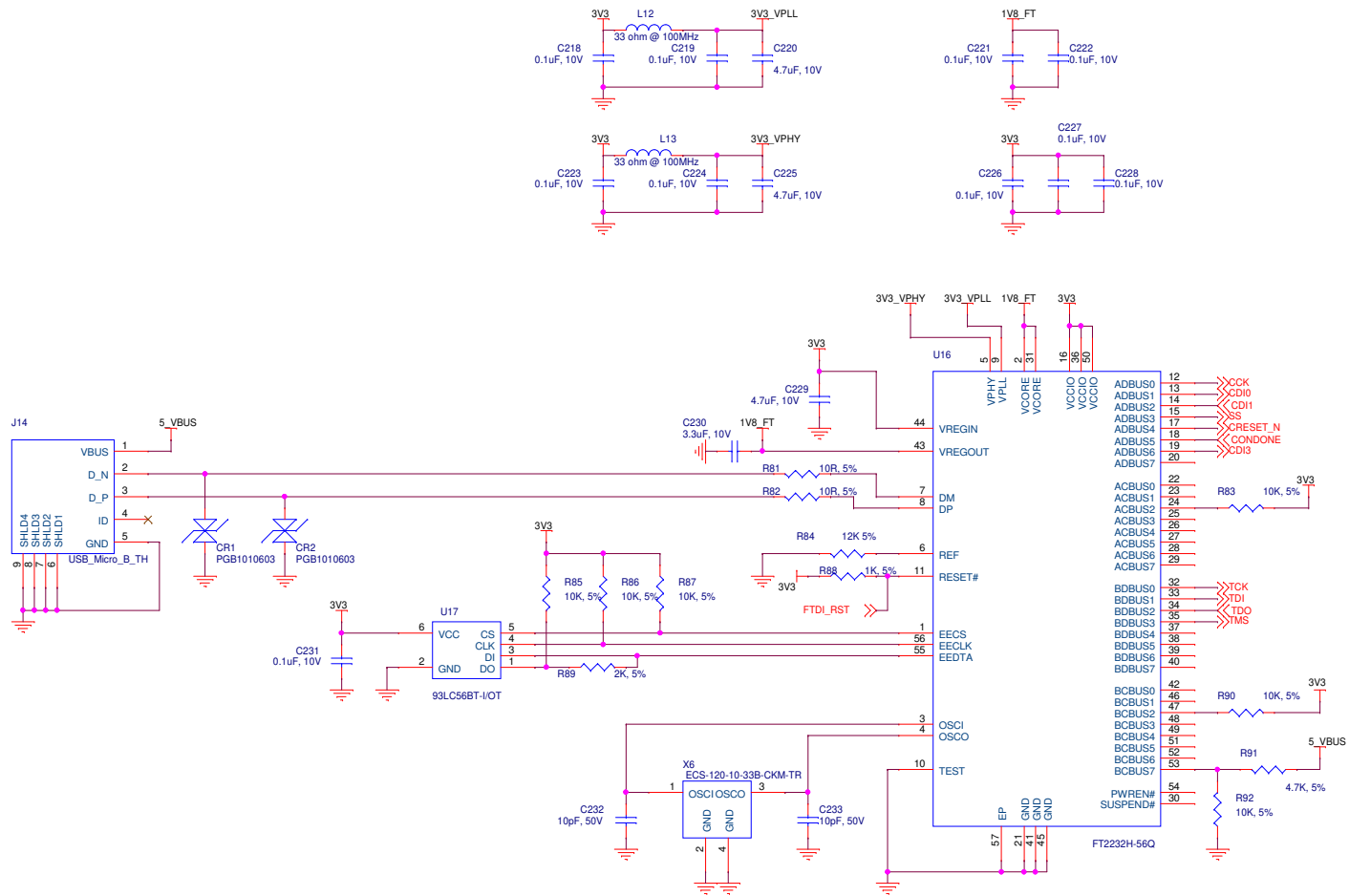


1.2 V for VDDQ

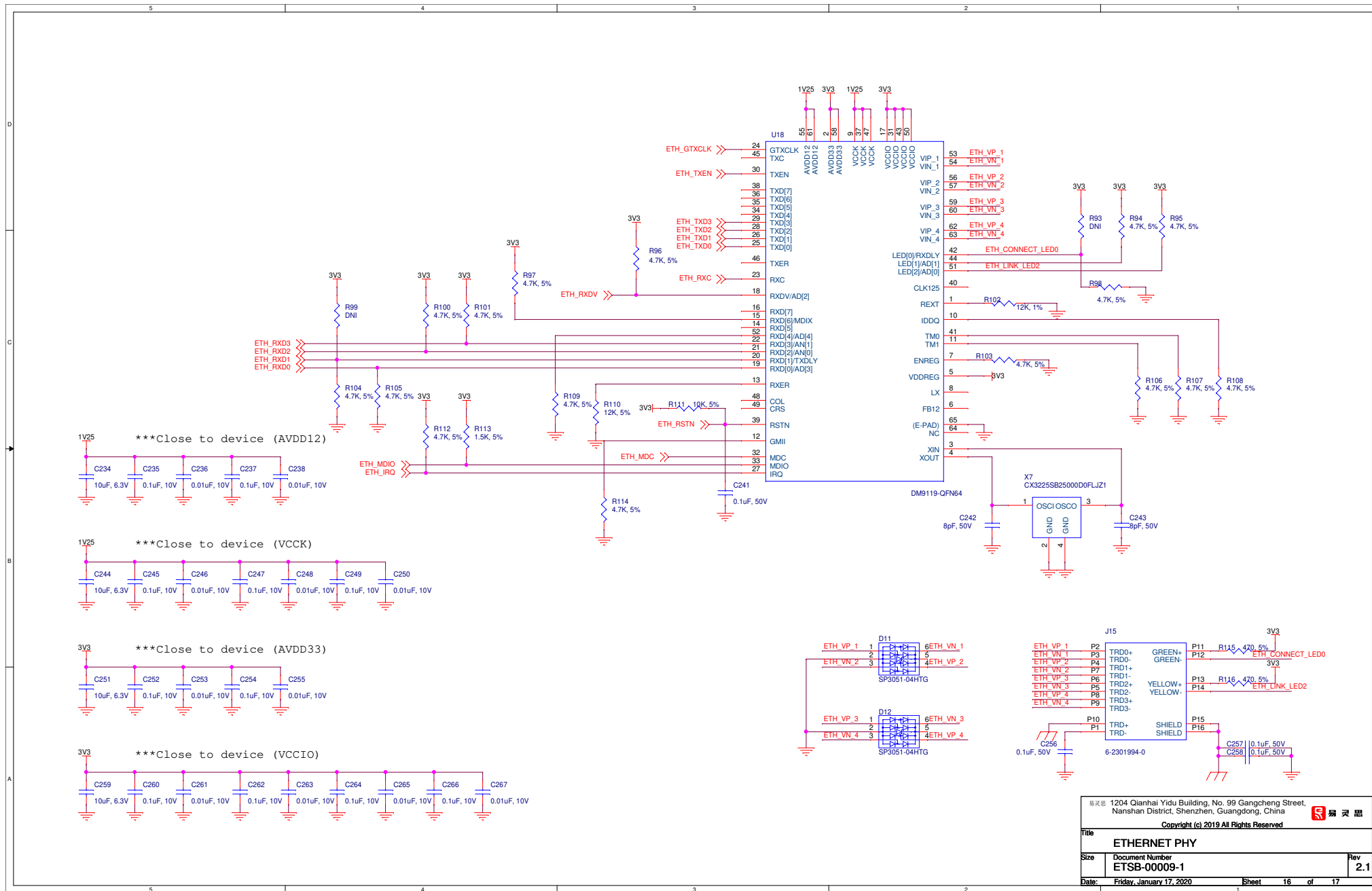


1.2 V for VDDCA

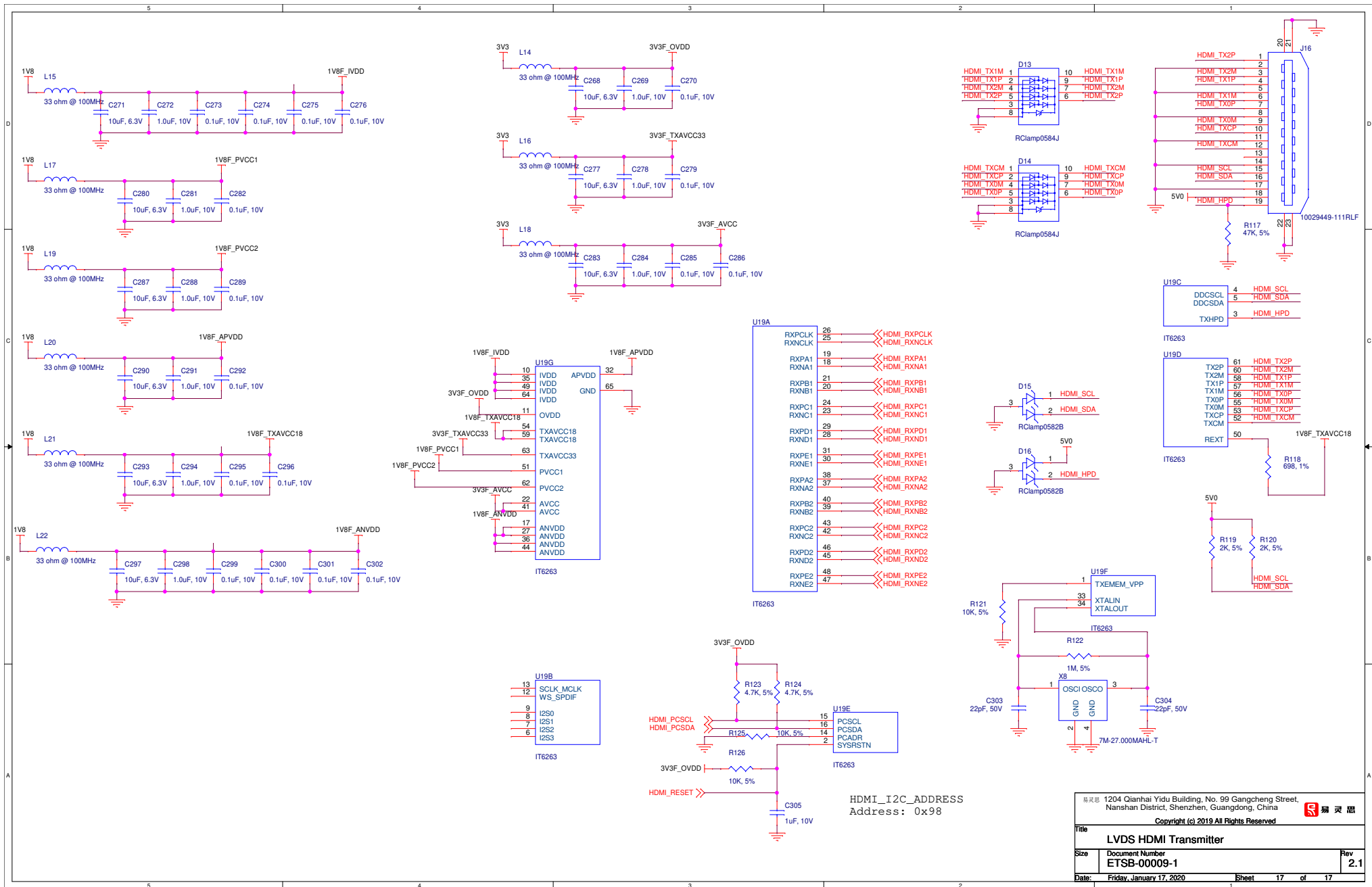




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<b>Title</b> USB CONTROLLER (CONFIGURATION)		
<b>Size</b> Document Number ETSB-00009-1	<b>Rev</b> 2.1	
<b>Date:</b> Friday, January 17, 2020	<b>Sheet</b> 15 of 17	







No	Quantity	Reference	Part	Datasheet	Description	PCB Footprint	Brand	Manufacturer Part No
1	2	CR1,CR2	PGB1010603	A0002	Surface Mount Polymeric Electrostatic Discharge Suppressors	SMD0603	LITTELFUSE	PGB1010603NR
2	5	C1,C4,C11,C12,C22	10uF, 25V	N/A	GRM21BR61E106KA73L - SMD Multilayer Ceramic Capacitor, 10 µF, 25 V, 0805 [2012 Metric], ± 10%, X5R, GRM Series	SMD0805	MURATA	GRM21BR61E106KA73L
3	2	C2,C13	47uF, 16V	N/A	GRM32EC81C476KE15L - SMD Multilayer Ceramic Capacitor, 47 µF, 16 V, 1210 [3225 Metric], ± 10%, X6S, GRM Series	SMD1210	MURATA	GRM32EC81C476KE15L
4	1	C25	2.2uF, 10V	N/A	2.2µF ±20% 10V Ceramic Capacitor X7R 0603 (1608 Metric)	SMD0603	TDK	C1608X7R1A225M080AC
5	39	C7,C15,C20,C21,C28,C30,C32,C34,C36,C39,C55,C218,C219,C221,C222,C223,C224,C226,C227,C228,C231,C270,C273,C274,C275,C276,C279,C282,C285,C286,C289,C292,C295,C296,C299,C300,C301,C302,C491,C494	0.1uF, 10V	N/A	CAP CER 0.1UF 10V X5R 0402	SMD0402	MURATA	GRM155R61A104KA01J
6	4	C3,C5,C9,C14	1uF, 50V	N/A	C0805C105K5RACTU - SMD Multilayer Ceramic Capacitor, 1 µF, 50 V, 0805 [2012 Metric], ± 10%, X7R, C Series KEMET	SMD0805	KEMET	C0805C105K5RACTU
7	1	C6	0.1uF, 50V	N/A	0805B104K500CT - SMD Multilayer Ceramic Capacitor, 0.1 µF, 50 V, 0805 [2012 Metric], ± 10%, X7R	SMD0805	WALSIN	0805B104K500CT
8	2	C8,C10	0.01uF, 50V	N/A	0805B103K500CT - SMD Multilayer Ceramic Capacitor, 10000 pF, 50 V, 0805 [2012 Metric], ± 10%, X7R	SMD0805	WALSIN	0805B103K500CT
9	2	C37,C38	10uF, 16V	N/A	GRM188R61C106KAALD - SMD Multilayer Ceramic Capacitor, 10 µF, 16 V, 0603 [1608 Metric], ± 10%, X5R, GRM Series	SMD0603	MURATA	GRM188R61C106KAALD
10	23	C16,C17,C18,C19,C26,C27,C41,C42,C43,C44,C46,C47,C49,C50,C52,C53,C220,C225,C229,C307,C308,C492,C493	4.7uF, 10V	N/A	LMK107BJ475KA-T - SMD Multilayer Ceramic Capacitor, 4.7 µF, 10 V, 0603 [1608 Metric], ± 10%, X5R, M Series	SMD0603	TAIYO YUDEN	LMK107BJ475KA-T
11	33	C56,C57,C81,C89,C99,C109,C116,C123,C130,C131,C140,C147,C154,C161,C168,C175,C182,C191,C200,C209,C234,C244,C251,C259,C268,C271,C277,C280,C283,C287,C290,C293,C297	10uF, 6.3V	N/A	CAP CER 10UF 6.3V X5R 0603	SMD0603	MURATA	GRM188R60J106KE47D
12	20	C58,C59,C82,C90,C100,C110,C117,C124,C132,C141,C148,C155,C162,C169,C176,C185,C194,C203,C212,C305	1uF, 10V	N/A	CAP CER 1UF 10V X5R 0402	SMD0402	MURATA	GRM155R61A105KE15D
13	19	C60,C61,C62,C83,C86,C91,C94,C101,C104,C111,C118,C125,C133,C142,C149,C156,C163,C170,C177	1nF, 50V	N/A	04025C102JAT2A - SMD Multilayer Ceramic Capacitor, 1000 pF, 50 V, 0402 [1005 Metric], ± 5%, X7R, AVX 0402 MLCC	SMD0402	AVX	04025C102JAT2A
14	61	C63,C65,C67,C69,C71,C73,C75,C77,C79,C84,C87,C92,C95,C97,C102,C105,C107,C112,C113,C119,C120,C126,C127,C134,C136,C138,C143,C145,C150,C152,C157,C159,C164,C166,C171,C173,C178,C180,C186,C187,C189,C195,C196,C198,C204,C205,C207,C213,C214,C216,C235,C237,C245,C247,C249,C252,C254,C260,C262,C264,C266	0.1uF, 10V	N/A	GRM033R61A104KE15D - SMD Multilayer Ceramic Capacitor, 0.1 µF, 10 V, 0201 [0603 Metric], ± 10%, X5R, GRM Series	SMD0201	MURATA	GRM033R61A104KE15D
15	57	C64,C66,C68,C70,C72,C74,C76,C78,C80,C85,C88,C93,C96,C98,C103,C106,C108,C114,C115,C121,C122,C128,C129,C135,C137,C139,C144,C146,C151,C153,C158,C160,C165,C167,C172,C174,C179,C181,C188,C190,C197,C199,C206,C208,C215,C217,C236,C238,C246,C248,C250,C253,C255,C261,C263,C265,C267	0.01uF, 10V	N/A	GRM033R71A103KA01D - SMD Multilayer Ceramic Capacitor, 10000 pF, 10 V, 0201 [0603 Metric], ± 10%, X7R, GRM Series	SMD0201	MURATA	GRM033R71A103KA01D

16	1	C230	3.3uF, 10V	N/A	0805X335K100CT - SMD Multilayer Ceramic Capacitor, 3.3 $\mu$ F, 10 V, 0805 [2012 Metric], $\pm$ 10%, X5R	SMD0805	WALSIN	0805X335K100CT
17	2	C232,C233	10pF, 50V	N/A	CAP CER 10PF 50V COG/NPO 0402	SMD0402	MURATA	GRM1555C1H100JA01D
18	2	C23,C24	22uF, 25V	N/A	SMD Multilayer Ceramic Capacitor, 22 $\mu$ F, 25 V, 1210 [3225 Metric], $\pm$ 10%, X7R, GRM Series	SMD1210	MURATA	GRM32ER71E226KE15L
19	2	C242,C243	8pF, 50V	N/A	SMD Multilayer Ceramic Capacitor, General Purpose, 8 pF, 50 V, 0402 [1005 Metric], $\pm$ 0.5pF	SMD0402	WALSIN	0402N8R0D500CT
20	8	C183,C184,C192,C193,C201,C202,C210,C211	4.7uF, 6.3V	N/A	06036D475KAT2A - SMD Multilayer Ceramic Capacitor, 4.7 $\mu$ F, 6.3 V, 0603 [1608 Metric], $\pm$ 10%, X5R, AVX 0603 MLCC	SMD0603	AVX	06036D475KAT2A
21	4	C241,C256,C257,C258	0.1uF, 50V	N/A	06035C104K4T2A - SMD Multilayer Ceramic Capacitor, 0.1 $\mu$ F, 50 V, 0603 [1608 Metric], $\pm$ 10%, X7R, AVX 0603 MLCC	SMD0603	AVX	06035C104K4T2A
22	13	C29,C31,C33,C35,C269,C272,C278,C281,C284,C288,C291,C294,C298	1uF, 10V	N/A	CC0402KRX5R6BB105 - SMD Multilayer Ceramic Capacitor, 1 $\mu$ F, 10 V, 0402 [1005 Metric], $\pm$ 10%, X5R, CC Series	SMD0402	YAGEO	CC0402KRX5R6BB105
23	6	C40,C45,C48,C51,C54,C306	0.01uF, 25V	N/A	C0402C103K3RACTU - SMD Multilayer Ceramic Capacitor, 10000 pF, 25 V, 0402 [1005 Metric], $\pm$ 10%, X7R, C Series KEMET	SMD0402	KEMET	C0402C103K3RACTU
24	2	C303,C304	22pF, 50V	N/A	0402N220J500CT - SMD Multilayer Ceramic Capacitor, 22 pF, 50 V, 0402 [1005 Metric], $\pm$ 5%, COG / NPO, Walsin MLCC	SMD0402	WALSIN	0402N220J500CT
25	10	D1,D2,D3,D4,D5,D6,D7,D8,D9,D10	green	ESTB-00004-1-0005	LED GREEN CLEAR 0603 SMD	SMD0603	LITEON	LTST-C191KGKT
26	5	JU1,JU2,JU3,JU4,JU5	Shunt	N/A	Jumper (Busbar), Mini Shunt Jumper, Board-to-Board Header Connectors, 2 Ways, 2.54 mm, 2228 Series		MULTICOMP	MC-2228CG
27	1	J1	PJ-037BH-SMT-TR	A0018	DC POWER JACK	SMD	CUI	PJ-037BH-SMT-TR
28	3	J4,J7,J8	2X5_2_54MM_PIN_HEADER	ETSB-0007-1-0006	2 X 5 Header, 2.54 MM Pitch	THRU-HOLE	Samtec	MTSW-105-08-F-D-310
29	3	J2,J3,J5	2X3_2_54MM_PIN_HEADER	ETSB-0007-1-0006	2 X 3 Header, 2.54 MM Pitch	THRU-HOLE	Samtec	MTSW-103-08-F-D-310
30	1	J11	2X20_2_54MM_PIN_SOCKET	ETSB-0007-1-0007	2 X 20 Socket, 2.54 MM Pitch	THRU-HOLE	Samtec	ESW-120-24-L-D
31	1	J6	2X2_2_54MM_PIN_HEADER	ETSB-0007-1-0006	2 X 2 Header, 2.54 MM Pitch	THRU-HOLE	Samtec	MTSW-102-08-F-D-310
32	2	J12,J13	2X6_2_54MM_PIN_SOCKET	ETSB-0007-1-0007	2 X 6 Socket, 2.54 MM Pitch	THRU-HOLE	Samtec	SSQ-106-03-F-D-RA
33	1	J9	142-0711-202	B0004	CONN SMA JACK STR 50 OHM SMD	142-0711-202	Cinch Connectivity Solutions Johnson	142-0711-202
34	1	J10	3X1_2_54MM_PIN_HEADER	ESTB-00004-1-0011, ESTB-00004-1-0011-1	3 X 1 Header, 2.54 MM Pitch	THRU-HOLE	Samtec	MTSW-103-08-F-S-310
35	1	J14	USB_Micro_B_TH	A0026, A0026-1	MICRO USB 2.0 CONNECTORS	SMD	Amphenol	10118192-0001LF
36	6	L6,L7,L8,L9,L10,L11	220 ohm	N/A	Ferrite Bead	SMD0402	muRata	BLM15AG221SN1D
37	11	L12,L13,L14,L15,L16,L17,L18,L19,L20,L21,L22	33 ohm @ 100MHz	N/A	FERRITE BEAD 33 OHM 0402 1LN	SMD0402	muRata	BLM15PX330SN1D
38	6	L1,L2,L3,L4,L5,L26	600 ohm	N/A	FERRITE BEAD 600 OHM 0402 1LN, 600 Ohms @ 100MHz 1 Ferrite Bead 0402 (1005 Metric) 300mA 520mOhm	SMD0402	muRata	BLM15AG601SN1D
39	6	P2,P3,P4,P5,P6,P7	QSE-020-01-F-D-A	A0032, A0032-1	Board to Board & Mezzanine Connectors	SMD	Samtec	QSE-020-01-F-D-A
40	9	Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9	MMBT3904T-7-F	A0033	NPN 40V 0.2A SOT523	SOT-523	DIODES	MMBT3904T-7-F
41	10	R1,R5,R11,R12,R28,R33,R54,R55,R60,R61	220, 5%	N/A	SMD Chip Resistor, 0402, 220, 5%	SMD0402	YAGEO	RC0402FR-07220RL
42	5	R4,R8,R17,R18,R40	100K, 5%	N/A	SMD Chip Resistor, 0402, 100k, 5%	SMD0402	YAGEO	RC0402FR-07100KL
43	1	R27	324K, 5%	N/A	SMD Chip Resistor, 0402, 324k, 5%	SMD0402	YAGEO	RC0402FR-07324KL
44	8	R38,R39,R44,R45,R46,R56,R57,R88	1K, 5%	N/A	SMD Chip Resistor, 0402, 1k, 5%	SMD0402	YAGEO	RC0402FR-071KL
45	31	R31,R36,R37,R83,R85,R86,R87,R90,R92,R2,R6,R15,R16,R22,R23,R24,R25,R26,R29,R30,R32,R34,R35,R41,R42,R43,R53,R111,R121,R125,R126	10K, 5%	N/A	SMD Chip Resistor, 0402, 10k, 5%	SMD0402	YAGEO	RC0402FR-0710KL
46	6	R47,R48,R49,R51,R52,R127	33, 5%	N/A	SMD Chip Resistor, 0402, 33, 5%	SMD0402	YAGEO	RC0402FR-0733RL
47	4	R64,R65,R84,R110	12K, 5%	N/A	SMD Chip Resistor, 0402, 12k, 5%	SMD0402	YAGEO	RC0402FR-0712KL
48	2	R81,R82	10R, 5%	N/A	SMD Chip Resistor, 0402, 10R, 5%	SMD0402	YAGEO	RC0402FR-0710RL
49	3	R89,R119,R120	2K, 5%	N/A	SMD Chip Resistor, 0402, 2k, 5%	SMD0402	YAGEO	RC0402FR-072KL
50	23	R91,R93,R94,R95,R96,R97,R98,R99,R100,R101,R103,R104,R105,R106,R107,R108,R109,R112,R114,R123,R124,R265,R266	4.7K, 5%	N/A	SMD Chip Resistor, 0402, 4.7k, 5%	SMD0402	YAGEO	RC0402JR-074K7L

51	2	R3,R19	60.4K, 1%	N/A	SMD Chip Resistor, 0603 [1608 Metric], 60.4 kohm, ERJ3EK Series, 75 V, Thick Film, 100 mW	SMD0603	PANASONIC	ERJ3EKF6042V
52	1	R7	13.3K, 1%	N/A	SMD Chip Resistor, 0603 [1608 Metric], 13.3 kohm, ERJ3EK Series, 75 V, Thick Film, 100 mW	SMD0603	PANASONIC	ERJ3EKF1332V
53	2	R79,R80	240, 0.1%	N/A	CPF-A-0805B240RE1 - SMD Chip Resistor, 0805 [2012 Metric], 240 ohm, CPF-A Series, 100 V, Thin Film, 100 mW	SMD0805	TE CONNECTIVITY	CPF-A-0805B240RE1
54	15	R66,R67,R68,R69,R70,R71,R72,R73,R74,R75,R76,R77,R185,R186,R187	0, 5%	N/A	WR08X000 PTL - SMD Chip Resistor, 0805 [2012 Metric], 0 ohm, WR08 Series, 150 V, Thick Film, 125 mW	SMD0805	WALSIN	WR08X000 PTL
55	1	R9	68K, 1%	N/A	SMD Chip Resistor, 0603,68k, 1%	SMD0603	YAGEO	RC0603FR-0768KL
56	1	R10	25.5K, 1%	N/A	SMD Chip Resistor, 0603, 25.5k, 1%	SMD0603	BOURNS	CR0603-FX-2552ELF
57	4	R13,R14,R21,R264	51K, 1%	N/A	SMD Chip Resistor, 0603, 51k, 1%	SMD0603	YAGEO	RC0603FR-0751KL
58	1	R20	56K, 1%	N/A	SMD Chip Resistor, 0603, 56k, 1%	SMD0603	WALSIN	WR06X5602FTL
59	1	R117	47K, 5%	N/A	SMD Chip Resistor, 0402, 47k, 5%	SMD0402	YAGEO	RC0402JR-0747KL
60	1	R102	12K, 1%	N/A	SMD Chip Resistor, 0402, 12k, 1%	SMD0402	YAGEO	RC0402FR-0712KL
61	1	R113	1.5K, 5%	N/A	SMD Chip Resistor, 0402, 1.5k, 5%	SMD0402	YAGEO	RC0402JR-071K5L
62	2	R115,R116	470, 5%	N/A	SMD Chip Resistor, 0402, 470, 5%	SMD0402	YAGEO	RC0402JR-07470RL
63	1	R118	698, 1%	N/A	SMD Chip Resistor, 0402,698, 1%	SMD0402	WALSIN	WR04X6980FTL
64	1	R50	50, 0.1%	N/A	50 Ohms ±0.1% 0.063W, 1/16W Chip Resistor 0402 (1005 Metric) Thin Film	SMD0402	YAGEO	RT0402BRE0750RL
65	4	R58,R59,R62,R63	100K, 5%	N/A	SMD Chip Resistor, 0805, 100k, 5%	SMD0805	YAGEO	RC0805JR-07100KL
66	1	R122	1M, 5%	N/A	SMD Chip Resistor, 0402, 1M, 5%	SMD0402	YAGEO	RC0402JR-071ML
67	2	D11,D12	SP3051-04HTG	ETSB-0008-0001	TVS DIODE 6V 17V SOT23-6, 17V Clamp 20A (8/20µs) Ipp Tvs Diode Surface Mount SOT-23-6	SOT-23-6	LITTELFUSE	SP3051-04HTG
68	2	D13,D14	RClamp0584J	ETSB-0008-0004	TVS DIODE 5V 15V SLP2710P8, 15V Clamp 5A (8/20µs) Ipp Tvs Diode Surface Mount SLP2710P8	10-UFDFN	Semtech	RCLAMP0584J.TCT
69	2	D15,D16	RClamp0582B	ETSB-0008-0005	TVS DIODE 5V 20V SC75,20V Clamp 15A (8/20µs) Ipp Tvs Diode Surface Mount SC-75 (SOT523)	SOT523	Semtech	RCLAMP0582BQCTCT
70	1	J15	6-2301994-0	ETSB-0008-0006	CONN MAGJACK 1PORT 1000 BASE-T, 1 Port RJ45 Magjack Connector Through Hole 10/100/1000 Base-T, AutoMDIX	THRU-HOLE	TE	6-2301994-0
71	1	J16	10029449-111RLF	ETSB-0008-0008	CONN RCPT 1.4 HDMI 19POS SMD R/A,HDMI™ 1.4 Receptacle Connector 19 Position Surface Mount, Right Angle; Through Hole	SMD	Amphenol ICC	10029449-111RLF
72	2	SW1,SW17	OS102011MS2QN1	B0005	Slide Switch, SPDT, On-On, Through Hole, OS Series, 100 mA	THRU-HOLE	C&K	OS102011MS2QN1
73	2	SW3,SW5	SDB02H1SBD	D0002	DIP Switches/SIP Switches 2P, 25mA 24VDC, 100mA 50VDC	SDB02H1SBD	C&K	SDB02H1SBD
74	1	SW4	SDB03H1SBD	D0002	DIP Switches/SIP Switches 3P, 25mA 24VDC, 100mA 50VDC	SDB03H1SBD	C&K	SDB03H1SBD
75	3	SW2,SW6,SW7	FSM4JSMATR	ESTB-00006-1-0001	Tactile Switch SPST-NO Top Actuated Surface Mount	FSM4JSMATR_SMD	TE Connectivity ALCOSWITCH Switches	FSM4JSMATR
76	1	U2	LT1763_X	ETSB-0008-0009	Linear Voltage Regulator IC Positive Fixed 1 Output 500mA 8-SOIC	8SOIC	Analog	LT1763CS8-5#TRPBF
77	2	U4,U27	ADM7170	ETSB-0008-0010	Linear Voltage Regulator IC Positive Adjustable 1 Output 500mA 8-LFCSP-WD (3x3)	8-LFCSP-WD (3x3)	Analog	ADM7170ACPZ-R7
78	2	U5,U7	ADM7172	ETSB-0008-0011	Linear Voltage Regulator IC Positive Adjustable 1 Output 2A 8-LFCSP-WD (3x3)	8-LFCSP-WD (3x3)	Analog	ADM7172ACPZ-R7
79	1	U14	AT24CM01	ETSB-0008-0012	EEPROM Memory IC 1Mb (128K x 8) 1°C 1MHz 550ns 8-SOIC	8-SOIC	Microchip	AT24CM01-SHD-T
80	1	U18	DM9119-QFN64	ETSB-0008-0013	Gigabit Ethernet Transceiver	64QFN	Davicon	DM9119INP
81	1	U19	IT6263	ETSB-0008-0020	Single Chip De-SSC LVDS to HDMI Converter	64QFN	Ite Tech Inc	IT6263
82	2	U1,U3	LTM4625	ESTB-00006-1-0002	Non-Isolated Pol Module DC DC Converter 1 Output 0.6 ~ 5.5V 5A 4V - 20V Input	BGA25	Analog	LTM4625IY#PBF
83	1	U6	LTM4632	ESTB-00006-1-0005	Non-Isolated Pol Module DC DC Converter 2 Output 0.6 ~ 2.5V 0.6 ~ 2.5V 3A, 3A 3.6V - 15V Input	BGA25	Analog	LTM4632IY#PBF
84	1	U12	T120F324Cx	ETSB-0008-0032	易灵思 Trion T120FBGA324	FBGA324	易灵思	T120F324Cx
85	1	U13	W25Q128JVSQ	ESTB-00004-1-0003	NOR Flash spiFlash, 3V, 128M-bit, 4Kb Uniform Sector	SOIC08	Winbond	W25Q128JVSQ
86	1	U15	W63CH6MBVACE	ETSB-0008-0031	SDRAM - Mobile LPDDR3 Memory IC 4Gb (256M x 16) 933MHz 178-FBGA (11.5x11)	178BGA	Winbond	W63CH6MBVACE
87	1	U16	FT232H-56Q	A0068	IC DUAL USB TO UART/FIFO 56VQFN	56VQFN	FTDI	FT232H-56Q-TRAY

88	1	U17	93LC56BT-I/OT	A0069	IC EEPROM 2K SPI 2MHZ SOT23-6	SOT-23-6	Microchip	93LC56BT-I/OT
89	4	U8,U9,U10,U11	TPS22964C	B0001	Power Switch ICs - Power Distribution Low On-Resistance 3A Load Switch	DSBGA-6	Texas Instruments	TPS22964CZPT
90	1	X6	12 MHz	ETSB-0008-0030	12MHz ±10ppm Crystal 10pF 100 Ohms 4-SMD, No Lead	SMD 3225 (3.2mm × 2.5mm × 0.7mm)	ECS	ECS-120-10-33B-CKM-TR
91	1	X7	25 MHz	ETSB-0007-1-0001	Crystal, 25 MHz, SMD, 3.2mm x 2.5mm, 10 ppm, 8 pF	SMD 3225 (3.2mm × 2.5mm × 0.7mm)	Kyocera	CX3225SB25000D0FLJZ1
92	1	X1	ASE-25.000MHZ-LR-T	ETSB-0008-0025	25MHz XO (Standard) HCMOS Oscillator 3.3V Enable/Disable 4-SMD, No Lead	SMD_3_2X2_5X1_2	Abracon	ASE-25.000MHZ-LR-T
93	1	X2	SG5032CAN 74-250000M-TJGA3	ETSB-0008-0023	74.25MHz XO (Standard) CMOS Oscillator 1.6V ~ 3.6V Standby (Power Down) 4-SMD, No Lead	SMD5032 (5 mm X 3.2mm x 1.1)	EPSON	SG5032CAN 74.250000M-TJGA3
94	1	X3	ASE-50.000MHZ-LR-T	ETSB-0008-0025	50MHz XO (Standard) HCMOS Oscillator 3.3V Enable/Disable 4-SMD, No Lead	SMD_3_2X2_5X1_2	Abracon	ASE-50.000MHZ-LR-T
95	1	X4	ASE-30.000MHZ-LR-T	ETSB-0008-0025	30MHz XO (Standard) HCMOS Oscillator 3.3V Enable/Disable 4-SMD, No Lead	SMD_3_2X2_5X1_2	Abracon	ASE-30.000MHZ-LR-T
96	1	X5	ASE-10.000MHZ-LR-T	ETSB-0008-0025	10MHz XO (Standard) HCMOS Oscillator 3.3V Enable/Disable 4-SMD, No Lead	SMD_3_2X2_5X1_2	Abracon	ASE-10.000MHZ-LR-T
97	1	P1	LSHM-130-02.5-L-DV-A-S-TR	ETSB-0008-0026	60 Position Connector Self Mating, Non-Gendered Surface Mount Gold	SMD	Samtec	LSHM-130-02.5-L-DV-A-S-TR
98	7	TP1,TP2,TP6,TP7,TP8,TP9,TP17	5190TR	ETSB-0008-0028	Red PC Test Point, Miniature Phosphor Bronze, Silver Plating Surface Mount Mounting Type	SMD	Keystone	5190TR
99	2	RN1,RN2	EXB-2HV510JV	ESTB-00006-1-0011	51 Ohm ±5% 62.5mW Power Per Element Isolated 8 Resistor Network/Array ±200ppm/°C 1506, Convex, Long Side Terminals	SMD3_8mm_X_1_6_mm	PANASONIC	EXB-2HV510JV
100	2	CN1,CN2	CA064C104K4RACTU	ESTB-00006-1-0012	0.1µF Isolated Capacitor 4 Array 16V X7R 0612 (1632 Metric)	SMD0612	KEMET	CA064C104K4RACTU
101	1	R78	RC0201FR-07100RL	N/A	RC0201FR-07100RL - SMD Chip Resistor, 0201 (0603 Metric), 100 ohm, RC Series, Thick Film, 50 mW	SMD0201	Yageo	RC0201FR-07100RL
102	3	TP3,TP4,TP5	5191TR	ETSB-0008-0028	Black PC Test Point, Miniature Phosphor Bronze, Silver Plating Surface Mount Mounting Type	SMD	Keystone	5191TR
103	1	X8	27 MHz	ETSB-0008-0029	27MHz ±30ppm Crystal 22pF 60 Ohms 4-SMD, No Lead	SMD 3225 (3.2mm × 2.5mm × 0.7mm)	TXC	7M-27.000MAHL-T
104	5	R178,R180,R181,R182,R183	0.01, 0.5%	N/A	ERJ-6CWDR010V - 0805 CURRENT SENSING RES. 0.5%, 0.01OHM 13AH0674	SMD0805	PANASONIC	ERJ-6CWDR010V
105	1	R263	2.15K, 1%	N/A	WR06X2151FTL - SMD Chip Resistor, 0603 (1608 Metric), 2.15 kohm, WR06 Series, 75 V, Thick Film, 100 mW	SMD0603	WALSIN	WR06X2151FTL
106	1	X12	ASE-20.000MHZ-LR-T	ETSB-0008-0025	20MHz XO (Standard) HCMOS Oscillator 3.3V Enable/Disable 4-SMD, No Lead	SMD_3_2X2_5X1_2	Abracon	ASE-20.000MHZ-LR-T
107	1	U28	MCP100T-315I/TT	ETSB-0008-0033	Supervisor Push-Pull, Totem Pole 1 Channel SOT-23-3	SOT-23-3	Microchip	MCP100T-315I/TT



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