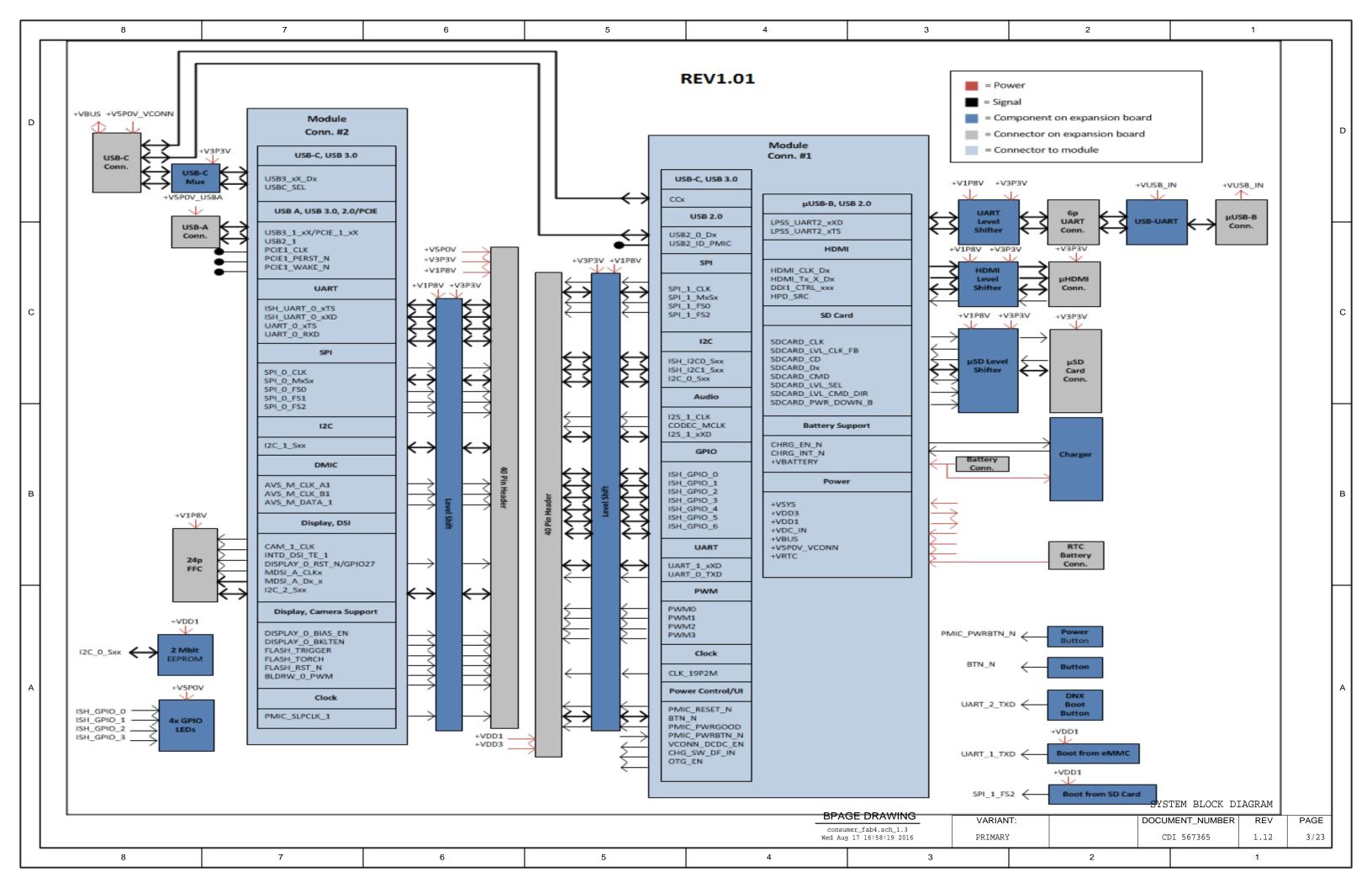
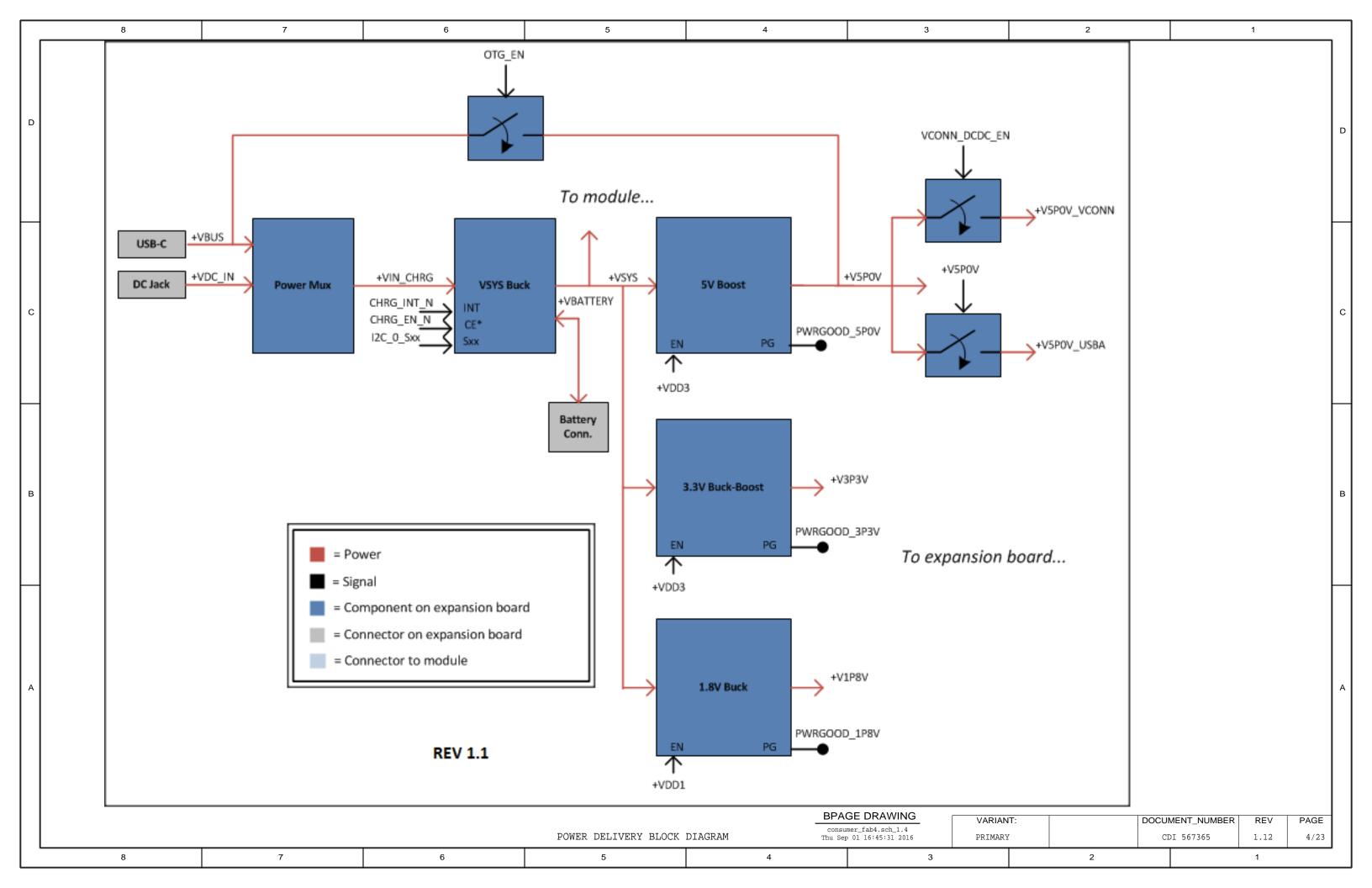
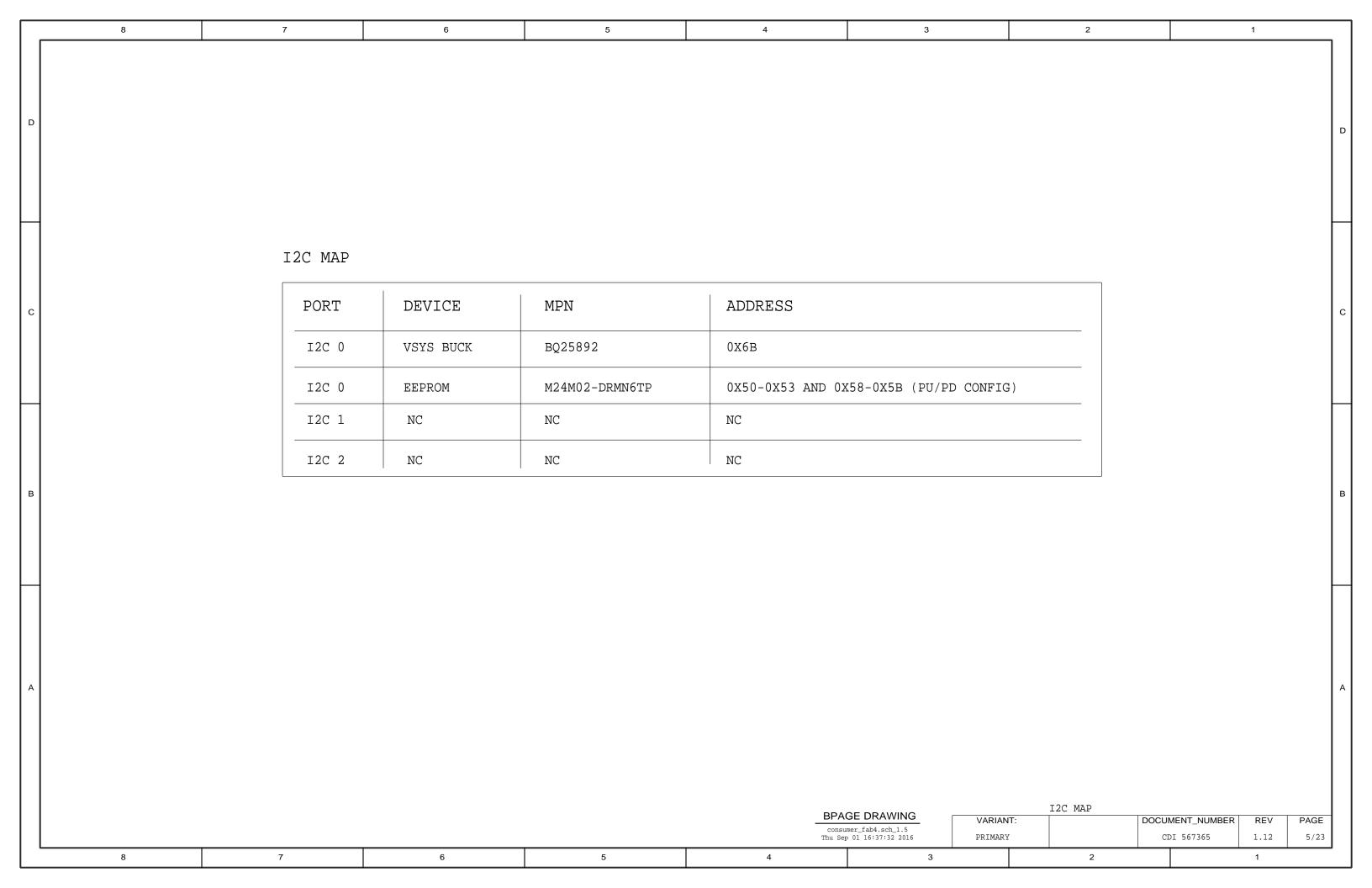
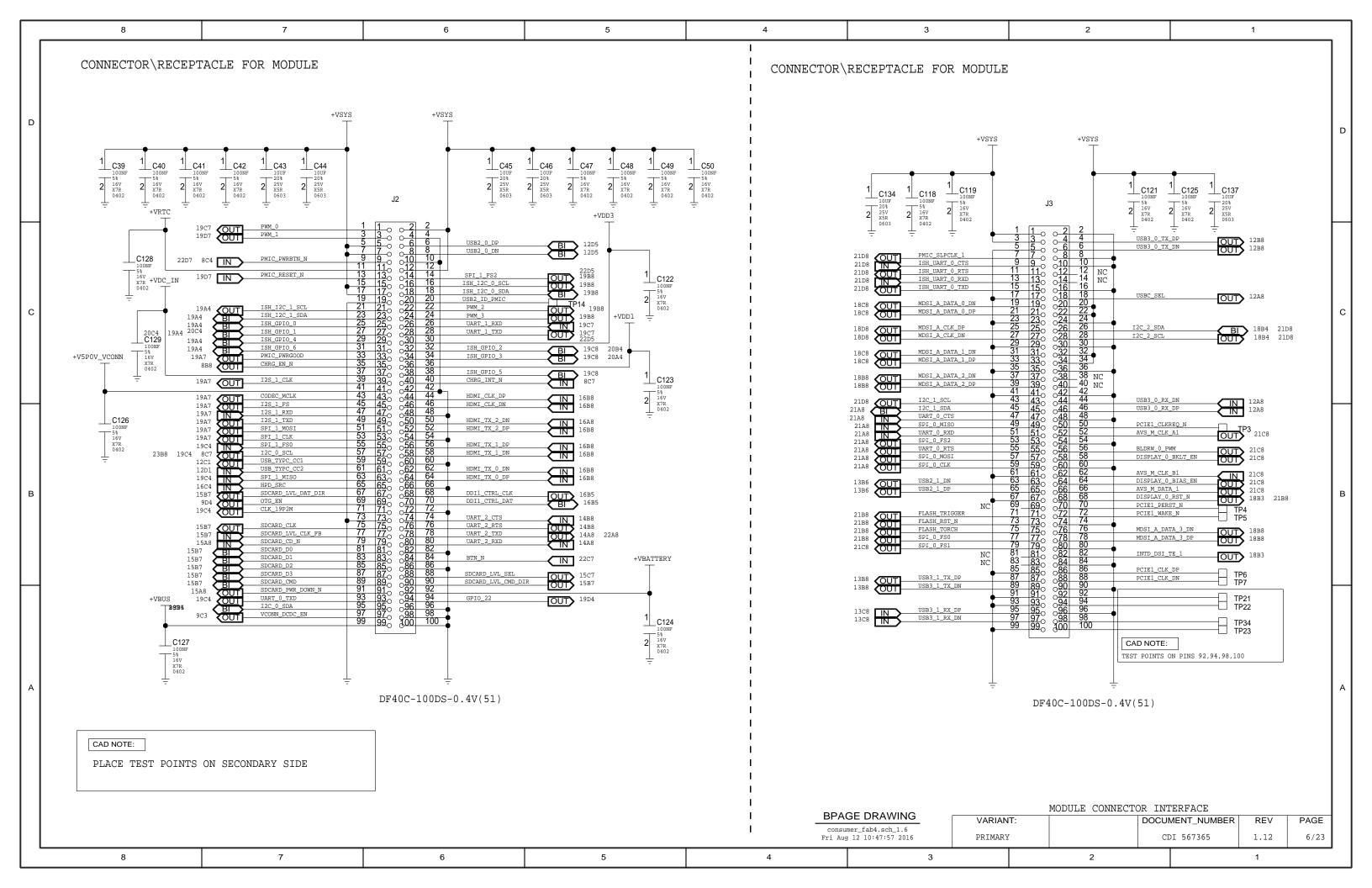


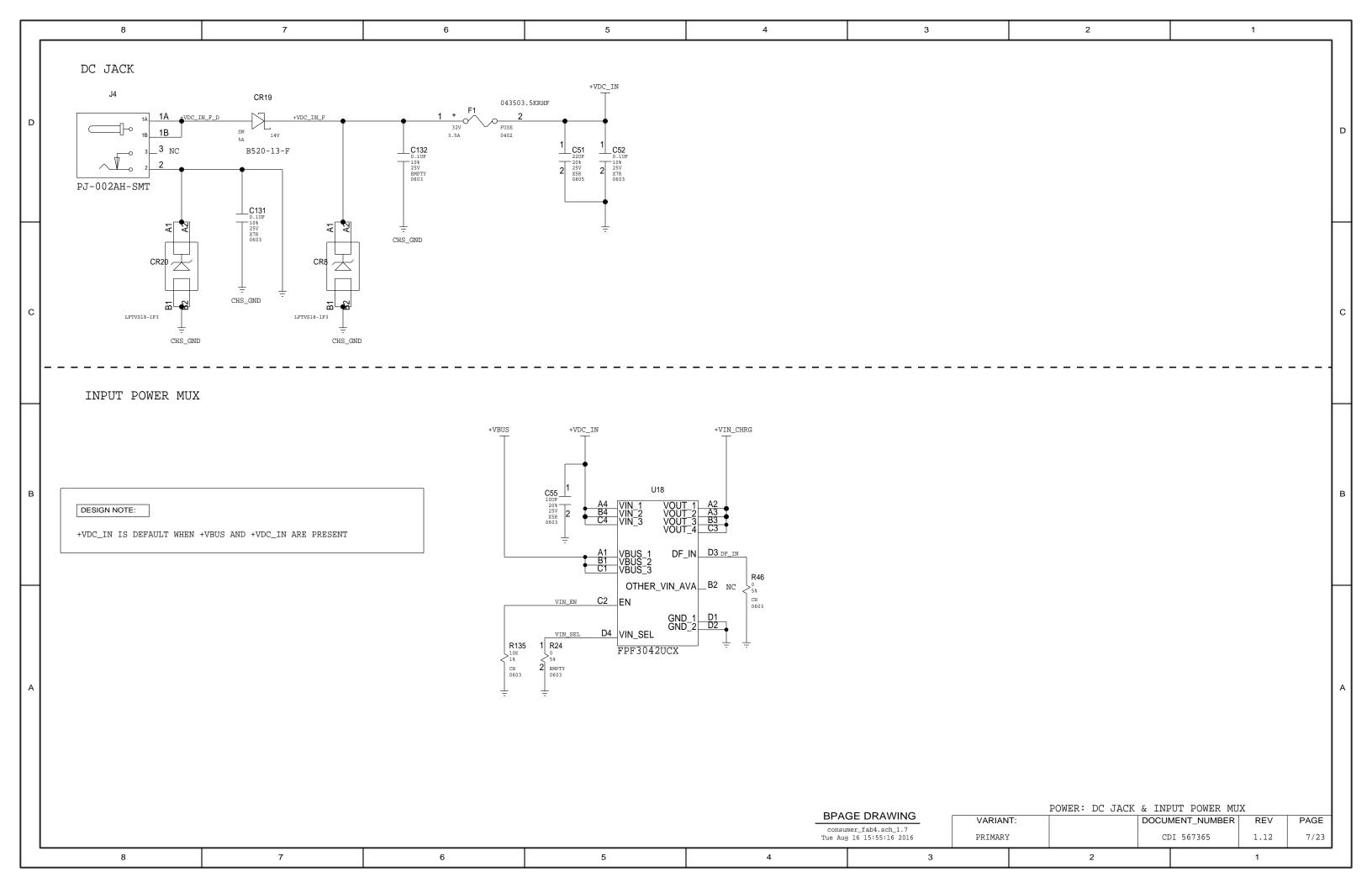
8	8 7	6	5	4	3	2	1	
TABL	E OF CONTENTS							
SHEET NO	SHEET NAME							
,	2000							
	COVER PAGE							
2	TABLE OF CONTENT SYSTEM BLOCK DIAGRAM	_	INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY					
4	POWER DELIVERY BLOCK DIAGRAM	_		LENSE, EXPRESS OR IMPLIED, I DPERTY RIGHTS IS GRANTED B		•		
5	I2C MAP			AND CONDITIONS OF SALE FO				
6	MODULE CONNECTOR INTERFACE		LIABILITY WHATSO	EVER AND INTEL® DISCLAIMS	ANY EXPRESS OR IMPLIED W	/ARRANTY,		
7	POWER: DC JACK & INPUT POWER MUX			AND/OR USE OF INTEL® PRO				
8	POWER: VSYS REGULATOR			ATING TO FITNESS FOR A PART FANY PATENT, COPYRIGHT OI	·	· · · · · · · · · · · · · · · · · · ·		
9	POWER: 5V BOOST			·				
10	POWER 3P3V BUCK-BOOST			Application" is any applicatio				
11	POWER: 1P8V BUCK			ly or indirectly, in personal in UCTS FOR ANY SUCH MISSION				
12	USB: USB TYPE-C			OLD INTEL® AND ITS SUBSIDIA	•			
13	USB: USB 3.0, USB TYPE-A			RS, OFFICERS, AND EMPLOYE				
14	USB: UART TO USB INTERFACE, USB MICRO-B		· · · · · · · · · · · · · · · · · · ·	MAGES, AND EXPENSES AND				
15	MICRO-SD: MICRO SD LEVEL SHIFTER & CONN			OR INDIRECTLY, ANY CLAIM (
16	HDMI: HDMI LEVEL SHIFTER			G IN ANY WAY OUT OF SUCH I R ITS SUBCONTRACTOR WAS N				
17	HDMI: MICRO-HDMI CONN			THE INTEL® PRODUCT OR ANY		MATACIONE,		
18	DSI: MIPI DISPLAY CONN		Intal® may make a	hanges to specifications and	aradust descriptions at any ti	ma without		
19	I/O: BREAKOUT #1 LEVEL SHIFTERS			hanges to specifications and p must not rely on the absence				
20	I/O: BREAKOUT #1 LEDS			d "reserved" or "undefined."				
21	I/O: BREAKOUT #2 LEVEL SHIFTERS			esponsibility whatsoever for				
22	I/O: BUTTONS, SWITCHES, HW STRAPS			them. The information here is	s subject to change without n	otice. Do not		
23	MISC: EEPROM, FAN, RTC BATTERY		finalize a design wi	ith this information.				
				ribed in this document may co				
				cause the product to deviate t	from published specifications	s. Current		
			characterized erra	ta are available on request.				
				Intel [®] sales office or your distance your product order.	tributor to obtain the latest s	pecifications		
		_	Conjos of documer	nts which have an order numb	oor and are referenced in this	document		
			or other Intel® lite	rature may be obtained by ca www.intel.com/design/literat	lling 1-800-548-4725 or by vi			
			Intel®, the Intel log	go, Intel® Joule™ Module and	Intel® Atom™ are trademark	s of Intel		
			·	United States and other cour d names may be claimed as th				
				, Intel Corporation. All rights re				
						TABLE OF CO	∩NTENT	
					BPAGE DRAWING	VARIANT:	DOCUMENT_NUMBER REV	PAGE
					consumer_fab4.sch_1.2 Thu Aug 11 09:17:27 2016	PRIMARY	CDI 567365 1.12	2/23
					_			

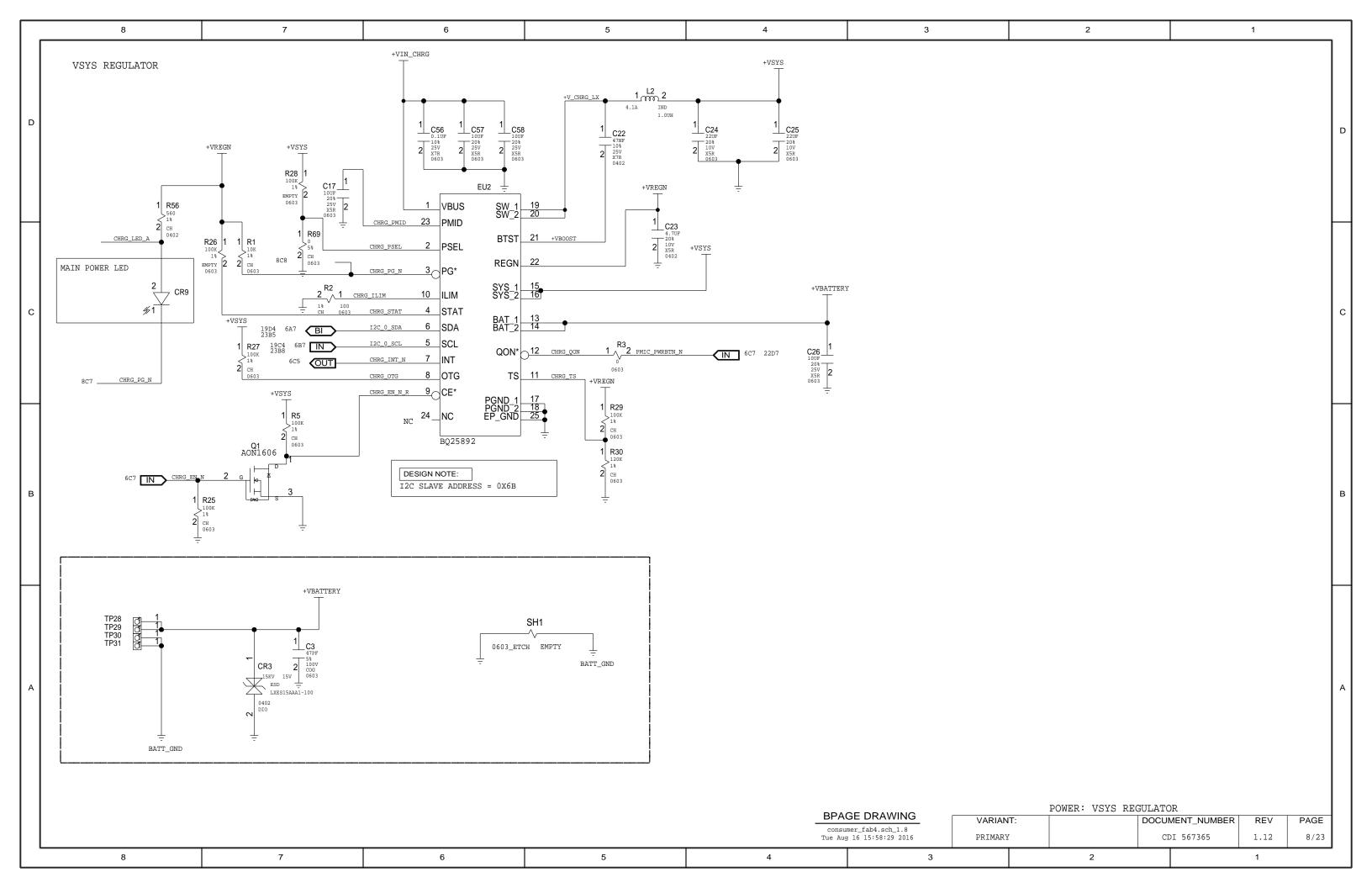


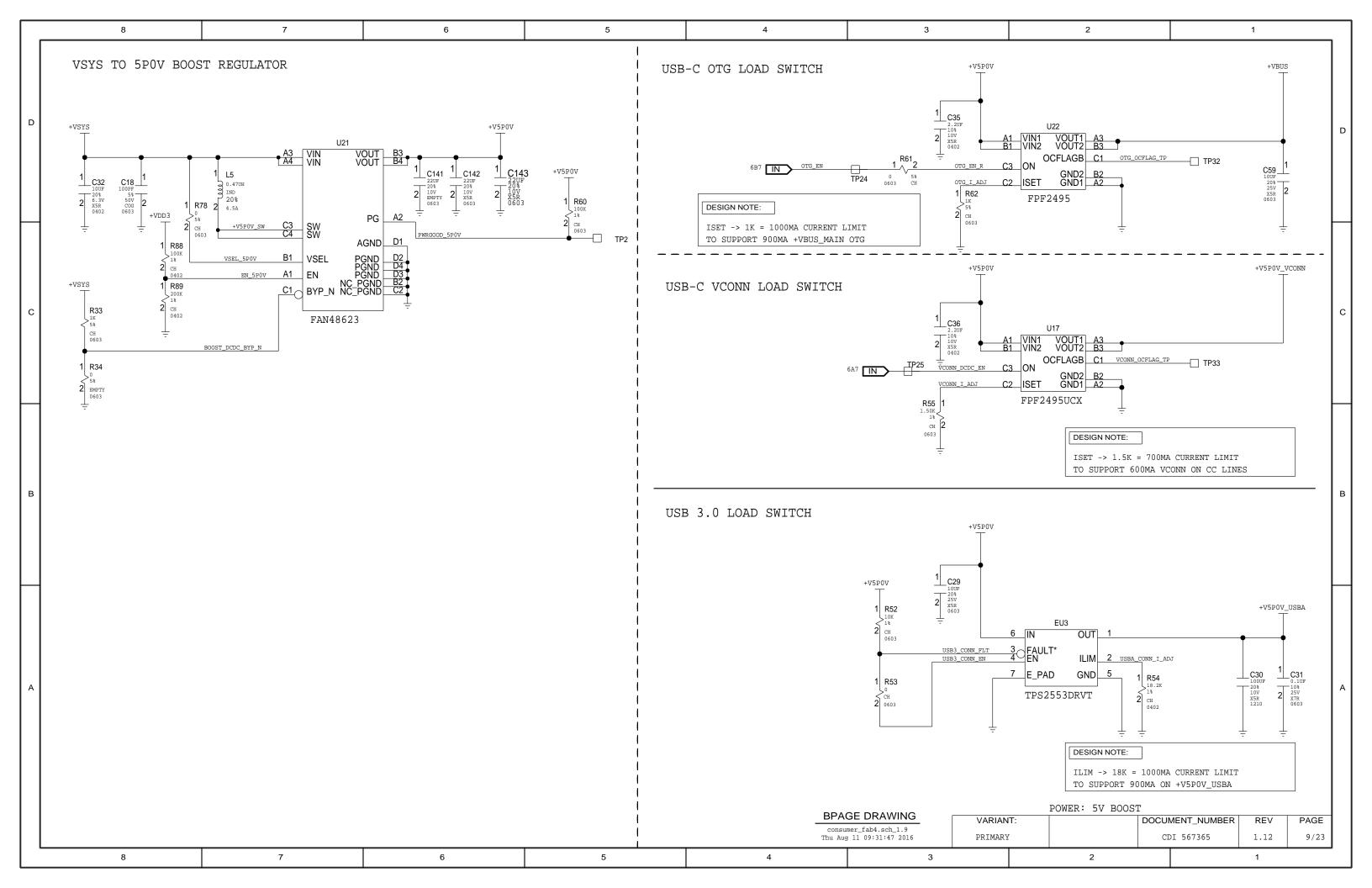


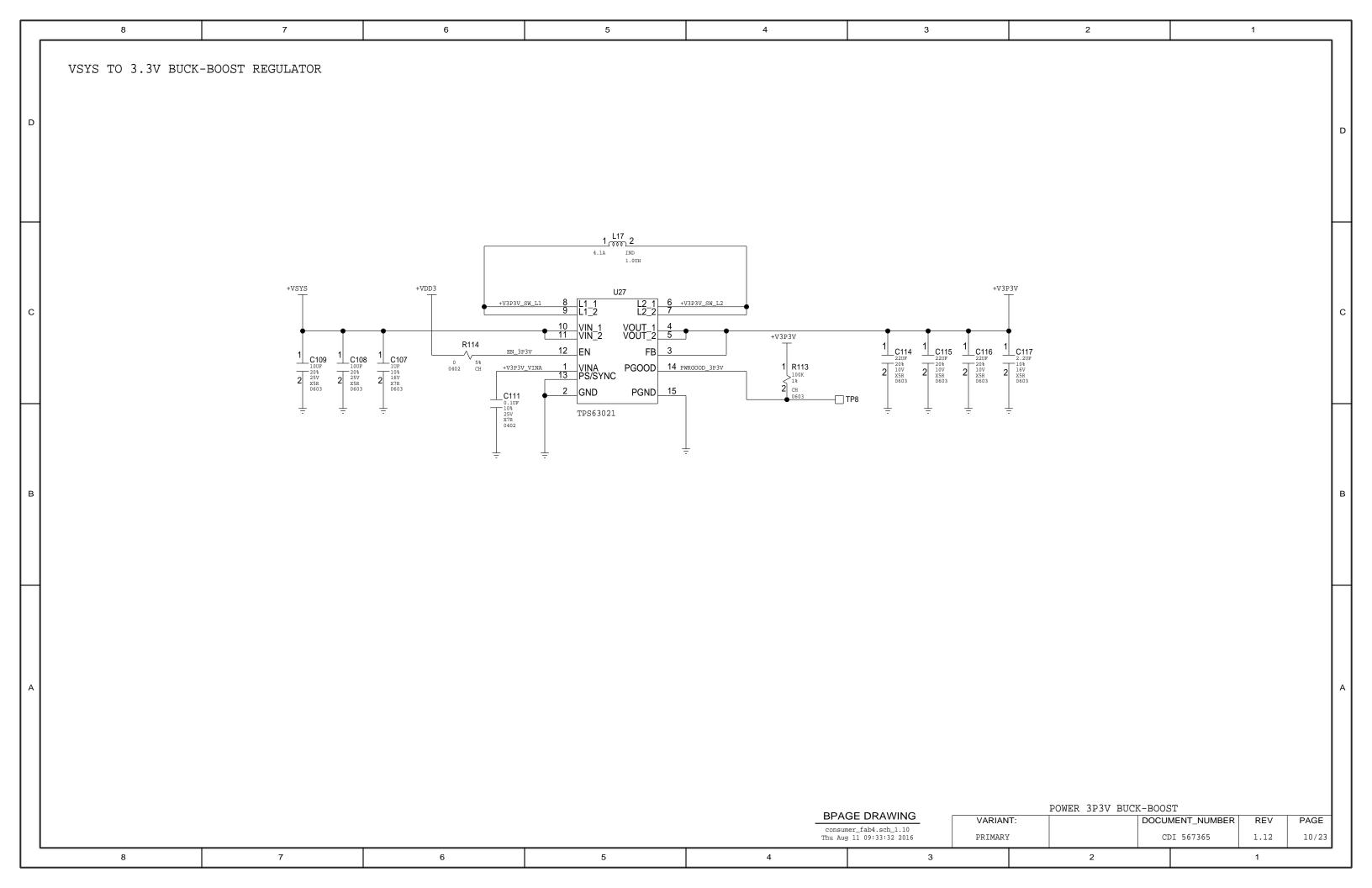


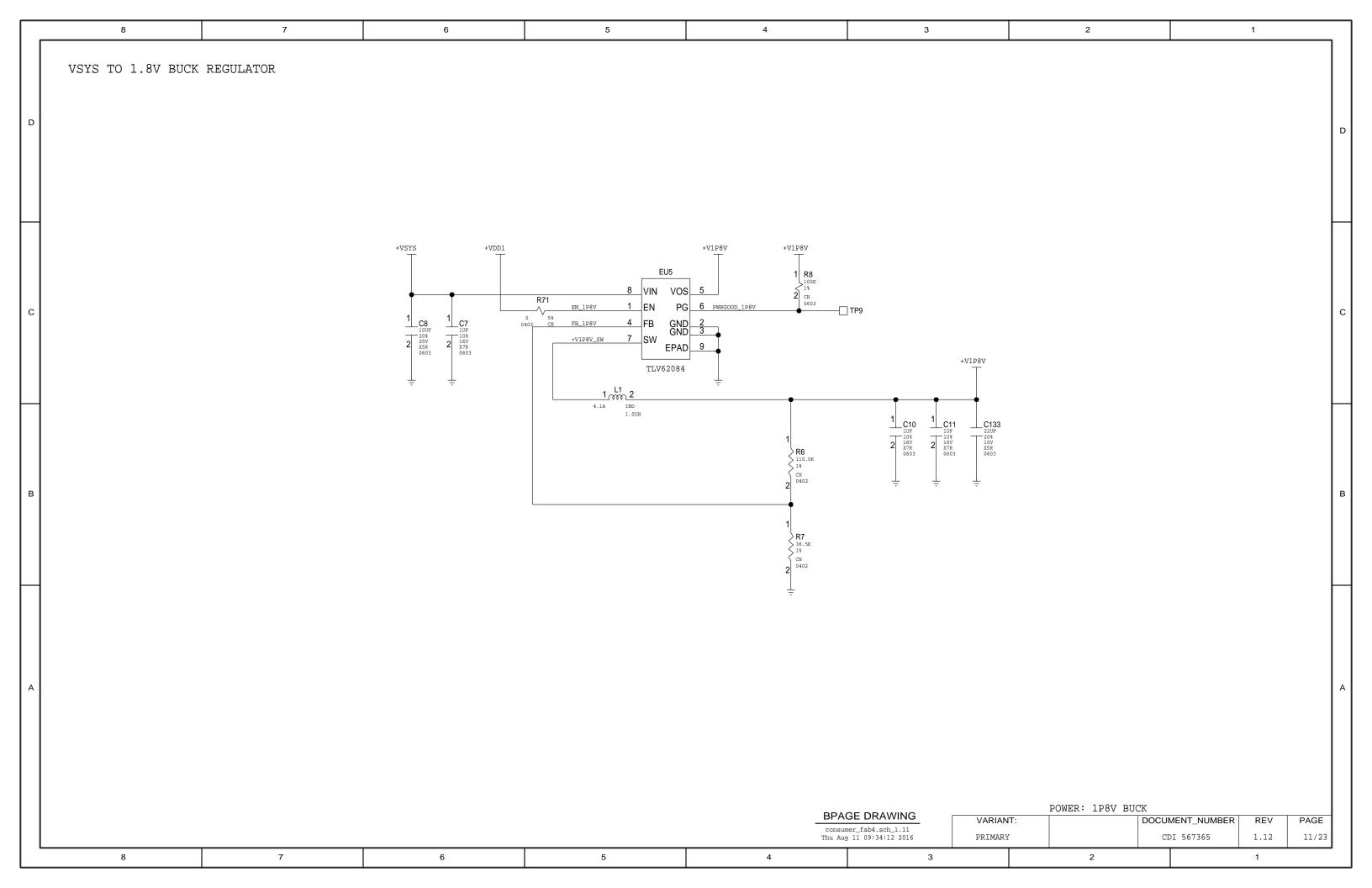


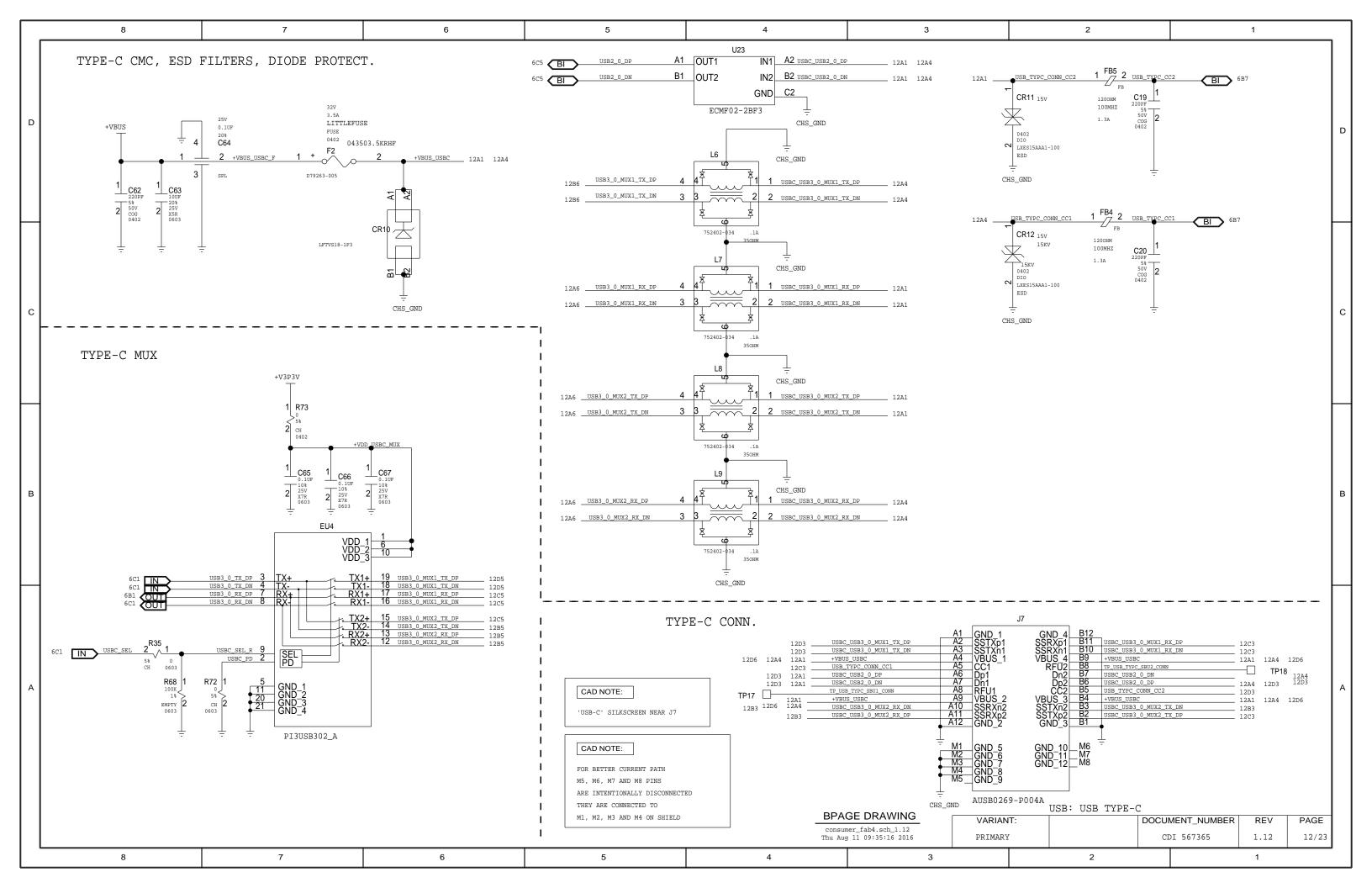


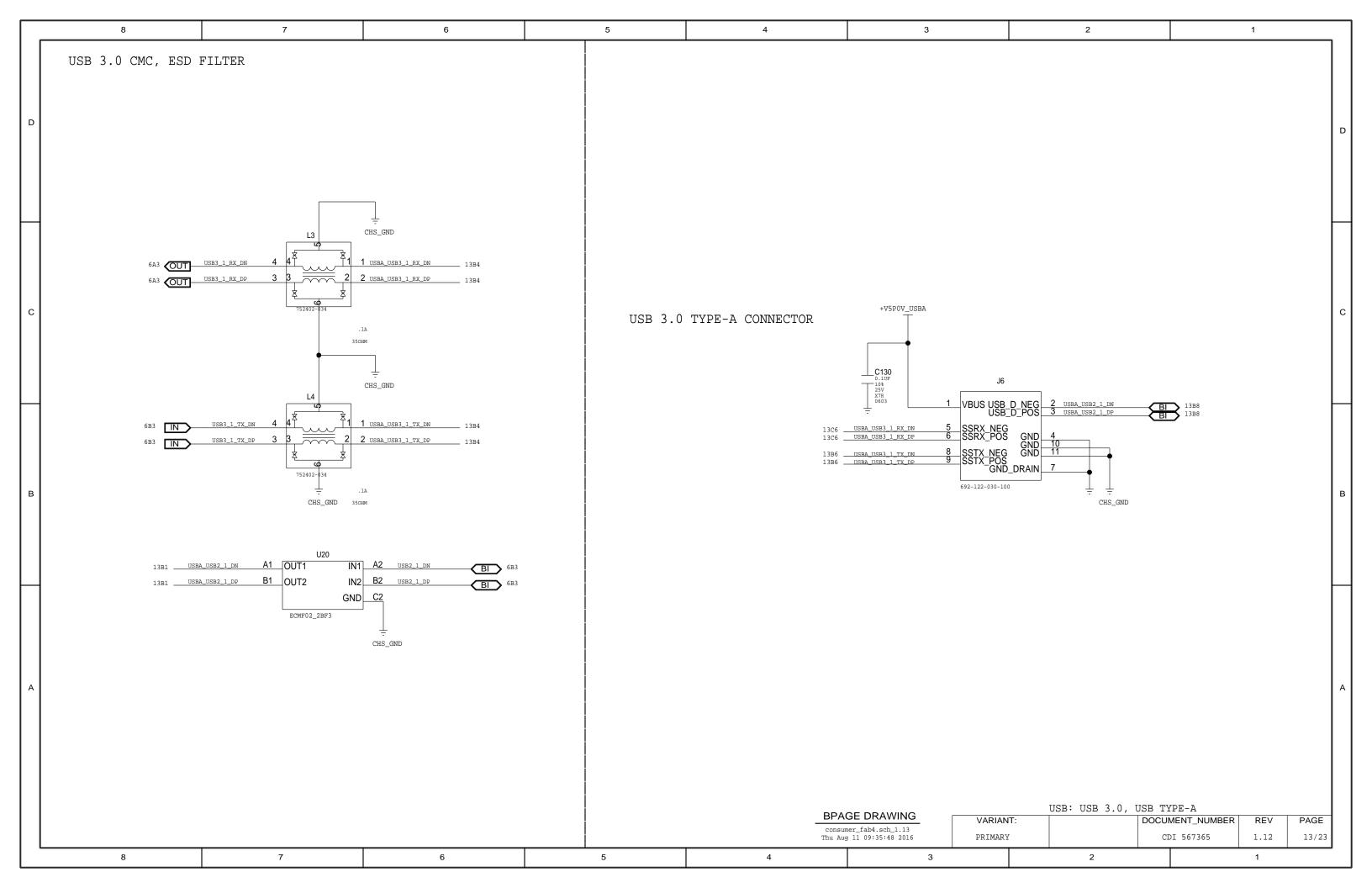


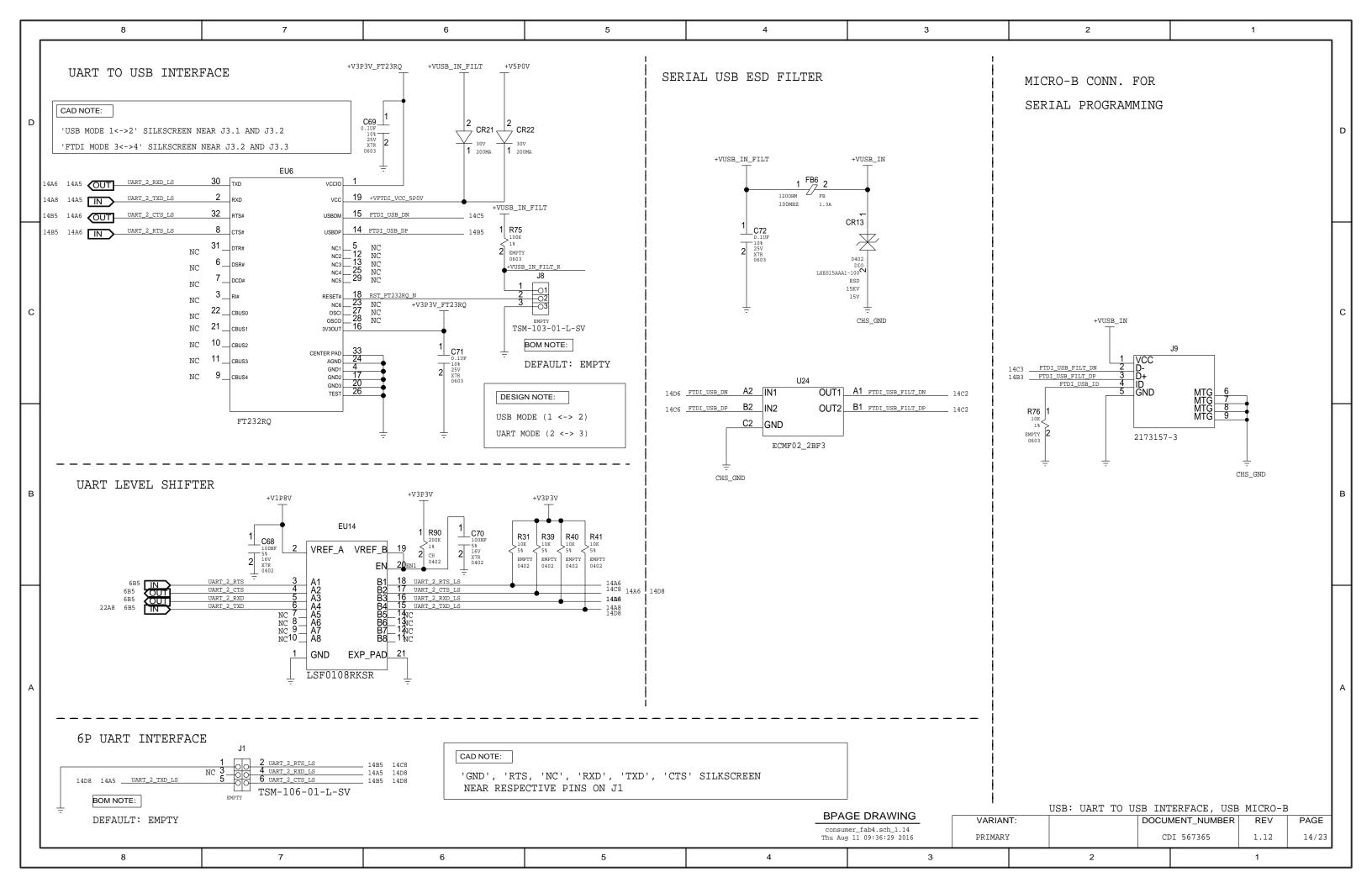


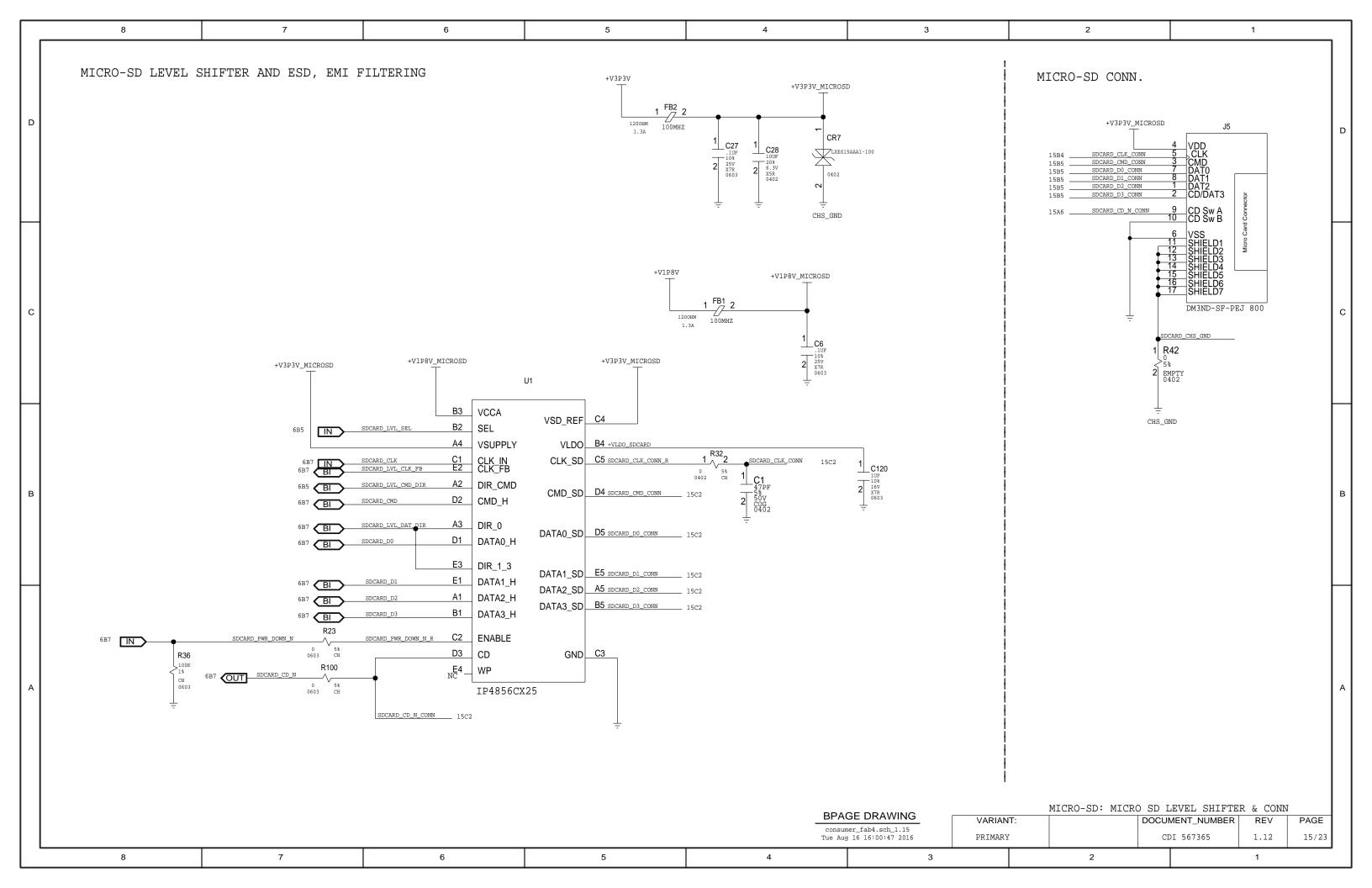


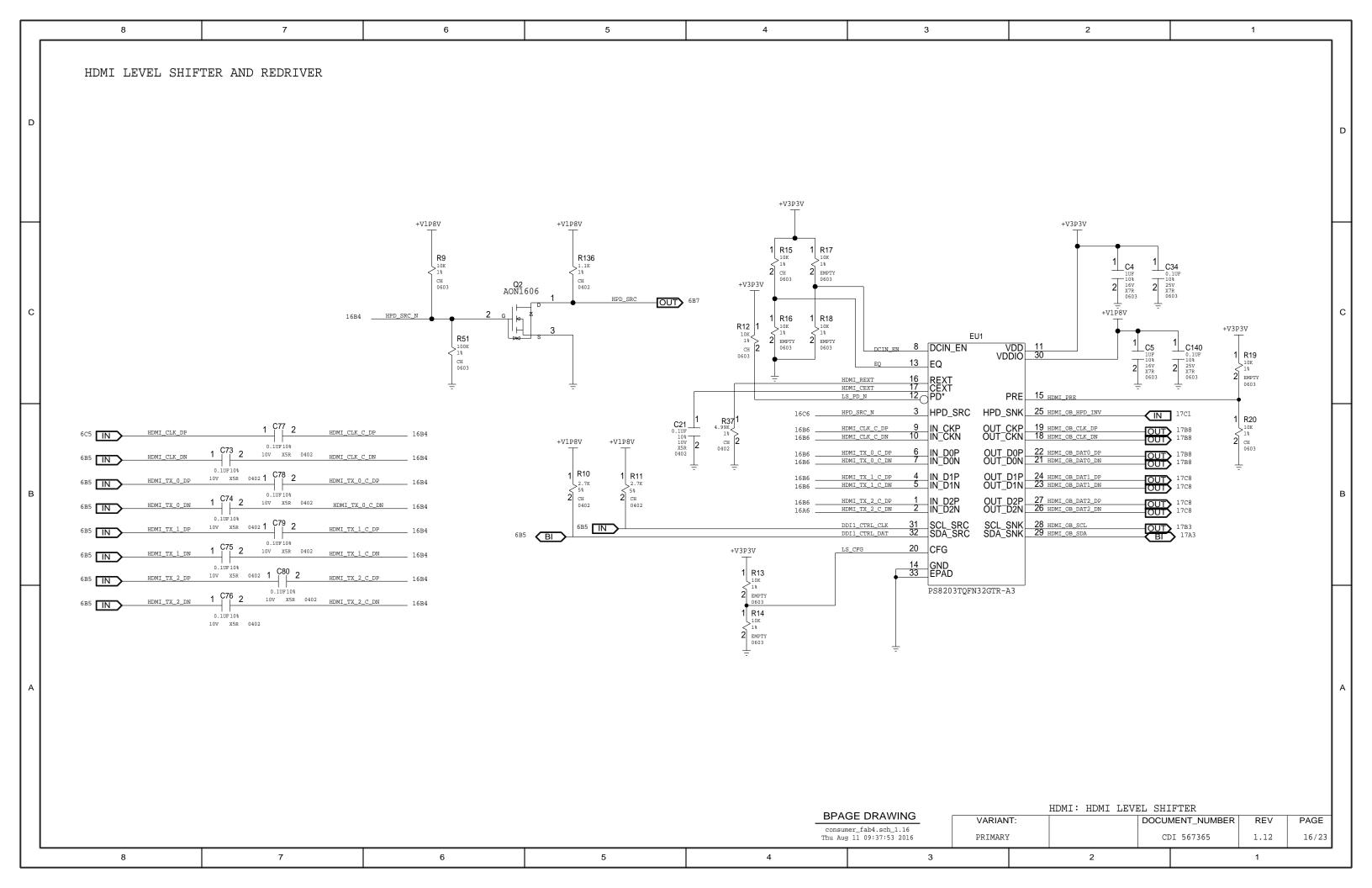


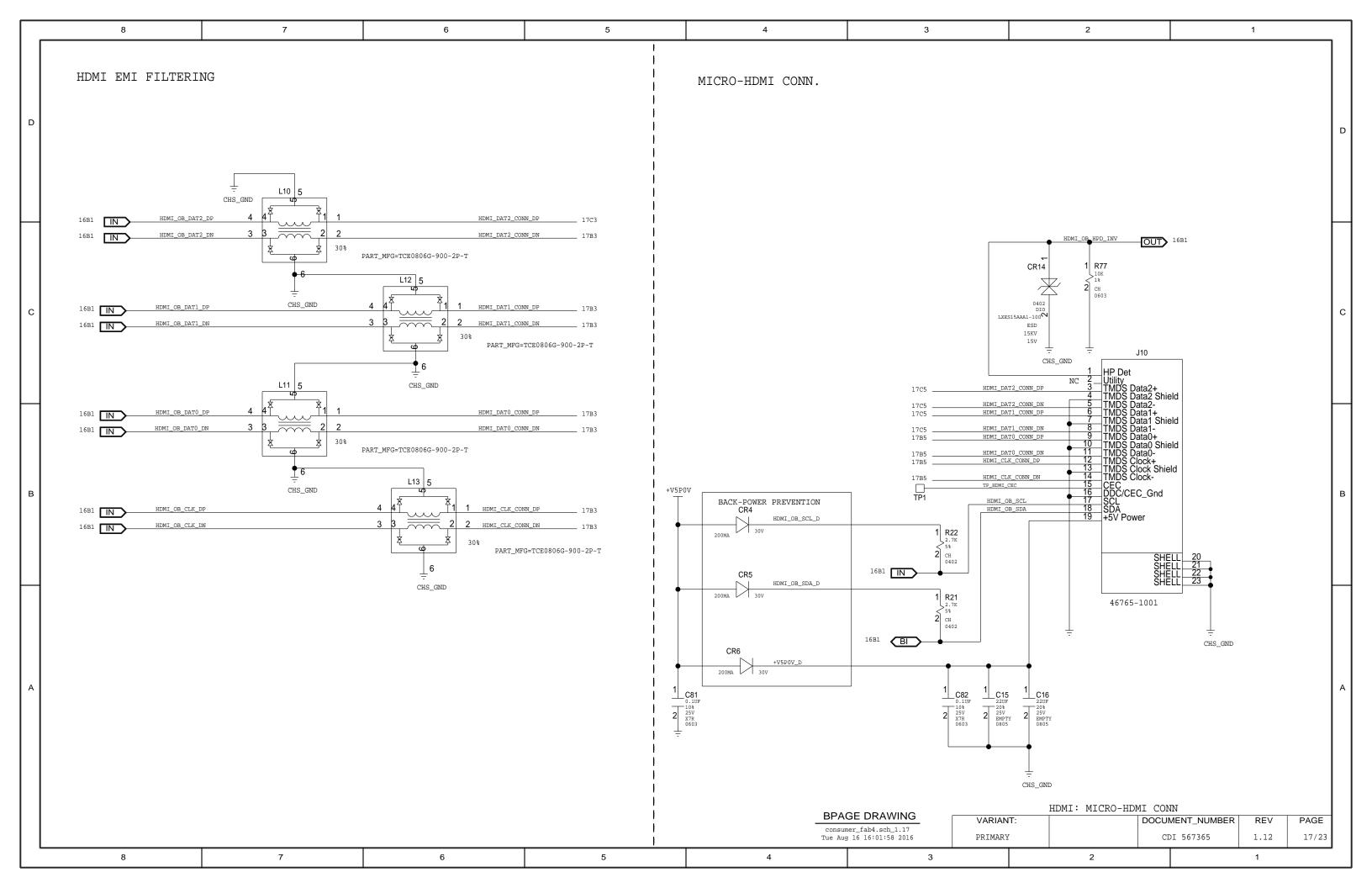


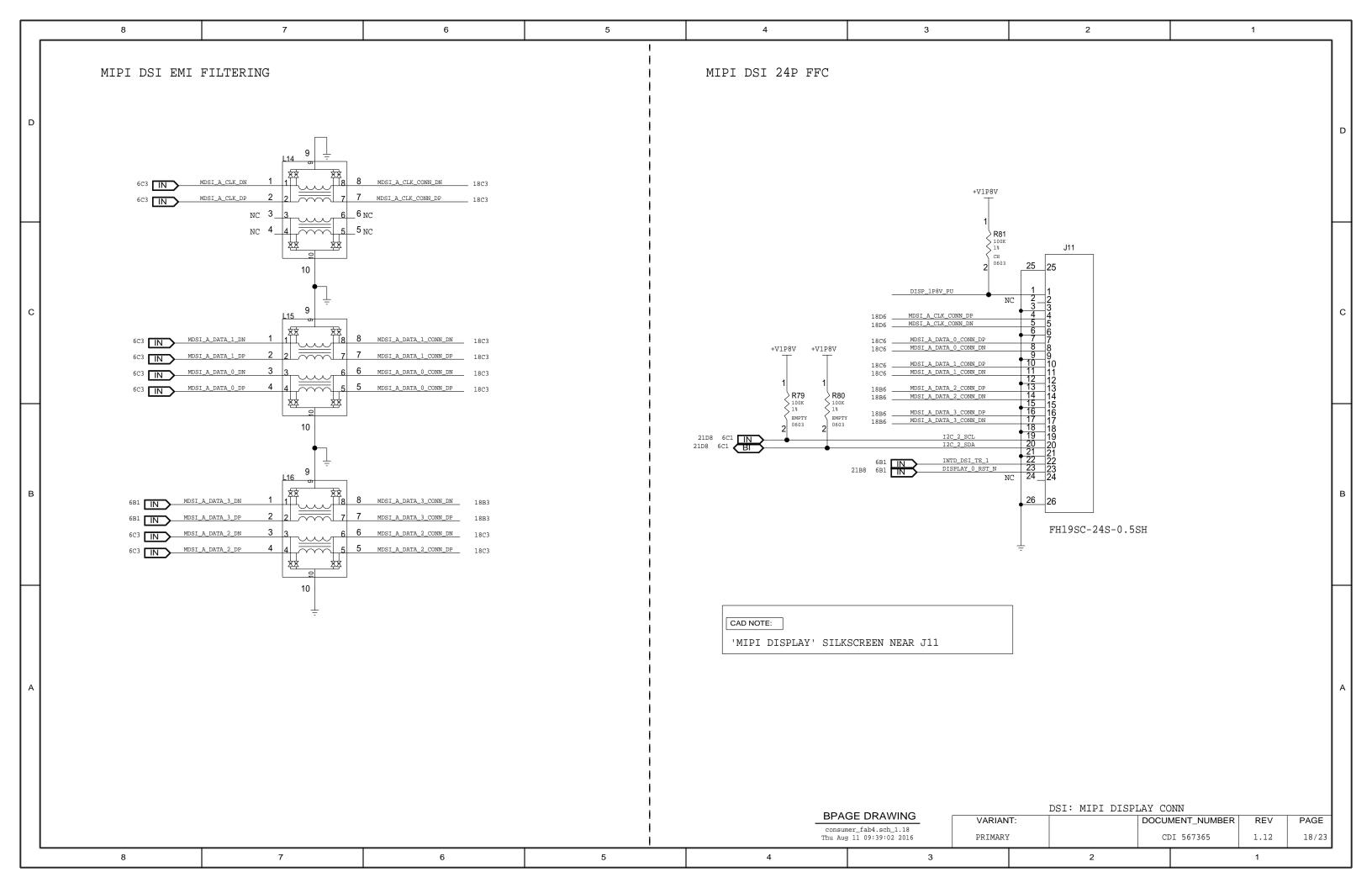


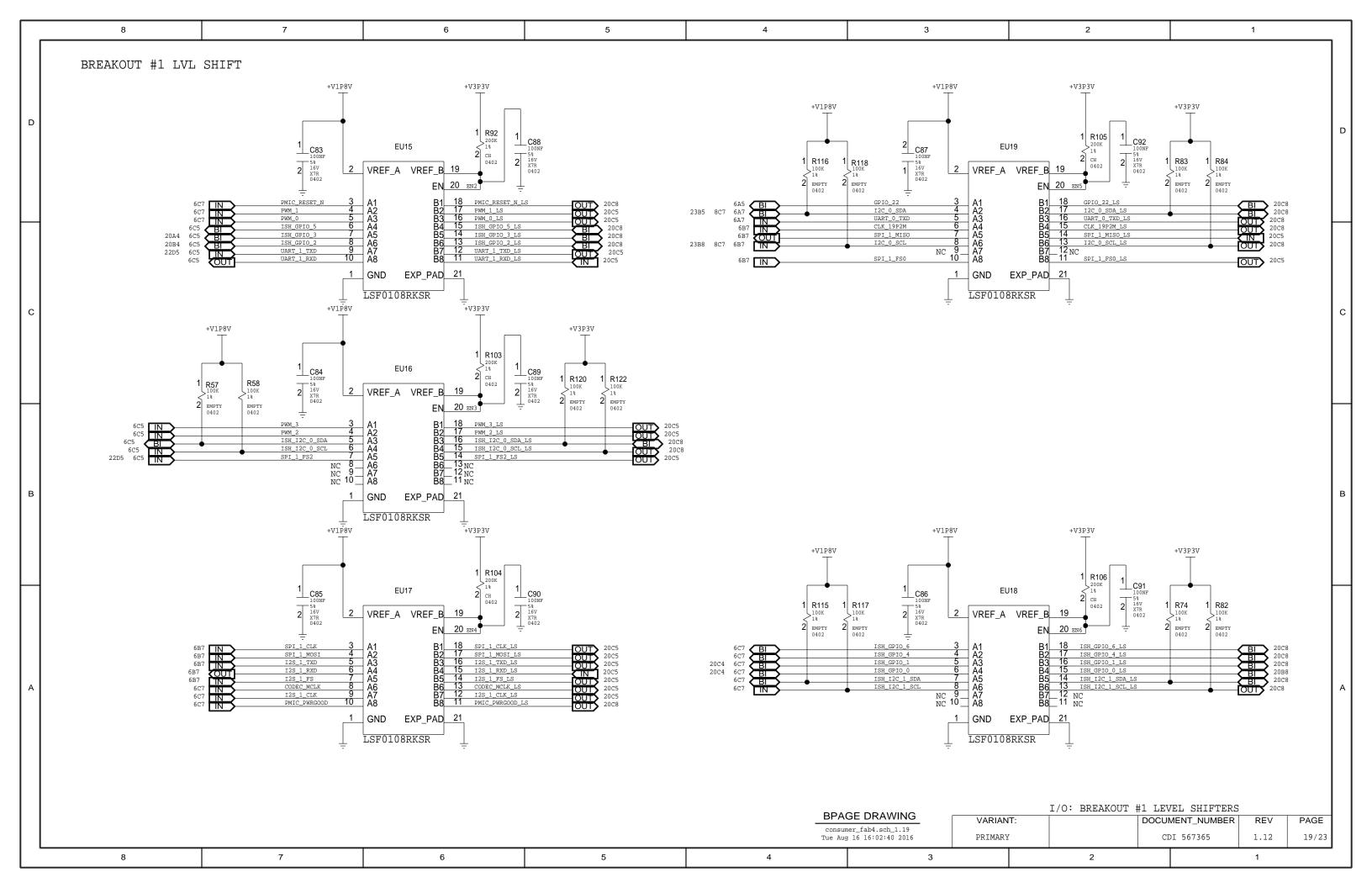


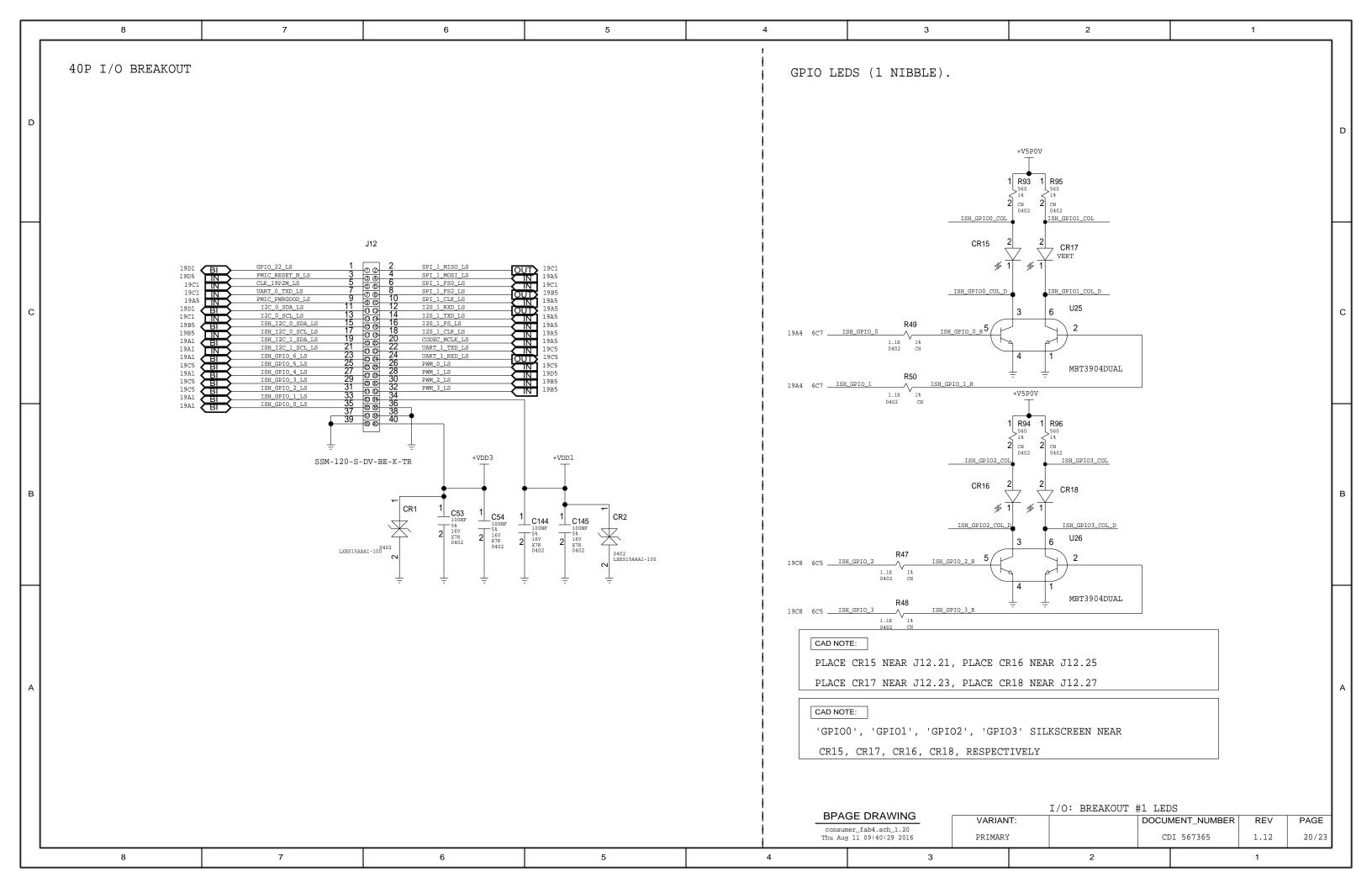


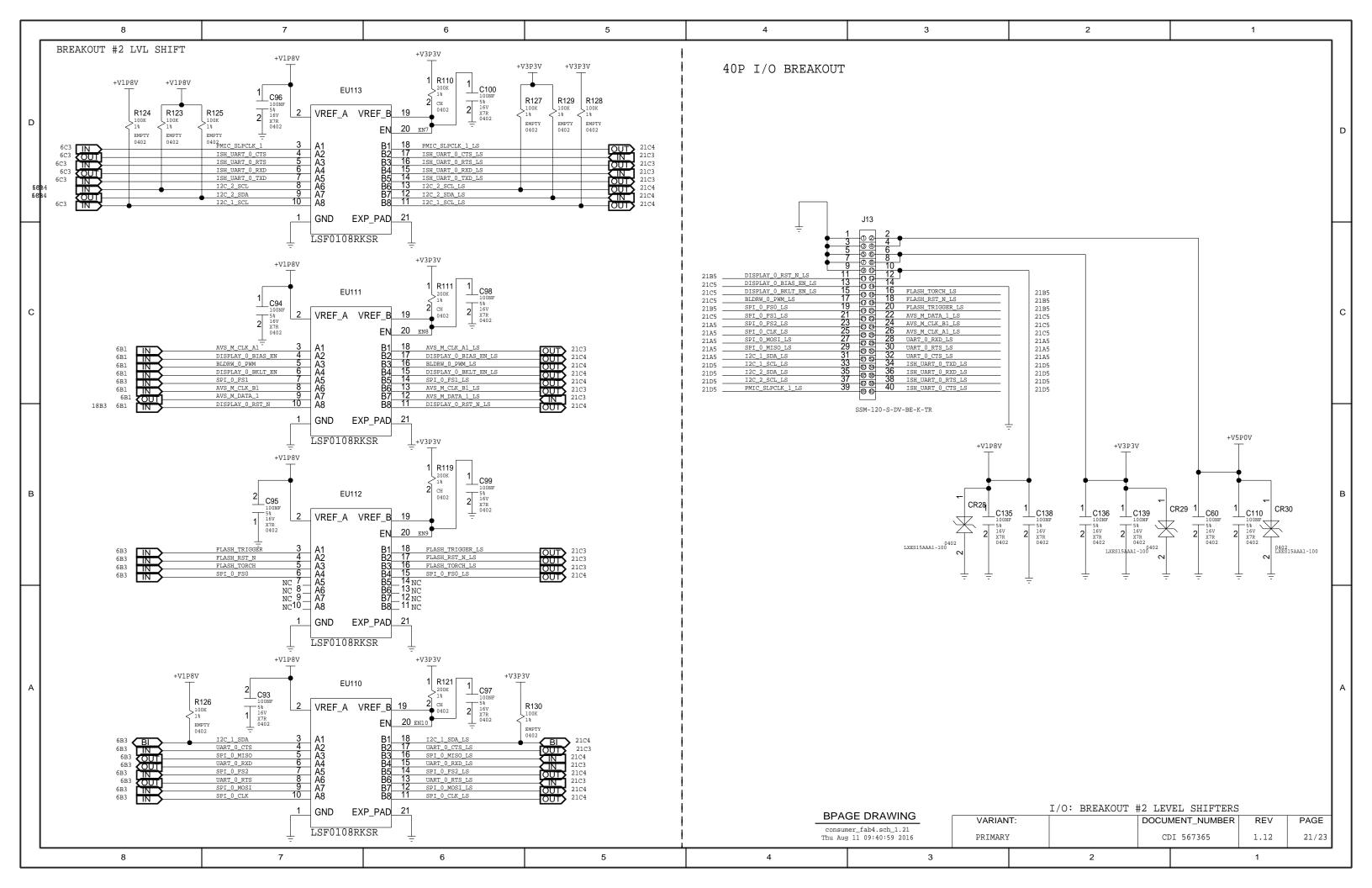


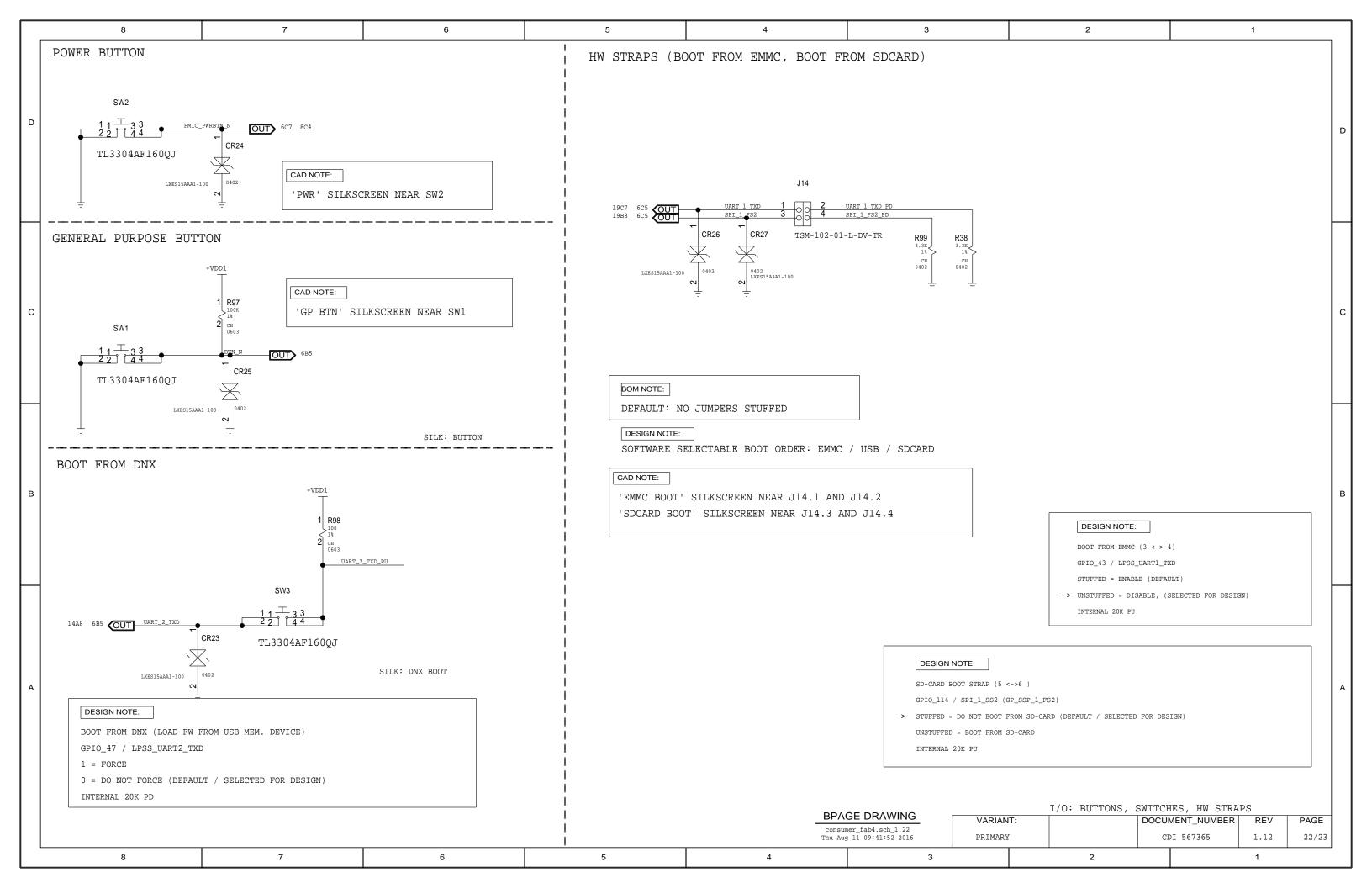


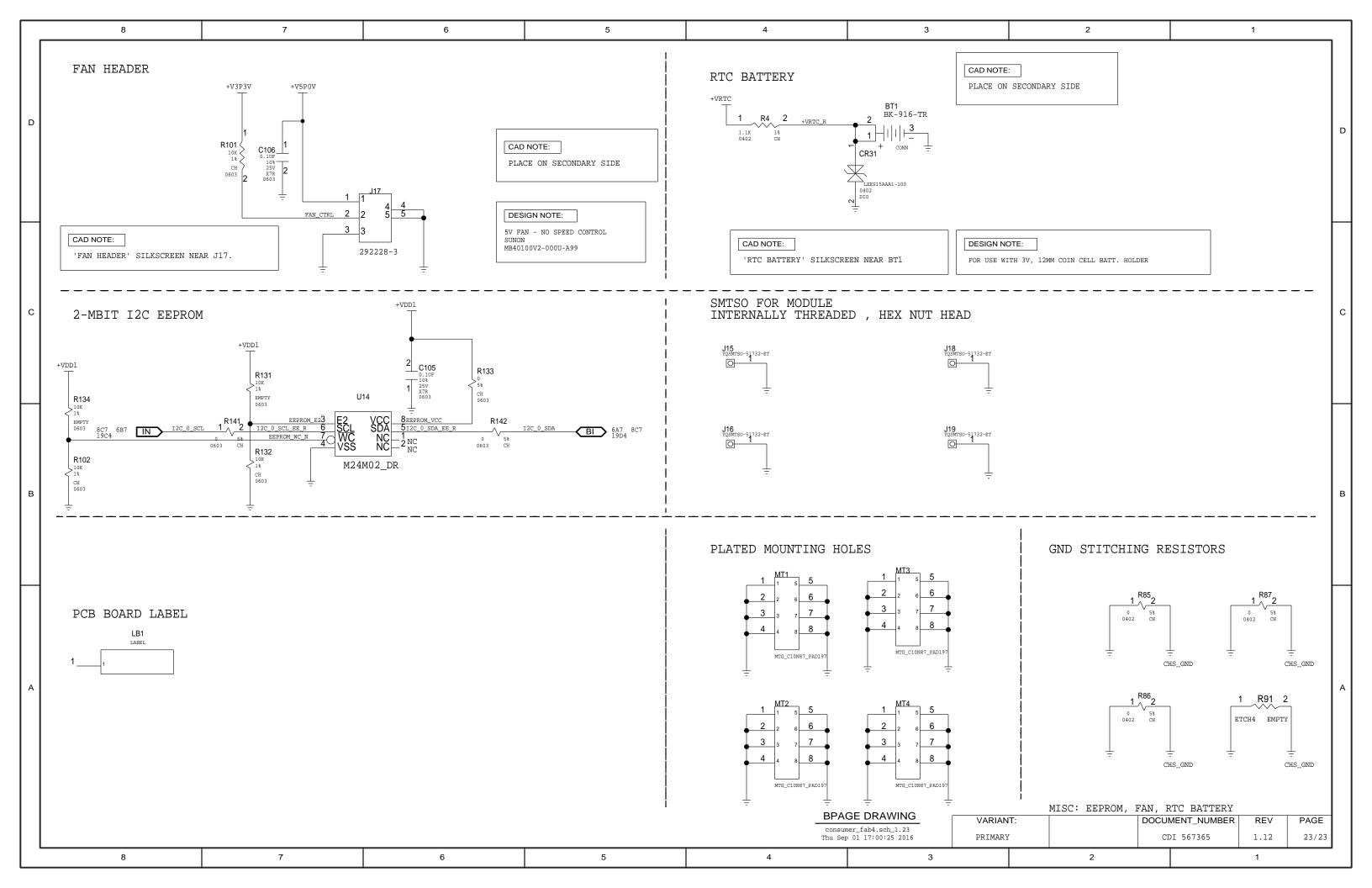












Reference Designator	Engineer Abbrivation	Original Manufacturer	MFG Part Number	Description
BT1	CONN,MISC,2P,BATT HOLDR,SMT BR1225	Memory Protection Devices Inc.*	BK-916-TR	Battery Retainer
C1	CAPC,COG,0402,47.000PF,50.000V,+/-5%	Eyang*	C0402C0G470J500NTB	
C10, C107, C11, C120, C4, C5, C7	CAPC,X7R,0603,1.000UF,16.000V,+/- 10%	Samsung Electro-Mechanics America, Inc.*	CL10B105KO8NNNC	1μF ±10% 16V Ceramic Capacitor X7R 0603 (1608 Metric)
C100, C110, C118, C119, C121, C122, C123, C124, C125, C126, C127, C128, C129, C135, C136, C138, C139, C144, C145, C39, C40, C41, C42, C47, C48, C49, C50, C53, C54, C60, C68, C70, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99	CAP,X7R,0402,100NF,16V,+/- 5%	Kemet*	C0402C104J4RACTU	0.10μF ±5% 16V Ceramic Capacitor X7R 0402 (1005 Metric)
C105, C106, C130, C131, C140, C27, C31, C34, C52, C56, C6, C65, C66, C67, C69, C71, C72, C81, C82	CAPC,X7R,0603,0.100UF,25.000V,+/- 10%	TDK Corporation*	C1608X7R1E104K080AA	0.10μF ±10% 25V Ceramic Capacitor X7R 0603 (1608 Metric)
C108, C109, C134, C137, C17, C26, C29, C43, C44, C45, C46, C55, C57, C58, C59, C63, C8	CAPC,X5R,0603,25V,20%,10UF,	Murata Electronics North America*	GRM188R61E106MA73D	10μF ±20% 25V Ceramic Capacitor X5R 0603 (1608 Metric)
C111	CAPC,X7R,0402,0.1UF,25.00V,+/- 10%	Murata Electronics North America*	GRM155R71E104KE14D	0.10μF ±10% 25V Ceramic Capacitor X7R 0402 (1005 Metric)
C114, C115, C116, C133, C142, C143, C24, C25	CAPC,X5R,0603,22.00UF,10.00V,+/- 20%	Samsung Electro-Mechanics America, Inc.*	CL10A226MP8NUNE	22μF ±20% 10V Ceramic Capacitor X5R 0603 (1608 Metric)
C117	CAPC,X5R,0603,2.200UF,16.000V,+/- 10%	Samsung Electro-Mechanics America, Inc.*	CL10A225KO8NNNC	2.2μF ±10% 16V Ceramic Capacitor X5R 0603 (1608 Metric)
C18	CAPC,COG,0603,100.000PF,50.000V,+/- 5%	Samsung Electro-Mechanics America, Inc.*	CL10C101JB8NNNC	100pF ±5% 50V Ceramic Capacitor COG, NPO 0603 (1608 Metric)
C19, C20, C62	CAPC,COG,0402,220.000 PF,50.000V,+/- 5%>	Samsung Electro-Mechanics America, Inc.*	CL05C221JB5NNNC	220pF ±5% 50V Ceramic Capacitor COG, NPO 0402 (1005 Metric)
C21, C73, C74, C75, C76, C77, C78, C79, C80	CAPC,X5R,0402,0.100UF,10.000V,+/- 10%	Samsung Electro-Mechanics America, Inc.*	CL05A104KP5NNNC	0.10μF ±10% 10V Ceramic Capacitor X5R 0402 (1005 Metric)
C22	CAPC,X7R,0402,0.047 UF,25.000V,+/- 10%	Murata Electronics North America*	GRM155R71E473KA88E	
C23	CAPC,X5R,0402,4.7UF,10.00V,+/- 20%	Samsung Electro-Mechanics America, Inc.*	CL05A475MP5NRNC	4.7μF ±20% 10V Ceramic Capacitor X5R 0402 (1005 Metric)
C28, C32	CAPC,X5R,0402,10.00UF,6.3V,+/- 20%	Samsung Electro-Mechanics America, Inc.*	CL05A106MQ5NUNC	10μF ±20% 6.3V Ceramic Capacitor X5R 0402 (1005 Metric)
C3	CAPC,COG,0603,47.00PF,100.00V,+/- 5%	Murata Electronics North America*	GRM1885C2A470JA01D	47pF ±5% 100V Ceramic Capacitor COG, NPO 0603 (1608 Metric)
C30	CAPC,X5R,1210,100.000 uF,10.000V,+/- 20%	Taiyo Yuden*	LMK325BJ107MM-T	100μF ±20% 10V Ceramic Capacitor X5R 1210 (3225 Metric)
C35, C36	CAPC,X5R,0402,2.2UF,10.00V,+/- 10%	Samsung Electro-Mechanics America, Inc.*	CL05A225KP5NSNC	2.2μF ±10% 10V Ceramic Capacitor X5R 0402 (1005 Metric)

Reference Designator	Engineer Abbrivation	Original Manufacturer	MFG Part Number	Description
C51	CAPC,X5R,0805,22.00UF,25.00V,+/- 20%	Murata Electronics North America*	GRM21BR61E226ME44L	22μF ±20% 25V Ceramic Capacitor X5R 0805 (2012 Metric)
C64	CAPC,X7R,0603-3T,0.1UF,25.00V,+/- 20%	Murata Electronics North America*	NFM18PC104R1E3D	
CR1, CR11, CR12, CR13, CR14, CR2, CR23, CR24, CR25, CR26, CR27, CR28, CR29, CR3, CR30, CR31, CR7	ULTRA, LOW CAP, BIDIRECTIONAL, ESD, DIODE, ANTENNA PORT	Murata Electronics North America*	LXES15AAA1-100	TVS DIODE 0402
CR10, CR20, CR8	IC,DS,DIO,SMT,LFTVS18,TVS,	STMicroelectronics*	LFTVS18-1F3	TVS DIODE 12VWM 19VC 4FLIPCHIP
CR15, CR16, CR17, CR18, CR9	LED,1005,SM,GRN,V,1.00,RC,1	Lite-On Inc.*	LTST-C281KGKT-ND	Green 571nm LED Indication - Discrete 2V 0402 (1005 Metric)
CR19	IC,DIO,SCHKY DIODE,5A, 14V,REVERSE VOLTAGE, VF(MAX) 0.55V	Diodes Incorporated*	B520C-13-F	Diode Schottky 20V 5A Surface Mount SMC
CR21, CR22, CR4, CR5, CR6	IC,DS,DIO,MINDIP,DB2S31000L,SHTKY,	Panasonic Electronic Components	DB2S31000L	Diode Schottky 30V 200mA Surface Mount SSMini2-F5-B
EU1	IC,VLSI,OTHER,HDMI,A3 8203,TQFN,32	Parade*	PS8203TQFN32GTR-A3	
EU110, EU111, EU112, EU113, EU14, EU15, EU16, EU17, EU18, EU19	IC, LOG,TRANSLATOR,VQFN,LSF0108,TTL-MOS,	Texas Instruments*	LSF0108RKSR	Voltage Level Translator Bidirectional 1 Circuit 8 Channel 20-VQFN (4.5x2.5)
EU2	IC,LIN,CONT,24,QFN,BQ25892,BATCGR	Texas Instruments*	BQ25892RTWT	Charger IC Lithium-Ion/Polymer 24-WQFN (4x4)
EU3	IC,LIN,ANALOGSWITCH,SON,TPS2553,	Texas Instruments*	TPS2553DRVT-1	IC PWR DIST SWITCH ADJ 6SON
EU4	MWG,SWITCH,MUX/DEMUX,PI3USB302- A,TQFN	Pericom*	PI3USB302-AZBEX	USB Switch IC 2 Channel 20-TQFN (2.5x4.5)
EU5	IC,LIN,CONT,8,TSON,TLV62084DSG,PSP	Texas Instruments*	TLV62084DSGR	Buck Switching Regulator IC Positive Adjustable 0.5V 1 Output 2A 8-WFDFN Exposed Pad
EU6	IC,VLSI,OTHER,FT232,QFN,32	FTDI, Future Technology Devices International Ltd*	FT232RQ-REEL	USB Bridge, USB to UART USB 2.0 UART Interface 32-QFN Exposed Pad (5x5)
F1, F2	FUSE,0402,3.5A,32V,	Littelfuse inc.*	043503.5KRHF	FUSE BOARD MOUNT 3.5A 32VDC 0402
FB1, FB2, FB4, FB5, FB6	FER-BEAD,0402,120.0 OHM,1.3 A,± 25%	Murata Electronics North America*	BLM15PD121SN1D	FERRITE BEAD 120 OHM 0402 1LN
J10	CONN,MISC,19P,HDMI-D,RA, SMT,	Molex, LLC*	467651001	HDMI - Micro Receptacle Connector 19 Position Surface Mount, Right Angle, Horizontal
J11	CONN,MISC,24P,LVDS, HZ,0.5MM, SMT	Hirose Electric Co Ltd*	FH19SC-24S-0.5SH(05)	24 Position FFC, FPC Connector Contacts, Bottom 0.020" (0.50mm) Surface Mount, Right Angle
J12, J13	CONN,HDR,2X20,RCP,COP,0.1,SMT,KP	Samtec Electronic Hardware*	SSM-120-S-DV-BE-K-TR	
J14	CONN,HDR,2 X 2,PLG,VT,0.1,SMT,KP	Samtec Electronic Hardware*	TSM-102-01-L-DV-TR	
J15, J16, J18, J19	SMT STANDOFF, M1.6 THREADED,1.5 MM TALL	Penn Engineering & Hardware*	YQSMTSO-51732-ET	

Reference Designator	Engineer Abbrivation	Original Manufacturer	MFG Part Number	Description
J17	CONN,MISC,3P,RT HDR,	TE Connectivity AMP Connectors*	292228-3	3 Positions Header, Shrouded Connector 0.059" (1.50mm) Surface Mount, Right Angle Tin
J2, J3	CONN,MISC,100P,BTB RCPT,.4MM SMT	Hirose Electric Co Ltd*	DF40C-100DS-0.4V(51)	100 Position Connector Receptacle, Center Strip Contacts Surface Mount Gold
J4	CONN DC POWER JACK 2.1X5.5MM H,	CUI Inc.*	PJ-002AH-SMT-TR	Power Barrel Connector Jack 2.00mm ID (0.079"), 5.50mm OD (0.217") Surface Mount
J5	CONN,MISC,10P,MICRO SD,PSH- PSH,INDUST_TEMP	Hirose Electric (U.S.A.), Inc.*	DM3ND-SF-PEJ (850)	
J6	CONN,USB 3.0 TYPE A,SURFACE MT,	Wurth Electronics Inc.*	692122030100	USB - A USB 3.0, Super Speed Receptacle Connector 9 Position Surface Mount, Right Angle, Horizontal
J7	CONN,MISC,24P,USBC RA,RCPT, TALL	Lotes*	AUSB0269-P004A01	
J9	CONN,I/O,5P,USB-B,RA,MIXED,SMT,	TE Connectivity AMP Connectors*	2173157-3	USB - micro B USB 2.0 Receptacle Connector 5 Position Surface Mount, Right Angle, Horizontal
L1, L17, L2	INDCT,WWOUND,1.00uH,4.1A,NSTD,20.00%,	TDK Corporation*	SPM4012T-1R0M	1μH Shielded Wirewound Inductor 4.3A 45 mOhm Max Nonstandard
L10, L11, L12, L13	CHOKE,90.0OHM,100.0MA,0302,2LINE	TDK Corporation*	TCE0806G-900-2P-T200	2 Line Common Mode Choke Surface Mount 90 Ohm @ 100MHz 100mA DCR 3.5 Ohm
L14, L15, L16	CHOKE,90.0OHM,100.0MA,0603,4LINE	TDK Corporation*	TCE1608G-900-4P	4 Line Common Mode Choke Surface Mount 90 Ohm @ 100MHz 100mA DCR 1.95 Ohm
L3, L4, L6, L7, L8, L9	CHOKE,35.0OHM,0.1A,0302,2LINE	TDK Corporation*	TCE0806S-350-2P-T200	2 Line Common Mode Choke Surface Mount 35 Ohm @ 100MHz 100mA DCR 1.8 Ohm
L5	INDCT,0.47UH,4.5A,23.00MOHM,CUBE,SM	Cyntec*	PIFE25201B-R47MS-70	
PWA	Intel® Joule™ Expansion (Printed Wire) Board	Intel®	J28235-004	
Q1, Q2	IC,DS,FET N,DFN,AON1606,	Alpha & Omega Semiconductor Inc.*	AON1606	MOSFET N-CH 20V 0.7A 3DFN
R1, R101, R102, R12, R132, R135, R15, R20, R52, R77, R9	RES D,0603,10.00 kOHM,1.00%,1/10W,YES	Yageo*	RC0603FR-0710KL	RES SMD 10K OHM 1% 1/10W 0603
R10, R11, R21, R22	RES D,0402,2.70 kOHM,5.00%,1/16W	Vishay Dale*	CRCW04022K70JNED	RES SMD 2.7K OHM 5% 1/16W 0402
R100, R133, R141, R142, R23, R3, R35, R46, R53, R61, R69, R72, R78	RES_D,0603,0.00OHM,5.00%,1/10W,	Vishay Dale*	RCG06030000Z0EA	RES SMD 0.00HM JUMPER 1/10W 0603
R103, R104, R105, R106, R110, R111, R119, R121, R89, R90, R92	RES D,0402,200.00 kOHM,1.00%,1/16W	Vishay Dale*	CRCW0402200KFKED	RES SMD 200K OHM 1% 1/16W 0402
R113, R25, R27, R29, R36, R5, R51, R60, R8, R81, R97	RES_D,0603,100.00kOHM,1.00%,1/10W,	Vishay Dale*	RCG0603100KFKEA	RES SMD 100K OHM 1% 1/10W 0603
R114, R32, R71, R73, R85, R86, R87	RES_D,0402,0.00HM,5.00%,1/16W,	Vishay Dale*	RCG04020000Z0ED	RES SMD 0.00HM JUMPER 1/16W 0402

Reference Designator	Engineer Abbrivation	Original Manufacturer	MFG Part Number	Description
R136, R4, R47, R48, R49, R50	RES D,0402,1.10 kOHM,1.00%,1/16W	Vishay Dale*	CRCW04021K10FKED	RES SMD 1.1K OHM 1% 1/16W 0402
R2, R98	RES D,0603,100.00 OHM,1.00%,1/10W,YES	Yageo*	RC0603FR-07100RL	RES SMD 100 OHM 1% 1/10W 0603
R30	RES_D,0603,120.00kOHM,1.00%,1/10W,	Yageo*	RC0603FR-07120KL	RES SMD 120K OHM 1% 1/10W 0603
R33, R62	RES D,0603,1.00 kOHM,5.00%,1/10W,YES	Yageo*	RC0603JR-071KL	RES SMD 1K OHM 5% 1/10W 0603
R37	RES_D,0402,4.99kOHM,1.00%,1/16W,	Vishay Dale*	RCG04024K99FKED	RES SMD 4.99K OHM 1% 1/16W 0402
R38, R99	RES_D,0402,3.3kOHM,1.0%,1/16W,	Yageo*	RC0402FR-073K3L	RES SMD 3.3K OHM 1% 1/16W 0402
R54	RES D,0402,18.20 kOHM,1.00%,1/16W	Yageo*	RC0402FR-0718K2L	RES SMD 18.2K OHM 1% 1/16W 0402
R55	RES D,0603,1.50 kOHM,1.00%,1/10W,YES	Vishay Dale*	CRCW06031K50FKEB	RES SMD 1.5K OHM 1% 1/10W 0603
R56, R93, R94, R95, R96	RES D,0402,560.00 OHM,1.00%,1/16W,YES	Vishay Dale*	CRCW0402560RFKED	RES SMD 560 OHM 1% 1/16W 0402
R6	RES D,0402,110.00 kOHM,1.00%,1/16W	Yageo*	RC0402FR-07110KL	RES SMD 110K OHM 1% 1/16W 0402
R7	RES D,0402,36.50 kOHM,1.00%,1/16W,YES	Yageo*	RC0402FR-0736K5L	RES SMD 36.5K OHM 1% 1/16W 0402
R84	RES D,0402,0.00 OHM,5.00%,1/16W	Vishay Dale*	CRCW04020000Z0ED	RES SMD 0.00HM JUMPER 1/16W 0402
R88	RES_D,0402,100.0kOHM,1.00%,1/16W,	Vishay Dale*	RCG0402100KFKED	RES SMD 100K OHM 1% 1/16W 0402
SW1, SW2, SW3	CONN,SWIT,TACTILE,VT,SPST,2,50.0 mA,SMT	E-Switch*	TL3304AF160QJ	Tactile Switch SPST-NO Top Actuated Surface Mount
U1	IC,LIN,INTFC,CSP,IP4856CX,TRANSLAT,	NXP USA Inc.*	IP4856CX25/CZ-ND	Memory Card Interface 25-WLCSP (2.04x2.04)
U14	MWG,EEPROM,SERIAL,2MBIT,M24M02-DR	STMicroelectronics*	M24M02-DRMN6TP	IC EEPROM 2MBIT 1MHZ 8SO
U17, U22	IC,LIN,WLCSP,FPF2495UCX,VREG	Fairchild Semiconductor*	FPF2495UCX	IC LOAD SWITCH 28 9WLCSP
U18	IC,LIN,ANALOGSWITCH,FCBGA,FPF3042,	Fairchild Semiconductor*	FPF3042UCX	OR Controller Source Selector Switch N- Channel 2:1 16-WLCSP
U20, U23, U24	IC,DS,DIO,CSP,ECMF02,TVS,	STMicroelectronics*	ECMF02-2BF3	2 Line Common Mode Choke Surface Mount DCR 4 Ohm
U21	IC,LIN,WLCSP,FAN48623,DC/DC	Fairchild Semiconductor*	FAN48623UC50X	Boost Switching Regulator IC Positive Programmable 5V, 5.29V 1 Output 2.5A 16- UFBGA, WLCSP
U25, U26	IC,DS,NPN XSTR,SOT363,MDT3904,LF	Diodes Incorporated*	MMDT3904-7-F	TRANS 2NPN 40V 0.2A SOT363
U27	IC,LIN,CONT,14,QFN,TPS63021DSJ,PSP	Texas Instruments*	TPS63021DSJR	Buck-Boost Switching Regulator IC Positive Fixed 3.3V 1 Output 3.5A (Switch) 14-VFDFN Exposed Pad