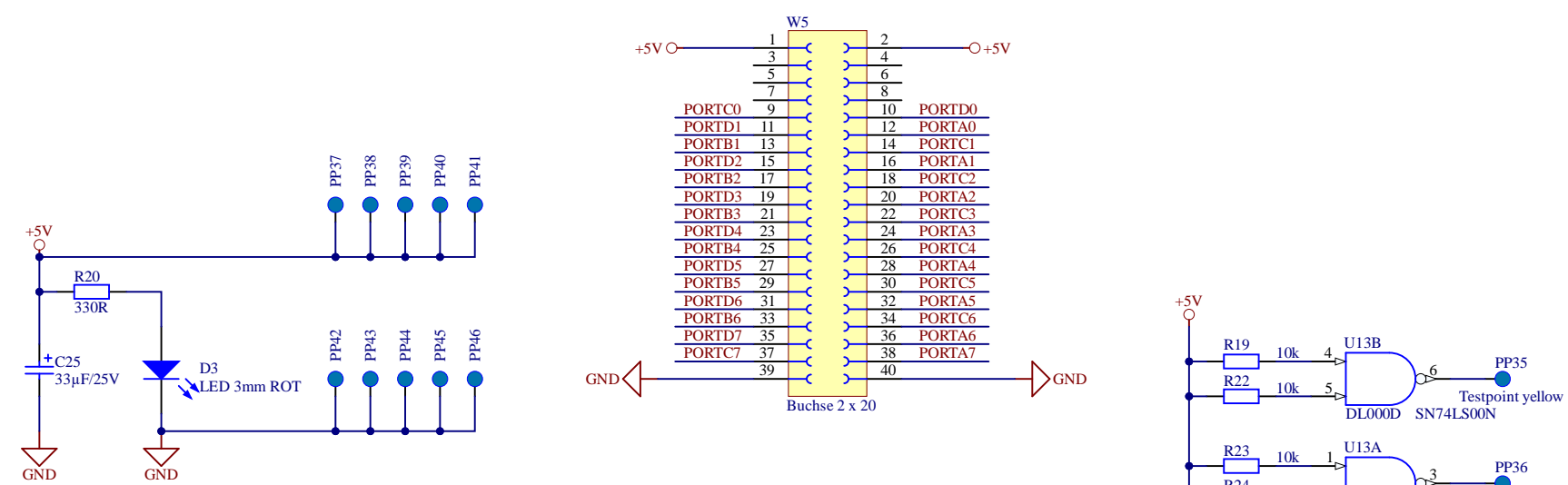
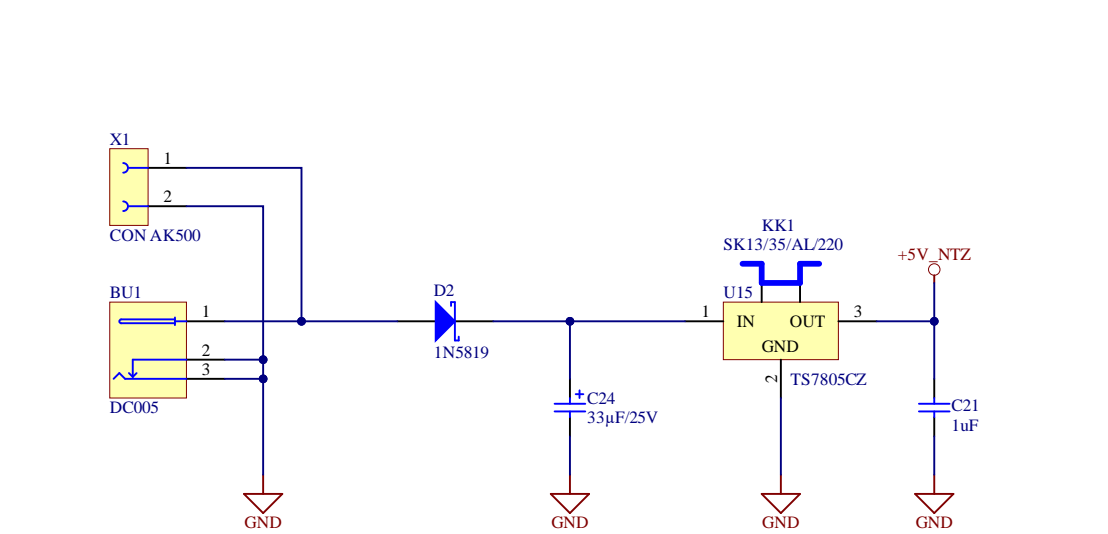
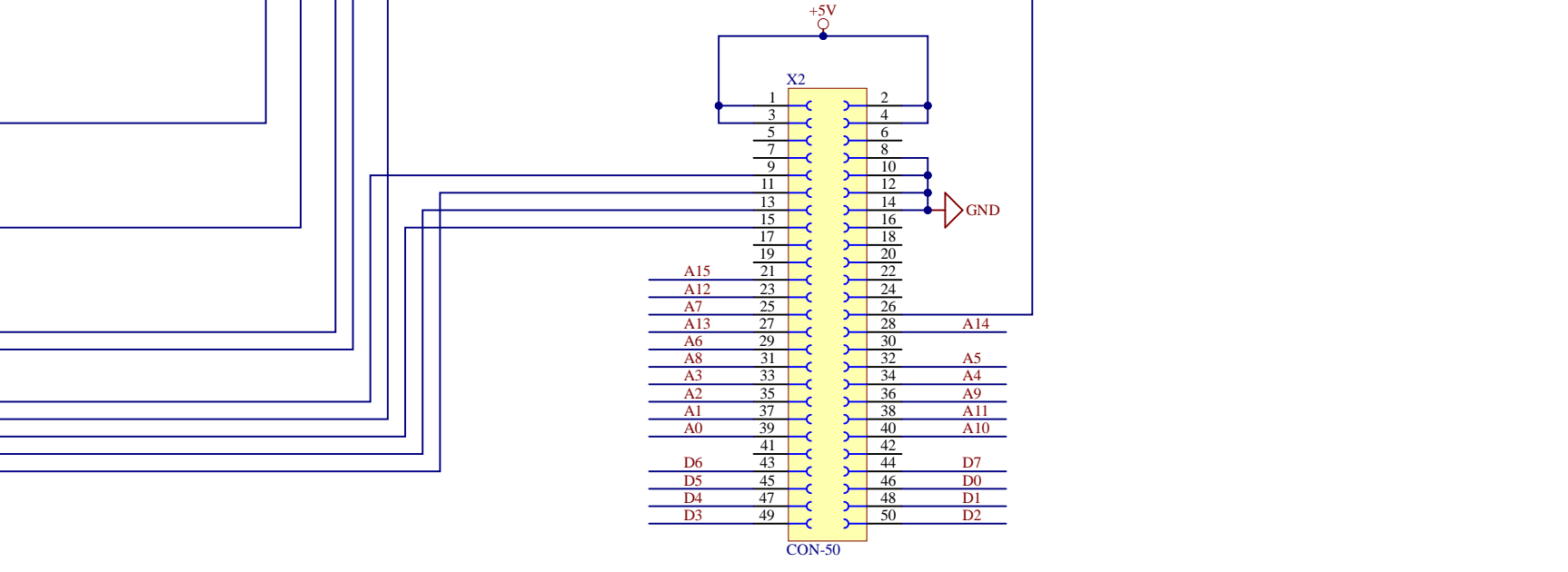
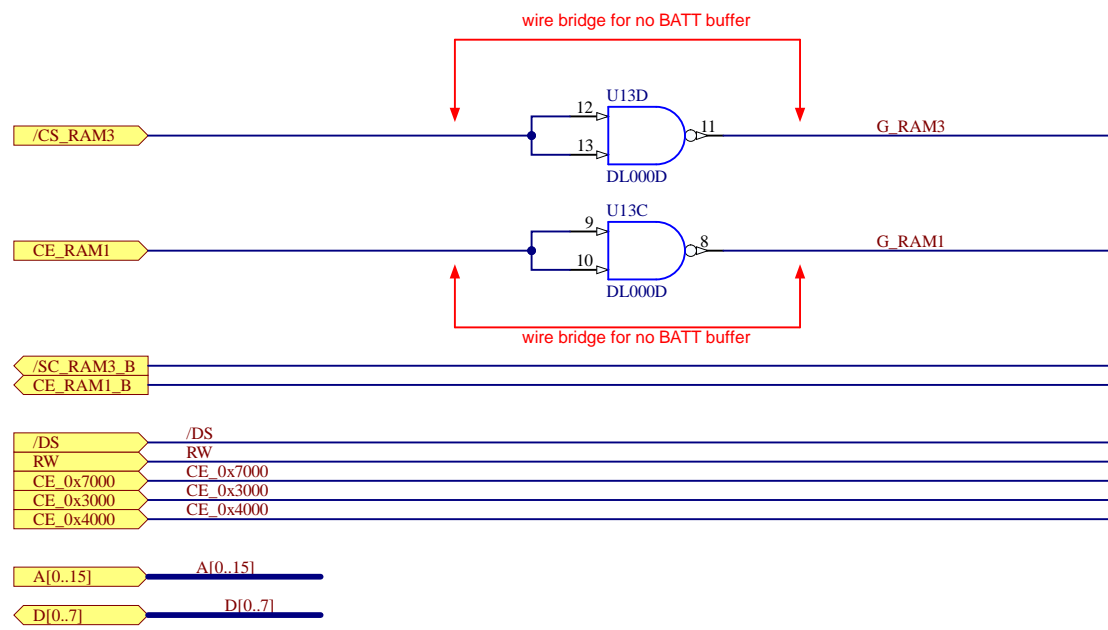
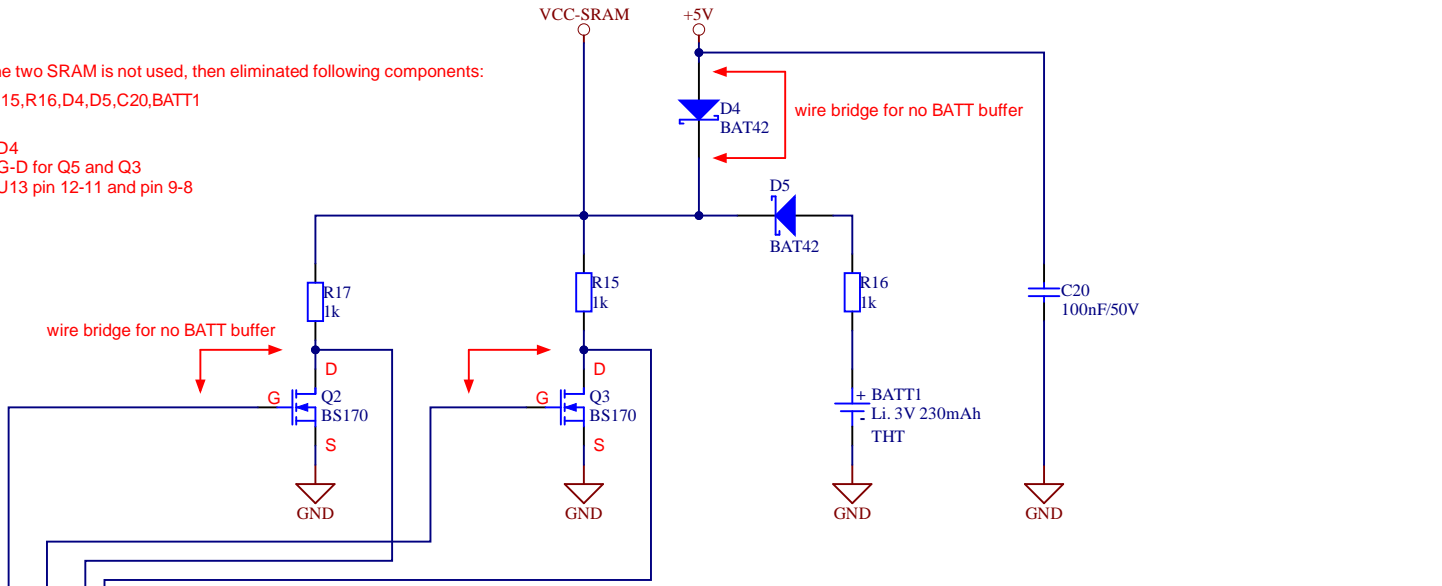
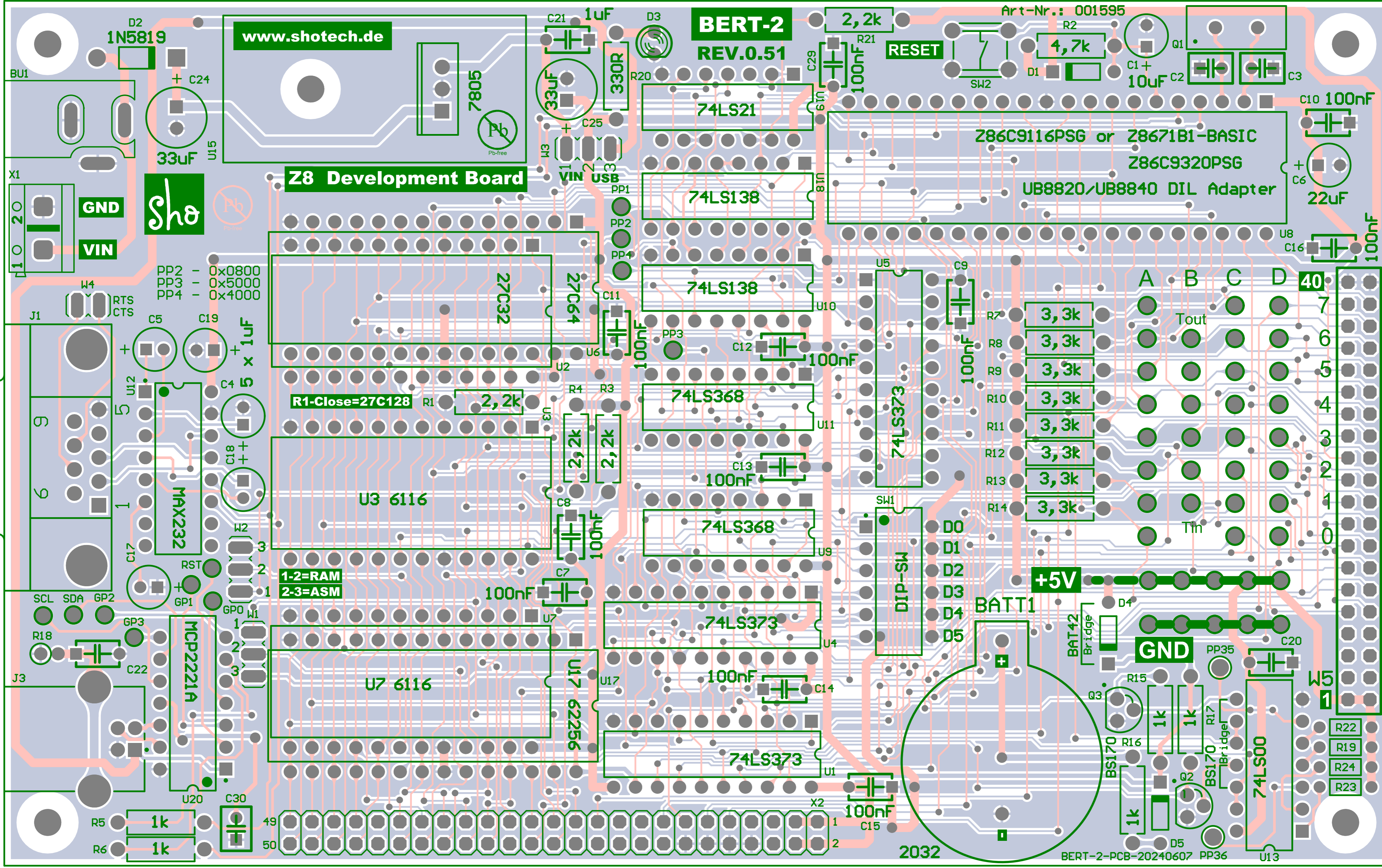


If the buffering of the two SRAM is not used, then eliminated following components:
 U13, Q2, Q3, R17, R15, R16, D4, D5, C20, BATT1

a wire bridge over D4
 a wire bridge over G-D for Q5 and Q3
 a wire bridge over U13 pin 12-11 and pin 9-8







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Bill of Materials

Datum:	3. August 2024
Zeit:	22:09:55
Variante:	None
Bezeichnung:	BERT2-r051
Revision:	0.51

Quantity	Designator	Footprint	Bemerkung	Value	MFT	Order-Code	shotech
1	BATT1	BAT-TH_BS-04-A1BJ004	Battery base -25°C--+85°C, CR2032 SMD Battery Connectors	3V 230mAh	MYOUNG	BS-04-A1BJ005	
1	BU1	DC10B - slot		DC005		DC005-Gelb	923
1	C1	CAPPR2-5x11 - RM2.5	10uF/50V/20%/RM2.5/105 °C /2000h	10uF/50V	Chang	RL1H100MC110B25CEH	1339
2	C2, C3	CAP_Radial_2.54MM	Ker-Ko 10pF 100V RM2.54 5% NPO	10pF	RICHWELL	TCH2A100J05S205N	1599
5	C4, C5, C17, C18, C19	CAPPR2-5x11	1uF/50V/20%/2000h/RM 2	1uF/50V	Würth Elektronik	8.60021E+11	1550
1	C6	CAPPR2-5x11 - RM2.5	22uF/63V/20%/2000h/RM2.5/85 °C	22uF/63V	Samwha	SD1J226M05011PC359	1338
12	C14, C15, C16, C20, C29	CAP_Radial_5MM	X7R 5mm LS	100nF/50V	Vishay / BC Components	K104K15X7RF53H5	1347
1	C21	CAP_Radial_5MM	CAP CER 1uF 50V X7R RADIAL	1uF	KEMET	C330C105M5R5CA7303	1414
1	C22	CAP_Radial_5MM	COG +/-5% LS=5mm	330pF	TDK	FG26COG2J331JNT06	2396
2	C24, C25	CAPPR5-5x7	KS 33uF 25V 20% 5x7/2,5	33uF/25V	Chang Yang	KS1E330MC070B25CV0	1346
1	C30	CAP_Radial_2.54MM	Vs-Kond 470nF 63V 25U RM2.54	470nF	KEMET	C320C474MSUSTA	1598
1	D1	DO-35	Diode (Allzweck, Leistung, Schaltung) V/r75V I _o /150mA T/R	1N4148	On Semiconductors	1N4148TR	1594
1	D2	DO41	Schottky Dioden & Gleichrichter 1.0A 40V	1N5819	Taiwan Semiconductor	1N5819 R0	1568
1	D3	LED3MM	LED diffus rot 80mcd 45° 3mm	LED 3mm ROT	Everlight	204-10SURD/S530-A3	1321
2	D4, D5	DO-35	Schottky 30V 0.2A DO35	BAT42	Taiwan Semiconductor	BAT42 R0	1240
1	J1	DSUB1.385-2H9	D-Sub-Bu. 9polig Lötstift 90° FP8,08mm	DSUB9-BU	MPE Garry	997-3-009F-NB0NS-BS0	1578
1	J3	CON-A-USBSB	USB-Buchse B print 90°	USB-B	Assmann WSW	A-USBSB	1618
1	KK1		U-Kühlkörper Alu blank TO220 35x17x13	SK13/35/AL/220	Fischer Elektronik	SK13/35/AL/220	1592
1	KL1		ISO-Crystal, LED-Halter, IC-Fassungen	Small material	frei		
1	LP1			LP	shotech	BERT-2-PCB-20202403	1595
51	PP7, PP8, PP9, PP10, PP11,	PP-RTM1364E-Z	Lötstift quadr. 1,05x10mm verzinkt	RTM1364E-Z	Vogt	1364E.68	1570
2	PP35, PP36	VERO_Testpoint_Blue	Test Point PCB yellow	Testpoint yellow	frei	Test Point PCB yellow	2308
1	Q1	HC494H_SMX	Quarze 7.3728MHz 20pF 30ppm -40C 85C	7.3728MHz	CTS Electronic Components	ATS073-E	1274
2	Q2, Q3	SC_TO-92	N-VMOS 60V 0.5A 0.83W SR TO92	BS170	ON Semiconductor	BS170	1171
4	R1, R3, R4, R21	RES10-7.8X2.8 - 2k2	WIDERSTAND, 207, axial, 1%	2k2	frei	RMGK002.2	1238
1	R2	RES10-7.8X2.8	WIDERSTAND, 207, axial, 1%	4k7			1587
5	R5, R6, R15, R16, R17	RES10-7.8X2.8 - 1k	Metallsch. 0207 1/4W 1%	1k	frei	RMGK001	1235
8	R14	RES10-7.8X2.8 - 3k3	WIDERSTAND, 207, axial, 1%	3k3			1589
1	R18	RESADV200W55L630D240P	WIDERSTAND, 207, 1%	1M			1668
4	R19, R22, R23, R24	RES6.5-3.4X1.9	WIDERSTAND, 204, axial, 1%	10k	frei	frei	1253
1	R20	RES10-7.8X2.8 - 330R	WIDERSTAND, 207, axial, 1%	330R			1588
1	SW1	DIP-12	DIP/DIL-Schalter Standard 6pol.	EDG06S	ECE Excel Cell	EDG06S	1572
1	SW2	SW-DTS-644	Mini-Taster print stehend 1N	DTS-644N-V	Diptronics	DTS-644N-V	2455
3	U1, U4, U5	N020	FLIP-FLOPS	SN74LS373N	Texas Instruments	SN74LS373N	1593
1	U2	PDIP24	EPROM 4KBx8	U2732C	DDR	U2732C	
2	U3, U7	PDIP24	SRAM 2KB x 8 Bit	BR6116-12	ROHM	BR6116-12	1318
1	U6	PDIP28	8KB x 8 EPROM	M27C64		M27C64	1302
1	U8	PDIP40	Z86C93 Series 236 B RAM 20 MHz CMOS	Z86C9320PSG	Zilog	Z86C9320PSG	876
2	U9, U11	N016	6-bit buffers and line drivers, N0016A, TUBE	SN74LS368AN	Texas Instruments	SN74LS368AN	1567
1	U10, U18	N016	3-Line to 8-Line Decoder / Demultiplexer	74LS138N	NXP	74LS138N	1540
1	U12	PE16	RS232/V.24 Schnittstelle DIP16	MAX232N	Texas Instruments	TS232CPE	1579
1	U13	N014	Quadruple 2-Input Positive-NAND Gate	DL000D	RFT	DL000D	1546
1	U15	TO-220A - SK13 35	U-Reg +5V 1A TO220	TS7805CZ	Taiwan Semiconductor	TS7805CZ C0G	1573
1	U17	PDIP28	SRAM LLPow as 5V 32kx8 55ns DIP28	AS6C62256-55PCN	Alliance	AS6C62256-55PCN	1384
1	U19	N014	Dual 4-Input Positive-AND Gate DIP14	SN74LS21N	Texas Instruments	SN74LS21N	
1	U20	DIP-14	USB 2.0 to P2C/UART Protocol Converter with GPIO , PDIP-14	MCP2221A	Microchip	MCP2221A-V/P	1596
3	W1, W2, W3	JP2	Jumper 3pin	Jumper 3pin	frei	frei	1564
1	W4	JP1	Jumper RM2.54, rot	JUMP-RT		JUMP-RT	1564
1	W5	2X20		CON-2x20			
1	X1	AK500/2	AR-Klemmen 250V 2pol grau	ARK500/2	PTR-Messtechnik	AK500/2DS-5.0-V/GRAU	1576
1	X2	2X25	2x25pol. Buchsenleiste, gerade, RM 2,54, Höhe: 8,5mm	CON-50	frei	BL 2X25G8 2.54	