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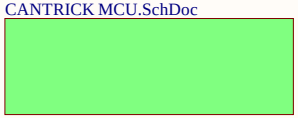
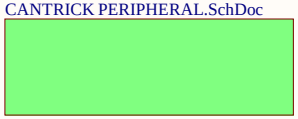
CANTRICK MCU.SchDoc



U_CANTRICK PERIPHERAL
CANTRICK PERIPHERAL.SchDoc



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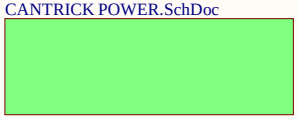
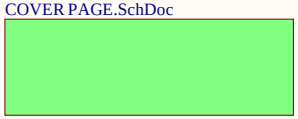


U_COVER PAGE
COVER PAGE.SchDoc



Title			
Size A4	Number		Revision
Date:	11/08/2025	Sheet of	
File:	F:\FREELANCER\..\OVERVIEW.SchDoc	Drawn By:	

CANTRICK

Variant: No variant

08/11/2025

DRAFT 08-11-2025

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2	COVER PAGE	12	.....	22	.....	32	.....
3	CANTRICK POWER	13	.....	23	.....	33	.....
4	CANTRICK MCU	14	.....	24	.....	34	.....
5	CANTRICK PERIPHERAL	15	.....	25	.....	35	.....
6	.....	16	.....	26	.....	36	.....
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8	.....	18	.....	28	.....	38	.....
9	.....	19	.....	29	.....	39	.....
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DESIGN CONSIDERATIONS

DESIGN NOTE:
Example text for informational design notes.

DESIGN NOTE:
Example text for cautionary design notes.

DESIGN NOTE:
Example text for debug notes.

DESIGN NOTE:
Example text for critical design notes.

LAYOUT NOTE:
Example text for critical layout guidelines.

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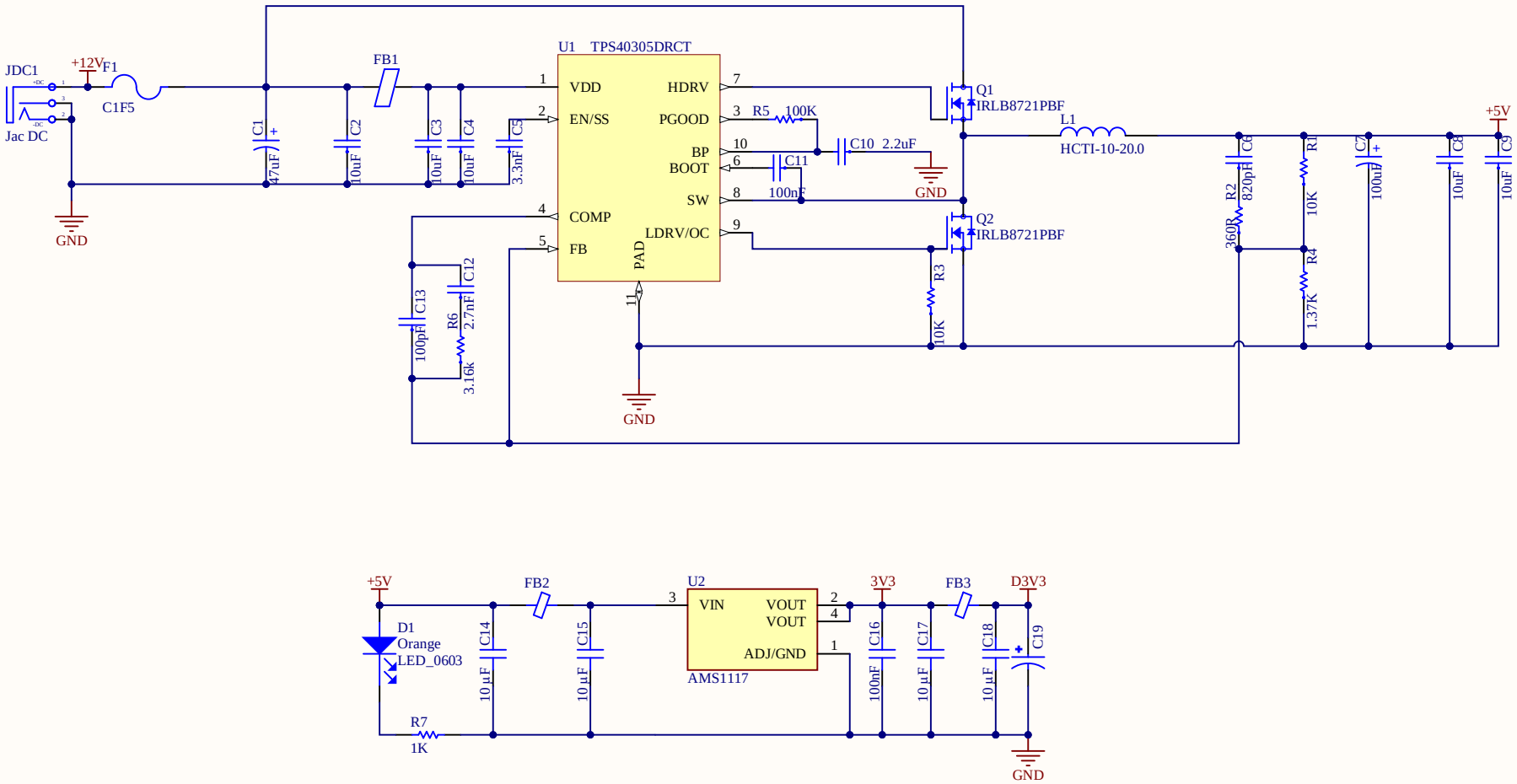

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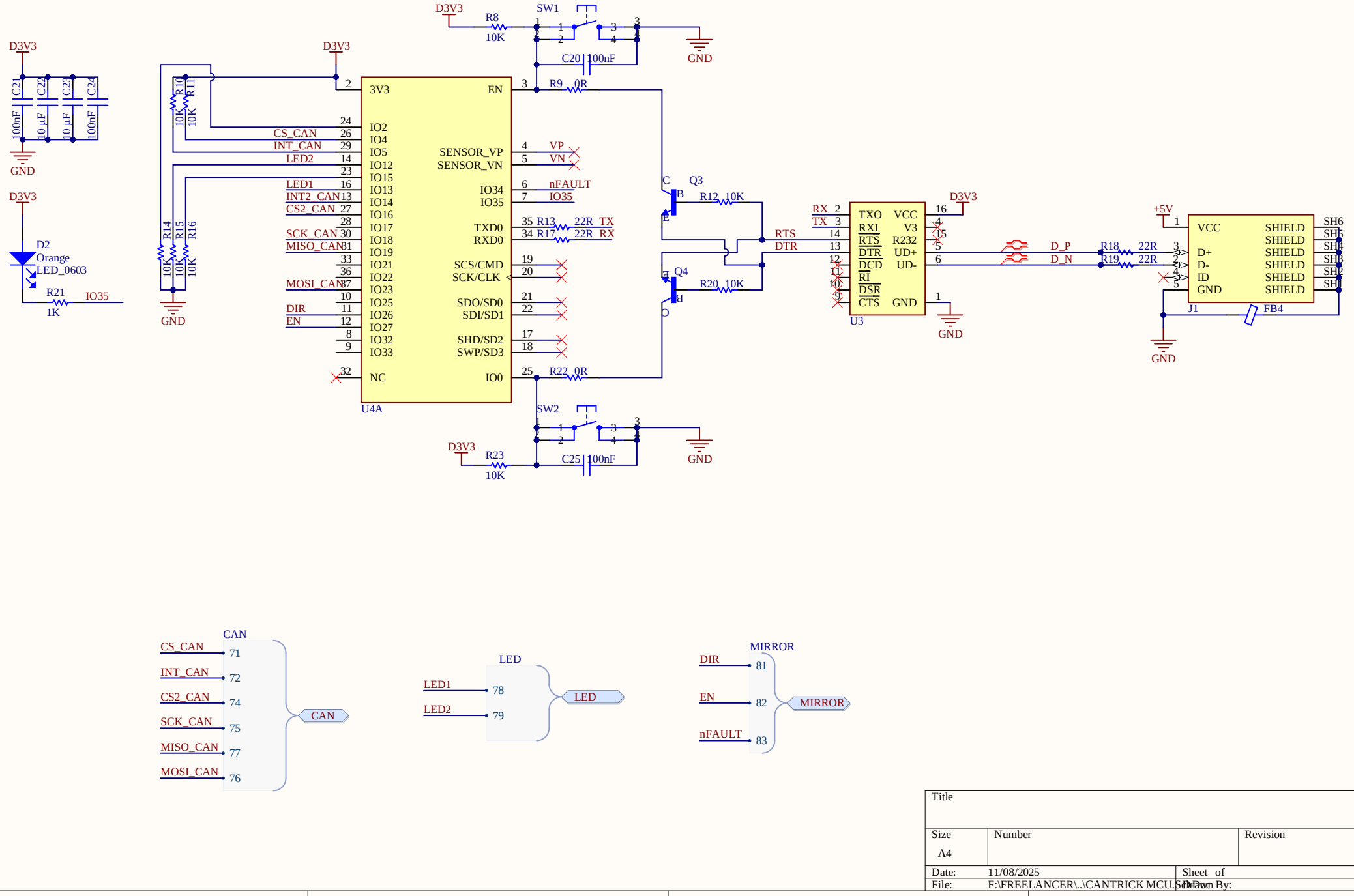

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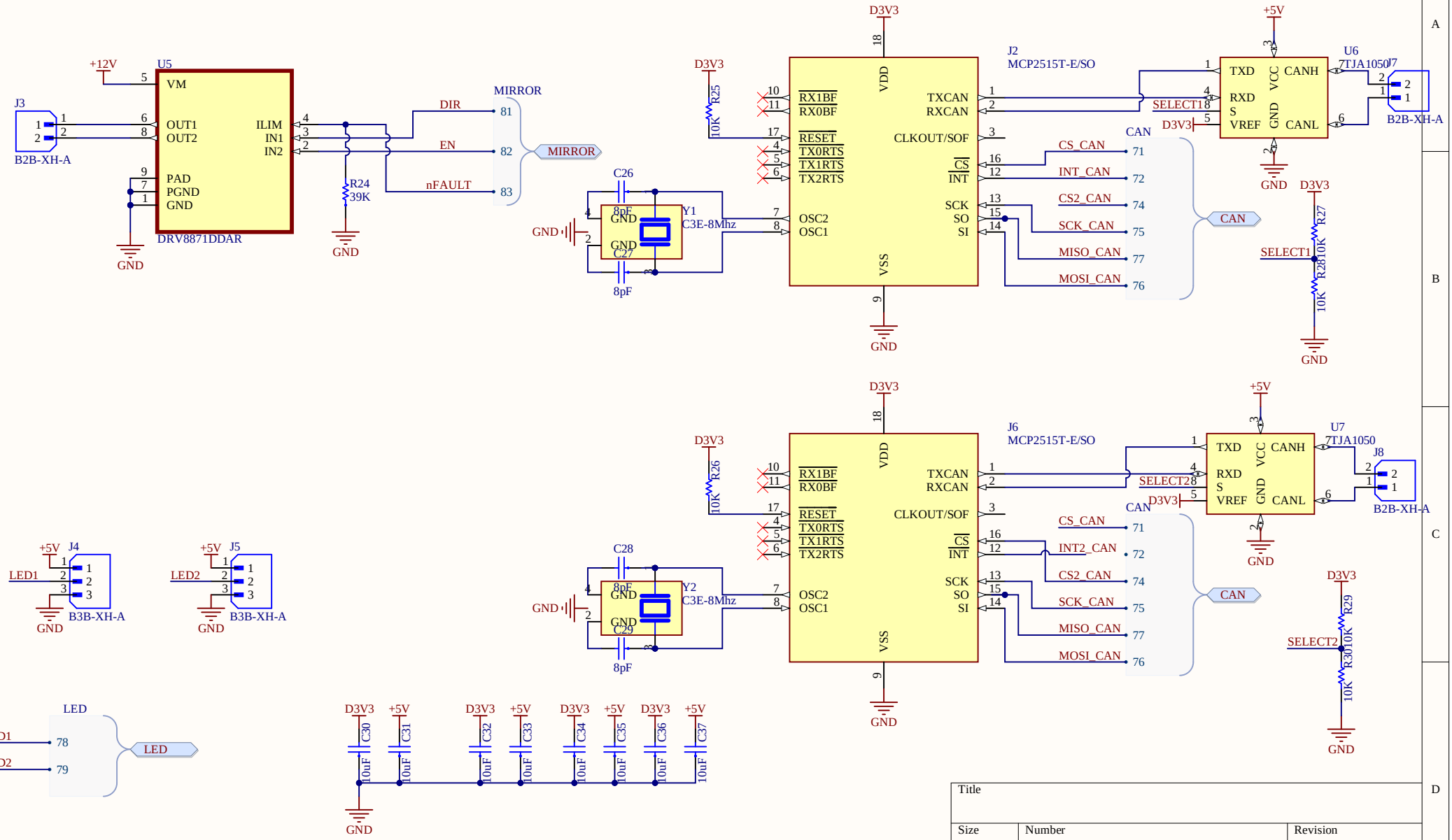

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Size A4	Number	Revision
Date: 11/08/2025	Sheet of	
File: F:\FREELANCER\..\CANTRICK PERIPHERAL.SchDoc	Drawn By:	

Comment	Description	Designator	Footprint	LibRef	Quantity
47uF	Cap Aluminum Lytic 100uF 35V 20% (6.3 X 7.7mm) SMD 300mA 2000h 105C T/R	C1	Cap Aluminum Lytic 100uF 35V 20%	Cap Aluminum Lytic 100uF 35V 20%	1
10uF	CAP CER 100nF 10% 50V X7R 0603 SMD	C2, C3, C4, C8, C9, C30, C31, C32, C33, C34, C35, C36, C37	CAP-CER0603-0.8H	CAPCER0001 100nF 10% 50V X7R 0603 SMD	13
3.3nF	CAP CER 100nF 10% 50V X7R 0603 SMD	C5	CAP-CER0603-0.8H	CAPCER0001 100nF 10% 50V X7R 0603 SMD	1
820pF	CAP CER 100nF 10% 50V X7R 0603 SMD	C6	CAP-CER0603-0.8H	CAPCER0001 100nF 10% 50V X7R 0603 SMD	1
100uF	Cap Aluminum Lytic 100uF 35V 20% (6.3 X 7.7mm) SMD 300mA 2000h 105C T/R	C7	Cap Aluminum Lytic 100uF 35V 20%	Cap Aluminum Lytic 100uF 35V 20%	1
2.2uF	CAP CER 100nF 10% 50V X7R 0603 SMD	C10	CAP-CER0603-0.8H	CAPCER0001 100nF 10% 50V X7R 0603 SMD	1
100nF	CAP CER 100nF 10% 50V X7R 0603 SMD	C11	CAP-CER0603-0.8H	CAPCER0001 100nF 10% 50V X7R 0603 SMD	1
2.7nF	CAP CER 100nF 10% 50V X7R 0603 SMD	C12	CAP-CER0603-0.8H	CAPCER0001 100nF 10% 50V X7R 0603 SMD	1
100pF	CAP CER 100nF 10% 50V X7R 0603 SMD	C13	CAP-CER0603-0.8H	CAPCER0001 100nF 10% 50V X7R 0603 SMD	1
10 µF	CAP0603 X7R 10UF 10% 10V	C14, C15, C17, C18, C22, C23	CAP 0603	GMC10X7R106K10NT	6
100nF	CAP0603 X7R 10UF 10% 10V	C16, C20, C21, C24, C25	CAP 0603	GMC10X7R106K10NT	5
ECA1CHG331	Cap Aluminum 330uF 16V 20% (8 X 11.5mm) Radial Aluminum Cylindrical Can 3.5mm 260mA 1000 hr 105C Bulk	C19	330UF-5mm	ECA1CHG331	1
8pF	CAP CER 100nF 10% 50V X7R 0402 SMD	C26, C27, C28, C29	CAP-CER0402-0.5H	CAPCER0013 100nF 10% 50V X7R 0402 SMD	4
Orange	LED SMARTLED ORANGE 606NM 0603	D1, D2	LED	LED ORANGE 606NM 0603	2
C1F5	Fuse Chip Fast Acting 5A 125V SMD Solder Pad 1206 3.2 X 1.58 X 0.63mm	F1	FUSE C1F5	C1F5	1
100MHz 2A 50mOhm	Ferrite Beads Multi-Layer 120Ohm 25% 100MHz 2A 50mOhm DCR 0603 Paper T/R	FB1	FB 0603	BLM18PG121SN1D	1
330 Ohms @ 100 MHz	FERRITE BEAD 330 OHM 0603 1LN	FB2, FB3, FB4	FB_0603	BLM18KG331SH1D	3
MICRO B		J1	MICRO USB B	MICRO USB B	1
MCP2515T-E/SO	CAN controller w/ SPI interface, 125 deg C18 SOIC, 300in T/R | Microchip Technology Inc. MCP2515T-E/SO	J2, J6	SOIC127P1030X265-18N	MCP2515T-E/SO	2
B2B-XH-A		J3, J7, J8	JST_B2B-XH-A	B2B-XH-A	3
B3B-XH-A	Connector Header Through Hole 3 position 0.098 (2.50mm)	J4, J5	JST_B3B-XH-A	B3B-XH-A	2
Jac DC	Jac DC input	JDC1	DC0	DCIN	1
HCTI-10-20.0	High Current Toroidal Inductor | 10 uH	L1	IND_HCTI-10-20.0	HCTI-10-20.0	1
IRLB8721PBF	IRLB8721PBF N-channel MOSFET Transistor, 62 A, 30 V, 3-Pin TO-220AB | Infineon IRLB8721PBF	Q1, Q2	TO254P1067X483X2057-3	IRLB8721PBF	2
NMOS	MMBT3904 Series 40 V CE Breakdown 0.2 A NPN General Purpose Amplifier - SOT-23	Q3, Q4	SOT23-3	MMBT3904	2
10K	RES CHP 165K 1% 1/10W 0603 SMD	R1, R3	RES-CHP0603-0.45H-101	RESCHP0427 165K 1% 0603 SMD	2
360R	RES CHP 165K 1% 1/10W 0603 SMD	R2	RES-CHP0603-0.45H-101	RESCHP0427 165K 1% 0603 SMD	1
1.37K	RES CHP 165K 1% 1/10W 0603 SMD	R4	RES-CHP0603-0.45H-101	RESCHP0427 165K 1% 0603 SMD	1
100K	RES CHP 165K 1% 1/10W 0603 SMD	R5	RES-CHP0603-0.45H-101	RESCHP0427 165K 1% 0603 SMD	1
3.16k	RES CHP 165K 1% 1/10W 0603 SMD	R6	RES-CHP0603-0.45H-101	RESCHP0427 165K 1% 0603 SMD	1
1K	Res Thick Film 0603 2.2K Ohm 5% 1/10W ±200ppm/°C Molded SMD SMD Paper T/R	R7, R21	Res 0603	Resistor 2.2K	2
10K	Res Thick Film 0603 2.2K Ohm 5% 1/10W ±200ppm/°C Molded SMD SMD Paper T/R	R8, R10, R11, R12, R14, R15, R16, R20, R23, R25, R26, R27, R28, R29, R30	Res 0603	Resistor 2.2K	15
0R	Res Thick Film 0603 2.2K Ohm 5% 1/10W ±200ppm/°C Molded SMD SMD Paper T/R	R9, R22	Res 0603	Resistor 2.2K	2
22R	Res Thick Film 0603 2.2K Ohm 5% 1/10W ±200ppm/°C Molded SMD SMD Paper T/R	R13, R17, R18, R19	Res 0603	Resistor 2.2K	4
39K	RES CHP 39K 1% 1/16W 0402 SMD	R24	RES-CHP0402-0.35H	RESCHP0087 39K 1% 0402 SMD	1
SW2	Switch button 4 pin	SW1, SW2	SWITCH	SW2	2
TPS40305DRCT	3-V to 20-V, 25-A, 1.2-MHz synchronous buck controller with PS	U1	VREG_V62/16624-01YE	TPS40305DRCT	1
AMS1117	1A LOW DROPOUT VOLTAGE REGULATOR SOT-223	U2	AMS1117	AMS1117	1
CH340C		U3	CH340C	CH340C	1
ESP32-WROOM-32UE-N8	Multiprotocol Modules SMD module ESP32-WROOM-32UE, ESP32 D0WD-V3, ESP32 ECO V3	U4	ESP32S	ESP32-WROOM-32UE-N8	1
DRV8871DDAR	50-V, 3.6-A H-bridge motor driver with integrated current sensing	U5	VREG_LM5017MR/NOPB	DRV8871DDAR	1
TJA1050	CAN 1Mbit Silent 5V Automotive 8-Pin SO T/R	U6, U7	SOT96-1	TJA1050	2
C3E-8Mhz		Y1, Y2	XTAL_C3E-8.000-8-1015-R	C3E-8.000-8-1015-R	2