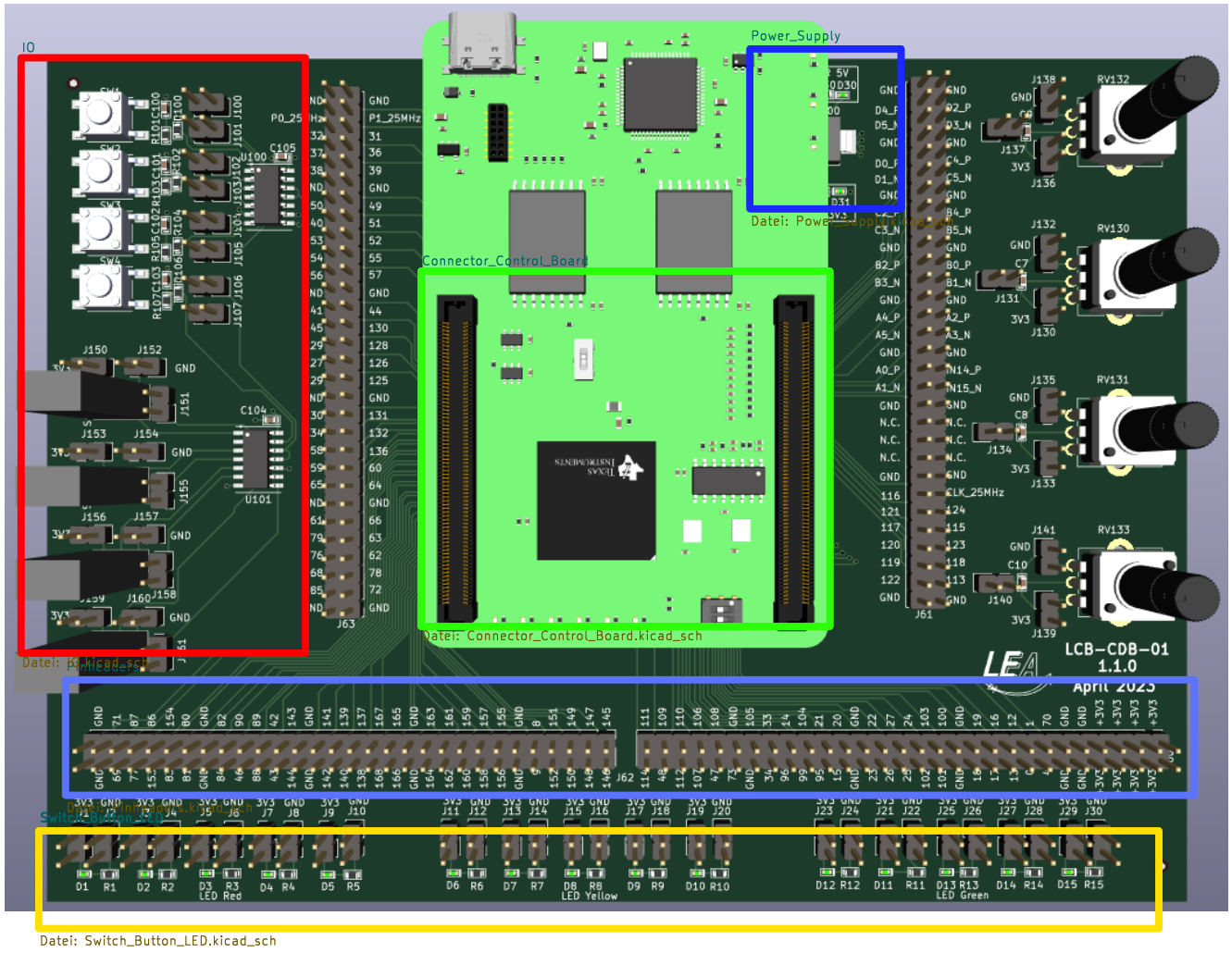


LEA Logo		Jumper	ACCESSORY3
Fiducial medium		Jumper	ACCESSORY4
Fiducial medium		Jumper	ACCESSORY5
Fiducial medium		Jumper	ACCESSORY6
Fiducial medium		Jumper	ACCESSORY7
USB-C Cable	ACCESSORY1	Jumper	ACCESSORY8
Jumper Cable Set	ACCESSORY2	Jumper	ACCESSORY9
Rubber Feet Set	ACCESSORY13	Jumper	ACCESSORY10
Rubber Feet Set	ACCESSORY14	Jumper	ACCESSORY11
BOM correction for LCB connector		Jumper	ACCESSORY12
Poti Knob	ACCESSORY20	Jumper	ACCESSORY15
Poti Knob	ACCESSORY21	Jumper	ACCESSORY16
Poti Knob	ACCESSORY22	Jumper	ACCESSORY17
Poti Knob	ACCESSORY23	Jumper	ACCESSORY18
		Jumper	ACCESSORY19

H1

PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

Sheet: /
File: LCB-CDB-01.kicad_sch

Title: LCB-CDB-01: Dock Board

Size: A4	Date: 2024-07-16	**Rev: 1.2.0**
KiCad E.D.A. 8.0.3		Id: 1/6

Supply for shield boards

+3V3

+3V3

GND

GND

TOP LEFT CONNECTOR

J402A
LCB_connector_top

+3V3	1	2	+3V3
+3V3	3	4	+3V3
+3V3	5	6	+3V3
+3V3	7	8	+3V3
+3V3	9	10	+3V3
GND	11	12	GND
GND	13	14	GND
FreePin1	15	16	FreePin2
MCAN_RX | GPIO70	17	18	MCAN_TX | GPIO4
GND	19	20	GND
I2CA_SCL | GPIO1	21	22	I2CA_SDA | GPIO0
SCIC_TX | GPIO12	23	24	SCIC_RX | GPIO13
GND	25	26	GND
SPIA_MOSI | GPIO16	27	28	SPIA_MISO | GPIO17
SPIA_STEn | GPIO19	29	30	SPIA_CLK | GPIO18
GND	31	32	GND
SPIC_MOSI | GPIO100	33	34	SPIC_MISO | GPIO101
SPIC_STEn | GPIO103	35	36	SPIC_CLK | GPIO102
GND	37	38	GND
SPIB_MOSI | GPIO24	39	40	SPIB_MISO | GPIO25
SPIB_STEn | GPIO27	41	42	SPIB_CLK | GPIO26
GND	43	44	GND
SCIB_TX | GPIO22	45	46	SCIB_RX | GPIO23
GPIO20_nErr1	47	48	GPIO15_Err1
GPIO21_nErr2	49	50	GPIO95_Err2
GPIO104_nErr3	51	52	GPIO99_Err3
GND	53	54	GND
GPIO14_nErr4	55	56	GPIO96_Err4
GPIO33	57	58	GPIO34
GND	59	60	GND
ENET_MDIO_CLK | GPIO105	61	62	ENET_RMII_CLK | GPIO73
ENET_MII_INTR | GPIO108	63	64	ENET_PPS0 | GPIO47
GND	65	66	GND
ENET_MDIO_DATA | GPIO106	67	68	ENET_REVMII_MDIO_RST | GPIO107
ENET_MII_COL | GPIO110	69	70	ENET_MII_RX_DV | GPIO112
GND	71	72	GND
ENET_MII_CRS | GPIO109	73	74	ENET_PPS1 | GPIO48
ENET_MII_RX_CLK | GPIO111	75	76	ENET_MII_RX_Data0 | GPIO114

J402B
LCB_connector_top

GND	77	78	GND
ENET_MII_RX_ERR | GPIO113	79	80	ENET_MII_TX_Data1 | GPIO122
ENET_MII_TX_EN | GPIO118	81	82	ENET_MII_TX_ERR | GPIO119
GND	83	84	GND
ENET_MII_TX_Data2 | GPIO123	85	86	ENET_MII_TX_CLK | GPIO120
ENET_MII_RX_Data1 | GPIO115	87	88	ENET_MII_RX_Data3 | GPIO117
ENET_MII_TX_Data3 | GPIO124	89	90	ENET_MII_TX_Data0 | GPIO121
ENET_CLK_25MHz	91	92	ENET_MII_RX_Data2 | GPIO116
GND	93	94	GND
FreePin3	95	96	FreePin4
FreePin5	97	98	FreePin6
GND	99	100	GND
FreePin7	101	102	FreePin8
GND	103	104	GND
GND	105	106	GND
	107	108	
	109	110	
	111	112	
GND	113	114	GND
ADC_IN15_N	115	116	ADC_A1_N
ADC_IN14_P	117	118	ADC_A0_P
GND	119	120	GND
ADC_A3_N	121	122	ADC_A5_N
ADC_A2_P	123	124	ADC_A4_P
GND	125	126	GND
ADC_B1_N	127	128	ADC_B3_N
ADC_B0_P	129	130	ADC_B2_P
GND	131	132	GND
ADC_B5_N	133	134	ADC_C3_N
ADC_B4_P	135	136	ADC_C2_P
GND	137	138	GND
ADC_C5_N	139	140	ADC_D1_N
ADC_C4_P	141	142	ADC_D0_P
GND	143	144	GND
ADC_D3_N	145	146	ADC_D5_N
ADC_D2_P	147	148	ADC_D4_P
GND	149	150	GND

TOP RIGHT CONNECTOR

J402C
LCB_connector_top

GND	151	152	GND
EPWM1A | GPIO145	153	154	EPWM1B | GPIO146
EPWM2A | GPIO147	155	156	EPWM2B | GPIO148
GND	157	158	GND
EPWM3A | PGIO149	159	160	EPWM3B | GPIO150
EPWM4A | GPIO151	161	162	EPWM4B | GPIO152
GND	163	164	GND
EPWM5A | GPIO8	165	166	EPWM5B | GPIO9
EPWM6A | GPIO155	167	168	EPWM6B | GPIO156
GND	169	170	GND
EPWM7A | GPIO157	171	172	EPWM7B | GPIO158
EPWM8A | GPIO159	173	174	EPWM8B | GPIO160
GND	175	176	GND
EPWM9A | GPIO161	177	178	EPWM9B | GPIO162
EPWM10A | GPIO163	179	180	EPWM10B | GPIO164
GND	181	182	GND
EPWM11A | GPIO165	183	184	EPWM11B | GPIO166
EPWM12A | GPIO167	185	186	EPWM12B | GPIO168
GND	187	188	GND
EPWM13A | GPIO137	189	190	EPWM13B | GPIO138
EPWM14A | GPIO139	191	192	EPWM14B | GPIO140
GND	193	194	GND
EPWM15A | GPIO141	195	196	EPWM15B | GPIO142
EPWM16A | GPIO143	197	198	EPWM16B | GPIO144
GND	199	200	GND
UARTA_TX | GPIO42	201	202	UARTA_RX | GPIO43
ESC_TX0_DATA2 | GPIO89	203	204	ESC_TX0_DATA1 | GPIO88
GND	205	206	GND
ESC_TX0_DATA3 | GPIO90	207	208	ESC_MDIO_CLK | GPIO46
ESC_RX0_DATA2 | GPIO82	209	210	ESC_TX0_ENA | GPIO84
GND	211	212	GND
ESC_RX0_DATA0 | GPIO80	213	214	ESC_RX0_DATA1 | GPIO81
ESC_PHY_CLK | GPIO154	215	216	ESC_RX0_DATA3 | GPIO83
GND	217	218	GND
ESC_PHY0_LINKSTATUS | GPIO86	219	220	ESC_MDIO_DATA | GPIO153
ESC_TX0_DATA0 | GPIO87	221	222	ESC_RX0_CLK | GPIO77
GND	223	224	GND
ESC_RX1_ERR | GPIO71	225	226	ESC_RX1_CLK | GPIO69

J402D
LCB_connector_top

ESC_TX1_DATA3 | GPIO72	227	228	ESC_TX0_CLK | GPIO85
GND	229	230	GND
ESC_RX0_DV | GPIO78	231	232	ESC_PHY1_LINKSTATUS | GPIO68
ESC_LED_STATE_RUN | GPIO62	233	234	ESC_PHY_RESETn | GPIO76
GND	235	236	GND
ESC_RX1_DATA0 | GPIO63	237	238	ESC_RX0_ERR | GPIO79
ESC_RX1_DATA3 | GPIO66	239	240	ESC_LED_RUN | GPIO61
GND	241	242	GND
ESC_RX1_DATA1 | GPIO64	243	244	ESC_RX1_DATA2 | GPIO65
ESC_LED_ERR | GPIO60	245	246	ESC_LED_LINK1_ACTIVE | GPIO59
GND	247	248	GND
ESC_RX1_DV | GPIO136	249	250	ESC_LED_LINK0_ACTIVE | GPIO58
ESC_TX1_DATA1 | GPIO132	251	252	ESC_TX1_DATA2 | GPIO134
GND	253	254	GND
ESC_TX1_DATA0 | GPIO131	255	256	ESC_I2C_SCL | GPIO30
ESC_LATCH0 | GPIO125	257	258	ESC_I2C_SDA | GPIO29
GND	259	260	GND
ESC_LATCH1 | GPIO126	261	262	ESC_SYNC0 | GPIO127
ESC_SYNC1 | GPIO128	263	264	ESC_TX1_ENA | GPIO129
GND	265	266	GND
ESC_TX1_CLK | GPIO130	267	268	GPIO45
GPIO44	269	270	GPIO41
GND	271	272	GND
SSIA_FSS | GPIO57	273	274	SSIA_CLK | GPIO56
SSIA_RX | GPIO55	275	276	SSIA_TX | GPIO54
GND	277	278	GND
GPIO52	279	280	GPIO53
GPIO51	281	282	GPIO40
GND	283	284	GND
GPIO49	285	286	GPIO50
CANB_RX | GPIO39	287	288	CANB_TX | GPIO38
GND	289	290	GND
CANA_RX | GPIO36	291	292	CANA_TX | GPIO37
CM-I2CA_SDA | GPIO31	293	294	CM-I2CA_SCL | GPIO32
GND	295	296	GND
P1_CLK_25MHz	297	298	P0_CLK_25MHz
GND	299	300	GND

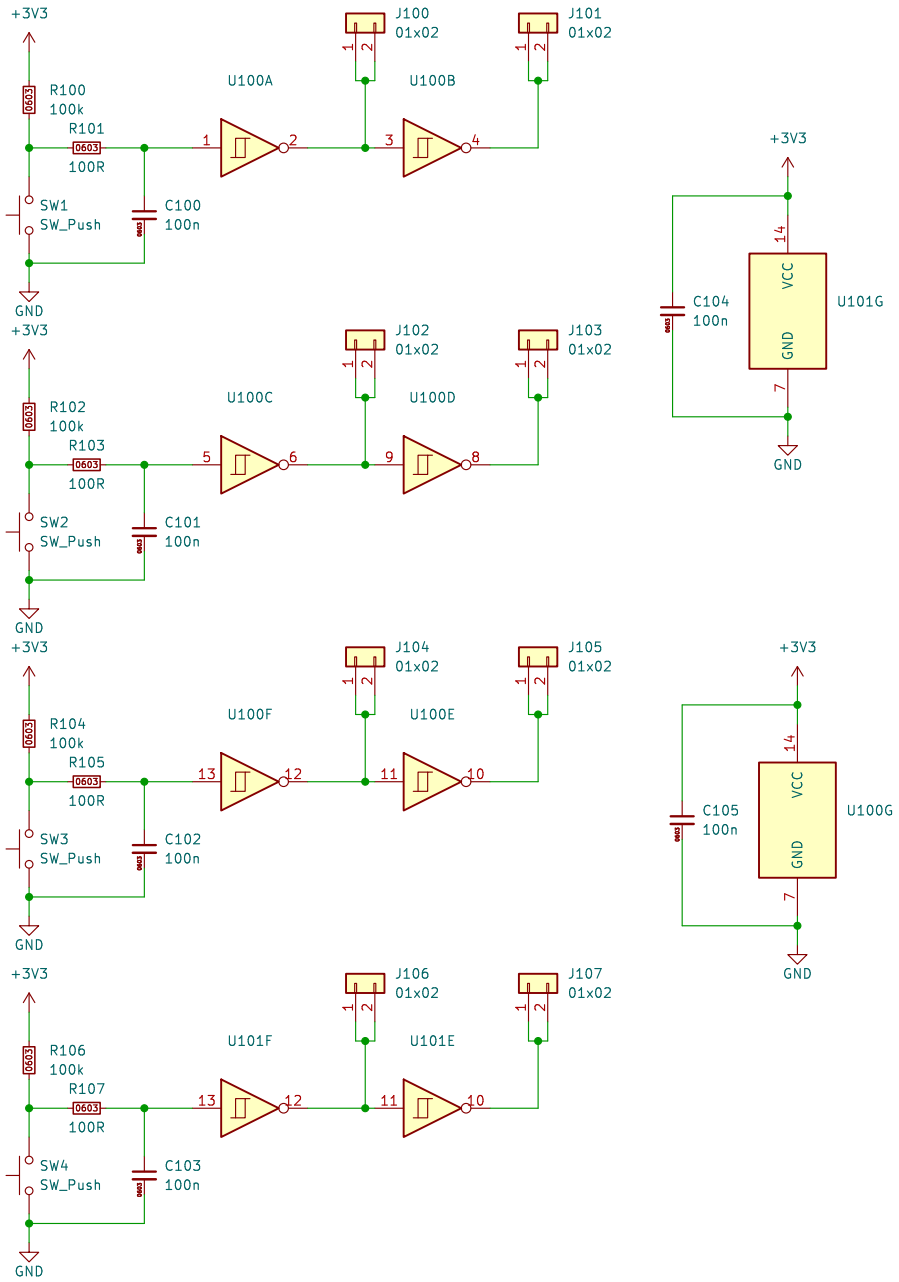
PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

Sheet: /Connector_Control_Board/
File: Connector_Control_Board.kicad_sch

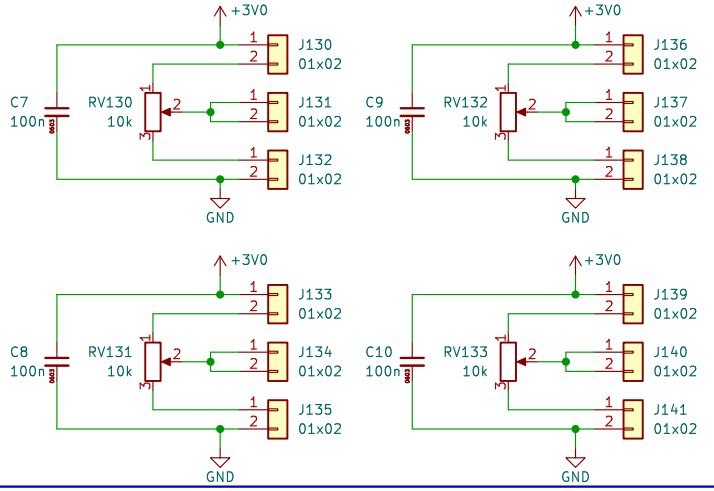
Title: LCB-CDB-01: Dock Board

Size: A4	Date: 2024-07-16	**Rev: 1.2.0**
KiCad E.D.A. 8.0.3		Id: 2/6

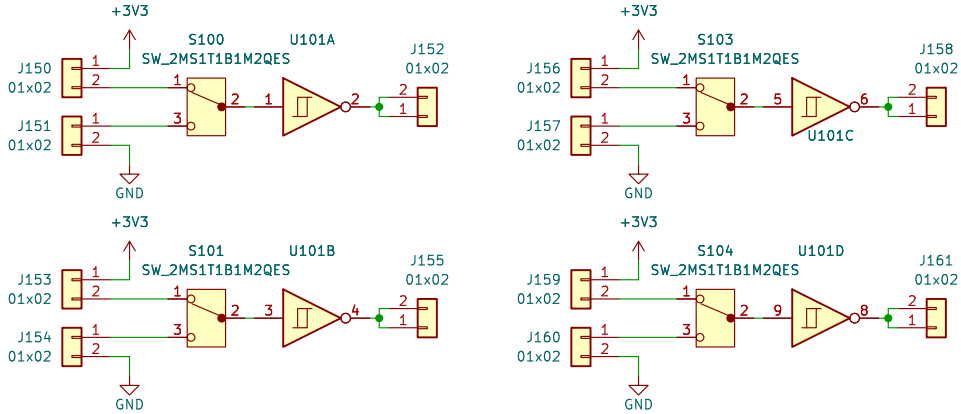
Buttons



Potentiometer



Switches

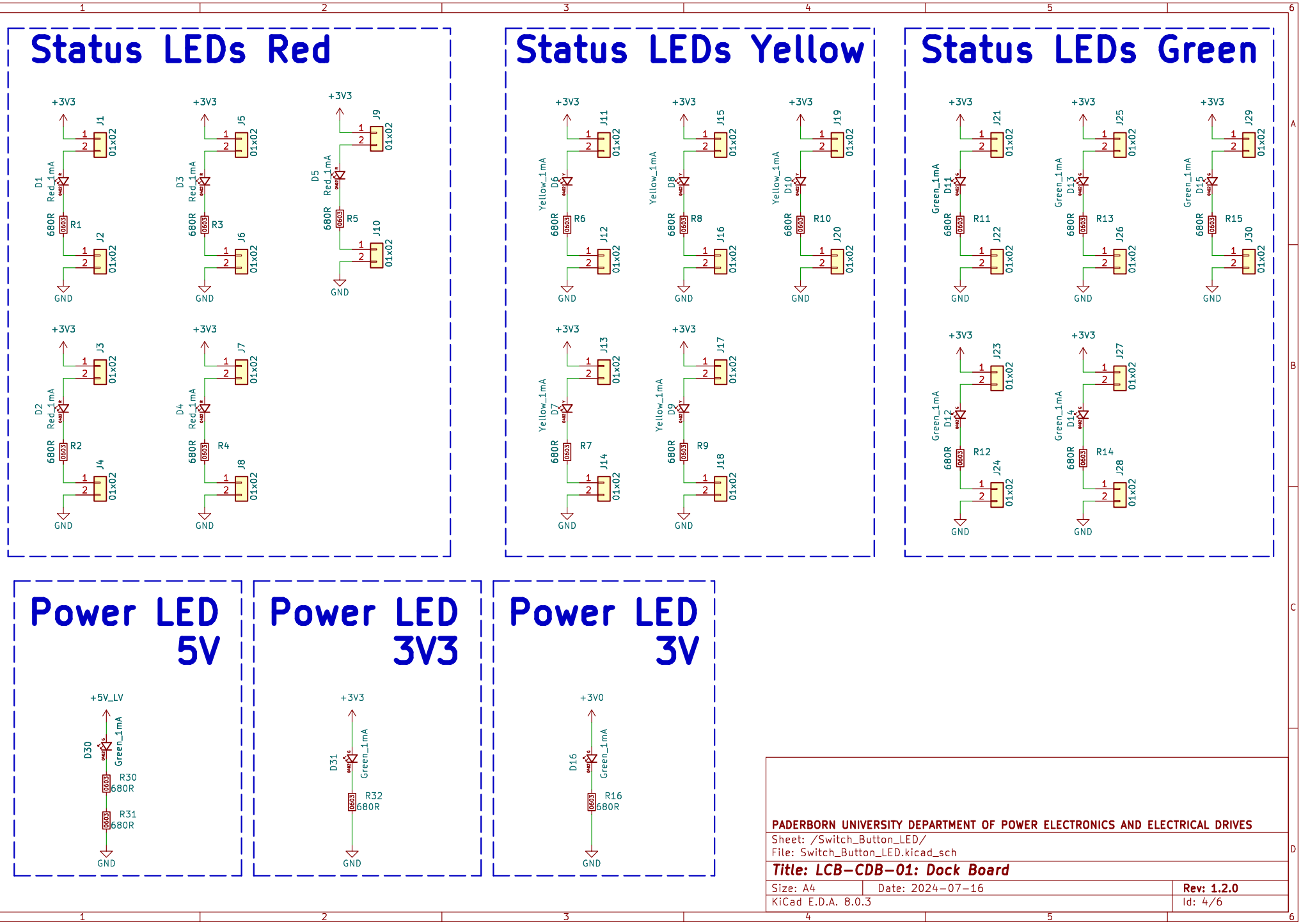


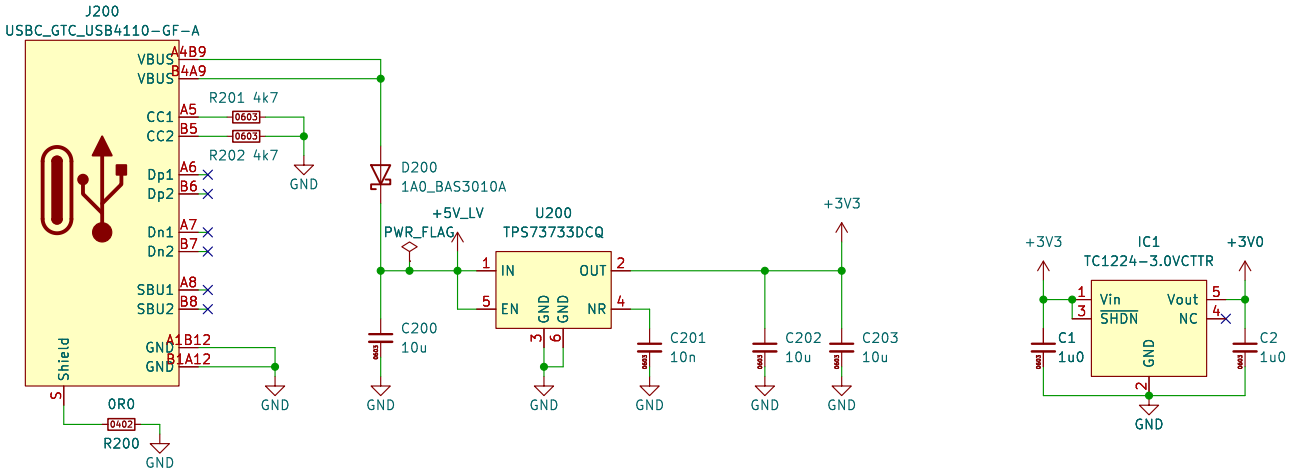
PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

Sheet: /IO/
File: IO.kicad_sch

Title: LCB-CDB-01: Dock Board

Size: A4	Date: 2024-07-16	**Rev: 1.2.0**
KiCad E.D.A. 8.0.3		Id: 3/6


Status LEDs Red
Status LEDs Yellow
Status LEDs Green
Power LED 5V
Power LED 3V3
Power LED 3V
+3V3
+5V_LV
+3V0
GND
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
J12
J13
J14
J15
J16
J17
J18
J19
J20
J21
J22
J23
J24
J25
J26
J27
J28
J29
J30
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D30
D31
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R30
R31
R32
680R
0603
01x02
Red_1mA
Yellow_1mA
Green_1mA
PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES
Sheet: /Switch_Button_LED/
File: Switch_Button_LED.kicad_sch
Title: LCB-CDB-01: Dock Board
Size: A4
Date: 2024-07-16
Rev: 1.2.0
KiCad E.D.A. 8.0.3
Id: 4/6



PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

Sheet: /Power_Supply/
File: Power_Supply.kicad_sch

Title: LCB-CDB-01: Dock Board

Size: A4	Date: 2024-07-16	**Rev: 1.2.0**
KiCad E.D.A. 8.0.3		Id: 5/6

TOP LEFT CONNECTOR to Pinheader

J60

02x30_Row_Letter_Last

+3V3	1a	1b	+3V3
+3V3	2a	2b	+3V3
+3V3	3a	3b	+3V3
+3V3	4a	4b	+3V3
GND	5a	5b	GND
GND	6a	6b	GND
MCAN_RX | GPIO70	7a	7b	MCAN_TX | GPIO4
I2CA_SCL | GPIO1	8a	8b	I2CA_SDA | GPIO0
SCIC_TX | GPIO12	9a	9b	SCIC_RX | GPIO13
SPIA_MOSI | GPIO16	10a	10b	SPIA_MISO | GPIO17
SPIA_STEn | GPIO19	11a	11b	SPIA_CLK | GPIO18
GND	12a	12b	GND
SPIC_MOSI | GPIO100	13a	13b	SPIC_MISO | GPIO101
SPIC_STEn | GPIO103	14a	14b	SPIC_CLK | GPIO102
SPIB_MOSI | GPIO24	15a	15b	SPIB_MISO | GPIO25
SPIB_STEn | GPIO27	16a	16b	SPIB_CLK | GPIO26
SCIB_TX | GPIO22	17a	17b	SCIB_RX | GPIO23
GND	18a	18b	GND
GPIO20_nErr1	19a	19b	GPIO15_Err1
GPIO21_nErr2	20a	20b	GPIO95_Err2
GPIO104_nErr3	21a	21b	GPIO99_Err3
GPIO14_nErr4	22a	22b	GPIO96_Err4
GPIO33	23a	23b	GPIO34
ENET_MDIO_CLK | GPIO105	24a	24b	GND
GND	25a	25b	ENET_RMII_CLK | GPIO73
ENET_MII_INTR | GPIO108	26a	26b	ENET_PPS0 | GPIO47
ENET_MDIO_DATA | GPIO106	27a	27b	ENET_REVMII_MDIO_RST | GPIO107
ENET_MII_COL | GPIO110	28a	28b	ENET_MII_RX_DV | GPIO112
ENET_MII_CRS | GPIO109	29a	29b	ENET_PPS1 | GPIO48
ENET_MII_RX_CLK | GPIO111	30a	30b	ENET_MII_RX_Data0 | GPIO114

J61

02x30_Row_Letter_Last

GND	1a	1b	GND
ENET_MII_RX_ERR | GPIO113	2a	2b	ENET_MII_TX_Data1 | GPIO122
ENET_MII_TX_EN | GPIO118	3a	3b	ENET_MII_TX_ERR | GPIO119
ENET_MII_TX_Data2 | GPIO123	4a	4b	ENET_MII_TX_CLK | GPIO120
ENET_MII_RX_Data1 | GPIO115	5a	5b	ENET_MII_RX_Data3 | GPIO117
ENET_MII_TX_Data3 | GPIO124	6a	6b	ENET_MII_TX_Data0 | GPIO121
ENET_CLK_25MHz	7a	7b	ENET_MII_RX_Data2 | GPIO116
GND	8a	8b	GND
	9a	9b	
	10a	10b	
	11a	11b	
GND	12a	12b	GND
ADC_IN15_N	13a	13b	ADC_A1_N
ADC_IN14_P	14a	14b	ADC_A0_P
GND	15a	15b	GND
ADC_A3_N	16a	16b	ADC_A5_N
ADC_A2_P	17a	17b	ADC_A4_P
GND	18a	18b	GND
ADC_B1_N	19a	19b	ADC_B3_N
ADC_B0_P	20a	20b	ADC_B2_P
GND	21a	21b	GND
ADC_B5_N	22a	22b	ADC_C3_N
ADC_B4_P	23a	23b	ADC_C2_P
GND	24a	24b	GND
ADC_C5_N	25a	25b	ADC_D1_N
ADC_C4_P	26a	26b	ADC_D0_P
GND	27a	27b	GND
ADC_D3_N	28a	28b	ADC_D5_N
ADC_D2_P	29a	29b	ADC_D4_P
GND	30a	30b	GND

TOP RIGHT CONNECTOR to Pinheader

J62

02x30_Row_Letter_Last

EPWM1A | GPIO145	1a	1b	EPWM1B | GPIO146
EPWM2A | GPIO147	2a	2b	EPWM2B | GPIO148
EPWM3A | PGIO149	3a	3b	EPWM3B | GPIO150
EPWM4A | GPIO151	4a	4b	EPWM4B | GPIO152
EPWM5A | GPIO8	5a	5b	EPWM5B | GPIO9
GND	6a	6b	GND
EPWM6A | GPIO155	7a	7b	EPWM6B | GPIO156
EPWM7A | GPIO157	8a	8b	EPWM7B | GPIO158
EPWM8A | GPIO159	9a	9b	EPWM8B | GPIO160
EPWM9A | GPIO161	10a	10b	EPWM9B | GPIO162
EPWM10A | GPIO163	11a	11b	EPWM10B | GPIO164
GND	12a	12b	GND
EPWM11A | GPIO165	13a	13b	EPWM11B | GPIO166
EPWM12A | GPIO167	14a	14b	EPWM12B | GPIO168
EPWM13A | GPIO137	15a	15b	EPWM13B | GPIO138
EPWM14A | GPIO139	16a	16b	EPWM14B | GPIO140
EPWM15A | GPIO141	17a	17b	EPWM15B | GPIO142
GND	18a	18b	GND
EPWM16A | GPIO143	19a	19b	EPWM16B | GPIO144
UARTA_TX | GPIO42	20a	20b	UARTA_RX | GPIO43
ESC_TX0_DATA2 | GPIO89	21a	21b	ESC_TX0_DATA1 | GPIO88
ESC_TX0_DATA3 | GPIO90	22a	22b	ESC_MDIO_CLK | GPIO46
ESC_RX0_DATA2 | GPIO82	23a	23b	ESC_TX0_ENA | GPIO84
GND	24a	24b	GND
ESC_RX0_DATA0 | GPIO80	25a	25b	ESC_RX0_DATA1 | GPIO81
ESC_PHY_CLK | GPIO154	26a	26b	ESC_RX0_DATA3 | GPIO83
ESC_PHY0_LINKSTATUS | GPIO86	27a	27b	ESC_MDIO_DATA | GPIO153
ESC_TX0_DATA0 | GPIO87	28a	28b	ESC_RX0_CLK | GPIO77
ESC_RX1_ERR | GPIO71	29a	29b	ESC_RX1_CLK | GPIO69
GND	30a	30b	GND

J63

02x30_Row_Letter_Last

GND	1a	1b	GND
ESC_TX1_DATA3 | GPIO72	2a	2b	ESC_TX0_CLK | GPIO85
ESC_RX0_DV | GPIO78	3a	3b	ESC_PHY1_LINKSTATUS | GPIO68
ESC_LED_STATE_RUN | GPIO62	4a	4b	ESC_PHY_RESETn | GPIO76
ESC_RX1_DATA0 | GPIO63	5a	5b	ESC_RX0_ERR | GPIO79
ESC_RX1_DATA3 | GPIO66	6a	6b	ESC_LED_RUN | GPIO61
GND	7a	7b	GND
ESC_RX1_DATA1 | GPIO64	8a	8b	ESC_RX1_DATA2 | GPIO65
ESC_LED_ERR | GPIO60	9a	9b	ESC_LED_LINK1_ACTIVE | GPIO59
ESC_RX1_DV | GPIO136	10a	10b	ESC_LED_LINK0_ACTIVE | GPIO58
ESC_TX1_DATA1 | GPIO132	11a	11b	ESC_TX1_DATA2 | GPIO134
ESC_TX1_DATA0 | GPIO131	12a	12b	ESC_I2C_SCL | GPIO30
GND	13a	13b	GND
ESC_LATCH0 | GPIO125	14a	14b	ESC_I2C_SDA | GPIO29
ESC_LATCH1 | GPIO126	15a	15b	ESC_SYNC0 | GPIO127
ESC_SYNC1 | GPIO128	16a	16b	ESC_TX1_ENA | GPIO129
ESC_TX1_CLK | GPIO130	17a	17b	GPIO45
GPIO44	18a	18b	GPIO41
GND	19a	19b	GND
SSIA_FSS | GPIO57	20a	20b	SSIA_CLK | GPIO56
SSIA_RX | GPIO55	21a	21b	SSIA_TX | GPIO54
GPIO52	22a	22b	GPIO53
GPIO51	23a	23b	GPIO40
GPIO49	24a	24b	GPIO50
GND	25a	25b	GND
CANB_RX | GPIO39	26a	26b	CANB_TX | GPIO38
CANA_RX | GPIO36	27a	27b	CANA_TX | GPIO37
CM-I2CA_SDA | GPIO31	28a	28b	CM-I2CA_SCL | GPIO32
P1_CLK_25MHz	29a	29b	P0_CLK_25MHz
GND	30a	30b	GND

PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

Sheet: /Pinheaders/

File: Pinheaders.kicad_sch

Title: LCB-CDB-01: Dock Board

Size: A4	Date: 2024-07-16	**Rev: 1.2.0**
KiCad E.D.A. 8.0.3		Id: 6/6