

Quantity	Designator	Type	Comment	Description	Manufacturer Part Number	Manufacturer Part Number	LibRef	Supplier 1	Supplier Part Number 1
2	C300, C304	Capacitor	C 10nF 0402 16V	CAP CER 10000PF 16V Y5V 0402	Samsung Electro-Mechanics	CL05F103Z05NN NC	CAP_10nF_16V_0402	Digi-Key	1276-1738-1-ND
2	C307, C308	Capacitor	C 5.6pF 0402 50V	CAP CER 5.6PF 50V COG/NP0 0402	Samsung Electro-Mechanics	CL05C5R6DB5NN NC	CAP_5.6PF_50V_0402	Digi-Key	1276-1712-1-ND
4	C200, C301, C302, C303	Capacitor	C 1nF 0402 50V	CAP CER 1000PF 50V COG/NP0 0402	Murata Electronics	GRM1555C1H102JA01J	CAP_1nF_50V_0402	Digi-Key	490-6190-1-ND
4	C201, C202, C203, C208	Capacitor	C 10uF 0603 6.3V	CAP CER 10UF 6.3V X5R 0603	Taiyo Yuden	JMK107ABJ106MA-T	CAP_10uF_6V3_0603	Digi-Key	587-5869-1-ND
8	C204, C205, C206, C207, C209, C305, C306, C400	Capacitor	C 100nF 0402 10V	CAP CER 0.1UF 10V X5R 0402	Samsung Electro-Mechanics	CL05A104MP5NN NC	CAP_100nF_10V_0402	Digi-Key	1276-1443-1-ND
1	J202	Connector	TYPE-C-31-M-17	USB4 GEN3, TYPE C, TOP MOUNT	Korean Hroparts Elec	TYPE-C-31-M-17	J_USB-C_2	LCSC	C283540
1	J300	Connector	PH2	CONN HEADER R/A 2POS 2MM	JST Sales America Inc.	S2B-PH-KL(LF)(SN)	J_S2B-PH-KL	LCSC	C160237
1	J301	Connector	CON	CONN CONNECTOR PH 2POS 2MM	JST Sales America Inc.	PHR-2-R	J_PHR-2-R	LCSC	C398543
1	J305	Connector	5x2	CONN HEADER SMD 10POS 1.27MM	Sullins Connector Solutions	GRP8052VWQS-RC	J_MHSx2_1.27	Digi-Key	S9012E-05-ND
1	J400	Connector	FPC24	CONN FPC BOT 24 PIN 1mm Pitch	MOLEX	522712479	J_FPC24_DS	LCSC	C293627
2	J302, J303	Connector	PIN	PIN INSERT	JST Sales America Inc.	SPH-004T-PO.5S	J_PHR-2-R_PIN	LCSC	C160351
2	D300, D301	Diode	BAS20LT3G	DIODE GP 200V 200MA SOT23-3	onsemi	BAS20LT3G	D_LL_200V_200mA	Digi-Key	BAS20LT3GOSCT-ND
2	D400, D401	Diode	D SCH 40V 5A	DIODE SCHOTTKY 40V 5A DO214AB	Comchip Technology	CDBC540-G	D_SCH_40V_5A	Digi-Key	641-1126-1-ND
1	D201	Diode, LED	LED G	LED GREEN DIFFUSED 0603 SMD	OSRAM Opto Semiconductors Inc.	LT O39G-Q1OO-25-1	D_LED_Green_0603	Digi-Key	475-3442-1-ND
2	D202, D302	Diode, LED	LED Y	LED YELLOW DIFFUSED	Stanley Electric Co	FKY1111C-TR	D_LED_Yellow_0603	Digi-Key	404-1273-1-ND
1	D200	Diode, TVS	TVS_4 5V	TVS DIODE 5VWM 12.5VC SOT23-6	Comchip Technology	CPDT6-5V0UPC-HF	D_TVS_U4_12V5	Digi-Key	641-1829-1-ND
1	IC200	IC	DW01A	IC BATT MANAGEMENT SOT-23-6	PULOP	DW01A	IC_BAT_PROT_DW01A	LCSC	C351410
1	IC201	IC	TP4056-42	IC BATT CHG LI-ION 1CELL ESOP-8-EP	TOPPOWER(Nanjing Extension Microelectronics)	TP4056-42-ESOP8	IC_BAT_CHGR_TP4056	LCSC	C16581
1	IC400	IC, Driver	SX1503I091TRT	IC GPIO EXPANDER I2C 16CH 28-QFN	Semtech Corporation	SX1503I091TRT	IC_16ch_Port_Extender_2	Digi-Key	SX1503I091CT-ND
1	IC301	IC, EEPROM	AT34C04-XSM	IC EEPROM 4KBIT I2C 1MHZ 8TSSOP	Microchip Technology	AT34C04-XSM-T	IC_EEPROM_AT34C04	Digi-Key	AT34C04-XSM-TCT-ND
1	IC302	IC, MCU	STM32G031F8P6	IC MCU 32BIT 32KB FLASH 20TSSOP	STMicroelectronics	STM32G031F8P6	IC_MCU_STM32G031F8P6	LCSC	C529334
1	IC202	IC, OpAmp	MCP6007-E/SN	DUAL, 1MHZ OP AMP, E TEMP	Microchip Technology	MCP6007-E/SN	IC_OpAmp_MCP6007-E/SN	Digi-Key	150-MCP6007-E/SN-ND
1	IC204	IC, Reference	VREF 3V0	IC VREF SHUNT 1% SOT23-3	Texas Instruments	LM4040DIM3X-3.0/NOPB	IC_Ref_LM4040DIM3X-3.0	Digi-Key	296-41429-1-ND
1	IC203	IC, Regulator	TCR2LF30	IC REG LINEAR 3V 200MA SMV	Toshiba Semiconductor and Storage	TCR2LF30LM[CT	IC_Reg_TCR2LF30	Digi-Key	TCR2LF30LM[CTCT-ND
1	IC300	IC, RTC	RV-3028-C7	IC RTC CLK/CALENDAR I2C 10SON	Micro Crystal AG	RV-3028-C7TAOC	IC_RTC_3028-C7	Mouser	428-203591-MG01
1	L200	Inductor, Ferrite	L Ferrite 100R 4A	FIXED IND 100 4000MA 1206	Faton - Electronics Division	MFBM1V3216-101-R	L_100R_4A	Digi-Key	283-MFBM1V3216-101-RCT-ND
1	DS300	other	BFP Mini-YXS200	Mini-YXS200 Audio MP3 Modul	DfRobot	DFR0299	DFP_Player_mini	AliExpress	33036928283
1	J203	other	BAT	SMT Battery Connectors 18650	MYOUNG	MY-18650-02	J_BAT_CLIP_18650_A	LCSC	C2979182
1	J204	other	BAT	SMT Battery Connectors 18650	MYOUNG	MY-18650-02	J_BAT_CLIP_18650_B	LCSC	C2979182
1	SW302	other	SW	SWITCH TACTILE SPST-NO 0.05A 16V	C&K	PTS810 SJM 250 SMTR LFS	SW_TactileSW_V	Digi-Key	CKN10502CT-ND
1	Q300	Other, Crystal	32.7680KHZ	CRYSTAL 32.7680KHZ 12.5PF SMD	NDK America, Inc.	NX3215SA-32.768K-EXS00A-MU00003	Q_32k768_12p5	Digi-Key	644-1313-1-ND
2	SW300, SW301	other, Encoder	Encoder	ROTARY ENCODER MECHANICAL 12PPR	Bourns Inc.	PEC11R-4220F-S0012	ENC_12_THT	Digi-Key	PEC11R-4220F-S0012-ND
1	R213	Resistor	R 220R 0603	RES 220 OHM 1% 1/10W 0603	Stackpole Electronics Inc	RMCF0603FT220R	R_220R_0603	Digi-Key	RMCF0603FT220RCT-ND
1	R217	Resistor	R 84K5 0402	RES SMD 84.5K OHM 1% 1/16W 0402	Vishay Dale	CRCW040284K5FKED	R_84K5_0402	Digi-Key	541-84.5KLTCT-ND
1	R401	Resistor	R 1k8 0402	RES 100K OHM 5% 1/16W 0402	YAGEO	RC0402JR-07100KL	R_100k_0402	Digi-Key	311-100KJRCT-ND
13	R200, R201, R216, R301, R302, R303, R304, R305, R307, R310, R315, R319, R321	Resistor	R 270k 0402	RES 270K OHM 1% 1/16W 0402	YAGEO	RC0402FR-07270KL	R_270k_0402	Digi-Key	311-270KLRCT-ND
13	R203, R205, R208, R209, R210, R214, R215, R300, R306, R312, R313, R314, R320	Resistor	R 10k 0402	RES 10K OHM 1% 1/16W 0402	YAGEO	RC0402FR-0710KL	R_10k_0402	Digi-Key	311-10.0KLRCT-ND
2	R211, R212	Resistor	R 5k1 0402	RES 5.1K OHM 1% 1/16W 0402	Stackpole Electronics Inc	RMCF0402FT5K10	R_5k1_0420	Digi-Key	RMCF0402FT5K10CT-ND
3	R218, R219, R402	Resistor	R 0R0 0402	RES 0 OHM JUMPER 1/16W 0402	Stackpole Electronics Inc	RMCF0402ZTOR00	R_0R0_0402	Digi-Key	RMCF0402ZTOR00CT-ND
6	R204, R206, R207, R308, R309, R311	Resistor	R 2k 0402	RES 2K OHM 1% 1/16W 0402	Stackpole Electronics Inc	RMCF0402FT2K00	R_2k_0402	Digi-Key	RMCF0402FT2K00CT-ND
7	R202, R316, R317, R318, R322, R323, R324	Resistor	R 100R 0402	RES 100 OHM 1% 1/16W 0402	Stackpole Electronics Inc	RMCF0402FT100R	R_100R_0402	Digi-Key	RMCF0402FT100RCT-ND
1	P200	Transistor	P2 NMOS 20V 6A	MOSFET 2N_CH 20V 6A TSSOP-8	Fortune Semicon	FS8205A	P_2NCH_20V_1W	LCSC	C16052
2	P300, P400	Transistor	P PMOS 30V 6A	MOSFET P-CH 30V 6A SOT23F	Toshiba Semiconductor and Storage	SSM3J372R.LF	P_PCH_30V_1W	Digi-Key	SSM3J372R.LFCT-ND
3	P201, P202, P301	Transistor	P_NCH_50V_150mW	MOSFET N-CH 50V 200MA UMT3F	Rohm Semicondu	RU1J002YNTCL	P_NCH_50V_150mW	Digi-Key	RU1J002YNTCLCT-ND

1

2

3

4

A

A

B

B

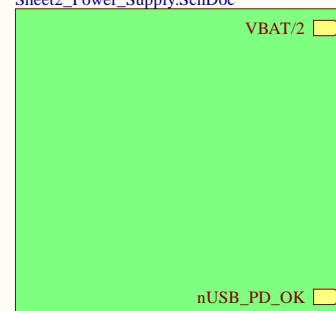
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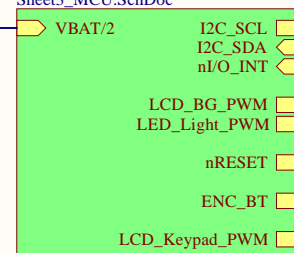
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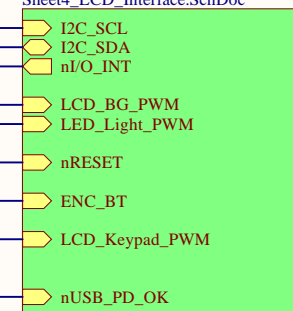
Power Supply
Sheet2_Power_Supply.SchDoc



MCU, Encoder, EEPROM
Sheet3_MCU.SchDoc



LCD Interface
Sheet4_LCD_Interface.SchDoc



FIDJ100




FIDJ101

1

2

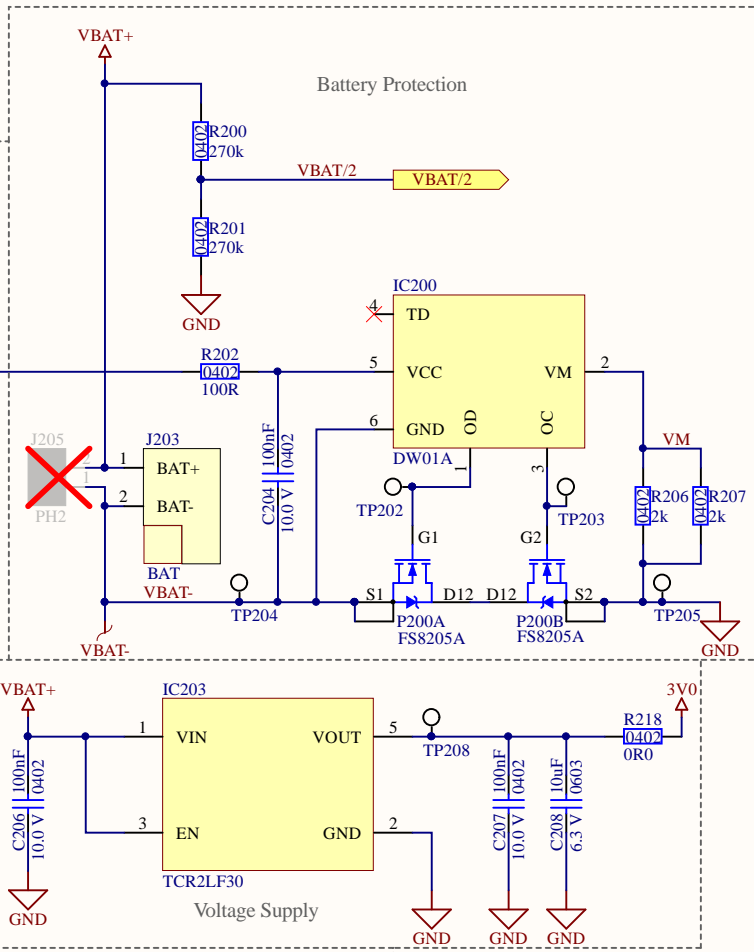
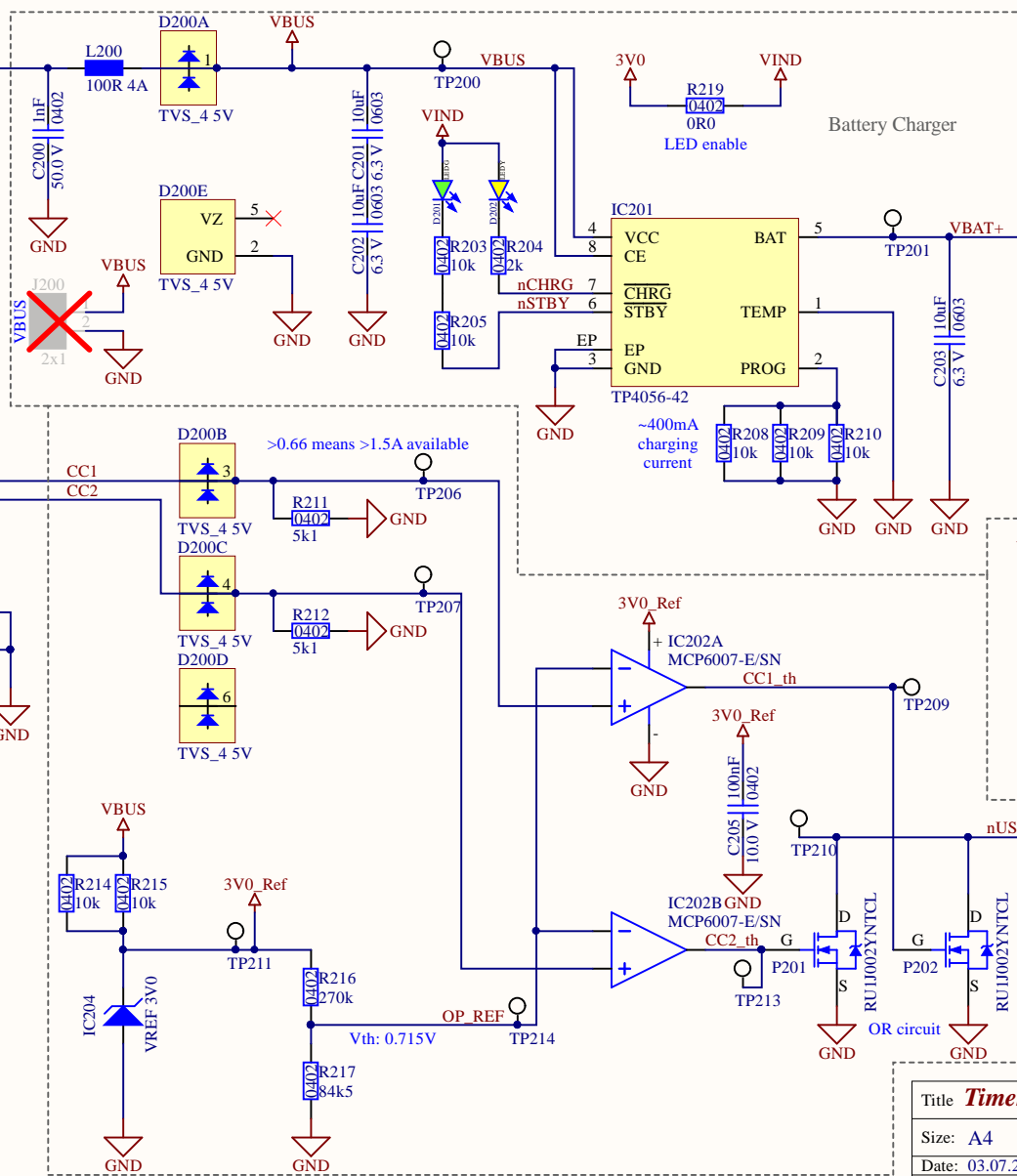
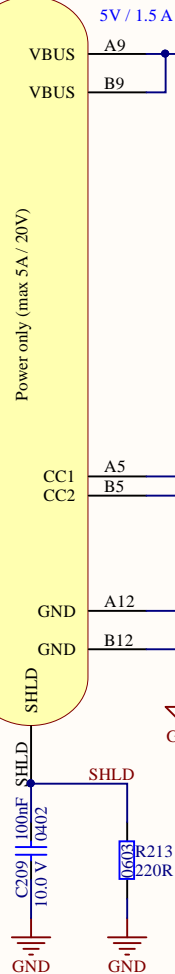
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4

Title <i>Timer_Clock_BOT.PrjPcb</i>			<i>Marius Tetard</i> 2022-06 / Freiburg	
Size: A4	Number:1	Revision: V2.0		
Date: 03.07.2022	Time: 15:03:33	Sheet 1 of 4		
File: Sheet1_Overview.SchDoc				

TYPE-C-31-M-17

J202
Power only (max 5A / 20V)



Title Timer_Clock_BOT.PrjPcb			Marius Tetard 2022-06 / Freiburg	
Size: A4	Number: 2	Revision: V2.0		
Date: 03.07.2022	Time: 15:03:33	Sheet 2 of 4		
File: Sheet2_Power_Supply.SchDoc				

A

B

C

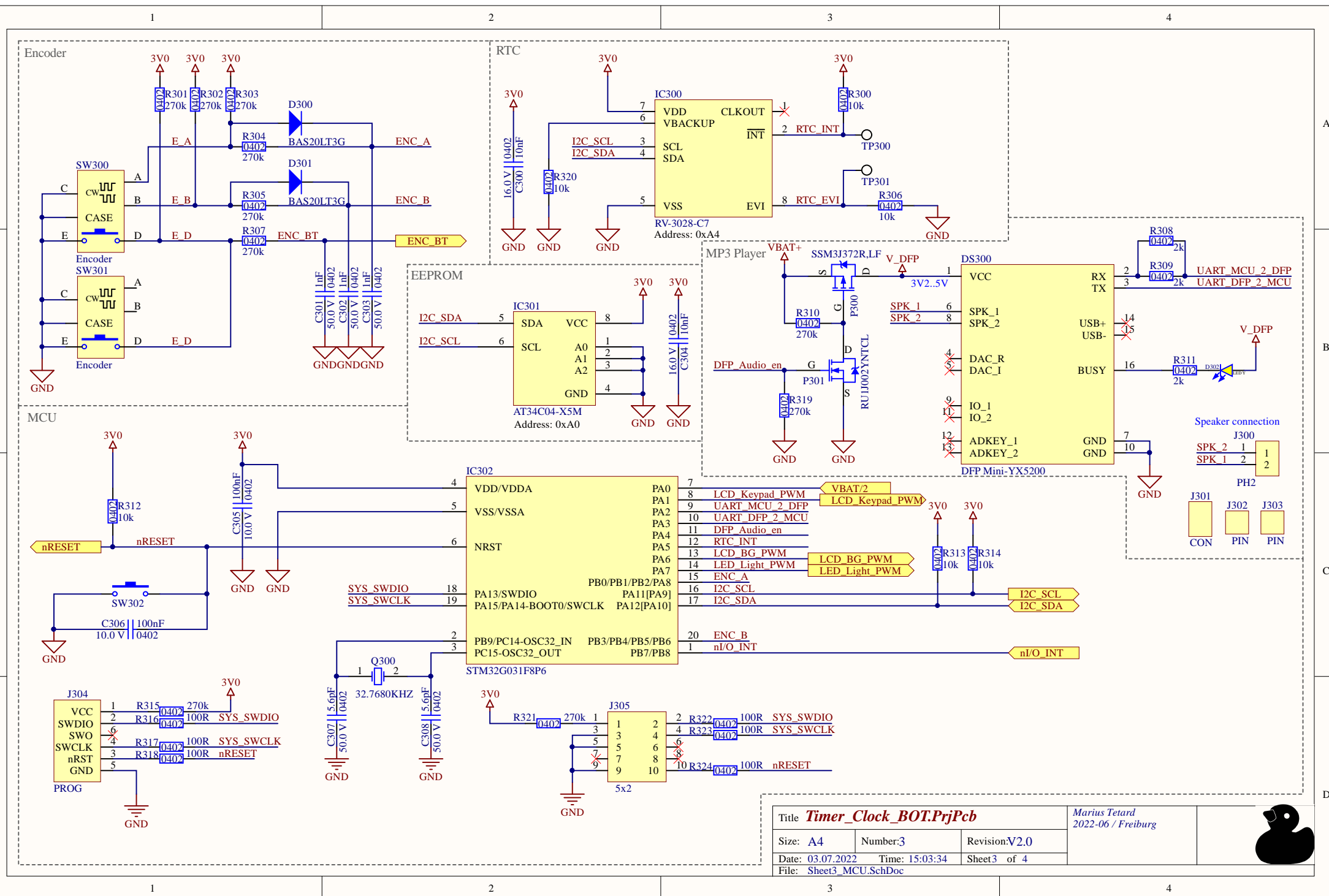
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A

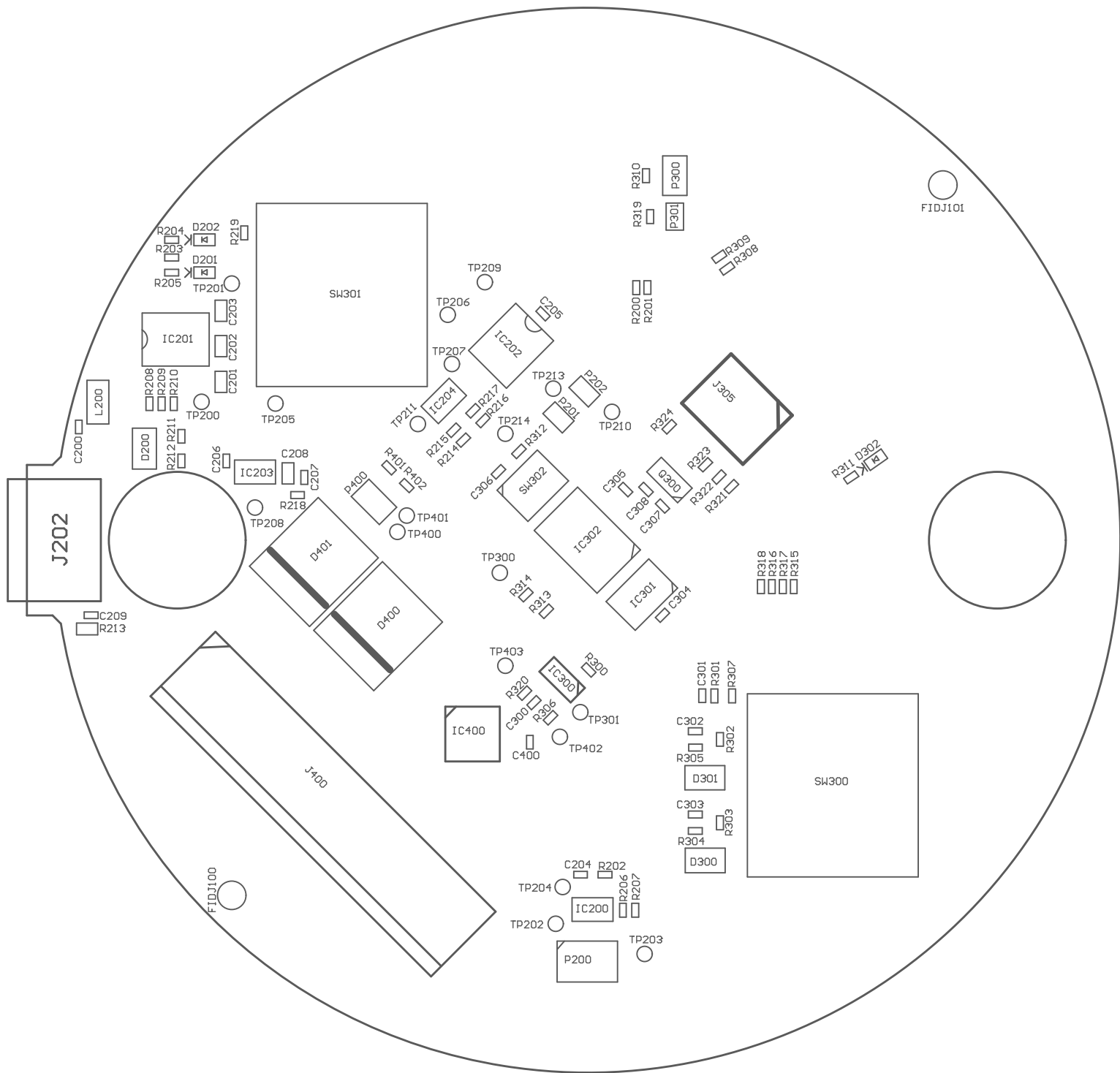
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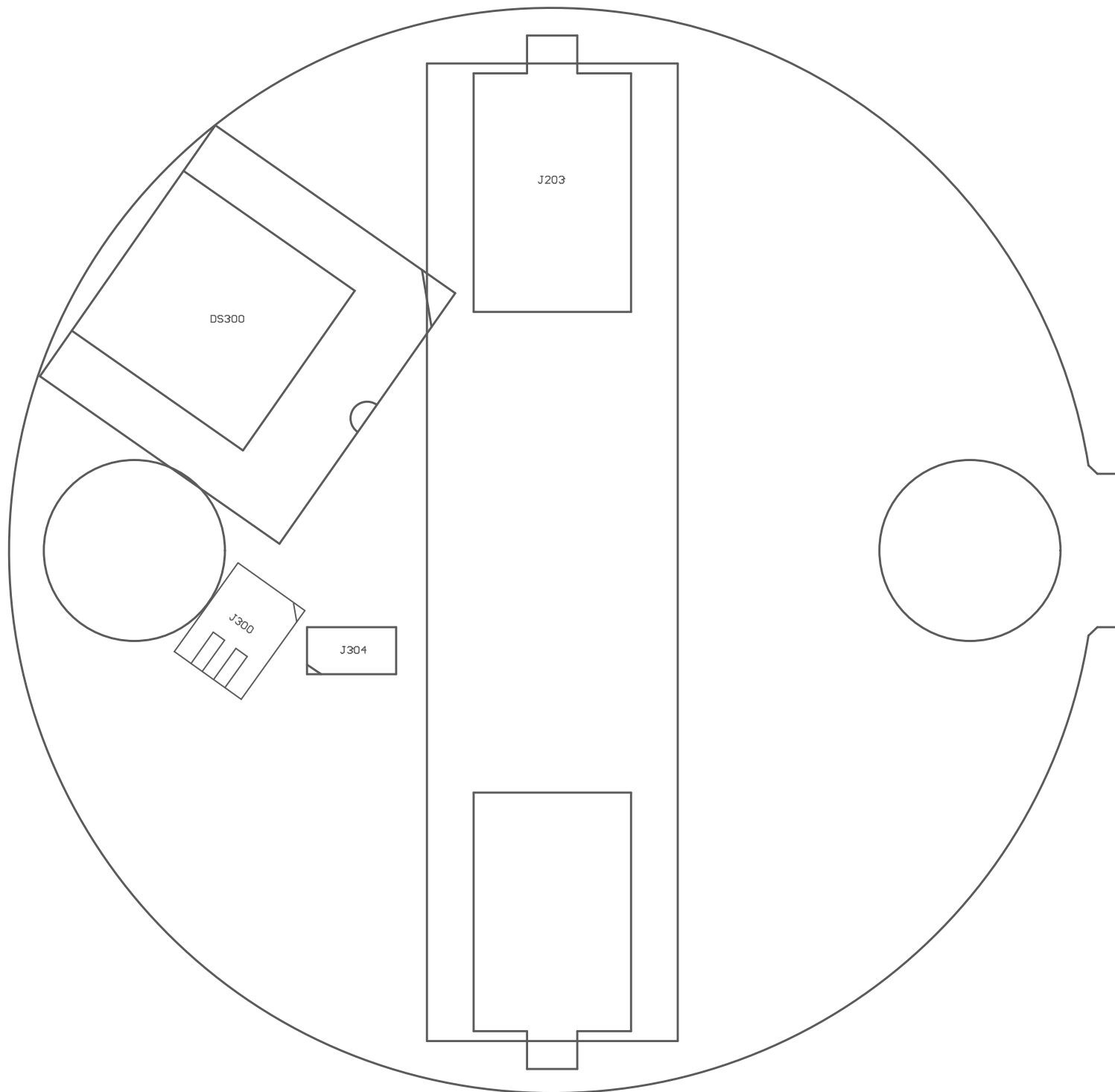
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D



Title <i>Timer_Clock_BOT.PrjPcb</i>			Marius Tetard 2022-06 / Freiburg	
Size: A4	Number:3	Revision:V2.0		
Date: 03.07.2022	Time: 15:03:34	Sheet 3 of 4		
File: Sheet3_MCU.SchDoc				





Design Rules Verification Report

Filename : C:\Users\Marius\Documents\GitHub\LCD_Timer_Clock\HW\PCB_BOT\PCB_BOT.CSPcbDoc

Warnings 2
Rule Violations 0

Warnings	
Multilayer Pads with 0 size Hole found	2
Total	2

Rule Violations	
Clearance Constraint (Gap=0.1mm) (All),(All)	0
Width Constraint (Min=0.125mm) (Max=2mm) (Preferred=0.2mm) (All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=0.508mm) (Conductor Width=0.254mm) (Air Gap=0.254mm)	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Un-Routed Net Constraint ((Disabled)(All))	0
Minimum Annular Ring (Minimum=0.2mm) (All)	0
Hole Size Constraint (Min=0.2mm) (Max=6.3mm) (All)	0
Height Constraint (Min=0mm) (Max=25.4mm) (Preferred=12.7mm) (All)	0
Hole To Hole Clearance (Gap=0.254mm) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0.05mm) (All),(All)	0
Silk To Solder Mask (Clearance=0.15mm) (IsPad),(All)	0
Silk to Silk (Clearance=0.153mm) (All),(All)	0
Silk primitive without silk layer	0
Unpoured Polygon (Allow unpoured: False)	0
Total	0

Multilayer Pads with 0 size Hole found	
Pad FIDJ101-1(26mm,26mm) Multi-Layer	
Pad FIDJ100-1(-26mm,-26mm) Multi-Layer	

Electrical Rules Check Report

Class	Document	Message
Warning	Sheet2_Power_Supply.SchDoc	Off grid at 203.29mm,121.89mm
Warning	Sheet3_MCU.SchDoc	Off grid at 264.95mm,83.44mm
Warning	Sheet3_MCU.SchDoc	Off grid at 272.87mm,81.44mm
Warning	Sheet3_MCU.SchDoc	Off grid at 280.49mm,81.44mm