

U\_1000\_mounting  
1000\_mounting.SchDoc



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A

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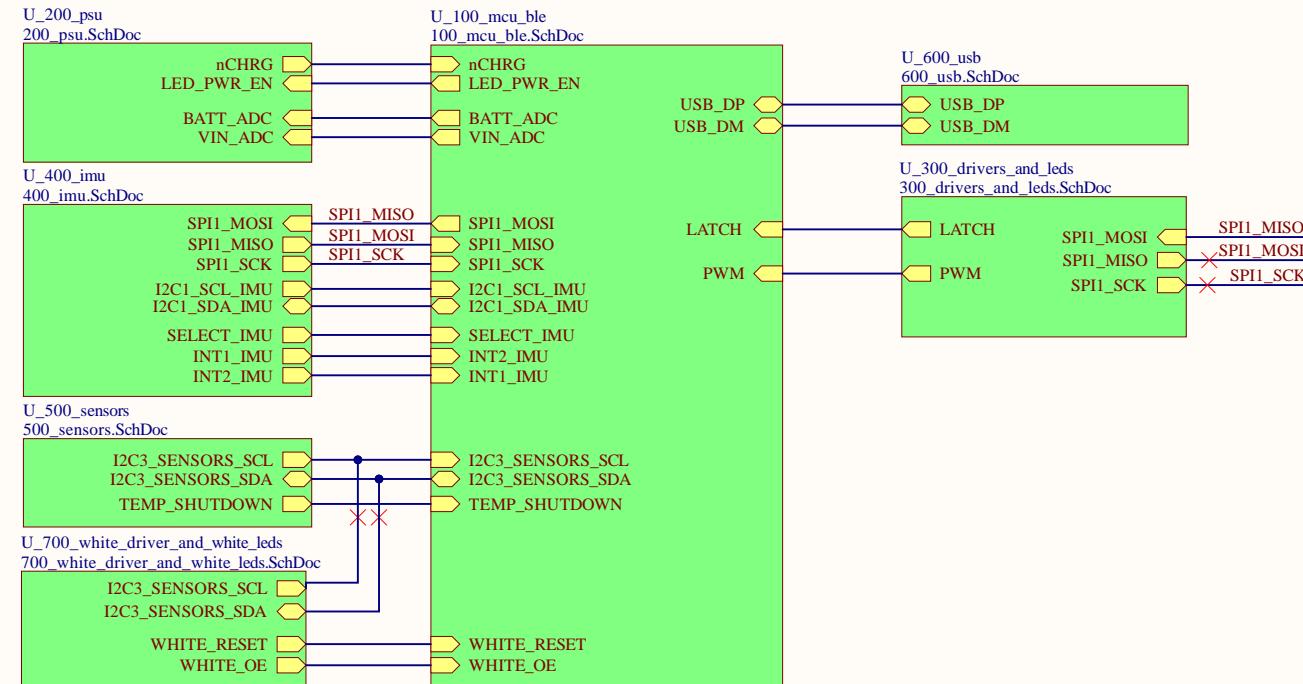
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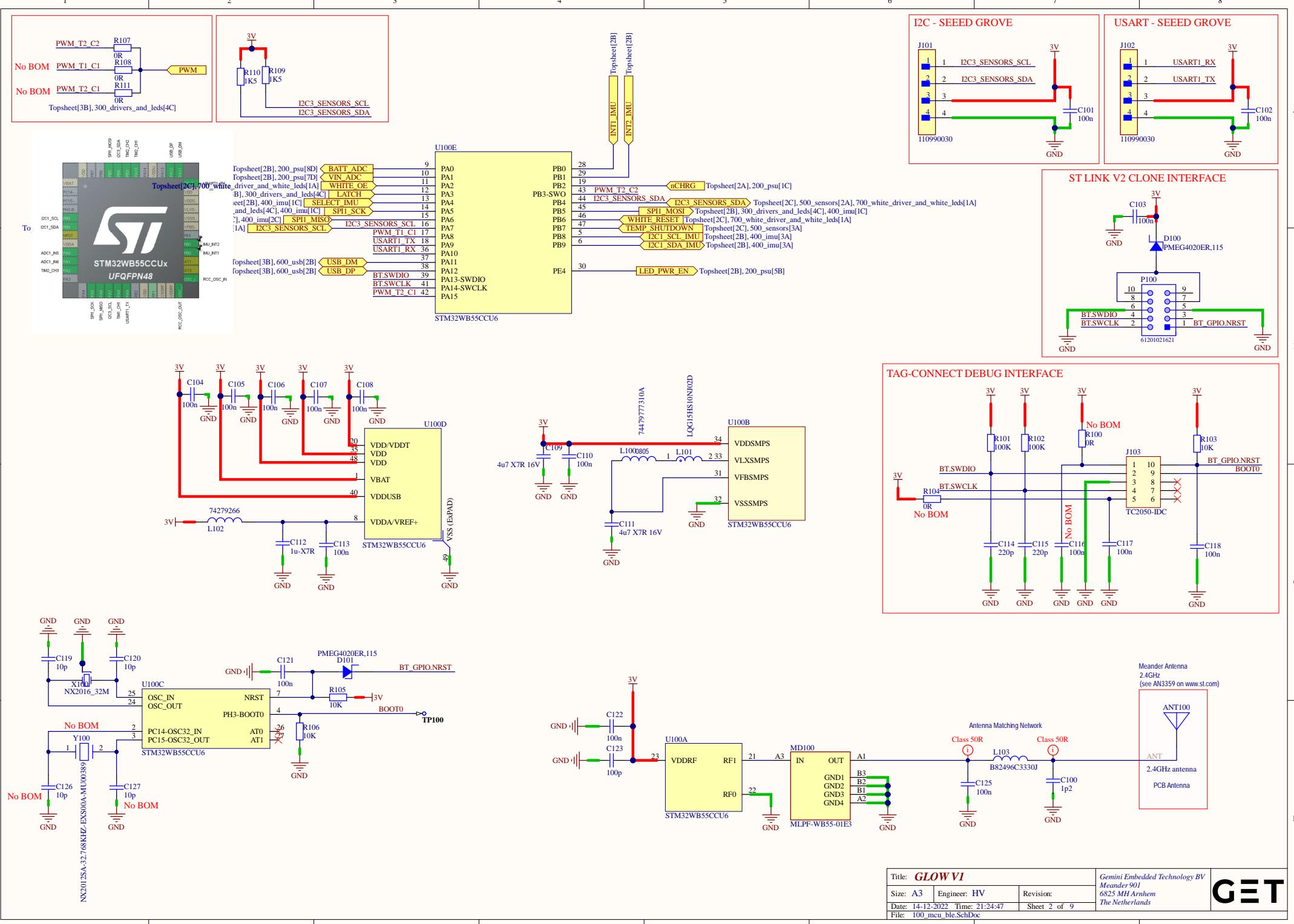
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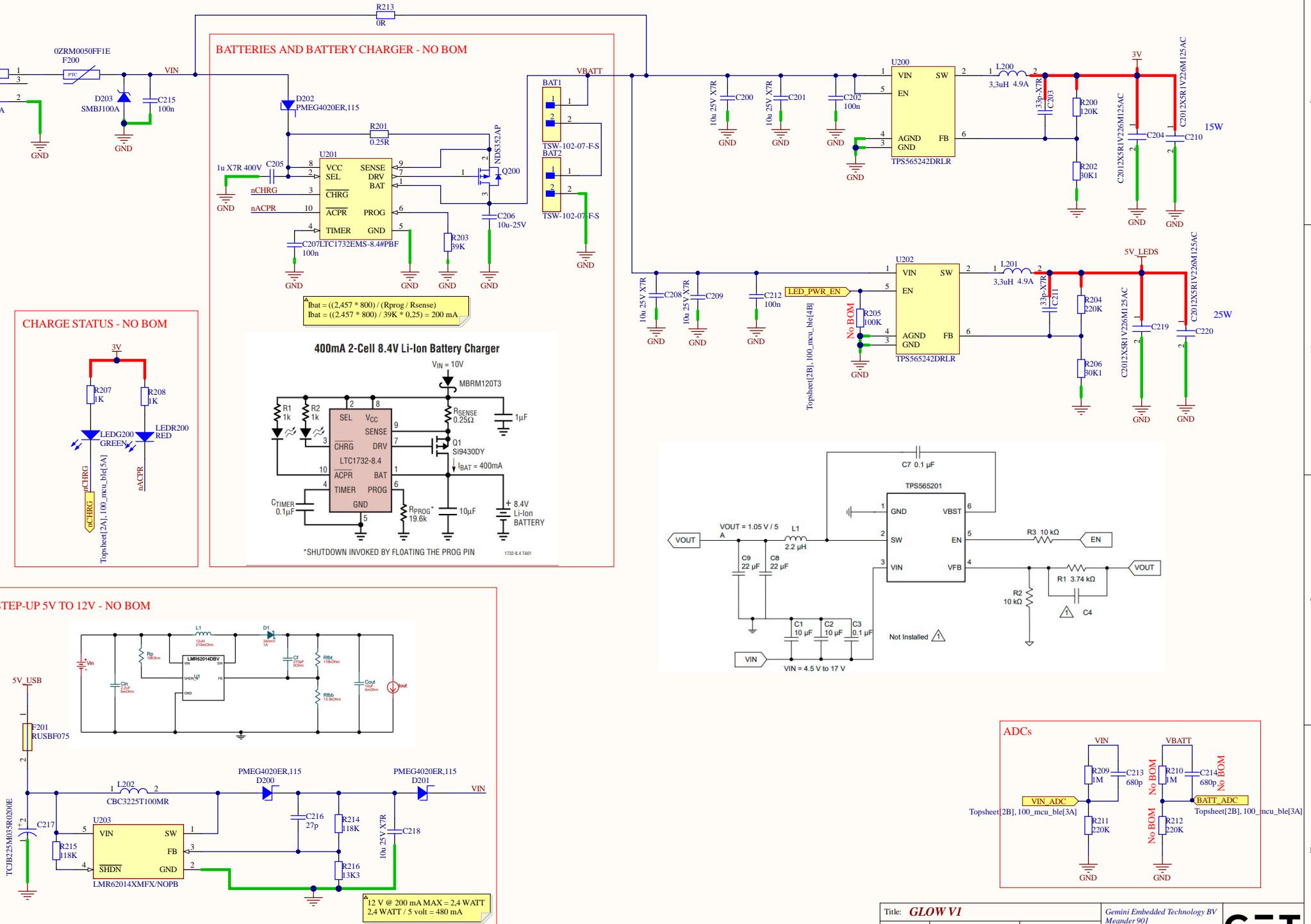
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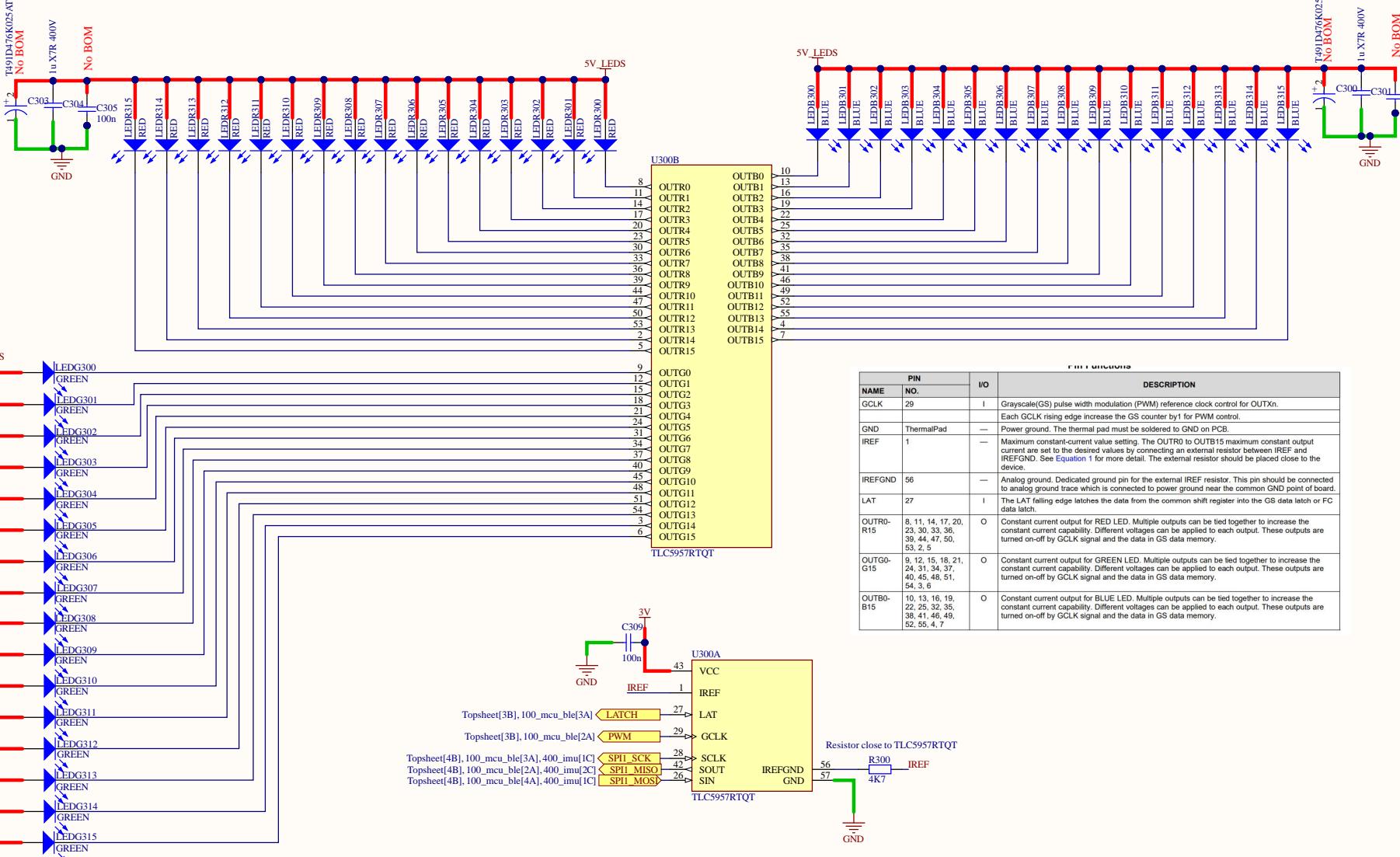


Title: <b>GLOW VI</b>		Gemini Embedded Technology BV	
Meander 901		d03d5d71ca96e2e397b52a866a91fa4f3	
Size: A4	Engineer: HV	Revision: df1d144d03d5d71ca96e2e397b52a866a91fa4f3	The Netherlands
Date: 14-12-2022	Time: 21:24:47	Sheet 1 of 9	
File: Topsheet.SchDoc			

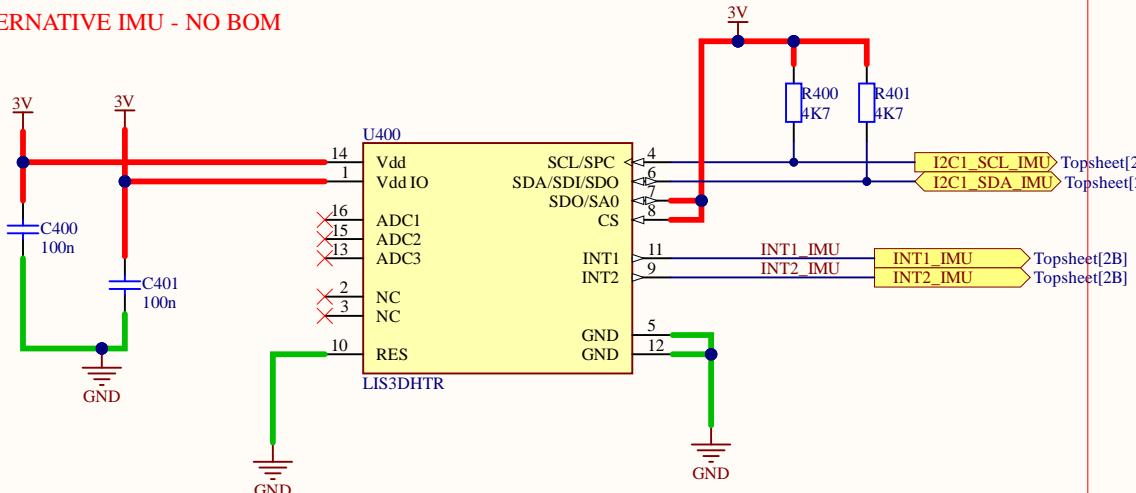
**G****E****T**







PIN			IO	FUNCTION
NAME	NO.			
GCLK	29	I		Grayscale(GS) pulse width modulation (PWM) reference clock control for OUTxn. Each GCLK rising edge increase the GS counter by1 for PWM control.
GND	ThermalPad	—		Power ground. The thermal pad must be soldered to GND on PCB.
IREF	1	—		Maximum constant-current value setting. The OUTR0 to OUTB15 maximum constant output current are set to the desired values by connecting an external resistor between IREF and IREFGND. See Equation 1 for more detail. The external resistor should be placed close to the device.
IREFGND	56	—		Analog ground. Dedicated ground pin for the external IREF resistor. This pin should be connected to analog ground trace which is connected to power ground near the common GND point of board.
LAT	27	I		The LAT falling edge latches the data from the common shift register into the GS data latch or FC data latch.
OUTR0- R15	8, 11, 14, 17, 20, 23, 30, 33, 36, 39, 42, 45, 50, 53, 2, 5	O		Constant current output for RED LED. Multiple outputs can be tied together to increase the constant current capability. Different voltages can be applied to each output. These outputs are turned on-off by GCLK signal and the data in GS data memory.
OUTG0- G15	9, 12, 15, 18, 21, 24, 31, 34, 37, 40, 45, 48, 51, 54, 3, 6	O		Constant current output for GREEN LED. Multiple outputs can be tied together to increase the constant current capability. Different voltages can be applied to each output. These outputs are turned on-off by GCLK signal and the data in GS data memory.
OUTB0- B15	10, 13, 16, 19, 22, 25, 32, 35, 38, 41, 46, 49, 52, 55, 4, 7	O		Constant current output for BLUE LED. Multiple outputs can be tied together to increase the constant current capability. Different voltages can be applied to each output. These outputs are turned on-off by GCLK signal and the data in GS data memory.

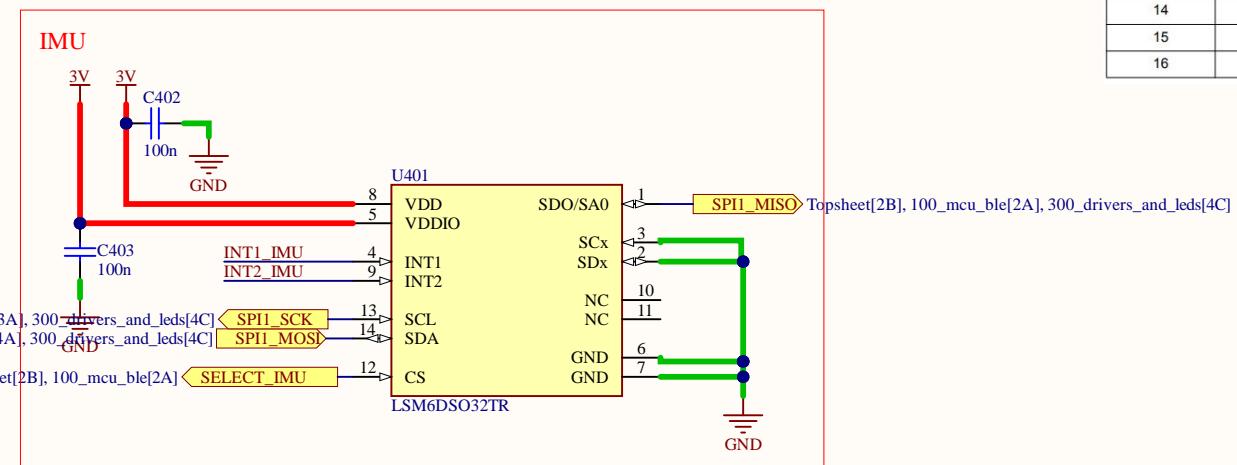
**ALTERNATIVE IMU - NO BOM**


Pin#	Name	Function
1	Vdd_IO	Power supply for I/O pins
2	NC	Not connected
3	NC	Not connected
4	SCL	I <sup>2</sup> C serial clock (SCL)
	SPC	SPI serial port clock (SPC)
5	GND	0 V supply
6	SDA	I <sup>2</sup> C serial data (SDA)
	SDI	SPI serial data input (SDI)
	SDO	3-wire interface serial data output (SDO)
7 <sup>(1)</sup>	SDO	SPI serial data output (SDO)
	SA0	I <sup>2</sup> C/SPI less significant bit of the device address (SA0)
8	CS	SPI enable I <sup>2</sup> C/SPI mode selection: 1: SPI idle mode / I <sup>2</sup> C communication enabled 0: SPI communication mode / I <sup>2</sup> C disabled
9	INT2	Inertial interrupt 2
10	RES	Connect to GND
11	INT1	Inertial interrupt 1
12	GND	0 V supply
13	ADC3	Analog-to-digital converter input 3
14	Vdd	Power supply
15	ADC2	Analog-to-digital converter input 2
16	ADC1	Analog-to-digital converter input 1

**IMU**

Topsheet[2B], 100\_mcu\_ble[3A], 300\_drivers\_and\_leds[4C]  
Topsheet[2B], 100\_mcu\_ble[4A], 300\_drivers\_and\_leds[4C]

Topsheet[2B], 100\_mcu\_ble[2A] **SELECT\_IMU**



A

A

### TEMPERATURE SENSOR

Topsheet[2C], 100\_mcu\_ble[2B], 700\_white\_driver\_and\_white\_leds[1A] **I2C3\_SENSORS\_SCL**  
Topsheet[2C], 100\_mcu\_ble[5A], 700\_white\_driver\_and\_white\_leds[1A] **I2C3\_SENSORS\_SDA**

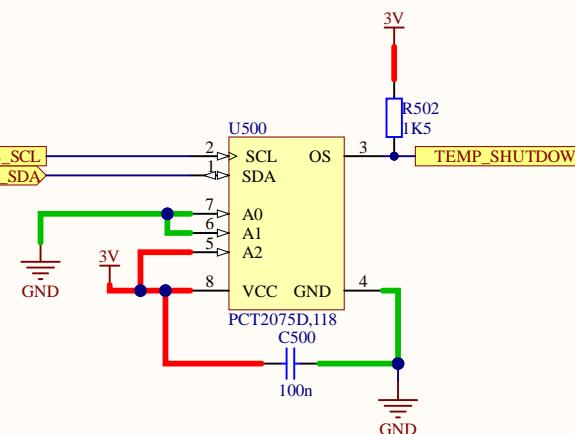


Table 3. Pin description for SO8, TSSOP8 and HWSO8

Symbol	Pin	Description
SDA	1	Digital I/O. I <sup>2</sup> C-bus serial bidirectional data line; open-drain.
SCL	2	Digital input. I <sup>2</sup> C-bus serial clock input.
OS	3	Overtemp Shutdown output; open-drain.
GND	4 <sup>[1]</sup>	Ground. To be connected to the system ground.
A2	5	Digital input. User-defined address bit 2.
A1	6	Digital input. User-defined address bit 1.
A0	7	Digital input. User-defined address bit 0.
Vcc	8	Power supply.

B

B

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D

D

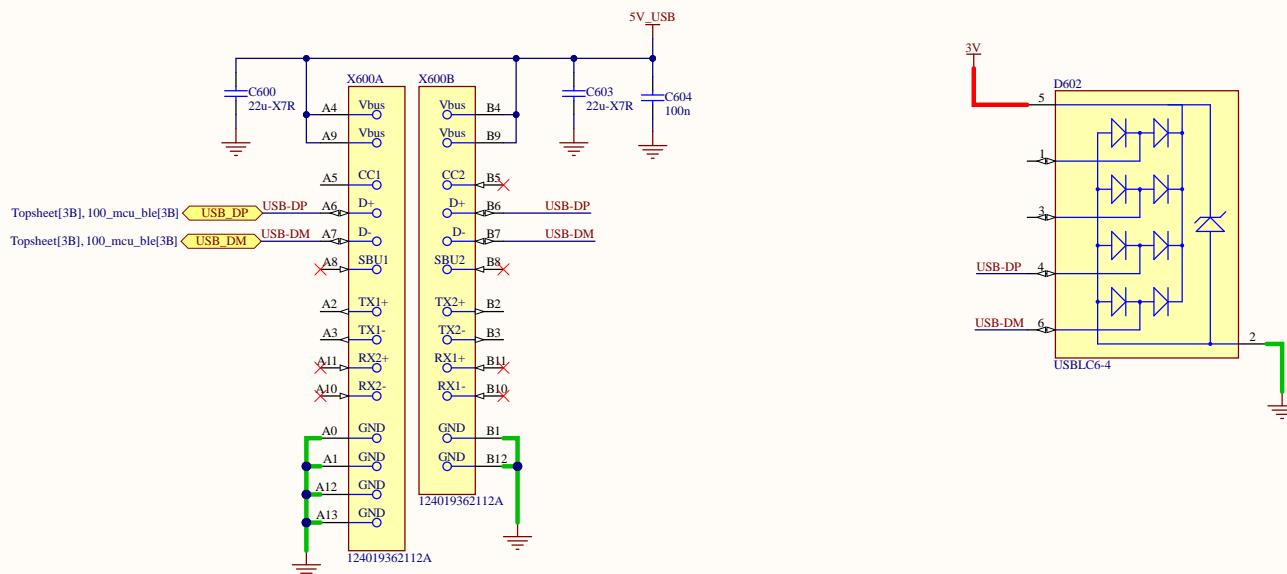
Title: **GLOW VI**Size: **A4**Engineer: **HV**

Revision:

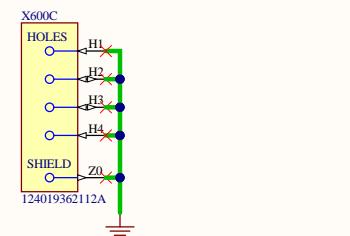
**Gemini Embedded Technology BV**  
**Meander 901**  
**6825 MH Arnhem**  
**The Netherlands**

Date: **14-12-2022** Time: **21:24:48**Sheet **6** of **9**File: **500\_sensors.SchDoc**

A



B



C

FID1000  
FIDUCIAL

FID1001  
FIDUCIAL

FID1002  
FIDUCIAL

FID1003  
FIDUCIAL

A

A

B

B

C

C

D

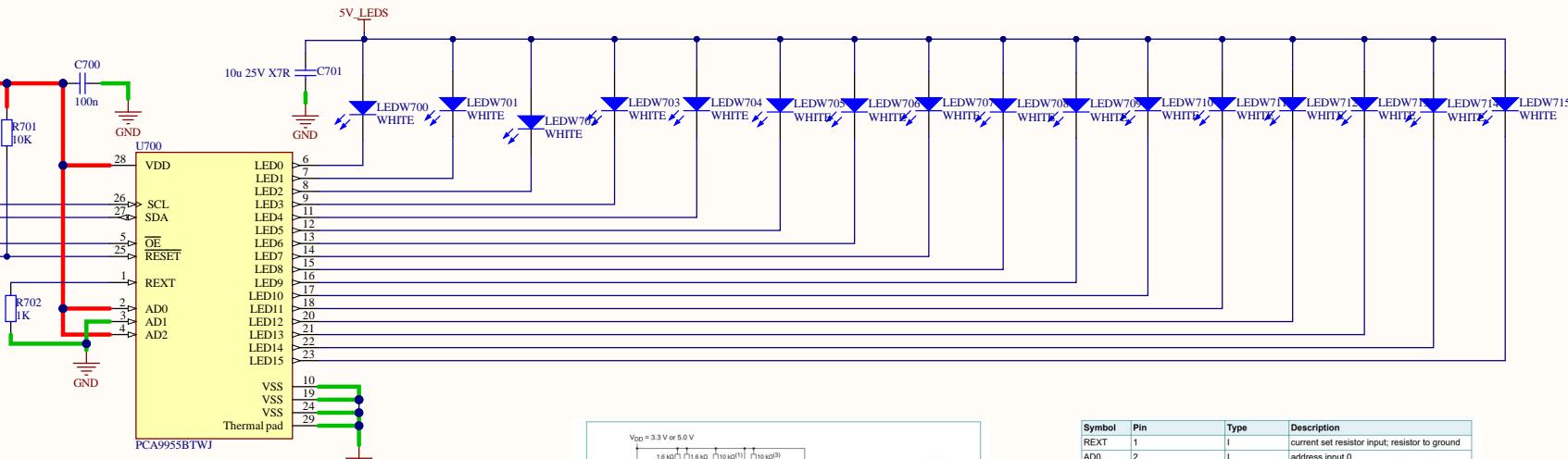
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Title: <b>GLOW VI</b>			Gemini Embedded Technology BV
Size: A4	Engineer: HV	Revision:	Meander 901
Date: 14-12-2022	Time: 21:24:48	Sheet 8 of 9	6825 MH Arnhem
File: 1000_mounting.SchDoc			The Netherlands

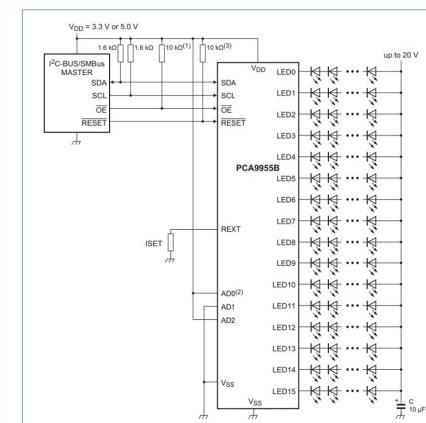
**GET**

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sheet[2C], 100\_mcu\_ble[2B], 500\_sensors[2A]  
sheet[2C], 100\_mcu\_ble[5A], 500\_sensors[2A]  
Topsheet[2C], 100\_mcu\_ble[3A] **I2C3\_SENSORS\_SCL**  
Topsheet[2C], 100\_mcu\_ble[4A] **I2C3\_SENSORS\_SDA**



B

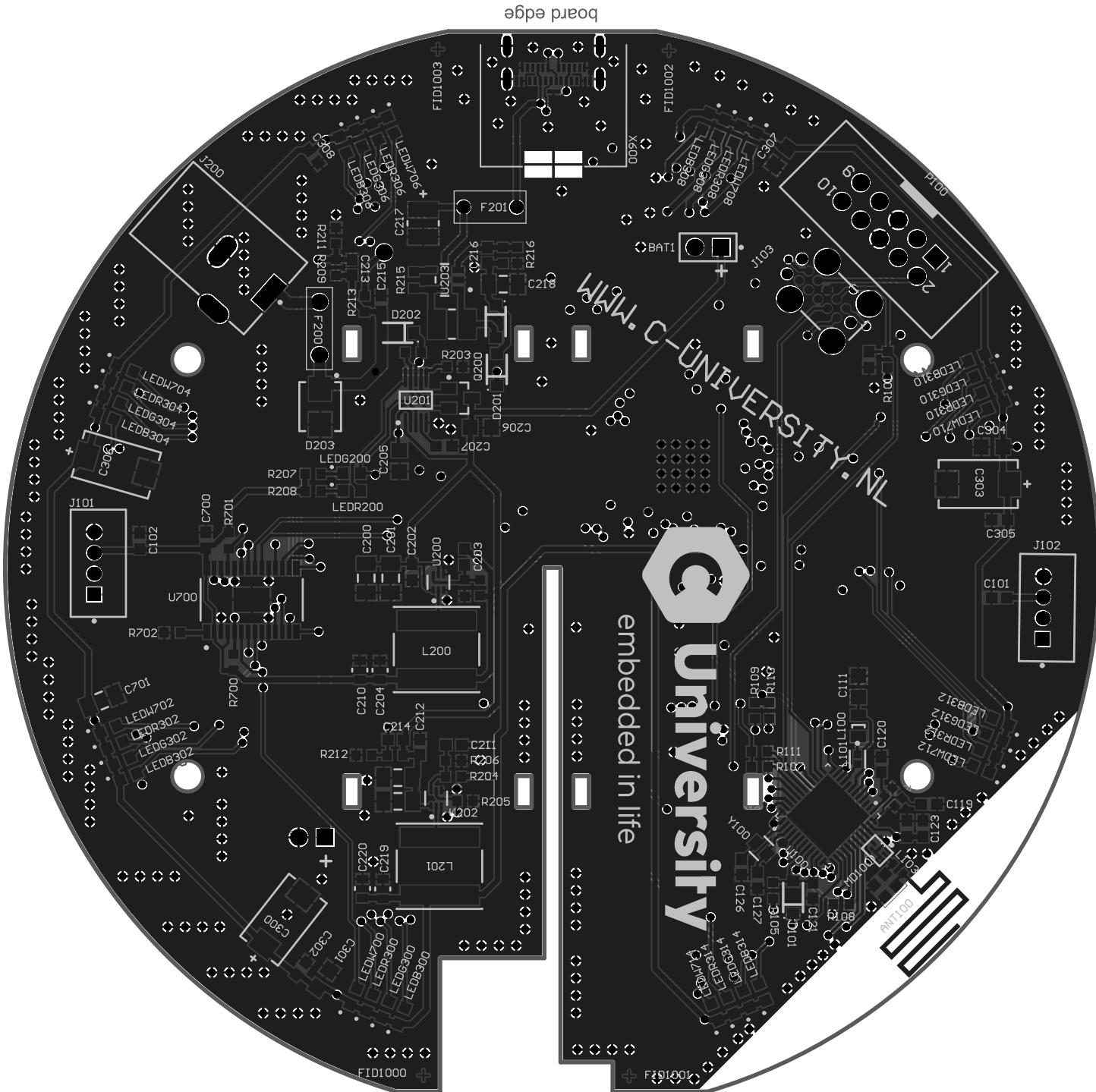


Symbol	Pin	Type	Description
REXT	1	I	current set resistor input; resistor to ground
AD0	2	I	address input 0
AD1	3	I	address input 1
AD2	4	I	address input 2
OE	5	I	active LOW output enable for LEDs
LED0	6	O	LED driver 0
LED1	7	O	LED driver 1
LED2	8	O	LED driver 2
LED3	9	O	LED driver 3
LED4	11	O	LED driver 4
LED5	12	O	LED driver 5
LED6	13	O	LED driver 6
LED7	14	O	LED driver 7
LED8	15	O	LED driver 8
LED9	16	O	LED driver 9
LED10	17	O	LED driver 10
LED11	18	O	LED driver 11
LED12	20	O	LED driver 12
LED13	21	O	LED driver 13
LED14	22	O	LED driver 14
LED15	23	O	LED driver 15
RESET	25	I	active LOW reset input with external 10 kΩ pull-up resistor
SCL	26	I/O	serial clock line
SDA	27	I/O	serial data line
V <sub>SS</sub>	10, 19, 24	ground	supply ground
V <sub>DD</sub>	28	power supply	supply voltage

Fig 25. Typical application

C

D



Comment	Description	Designator	Footprint	LibRef	Quantity
1p2	Generic Capacitor	C109, C110, C104, C108, C106, C104, C107, C108, C110, C113, C117, C118, C121, C122, C123, C124, C125, C209, C402, C403, C604, C700	CER0603N	CMP-00001-6	4
100n	Generic Capacitor	C119, C120, C121, C122, C123, C124, C125, C209, C402, C403, C604, C700	CER0603N	CMP-00001-6, CMP-00001-5, CMP-00001-8	21
4u7 XTR 18V	Generic Capacitor	C109, C111	CER0805N	CMP-00001-6	2
1u7 XTR	Generic Capacitor	C119, C120	CER0805N	CMP-00001-6	2
20p	Generic Capacitor	C114, C115	CER0603N	CMP-00001-6	2
10p	Generic Capacitor	C119, C120	CER0603N	CMP-00001-6	2
100p	Generic Capacitor	C123	CER0603N	CMP-00001-6	2
10u2 25V XTR	Generic Capacitor	C200, C201, C208, C209, C210, C211	CER1206N	CMP-00001-6	5
13p XTR	Generic Capacitor	C203, C211	CER0603N	CMP-00001-6	2
C2012XSR1V226M125 AC	Multilayer Ceramic Capacitors 2.2µF ±20% 35V XSR SMD 0805	C204, C210, C219, C220	FP-C2012-125-0.2,-MFG	CMP-2000-06038-3	4
680p	Generic Capacitor	C213	CER0603N	CMP-00001-6	1
1u7 XTR 400V	Generic Capacitor	C301, C304, C307	CER0805N	CMP-00001-6	3
2u2 XTR	Generic Capacitor	C400, C403	CER0603N	CMP-00001-5	2
PWME4000ER.115	TVS Diode 400V 1.5A DO-214-A	J100, J101	SOD123-N	PWME4000ER.115	2
SMB100A	TVS Diode 300VMM 162Vc SMB	D203	DO-214-AA	SMB100A	1
USBLC6-4	USBLC6-4	D602	FP-SOT23-4L-MFG	CMP-00052-1	1
PTC RESET 1.50A 120VAC/VDC RAD- 02RM005FF1E	PTC RESET 1.50A 120VAC/VDC RAD- 02RM005FF1E	F200	02RM005FF1E_vert 3d	02RM005FF1E	1
110990030	DOVTE 4.4PN VEST CONN PLACES	J101, J102	FP-110990030-MFG	CMP-139044-000001	2
PJ-102A	CONN PWR JACK 2x5.5MM SOLDER	J200	FP-PJ-102A-MFG	CMP-2000-06899-2	1
Inductor	PMI Series 10 µH ±20% Multilayer SMD Inductor, 0805 2.2MHz 6.000mH ±0.600mH Rds	L100	0805	MCD-01676	1
	Multilayer Pigtail Inductor 10µH ±5%	L101	FP-LOG15HH_02- IPC_A	CMP-06042-04113-1	1
WE-CB-SMT EMI Suppression Ferrite Beads -0.65A 1000Ohms, 0.65A	WE-CB-SMT EMI Suppression Ferrite Beads -0.65A 1000Ohms, 0.65A	L102	0603	74279266	1
BB2496C333U	Unshielded Wirewound Inductor 13.5A, 35mH, 65 to 150 degt; 0.023 (16AWG Metric), RoHS, Tape and Reel	L103	INDC1608K90X30L10 T20	CMP-2000-05913-1	1
NK8040T3R3ANGJ	Inductor Power Shielded Wirewound 3.3A@ 30% 1000Hz Ferrite 4.9A 0.01950hm DCR 3131 T/R	L200, L201	FP-NR8040-H_4,-2 MFG	CMP-00121-2	2
BLUE	KPT-16080BC-D	LED8300, LED8301, LED8302, LED8303, LED8304, LED8305, LED8306, LED8307, LED8308, LED8309, LED8310, LED8311, LED8312, LED8313, LED8314, LED8315	0603 - pol	LED	16
GREEN	KPT-16082GC	LEDG300, LEDG301, LEDG302, LEDG303, LEDG304, LEDG305, LEDG306, LEDG307, LEDG308, LEDG309, LEDG310, LEDG311, LEDG312, LEDG313, LEDG314, LEDG315	0603 - pol	LED	16
RED	KPT-16085EKJ3	LEDW700, LEDW701, LEDW702, LEDW703, LEDW704, LEDW705, LEDW706, LEDW707, LEDW708, LEDW709, LEDW710, LEDW711, LEDW712, LEDW713, LEDW714, LEDW715	0603 - pol	LED	16
WHITE	CLMJ3-WWV- CWBYA453	LEDW700, LEDW701, LEDW702, LEDW703, LEDW704, LEDW705, LEDW706, LEDW707, LEDW708, LEDW709, LEDW710, LEDW711, LEDW712, LEDW713, LEDW714, LEDW715	0603 - pol	LED	16
MLPF-WB55-01E3	RF FILTER LOW PASS 2.4GHz 65dB	M0100	FP-MLPF-WB55-01E3 MFG	CMP-12074-000002-1	1
61201021621	Male Box Header WR- Brid -100°C Vertical pitch 2.54 mm, 10 pins	P100	61201021621	CMP-1502-00007-1	1
100K	Generic Resistor	R101, R102, R103, R700, R701, R702	RES3603N	CMP-00001-2	2
10K	Generic Resistor	R103, R105, R106, R700, R703	RES3603N	CMP-00001-2	5
0.8	Generic Resistor	R107, R213	RES3603N	CMP-00001-2	3
1K5	Generic Resistor	R109, R110, R502	RES3603N	CMP-00001-2	3
2K2K	Generic Resistor	R202, R203	RES3603N	CMP-00001-2	2
3K1	Generic Resistor	R202, R205	RES3603N	CMP-00001-2	2
20K	Generic Resistor	R204, R211	RES3603N	CMP-00001-2	2
14.7	Generic Resistor	R209, R401	RES3603N	CMP-00001-2	2
1K	Generic Resistor	R202	RES3603N	CMP-00001-2	1
STM32WB55CCU6	STM32WB55CCU6	U100	QFN50P700X700460 49N	STM32WBxx_GFN48	1
PPS56524QDR	3.3V to 1.8V Input voltage, 5 A ECO mode, synchronous buck converter in SOT- 353 package -5.0V to +5.0V -50°C to +100°C	U200, U202	FP-DRL0006A-MFG	CMP-00085-2	2
PLC59578TQT	IC PWM LED DVR 480x540QIN	U300	FP-R7Q0056G-MFG	CMP-04914-000002-1	1
LSM6DSO32TR	6-axis Accelerometer and Gyroscope with I2C Interface	A401	FP-LGA-14L DM00249496-MFG	CMP-12117-00001-5	1
RTC2075D.118	DC-Bus Freq., 1 Degree Accuracy, Digital Temperature Sensor and Thermocouple Watchdog, 2.7 to 5.5 V Supply, 55 to 125 deg., 8-Pin SOIC-8, RoHS	U500	NOP-SOT96-1_N	CMP-1248-000027-1	1
PCA9558TJW	PC-LED 0.98mm 1mm DIM 281TSOP	U700	FP-SOT112-3-MFG	CMP-10140-000005-1	1
NO2016_32M	Crystal NDK 2.0x1.4mm 32 MHz	X100	OSC_NX2016SA- 24MHz-ESX00A C59020	NO2016_32M	1
124019362112A	Usb Type C, Receptacle, Top Mount	X600	124019362112A Footprint-1	CMP-00108-5	1