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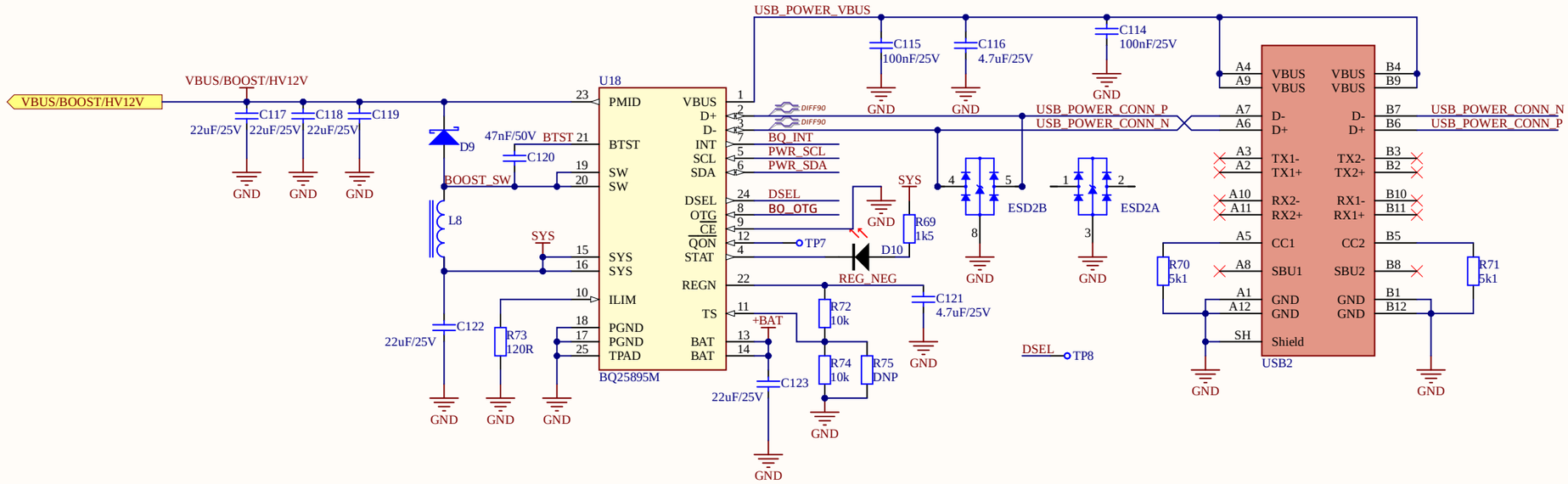

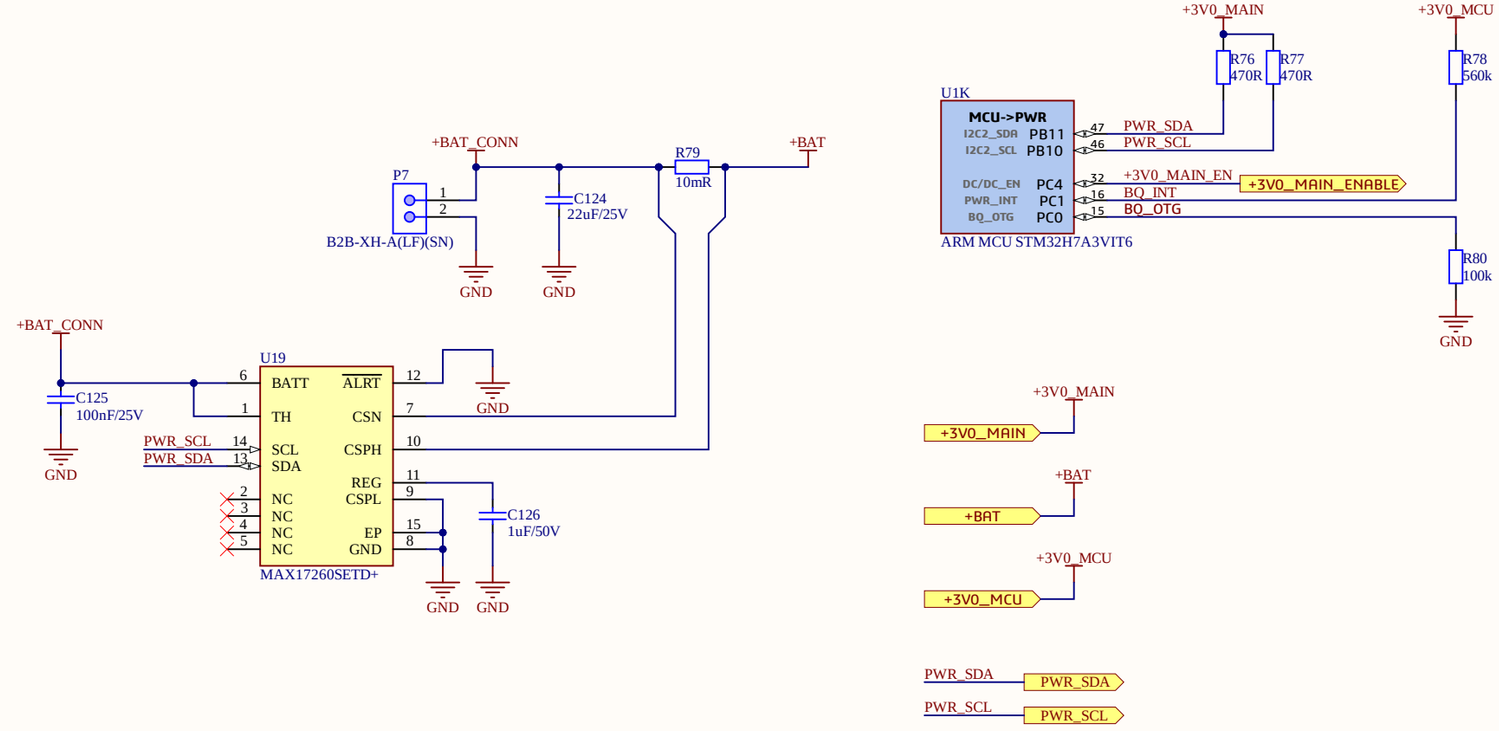

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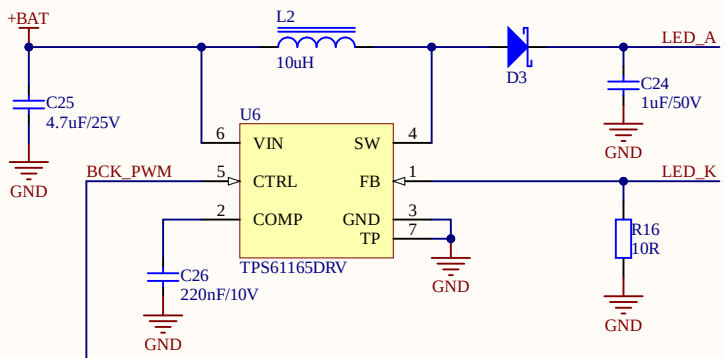
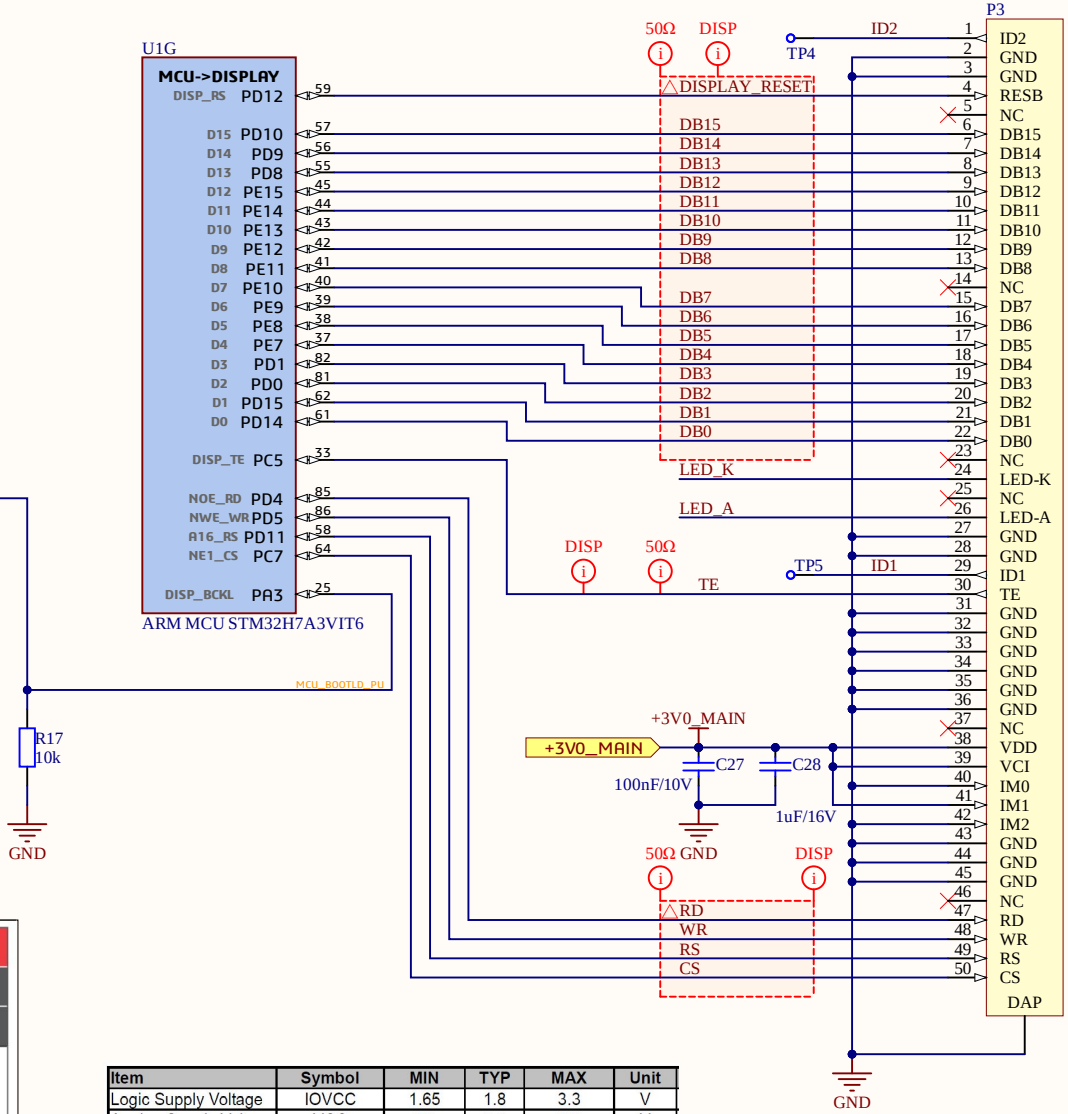


UPRAV FOOTPRINT !!!!!

mouser -zly a siroky ? Ale dostupnejsi
https://www.mouser.sk/ProductDetail/Molex/500913-0502?qs=0XEC3CxQBhAsOAUvFl7SlA==

Digikey- uzsi, dostupny len z USA footprint pripraveny
https://www.digikey.com/product-detail/en/molex/0513380574/WM3354CT-ND/2405645



LINE UP Combination				
Series Number	Receptacle		Plug	
	51338	500913	55909	501745
				
Circuit	10 to 100	24 to 100	10 to 100	12 to 80
Mated Height (mm)	1.50 to 2.00	1.80 to 2.30	1.50 to 1.80	2.00 to 2.30

Item	Symbol	MIN	TYP	MAX	Unit
Logic Supply Voltage	IOVCC	1.65	1.8	3.3	V
Analog Supply Voltage	VCC	2.5	3.0	3.3	V

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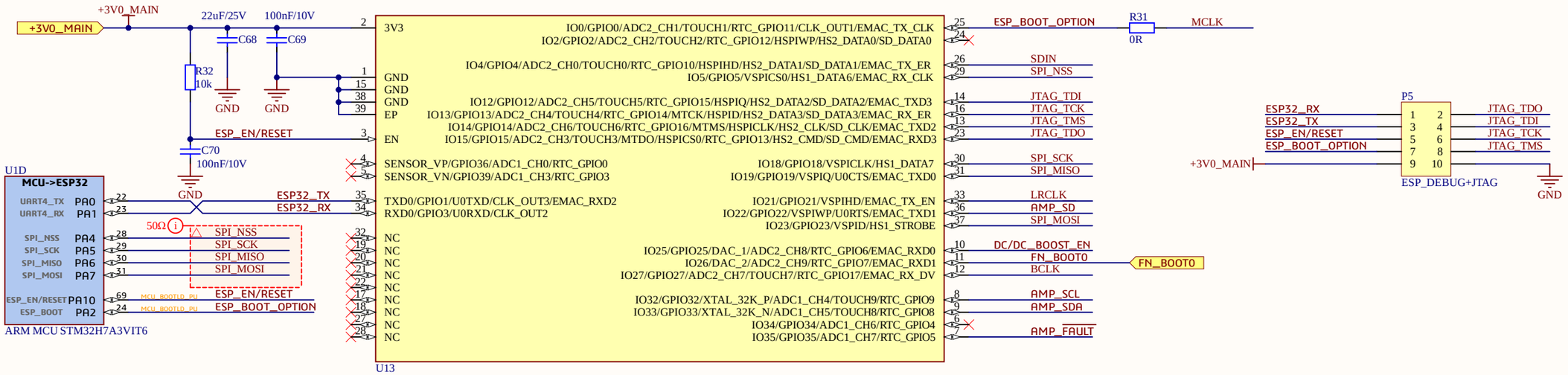

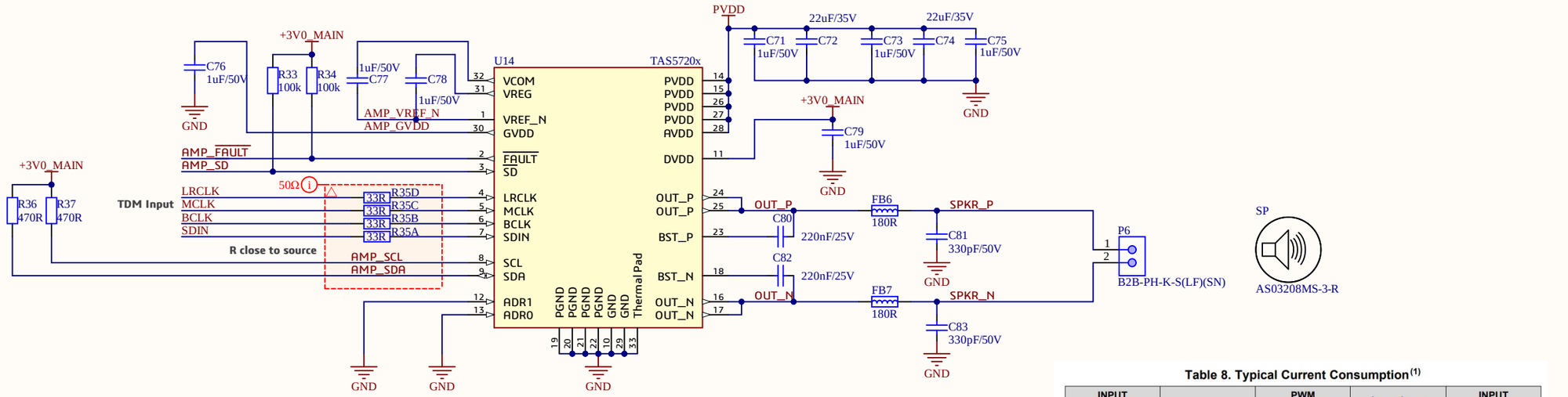

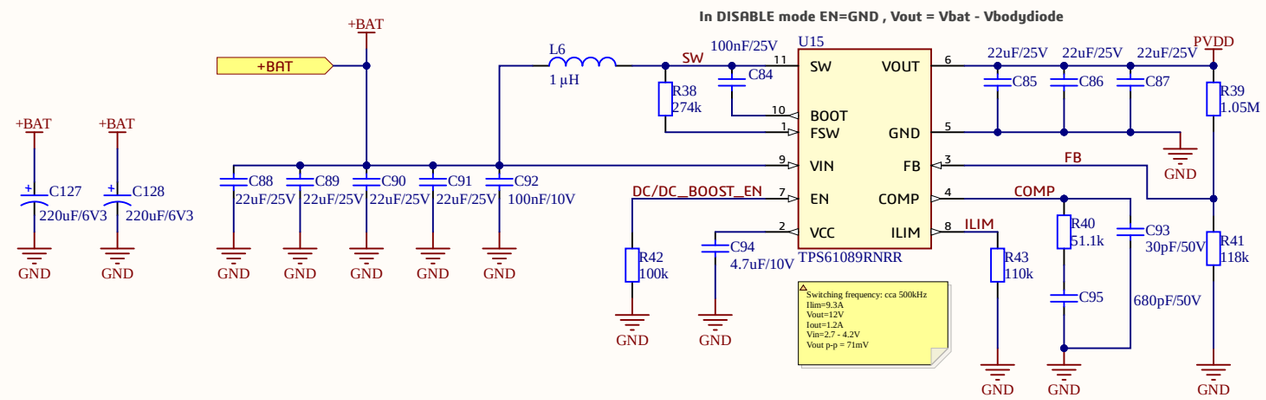

Table 8. Typical Current Consumption(1)

INPUT VOLTAGE V_{PVDD} (V)	MODE	PWM FREQUENCY f_{PWM} (kHz)	$I_{PVDD}+I_{AVDD}$ (mA)	INPUT CURRENT I_{DVDD} (mA)
7.2	Idle and Mute	384	14.5	4.1
		768	18.4	
	Sleep	—	9.0	1.32
	Shutdown	—	0.039	0.077
12	Idle and Mute	384	17.4	4.1
		768	21.3	
	Sleep	—	9.0	1.32
	Shutdown	—	0.045	0.077
15	Idle and Mute	384	19.4	4.1
		768	22.9	
	Sleep	—	9.1	1.32
	Shutdown	—	0.049	0.077
19	Idle and Mute	384	22.4	4.1
		768	24.8	
	Sleep	—	9.3	1.32
	Shutdown	—	0.054	0.077
24	Idle and Mute	384	26.2	4.1
		768	26.9	
	Sleep	—	9.4	1.32
	Shutdown	—	0.061	0.077

(1) T_A = 25°C, PVDD pin tied to AVDD pin, V_{DVDD} = 3.3 V, R_{LOAD} = 4Ω, f_{IN} = Idle, f_S = 48 kHz, Gain = 20.7 dBV

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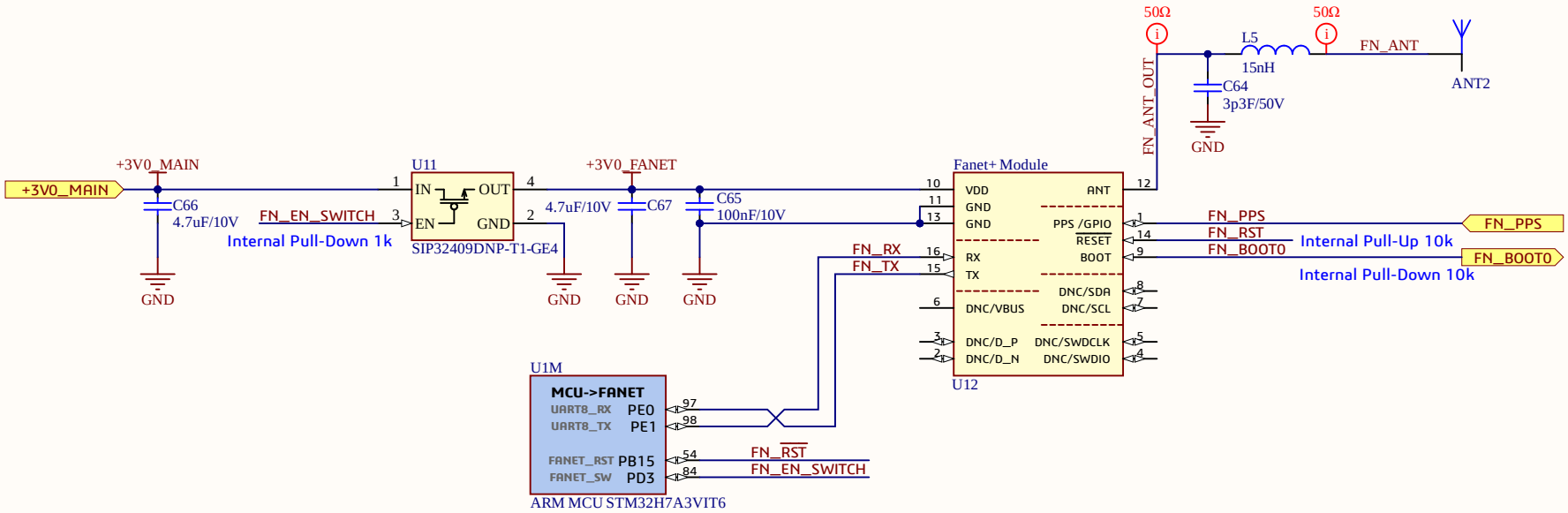

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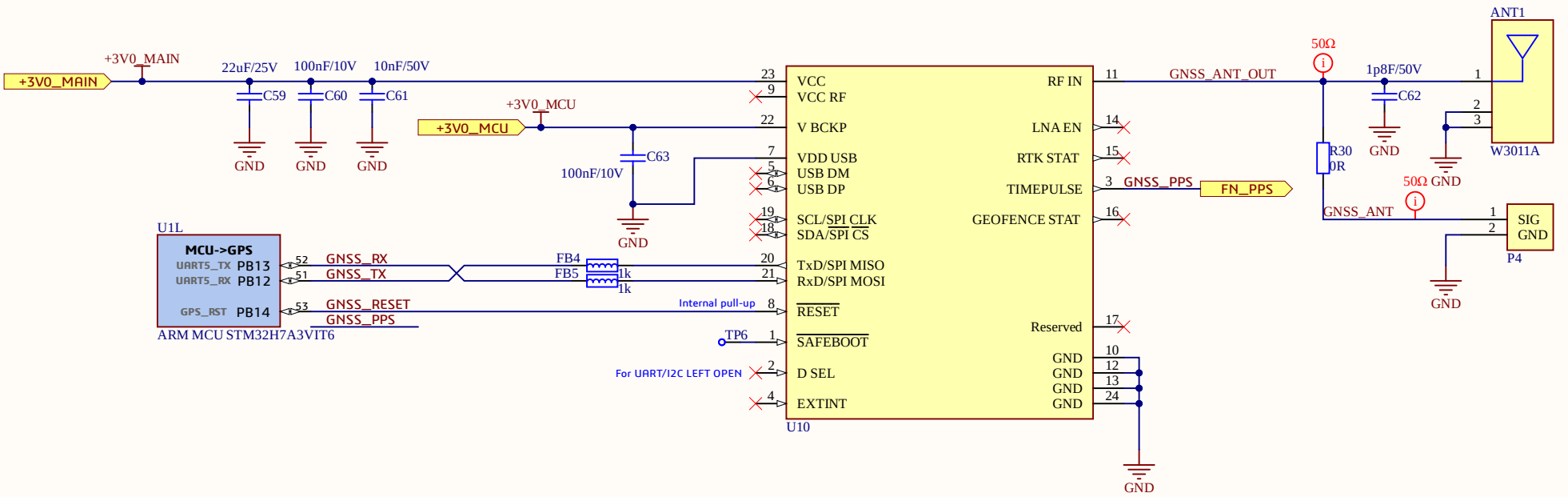

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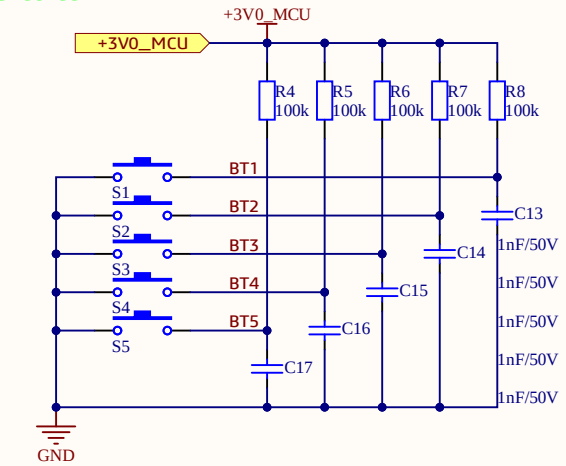
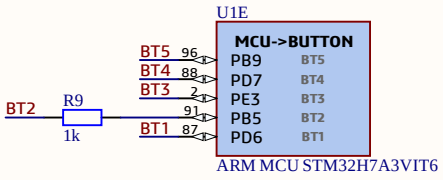
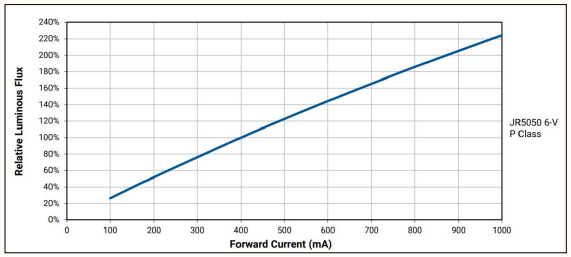
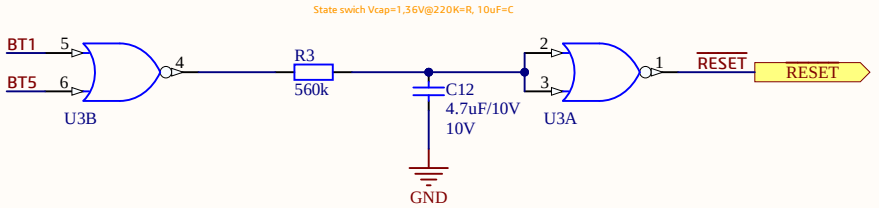
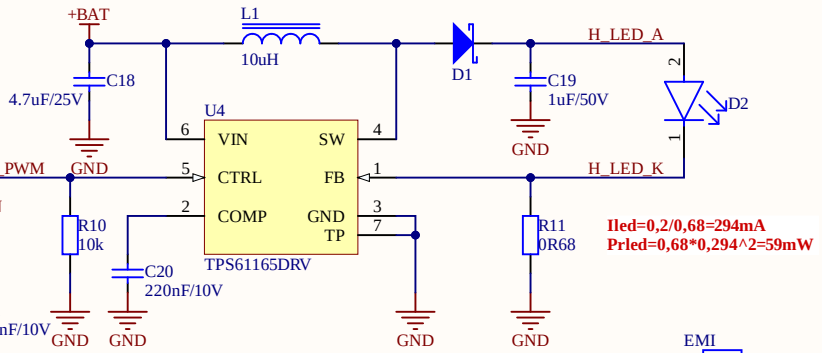
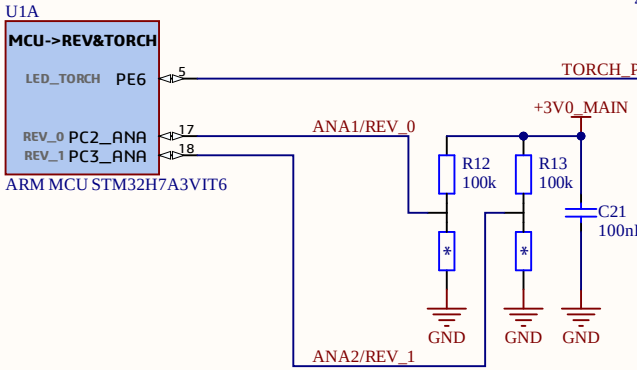












IC- tento co je na dispplay bck TPS61165
alebo tento TPS61169

IC od najlacnejsieho boost
https://www.ti.com/power-management/led-drivers/products.html?pqs=pocs&familyid=480#p1129=Boost;Boost%20Controller&p1299=1;1&sort=p1130;asc

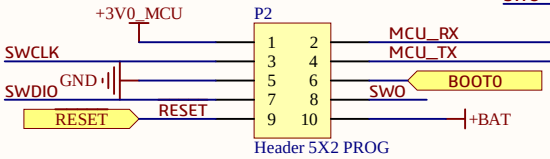
LEDs: na výber z viacerých stupňov teplôt

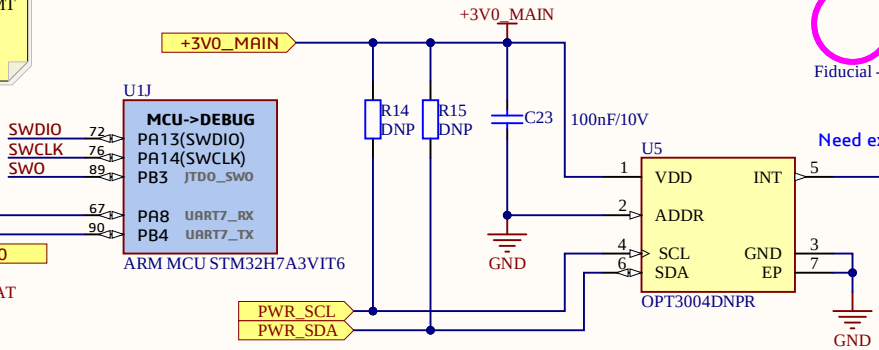
https://www.mouser.sk/Optoelectronics/LED-Lighting/LED-Emitters/High-Power-LEDs-White/_/N-8usfjZ1yzvvqx?P=1z0rxi7Z1z0yr4hZ1yxucpoZ1z0z7ptZ1z0wtwpZ1y7gjcgZ1z0wuhfZ1z0wt8jZ1z0wuf8Z1yzrhzp&Ns=Pricing%7c0

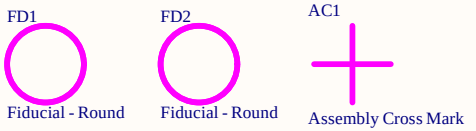
Skus nahradit cievku touto aj pre BCK aj pre Torch:

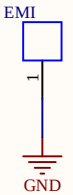
https://www.mouser.sk/ProductDetail/Murata-Electronics/DFE322512F-100M%3dP2?qs=AQlKX63v8RsOU770VFfKbQ%3D%3D

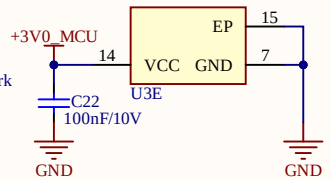
https://www.mouser.sk/ProductDetail/TDK/TFM322512ALMA100MTAA?qs=BJlw7L4Cy7%252BbfpLKVm%252BmtA%3D%3D











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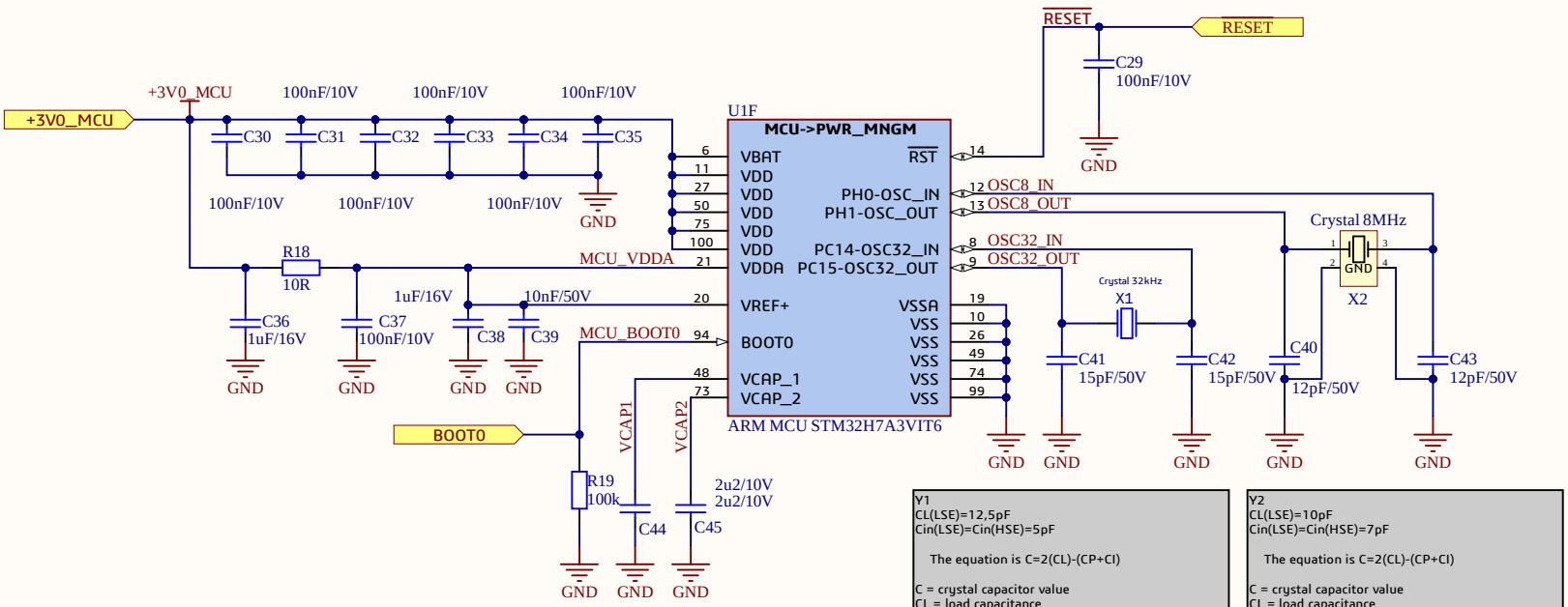

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Náhrada cievky s vyšším profilom:
5.5 x 5.3 x 4,8mm SRP5050FA-8R2M
5.5 x 5.3 x 4,8mm PA5175.822NLT
Náhrada cievky s nižším profilom:
652-SRP7030CA-8R2M

VBUS/BOOST/HV12V
C99 22uF/35V
C100 22uF/35V
C101 100nF/25V
R45 33k
R46 12k
NG_AGND
NG_VCC
R49 100k
NG_EN
NG_CDP/CLM_1
NG_CDP/CLM_2
C96 100nF/10V
C97 4.7uF/25V
U16
VCC
IN
IN
IN
EN/UVLO
CTRL1
CTRL2
DP_OUT
DM_OUT
RT/SYNC
LS_GD
IMON
ILIMIT
PAD
BOOT
SW
SW
SW
SW
FAULT
NC
NC
NC
EN_BUS
DP_IN
DM_IN
BUS
CSP
CSN/OUT
AGND
PGND
PGND
PGND
C103 100nF/25V
R44 2R
C98 1nF/50V
NG_SW
L7
USB_DATA_VBUS_COIL
C104 22uF/25V
C105 22uF/25V
C106 22uF/25V
NG_FAULT
R50 5k1
R51 10R
C110 220nF/25V
R52 300R
C102 100nF/25V
R47 15mR
C111 100nF/25V
NT2 Net-Tie
Heat Dissipation
S2
S1
G2
G1
D
LS_GD
Q1
C107 100nF/25V
220uF/6V3
C108
C109 22uF/35V
USB_DATA_VBUS
R48 1k5
FB8 110R
USB_DATA_VBUS_CONN
D4
U1C
MCU->USB
USB_DP PA12
USB_DM PA11
USB_VBUS PA9
MCU_BOOTLD_PU
USB_DATA_MCU_P
USB_DATA_MCU_N
USB_DATA_VBUS
ARM MCU STM32H7A3VIT6
R53 15k
R54 15k
R55 49k9
R56 12k
R57 5k9
USB_DATA_CONN_P
USB_DATA_CONN_N
ESD1B
ESD1A
USB1
VBUS
D-
D+
TX1-
TX1+
TX2-
TX2+
RX2-
RX2+
RX1-
RX1+
CC1
CC2
SBU1
SBU2
GND
Shield
SH

Maximum duty cycle allowed is: 96,64%

UVLO:
Vin(ON)=4,45V
Vin(OFF)=4,15V
Rtop=33k, Rbot=12k

U1N
USB Power Management
DFP_3.0A PE4
DFP_1.5A PE5
ALT_CH_EN PC13
NG_CDP/CLM_1 PA15
NG_CDP/CLM_2 PC6
USB_DATA_DFP_3.0A
USB_DATA_DFP_500mA
ALT_CH_EN
NG_CDP/CLM_1
NG_CDP/CLM_2
ARM MCU STM32H7A3VIT6
R58 100k

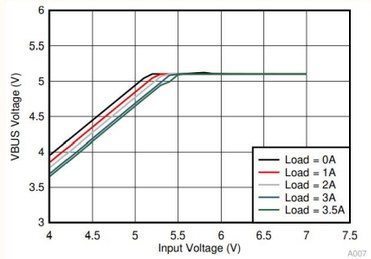

Figure 11-12. Dropout Characteristic

NG_VCC
R59 1k5
D5
NG_FAULT

Diode Forward voltage: 0,19V (0,2V)
GPIO Source voltage: 3V
500/900mA current source: 80uA
3A current source: 330uA
Parallel Rd resistor combination: 5K1||5K1=2,55k

(3-0,19)/(2x80uA)-2,55k=15k for 500/900mA
(3-0,19)/(2x330uA)-2,55k=1k69 for 3A

USB_DATA_DFP_3.0A
USB_DATA_DFP_500mA
R60 15k
R61 1k69
R62 15k
R63 1k69
D6 CC1
D7 CC2
R64 5k1
R65 5k1

USB_DATA_VBUS
C112 100nF/25V
R66 1k5
D8
ALT_CH_EN
R68 10k
U17
IN
OUT
ISET
STAT1
STAT2
CE
PG
EP
VSS
GND
GND
1K5 =500mA
R67 1k5
+BAT
C113 100nF/25V
BQ24080DRCR

TABLE 2: CC PIN VOLTAGE RANGES

CC Pin Voltage	
0.00V - 0.25V	No connection
0.25V - 0.70V	Legacy current (500mA for USB2.0, 900mA for USB3.0/3.1)
0.70V - 1.31V	1.5A capable
> 1.31V	3.0A capable

8.5 Electrical Characteristics

Limits apply over the junction temperature (T_J) range of –40°C to +150°C; V_{IN} = 13.5 V, f_{SW} =400 kHz, C_{VCC} = 2.2 µF, R_{SNS} = 15 mΩ, R_{IMON} = 13 kΩ, R_{ILIMIT}= 13 kΩ, R_{SET}= 300 Ω unless otherwise stated. Minimum and maximum limits are specified through test, design or statistical correlation. Typical values represent the most likely parametric norm at T_J = 25°C, and are provided for reference purposes only.

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
SUPPLY VOLTATE (IN PIN)						
V_{IN}	Operating input voltage range		4.5		36	V
I_Q	Operating quiescent current (non switching)	$V_{EN/UVLO}$ = V_{IN}, CTRL1 = CTRL2 = V_{CC}, V_{CSN} = 8V, INT pull down resistance = 5.1kΩ		700	990	µA
I_{Q-SB}	Standby quiescent current	$V_{EN/UVLO}$ = V_{IN}, CTRL1 = CTRL2 = V_{CC}, INT pull down resistance = 5.1kΩ			290	µA
I_{SD}	Shutdown quiescent current; measured at IN pin.	EN= 0		10	16	µA

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Altium

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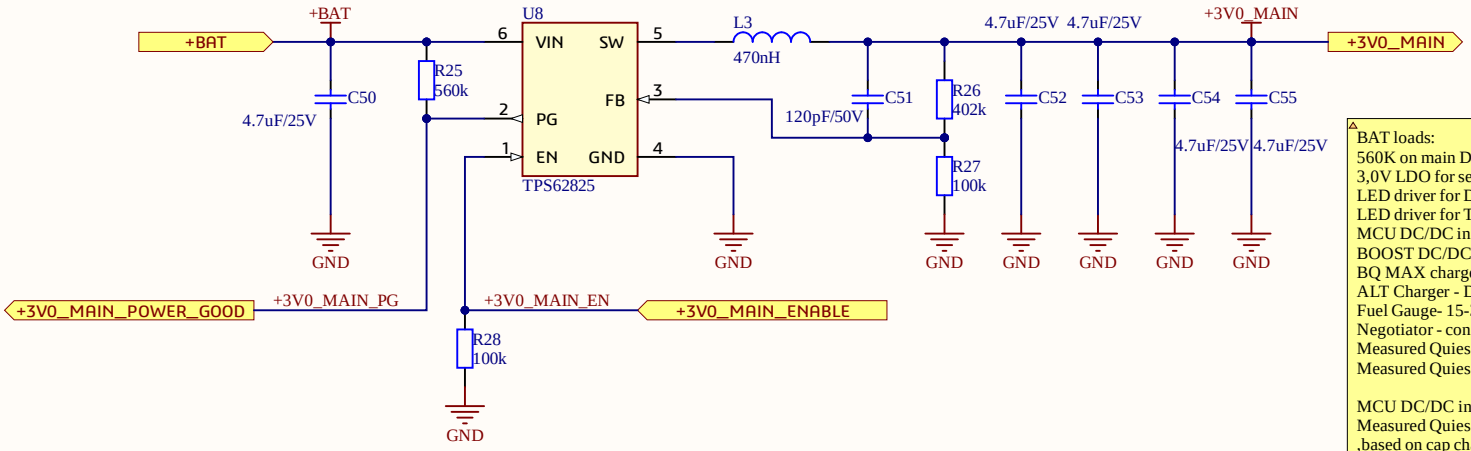
Output Capacitance Min: 22uF
Measurement:

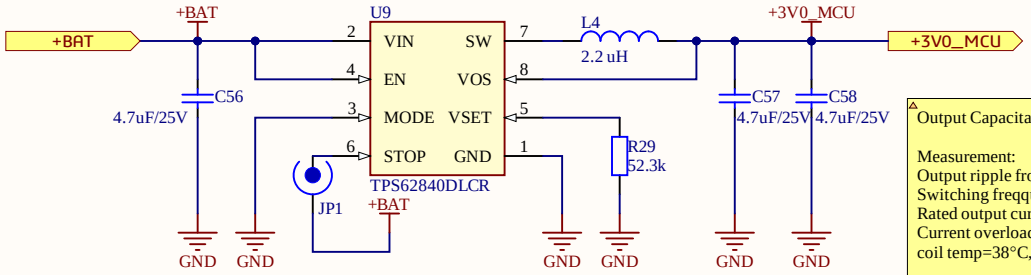
Output ripple from 8,2mV to 14mV
Switching freqquency: from 1,3MHz to 602kHz
Rated output current 2A
Current overload up to
2,5A@66kHz,ACripple=50mV, coil temp=29°C, IC temp=31°C



BAT loads:
560K on main DC/DC for PG output (7,1uA)
3,0V LDO for sensors OFF, disabled (1uA)
LED driver for Display Disabled (1uA)
LED driver for Torch DIsabled (1uA)
MCU DC/DC in stop mode (100uA-120uA)
BOOST DC/DC for AMP Disabled (1-3uA)
BQ MAX charger - (BATFET EN - 32-60uA) BATFET DIS 12-23uA !!!
ALT Charger - DIS state 2-5uA
Fuel Gauge- 15-30uA
Negotiator - connected trough BQ Max CH - 700-990uA
Measured Quiescent current without NG- 270uA
Measured Quiescent current witht NG - 1145uA

MCU DC/DC in RUN mode - without GNSS V_BCKP
Measured Quiescent current without NG- 680uA to peak 1366uA f= 1Hz ,based on cap charging
Average current =830uA

MCU DC/DC in RUN mode - GNSS V_BCKP from 3V0_MCU
Measured Quiescent current without NG- 693uA to peak 1347uA f= 1Hz
Average current =838uA
GNSS V_BCKP current consumption from DS =15uA



MODE - Direct to GND
-automatic PWM and power-save mode operation
STOP - Solder JP1
-temporarily stop the switching of the regulator.

Output Capacitance Min: 10uF

Measurement:
Output ripple from 4,08mV to 10,8mV
Switching freqquency: from 1,71MHz to 855kHz
Rated output current 750mA
Current overload up to 1A@205kHz,ACripple=24mV, coil temp=38°C, IC temp=43°C

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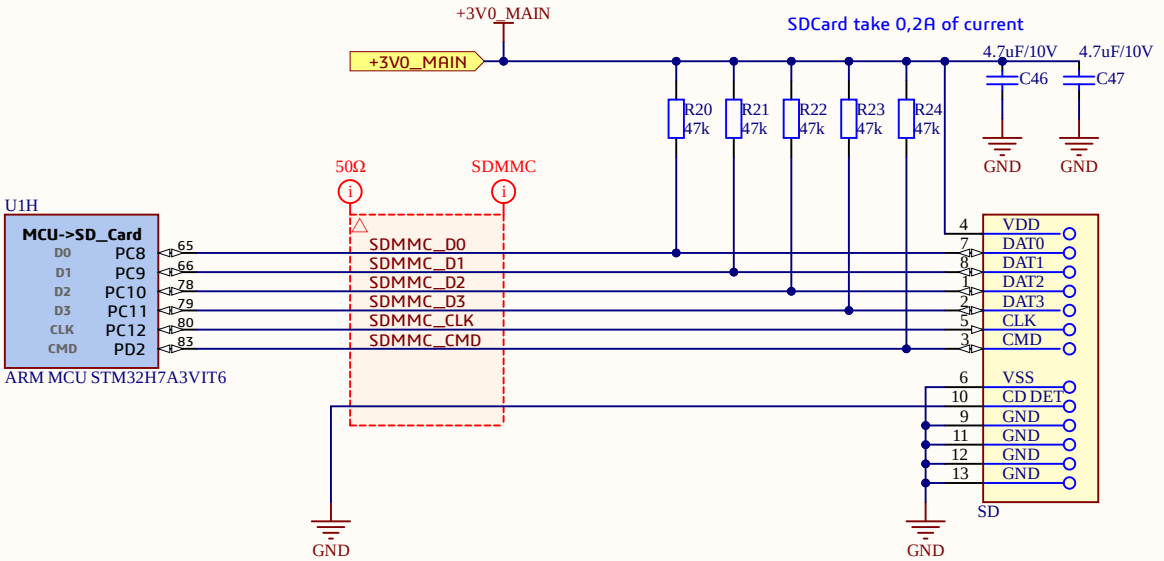

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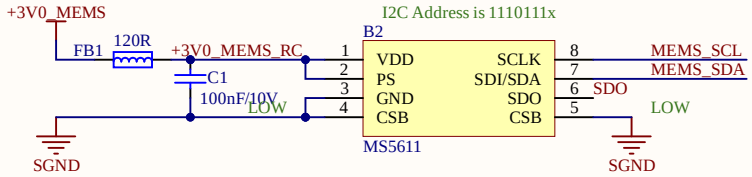
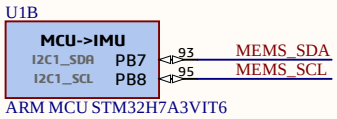
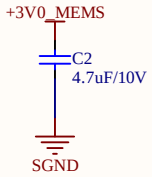


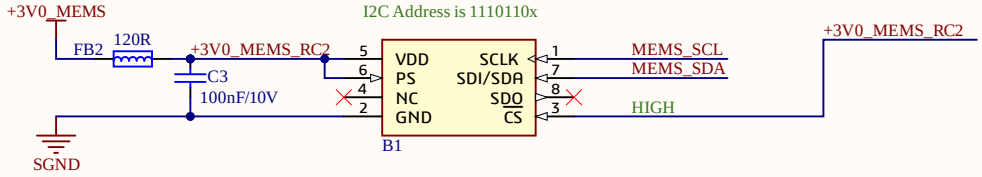




Cable
WR-FFC Flat Flexible Cable FFC / FPC Jumper Cables WR-FFC 0.5mm Type 1 06P 100mm length 687606100002

Connector
1. FFC & FPC Connectors WR-FPC SMT Horiz 0.50mm Dual.Cont. 687106182122
2. FFC & FPC Connectors WR-FPC 0.5mm SMT ZIF 6Pin Hrztl Top Cont 68710614022

Alternativa od Molex:
Conn:5034800640
Flex:150200053



XM I2C Address is 0011110x
G I2C Address is 1101011x

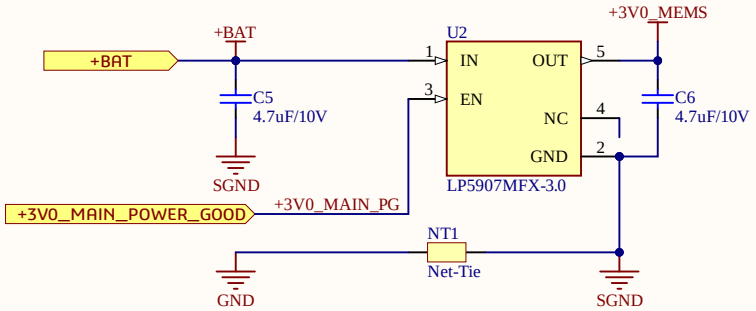
Table 15. Linear acceleration and magnetic sensor SAD+read/write patterns

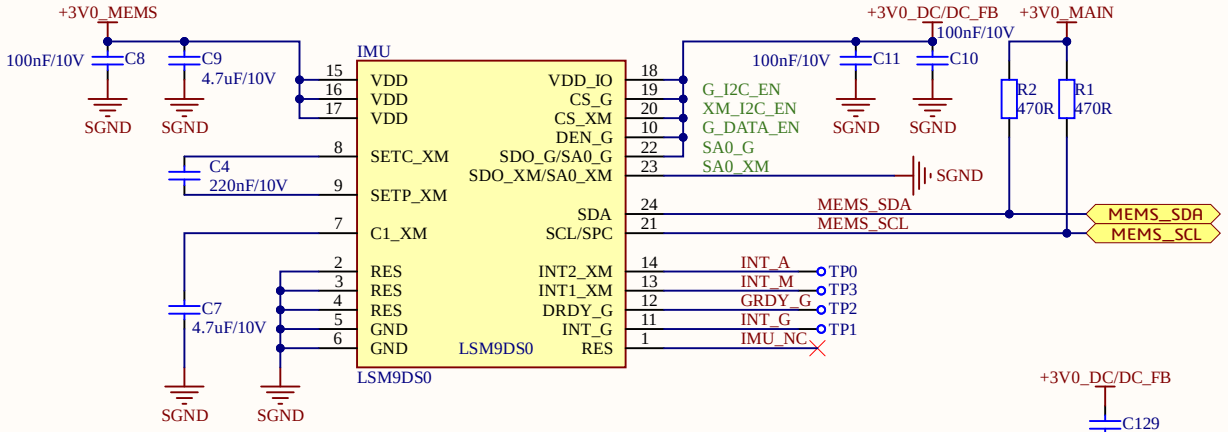
Command	SDO_XM/SA0_XM pin	SAD[6:2]	SAD[1:0]	R/W	SAD+R/W
Read	0	00111	10	1	00111101 (3D)
Write	0	00111	10	0	00111100 (3C)
Read	1	00111	01	1	00111011 (3B)
Write	1	00111	01	0	00111010 (3A)

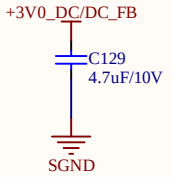
Angular rate sensor address:

Table 16. Angular rate SAD+read/write patterns

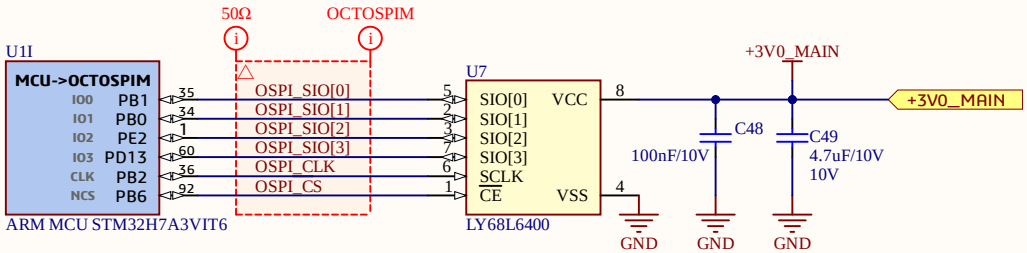
Command	SAD[6:1]	SAD[0] = SDO_G/SA0_G pin	R/W	SAD+R/W
Read	110101	0	1	11010101 (D5h)
Write	110101	0	0	11010100 (D4h)
Read	110101	1	1	11010111 (D7h)
Write	110101	1	0	11010110 (D6h)







Checked



Lyontek Inc. LY68L6400SLIT v púuzdre sop8 150mil _ WSON nekupis....
https://lcsc.com/product-detail/RAM_Lyontek-Inc-LY68L6400SLIT_C261881.html

Alternatíva
Vilsion Tech VTI7064MSME
https://lcsc.com/product-detail/RAM_VTI7064MSME_C139966.html

Title		
Size: A4	Number	Revision
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Designator	Comment	Quantity	Supplier 1	Supplier Part Number 1	Manufacturer	Description	Footprint
ANT1	W3011A	1	Mouser	673-W3011A	Pulse	ANTENNA GPS CERAMIC 1.575GHZ	W3011A
ANT2	W3329	1	Mouser	673-W3329	Pulse	Chip Antenna Single Band 50Ohm 868MHz 0.17dBi SMD T/R	W3329 PCB
B2	M55611	1	Farnell	2362662	TE Connectivity	M5561101BA03-50	M55611
C1, C3, C8, C10, C11, C21, C22, C23, C27, C29, C30, C31, C32, C33, C34, C35, C37, C48, C60, C63, C65, C69, C70, C92, C96	100nF/10V	25				CAPACITOR	CAPACITOR_0402_(1005)
C2, C5, C6, C7, C9, C12, C46, C47, C49, C66, C67, C94, C129	4.7uF/10V	13				CAPACITOR	CAPACITOR_0603_(1608)
C4, C20, C26	220nF/10V	3				CAPACITOR	CAPACITOR_0603_(1608)
C13, C14, C15, C16, C17, C98	1nF/50V	6				CAPACITOR	CAPACITOR_0603_(1608)
C18, C25, C50, C52, C53, C54, C55, C56, C57, C58, C97, C116, C121	4.7uF/25V	13	Farnell	2426959	Murata	CAPACITOR	CAPACITOR_0603_(1608)
C19, C24, C71, C73, C75, C76, C77, C78, C79, C126	1uF/50V	10	Farnell	2112858	Taiyo Yuden	CAPACITOR	CAPACITOR_0603_(1608)
C28, C36, C38	1uF/16V	3				CAPACITOR	CAPACITOR_0603_(1608)
C39, C61	10nF/50V	2				CAPACITOR	CAPACITOR_0402_(1005)
C40, C43	12pF/50V	2				CAPACITOR	CAPACITOR_0402_(1005)
C41, C42	15pF/50V	2				CAPACITOR	CAPACITOR_0402_(1005)
C44, C45	2u2/10V	2				CAPACITOR	CAPACITOR_0603_(1608)
C51	120pF/50V	1				CAPACITOR	CAPACITOR_0603_(1608)
C59, C68, C85, C86, C87, C88, C89, C90, C91, C104, C105, C106, C117, C118, C119, C122, C123, C124	22uF/25V	18	Farnell	1907510	Murata	CAPACITOR	CAPACITOR_0805_(2012)
C62	1p8F/50V	1				CAPACITOR	CAPACITOR_0402_(1005)
C64	3p3F/50V	1				CAPACITOR	CAPACITOR_0402_(1005)
C72, C74, C99, C100, C109	22uF/35V	5	Mouser	810-C3216JB1V226M16C	TDK	CAPACITOR	CAPACITOR_1206_(3216)
C80, C82, C110	220nF/25V	3				CAPACITOR	CAPACITOR_0603_(1608)
C81, C83	330pF/50V	2	Farnell	2332616	Kyocera AVX	CAPACITOR	CAPACITOR_0603_(1608)
C84, C101, C102, C103, C107, C111, C112, C113, C114, C115, C125	100nF/25V	11				CAPACITOR	CAPACITOR_0402_(1005)
C93	30pF/50V	1				CAPACITOR	CAPACITOR_0603_(1608)
C95	680pF/50V	1	Farnell	1414648	KEMET	CAPACITOR	CAPACITOR_0603_(1608)
C108, C127, C128	220uF/6V3	3	Farnell	2535302	KEMET	Tantalum Polymer Capacitor	Cap_tantalum Case B 3528-21
C120	47nF/50V	1				CAPACITOR	CAPACITOR_0603_(1608)
D1, D3, D6, D7, D9	NSR10F30NXT5G	5	Mouser	863-NSR10F30NXT5G	ON Semiconductor	DIODE SCHOTTKY 30V 1A 2DSN	D_DSN2_(0502)
D2	JR5050AWT-P-H30EB0000-N0000001	1	Mouser	941-JR5050AWTPH30EBN	Cree	J Series 5050 6-V LED Warm White 3000K 1A 2-Pin Surface Mount T/R	JR5050AWT
D4	Transient Voltage Suppressor	1	Farnell	2889195	Vishay Semiconductors	MSP5.0A-M3/89A - TVS Diode, TRANSZORB eSMP Series, Unidirectional, 5 V, 13.4 V, MicroSMP, 2 Pins	MicroSMP DO-219AD
D5, D8, D10	LED RED	3	Farnell	2099236	Kingbright	KPT-2012EC - LED, Low Power, Red, SMD, 0805, 2 mA, 2 V, 617 nm	LED_0805_RED
EMI	3029060060050	1	Farnell	3428258	Wurth Elektronik	Smt Solderable Gasket, 6Mm X 6Mm X 5Mm Rohs Compliant: Yes	EMI Gasket
ESD1, ESD2	ESD Suppressor	2	Mouser	595-TPD4E05U06DQAR	Texas Instruments	TEXAS INSTRUMENTS - ESD Protection Device, 14 V, USON, 10 Pins, 5.5 V, TPD4E Series	DQA10
FB1, FB2, FB3	120R	3	Farnell	2443229	Murata	MURATA - BLM15PD121SN1D - Ferrite Bead, 0402 [1005 Metric], 120 ohm, 1.3 A, BLM15PD Series, 0.09 ohm, ± 25%	FERRITE BEAD_0402_(1005)
FB4, FB5	1k	2	Farnell	1515785	Murata	FERRITE_BEAD	FERRITE BEAD_0402_(1005)
FB6, FB7	180R	2	Mouser	81-NFZ2MSM181SN10L	Murata	FERRITE_BEAD	FERRITE BEAD_0806 (2016 metric)
FB8	110R	1	Mouser	710-74279221111	Wurth Electronics	WURTH ELEKTRONIK - 74279221111 - Ferrite Bead, 1206 [3216 Metric], 110 ohm, 5.4 A, WE-MPSB Series, 0.015 ohm, ± 25%	FERRITE BEAD_1206_(3216)
IMU	LSM9DS0	1	Farnell	2433079		LSM9DS0	STM-LGA-24
L1, L2	10uH	2	Mouser	81-DFE322512F-100MP2	Murata	Ind Chip Wirewound 10uH 20% 1210 Emboss T/R	INDUCTOR_1210_(3225)
L3	470nH	1	Mouser	994-XFL4015-471MEB	Coilcraft	COILCRAFT XFL4015-471MEB Surface Mount Power Inductor, XFL4015 Series, 470 nH, 20%, Shielded, 8360 ohm, 11.2 A	Power Inductor_XFL4015 (SMD) COILCRAFT
L4	2.2 uH	1	Mouser	81-DFE201612E-2R2MP2	Murata	Inductor Power Shielded Wirewound 2.2uH 20% 1MHz Metal 1.8A 0.116Ohm DCR 0806 T/R	L_0806
L5	15nH	1				INDUCTOR_High_Frequency	INDUCTOR_0402_(1005)
L6	1 µH	1	Farnell	2434094	Bourns	INDUCTOR_High_Frequency	Power Inductor_073x066 (SMD)
L7	SRP5050FA-8R2M	1	Mouser	652-SRP5050FA-8R2M	Bourns	Ind, 5.5X5.3X4.8Mm, 8.2Uh 20%, 6.1A, shd, smd / Tape & Reel - 13" Reel	Power Inductor_SRP5050FA(SMD) Bourns
L8	SRP7030CA-2R2M	1	Mouser	652-SRP7030CA-2R2M	Bourns	Fixed Inductors Ind,7.8x7.6x2.9mm,2.2uH 20%,13A,Shd,SMD	Power Inductor_SRP7030CA(SMD) Bourns - Edited
P3	Connector	1	Mouser	538-500913-0502	Molex	RECEPTACLE HOUSING, 0.40MM, 50WAY	MOLEX 500913-0502
P6	B2B-PH-K-S(LF)(SN)	1	Farnell	9491856	JST	Connector Header, PH Series, 2 Position, 2.00mm, Through Hole, Press-Fit, Solder, Natural	JST-B2B-PH-K-S
P7	B2B-XH-A(LF)(SN)	1	Farnell	1516276	JST	Conn Shrouded Header (4 Sides) HDR 2 POS 2.5mm Solder ST Thru-Hole Box	JST-B2B-XH-A_V
Q1	ECH8693R-TL-W	1	Farnell	2774832	ON Semiconductor	Dual N-Channel Power MOSFET, 24V, 14A, 7mΩ	SOT-28FL / ECH8
R1, R2, R36, R37, R76, R77	470R	6				RESISTOR	RESISTOR_0603_(1608)
R3, R25, R78	560k	3				RESISTOR	RESISTOR_0603_(1608)
R4, R5, R6, R7, R8, R19, R27, R28, R33, R34, R42, R49, R58, R80	100k	14				RESISTOR	RESISTOR_0603_(1608)
R9	1k	1				RESISTOR	RESISTOR_0603_(1608)
R10, R17, R32, R68, R72, R74	10k	6				RESISTOR	RESISTOR_0603_(1608)
R11	0R68	1				RESISTOR	RESISTOR_0603_(1608)
R16, R18, R51	10R	3				RESISTOR	RESISTOR_0603_(1608)
R20, R21, R22, R23, R24	47k	5				RESISTOR	RESISTOR_0603_(1608)
R26	402k	1				RESISTOR	RESISTOR_0603_(1608)
R29	52.3k	1				RESISTOR	RESISTOR_0603_(1608)
R31	0R	1				RESISTOR	RESISTOR_0603_(1608)
R35	33R	1	Farnell	2060153	Panasonic	EXBV8V330JV - Fixed Network Resistor, 33 ohm, EXBV Seies, 4 Elements, Isolated, 0603 [1608 Metric], 8 Pins	RESISTOR_NETWORK_4x_0603_(1608)
R38	274k	1				RESISTOR	RESISTOR_0603_(1608)
R39	1.05M	1				RESISTOR	RESISTOR_0603_(1608)
R40	51.1k	1				RESISTOR	RESISTOR_0603_(1608)
R41	118k	1				RESISTOR	RESISTOR_0603_(1608)
R43	110k	1				RESISTOR	RESISTOR_0603_(1608)
R44	2R	1				RESISTOR	RESISTOR_0603_(1608)
R45	33k	1				RESISTOR	RESISTOR_0603_(1608)
R46, R56	12k	2				RESISTOR	RESISTOR_0603_(1608)
R47	15mR	1	Farnell	2079441	TT Welwyn	TT ELECTRONICS / WELWYN - LRMAM1206-R015FT5 STROMMESSWIDERSTAND, 0R015, 1%, 1W, 1206	RESISTOR_1206_(3216)
R48, R59, R66, R67, R69	1k5	5				RESISTOR	RESISTOR_0603_(1608)
R50, R64, R65, R70, R71	5k1	5				RESISTOR	RESISTOR_0603_(1608)
R52	300R	1				RESISTOR	RESISTOR_0603_(1608)
R53, R54	15k	2				RESISTOR	RESISTOR_0402_(1005)
R55	49k9	1				RESISTOR	RESISTOR_0603_(1608)
R57	5k9	1				RESISTOR	RESISTOR_0603_(1608)
R60, R62	15k	2				RESISTOR	RESISTOR_0603_(1608)
R61, R63	1k69	2				RESISTOR	RESISTOR_0603_(1608)
R73	120R	1				RESISTOR	RESISTOR_0603_(1608)
R79	10mR	1	Farnell	2079442	TT Welwyn	RESISTOR	RESISTOR_1206_(3216)
S1, S2, S3, S4, S5	DTSM-32S-B - Tactile Switch	5	Farnell	9471898	Multicomp	DTSM-32S-B - Tactile Switch, DTSM-3 Series, Top Actuated, Surface Mount, Rectangular Button, 320 gf	DTSM-32S-B
SD	DM3CS-SF	1	Farnell	1764376	Hirose	CONN MICRO SD CARD HINGED TYPE	DM3CS-SF
SP	AS03208MS-3-R	1	Mouser	665-AS03208MS-3-R	Projects Unlimited	SPEAKER 8OHM 3W TOP PORT 85DB	Speaker AS03208MS-3-R
U1	ARM MCU STM32H7A3VIT6	1	Mouser	511-STM32H7A3VIT6	STMicroelectronics	STM32H7A3VIT6 - 32-bit Arm® Cortex®-M7 280 MHz MCUs, up to 2-Mbyte Flash memory, 1.4Mbyte RAM, 46 com. and analog interfaces	STM-LQFP100_N - Edited
U2	LP5907MFX-3.0	1			Texas Instruments	IC REG LINEAR 3V 250MA SOT23-5	SOT23-5
U3	SN74LVC02ARGYR	1	Mouser	595-SN74LVC02ARGYR	Texas Instruments	Quadruple 2-Input Positive-NOR Gate, RGY0014A, LARGE T&R	VQFN-14
U4, U6	TPS61165DRV	2	Mouser	595-TPS61165DRVR	Texas Instruments	TEXAS INSTRUMENTS TPS61165DRVR WHITE LED DRIVER, BOOST, SON-6, FULL REEL	WSON-6
U7	LY68L6400	1			Lyontek Inc.	64M Bits Serial Pseudo-SRAM with SPI and QPI	SOIC8 (SOP)
U8	TPS62825	1	Mouser	595-TPS62825DMQR	Texas Instruments	2.4V-5.5V input, 2A step-down converter with 1% Accuracy in 1.5mm x 1.5mm QFN 6-VSON-HR -40 to 125	6VSON-HR
U9	TPS62840DLCR	1	Mouser	595-TPS62840DLCR	Texas Instruments	60-nA IQ, 1.8-V to 6.5-VIN, high-efficiency 750-mA step-down converter 8-VSON-HR -40 to 125	8VSON-HR
U10	NEO-M8Q	1	Digi-Key	672-NEO-M8Q-0CT-ND	u-blox	IC RECEIVER GPS/GNSS 24LCC	NEO-M8Q-0-11-MFG
U11	SIP32409DNP-T1-GE4	1	Farnell	2889710	Vishay	SIP32409DNP-T1-GE4 - Power Load Distribution Switch, Active High, 1 Output, 5.5V, 2.3A, 45mohm, TDFN-4 Pins	TDFN4
U12	Fanet+ Module	1			Flarm Skytraxx	SKYTRAXX FANET+ Module	Fanet
U13	ESP32-WROVER-E 64Mbit PSRAM, 16 MB SPI Flash	1	Mouser	356-ESP32WRVE22864PC	Espressif Systems	WiFi Modules (802.11) SMD Module ESP32-WROVER-E, ESP32-D0WD-V3, 3.3V 64Mbit PSRAM, 16 MB SPI flash, PCB Antenna	ESP32-WROVER-E
U14	TAS5720x	1	Mouser	595-TAS5720LRSMT	Texas Instruments	TAS5720x Digital Input Mono Class-D Audio Amplifier With TDM Support Up To 8 Channels	VQFN32 4 x 4, 0.4 mm p
U15	TPS61089RNRR	1	Mouser	595-TPS61089RNRR	Texas Instruments	Switching Voltage Regulators	VQFN_HR RNR0011A
U16	TPS25846-Q1	1	Digi-Key	296-TPS25846QWRHBRQ1CT-ND	Texas Instruments	USB Type-A BC1.2 5-V 3.5-A Output, 36-V Input Synchronous Buck With Cable Compensation, RHB0032R (VQFN-32)	VQFN32-RHB 32
U17	BQ24080DRCR	1	Mouser	595-BQ24080DRCR	Texas Instruments	1-Cell Li-Ion Charger with 1 A FET, AC Present and Charge Enable, 4.5 V, -40 to 85 degC, 10-pin SON (DRC), Green (RoHS & no Sb/Br)	VSON10
U18	BQ25895M	1	Mouser	595-BQ25895MRTWR	Texas Instruments	IC NVDC CHARGER I2C 24WQFN	S-PWQFN-N24
U19	MAX17260SETD+	1	Mouser	700-MAX17260SETD+	Maxim	Fuel Gauge Li+/LiFePO4 1-Cell 2-Wire Interface 5.1uA 0.4V 14-Pin TDFN-EP Tube	TDFN-EP-14
USB1, USB2	UJ31-CH-3-MSMT-TR-67	2	Mouser	490-UJ31-CH3MSMTTR67	CUI	USB Connectors USB Jack 3.1 C type 24pin HZ SMT IP67	USB Type C CUI_UJ31-CH-3-MSMT-TR-67
X1	Crystal 32kHz	1	Farnell	2101347	ABRACON	ABRACON - ABS07-32.768KHZ-T - CRYSTAL, 32.768KHZ, 12.5PF, SMD	ABS07
X2	Crystal 8MHz	1	Mouser	815-ABM3B8MHZ101UT	Abracon	CRYSTAL 8.0000MHZ 10PF SMD	SMD Crystal 5.0 X 3.2 X 1.1mm