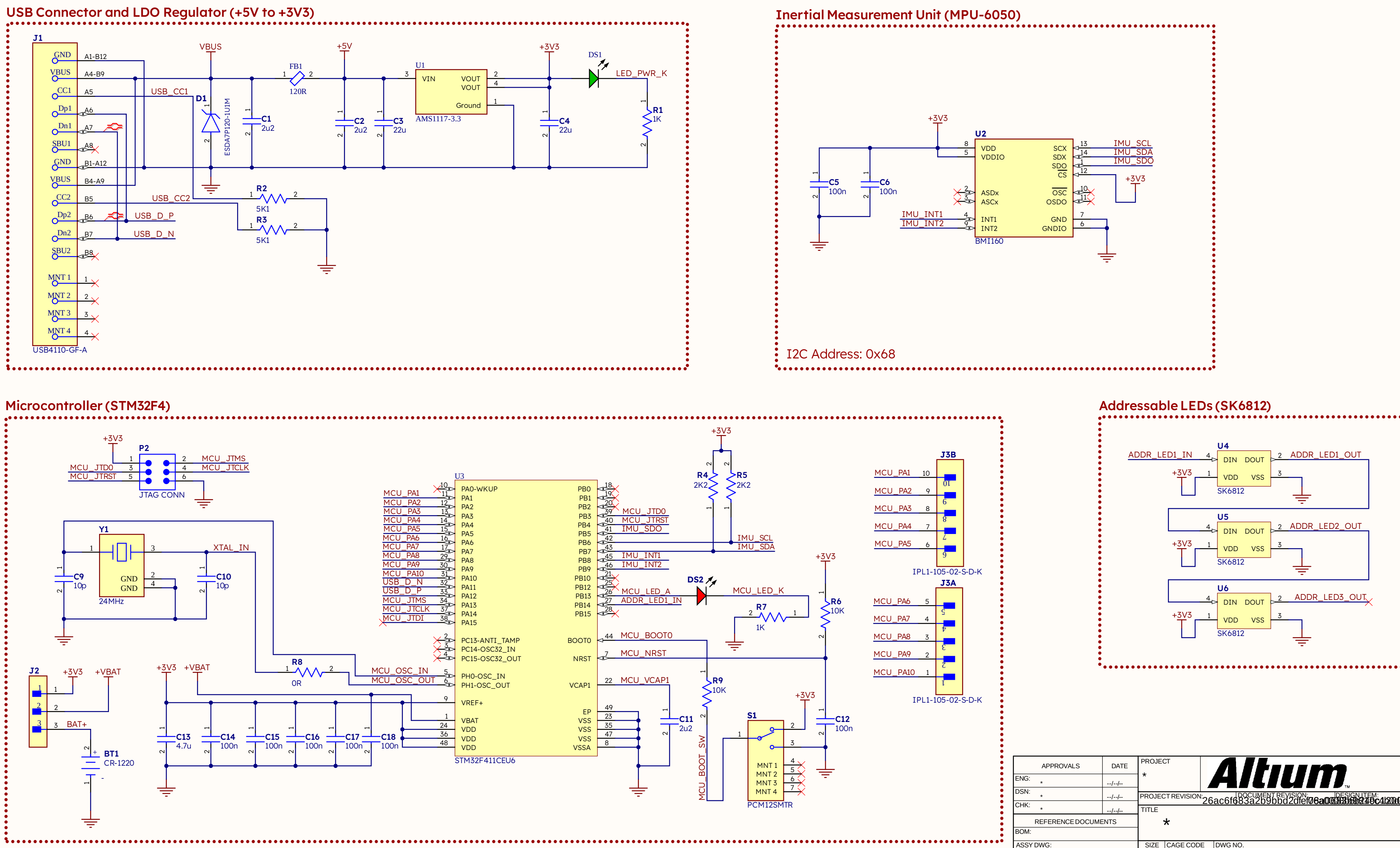
REVISION	DESCRIPTION	DATE	APPROVED

STM32 Project 1



USB Connector and LDO Regulator (+5V to +3V3)
J1
USB4110-GF-A
VBUS
+5V
+3V3
FB1
120R
U1
AMS1117-3.3
VIN
VOUT
Ground
DS1
LED_PWR_K
D1
ESDA7P120-1U1M
C1 2u2
C2 2u2
C3 22u
C4 22u
R1 1K
R2 5K1
R3 5K1
USB_CC1
USB_CC2
USB_D_P
USB_D_N
Inertial Measurement Unit (MPU-6050)
U2
BMI160
C5 100n
C6 100n
IMU_SCL
IMU_SDA
IMU_SDO
IMU_INT1
IMU_INT2
I2C Address: 0x68
Microcontroller (STM32F4)
P2
JTAG CONN
MCU_JTDO
MCU_JTRST
MCU_JTMS
MCU_JTCLK
Y1
24MHz
C9 10p
C10 10p
XTAL_IN
R8 0R
U3
STM32F411CEU6
MCU_OSC_IN
MCU_OSC_OUT
MCU_BOOT0
MCU_NRST
MCU_VCAP1
MCU_LED_A
MCU_LED_K
ADDR_LED1_IN
DS2
R4 2K2
R5 2K2
R6 10K
R7 1K
R9 10K
MCU_BOOT_SW
S1
PCM12SMTR
C11 2u2
C12 100n
C13 4.7u
C14 100n
C15 100n
C16 100n
C17 100n
C18 100n
J2
+VBAT
BAT+
BT1
CR-1220
J3B
J3A
IPL1-105-02-S-D-K
MCU_PA1
MCU_PA2
MCU_PA3
MCU_PA4
MCU_PA5
MCU_PA6
MCU_PA7
MCU_PA8
MCU_PA9
MCU_PA10
Addressable LEDs (SK6812)
U4
U5
U6
SK6812
ADDR_LED1_IN
ADDR_LED1_OUT
ADDR_LED2_OUT
ADDR_LED3_OUT

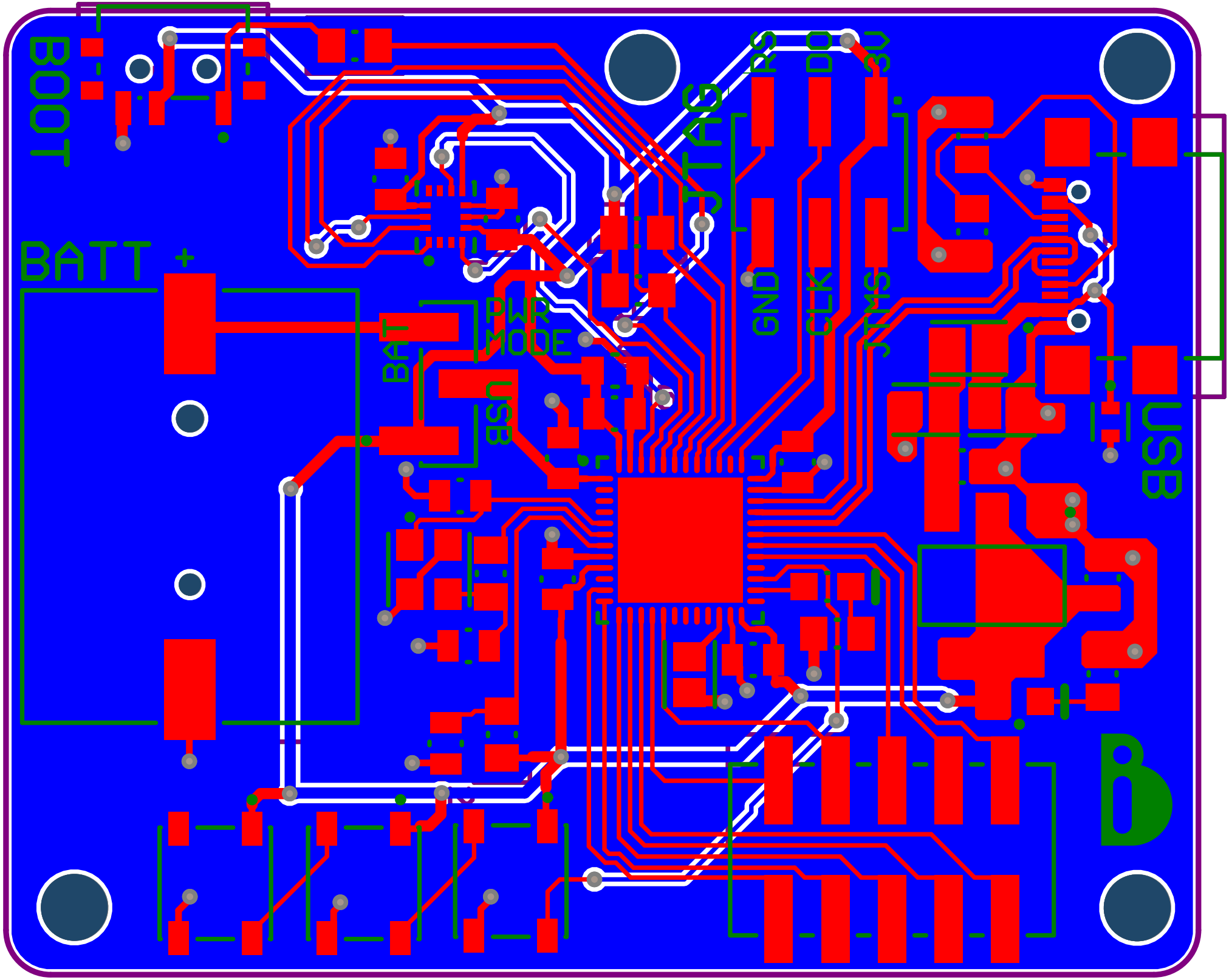
APPROVALS	DATE
ENG: *	--/--/--
DSN: *	--/--/--
CHK: *	--/--/--

REFERENCE DOCUMENTS
BOM:
ASSY DWG:
FAB DWG:
PCB DWG:

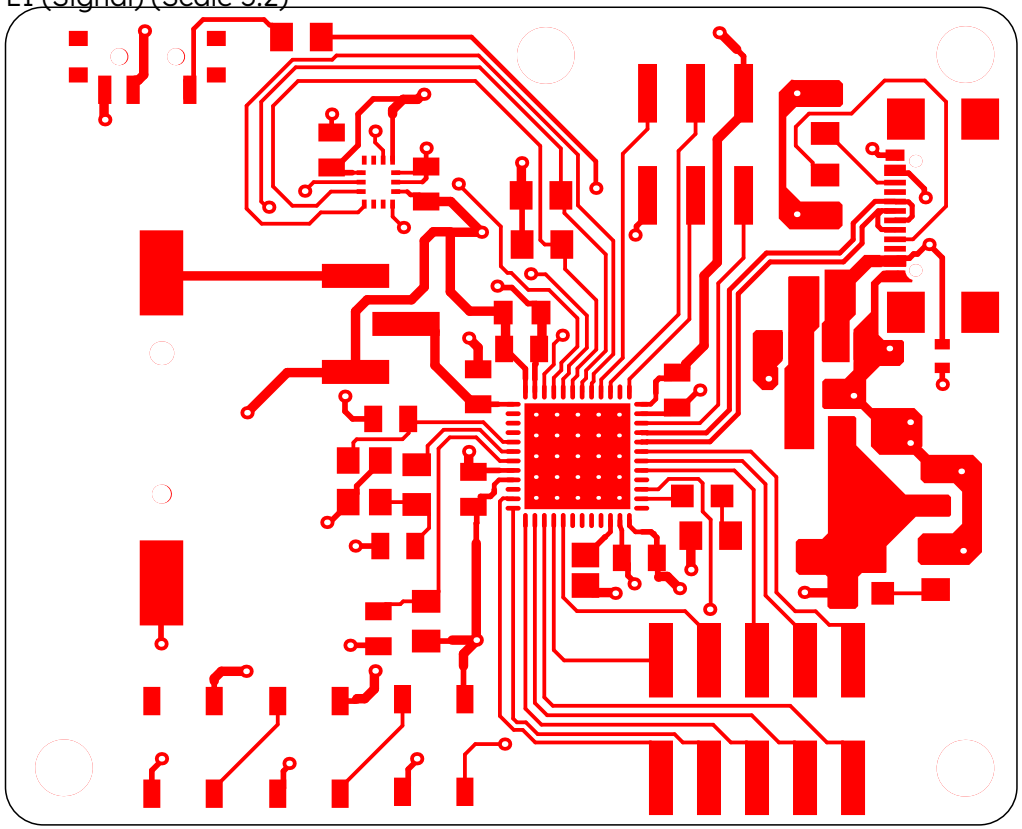
PROJECT: *
PROJECT REVISION: DOCUMENT REVISION: 26ac6f683a2b9bbd2dfef76a0 DESIGN ITEM: 0696cff8bc9a259faa9a
TITLE: *

SIZE	CAGE CODE	DWG NO.	REV
B			

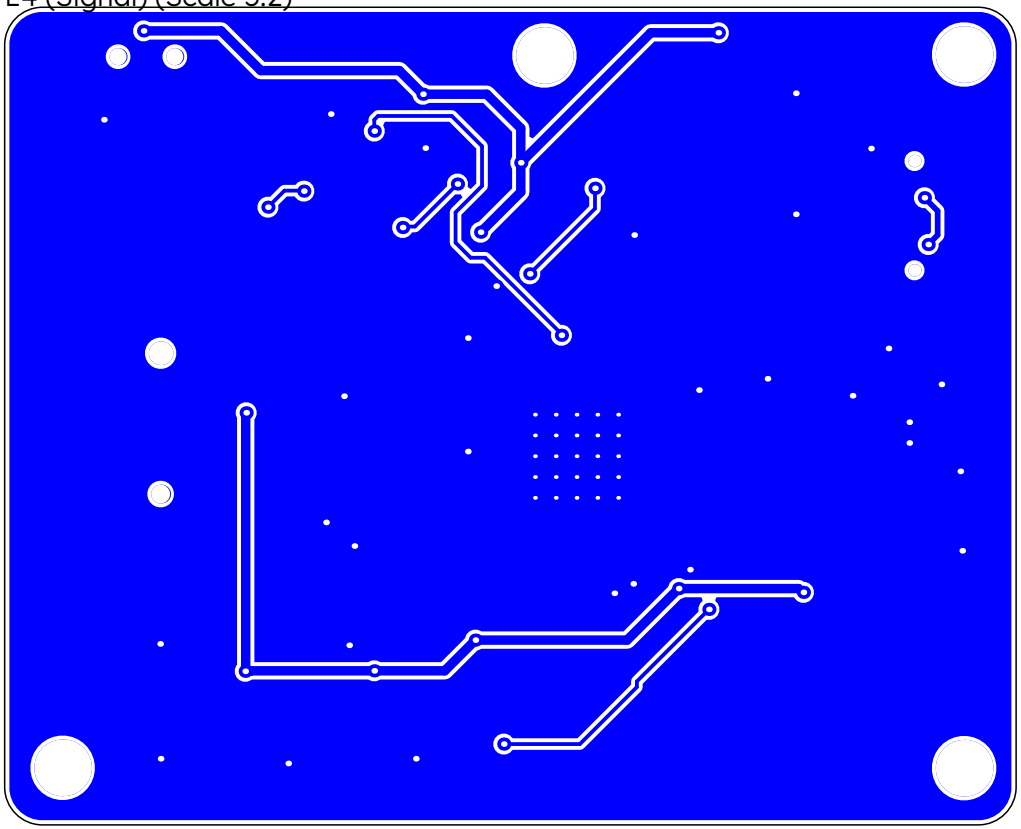
SCALE: FILENAME: MCU.SchDoc SHEET 1 OF 1


BOOT
BATT +
PWR MODE
Bat
BSL
JTAG
GND
CLK
SWS
3.3V
USB

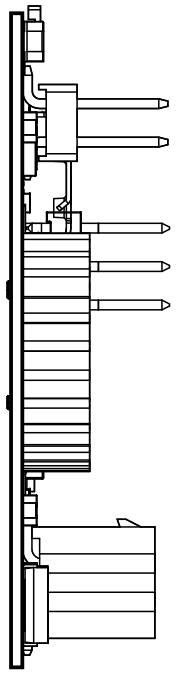
L1 (Signal) (Scale 5:2)



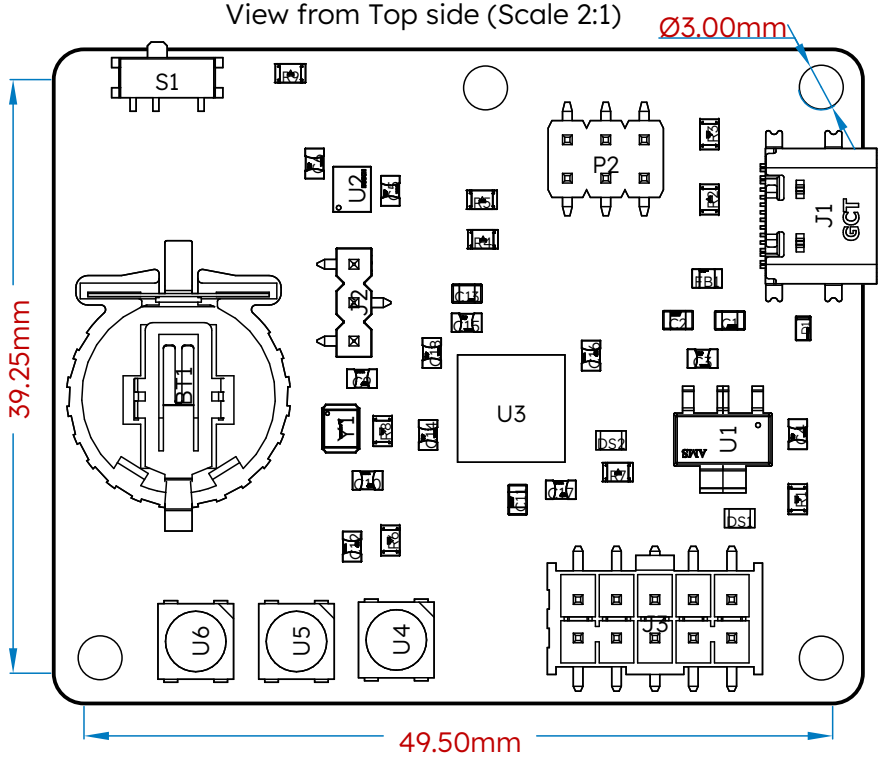
L4 (Signal) (Scale 5:2)



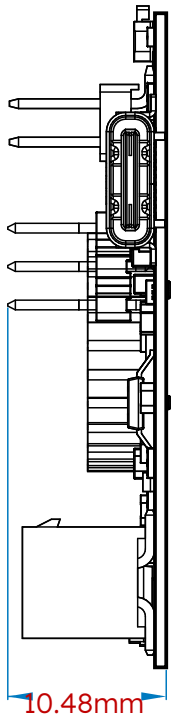
View from Left side (Scale 2:1)



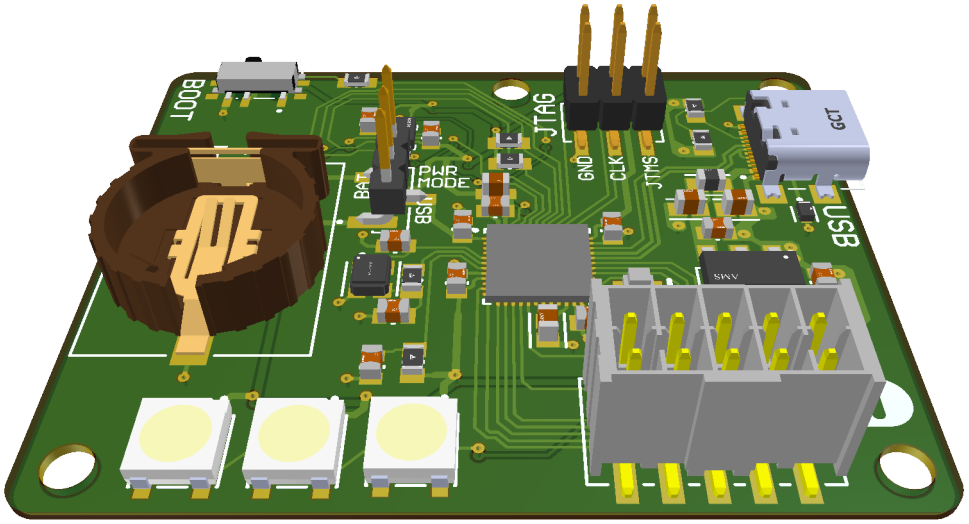
View from Top side (Scale 2:1)



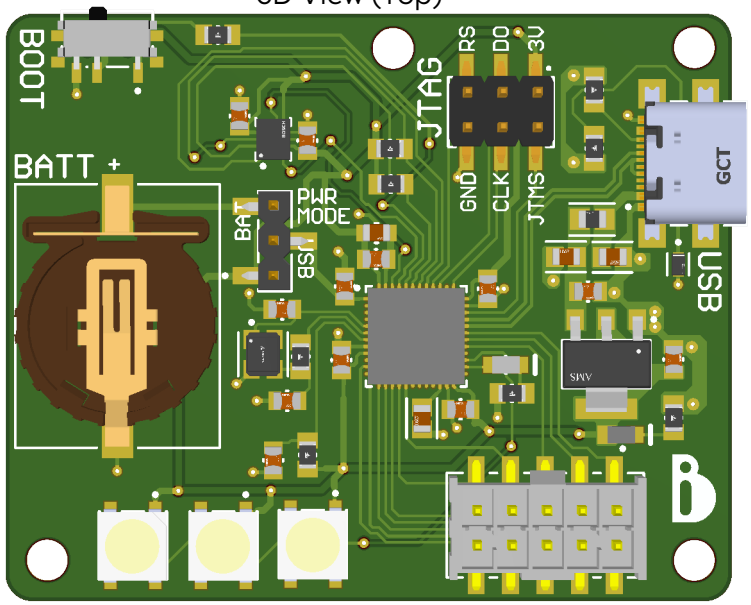
View from Right side (Scale 2:1)



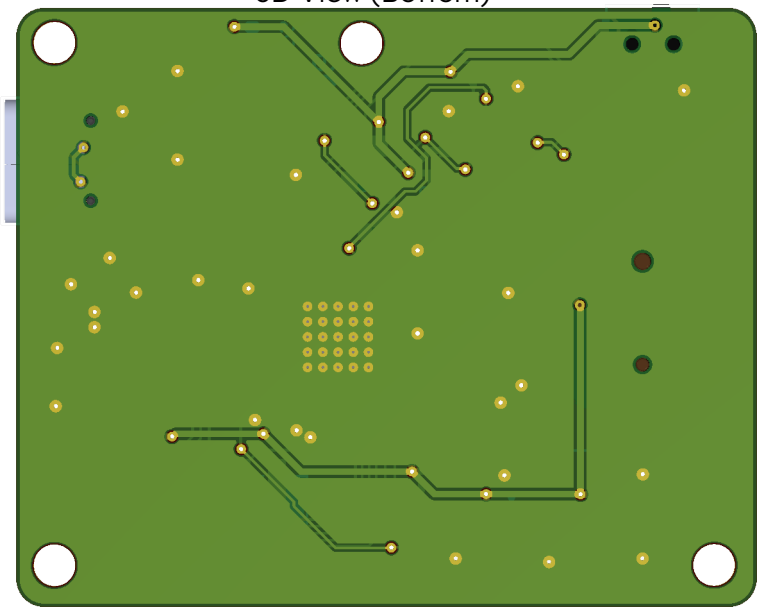
3D Isometric View



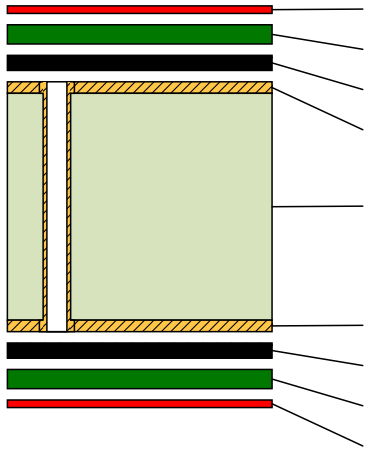
3D View (Top)



3D View (Bottom)



Layer Stack Legend



Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.03mm	SM-001	Solder Mask	GTS
PbSn	Top Surface Finish	0.02mm		Surface Finish	
CF-004	**L1 (Signal)**	**0.02mm**		**Signal**	**GTL**
Core		*0.66mm*	*Core-039*	*Dielectric*	
CF-004	**L4 (Signal)**	**0.02mm**		**Signal**	**GBL**
PbSn	Bottom Surface Finish	0.02mm		Surface Finish	
Surface Material	Bottom Solder	0.03mm	SM-001	Solder Mask	GBS
	Bottom Overlay			Legend	GBO

Total thickness: 0.79mm

Bill Of Materials

Line #	Designator	Comment	Quantity	Number of Pins	Package	Number of Positions
1	BT1	CR-1220	1			
2	C1, C2, C11	2u2	3	2		
3	C3, C4, C5, C6, C9, C10, C12, C14, C15, C16, C17, C18	22u, 100n, 10p	12		CC0805-0.85	
4	C13	4.7u	1	2		
5	D1	ESDA7P120-1U1M	1		QFN1610	
6	DS1	1K	1			
7	DS2	LTST-C170KRKT	1	2		
8	FB1	120R	1	2		
9	J1	USB4110-GF-A	1		0	
10	J2	5-146128-1	1		HDR3	
11	J3	IPL1-105-02-S-D-K	1			10
12	P2	JTAG CONN	1	6		6
13	R1, R2, R3, R4, R5, R6, R7, R8, R9	1K, 5K1, 2K2, 10K, 0R	9			
14	S1	PCM12SMTR	1			
15	U1	AMS1117-3.3	1		AMS1117	
16	U2	BMI160	1			
17	U3	STM32F411CEU6	1			
18	U4, U5, U6	SK6812	3			
19	Y1	24MHz	1	4		