

Chapter 1

Hardware description

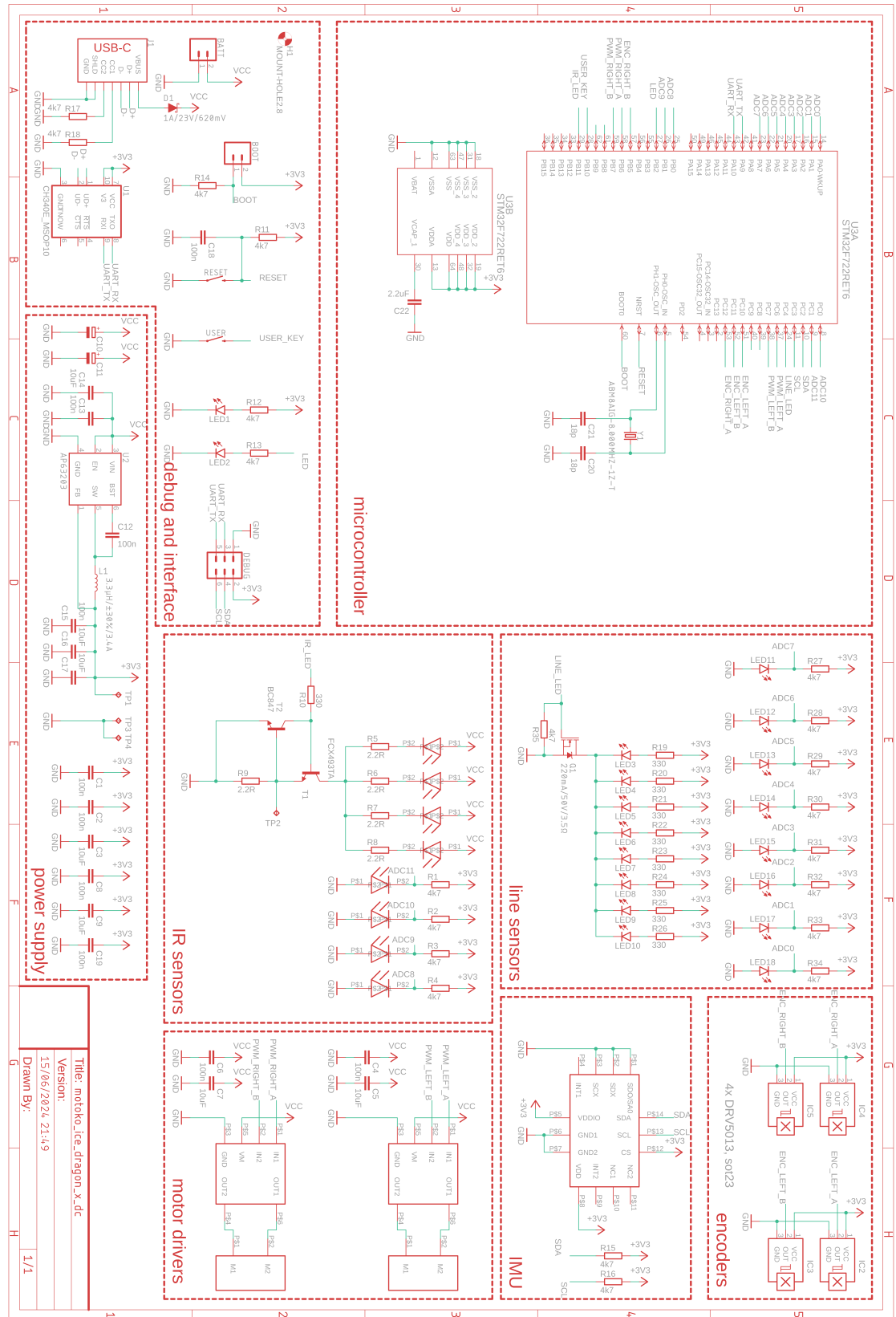


Figure 1.1: schematic diagram of DC motor version

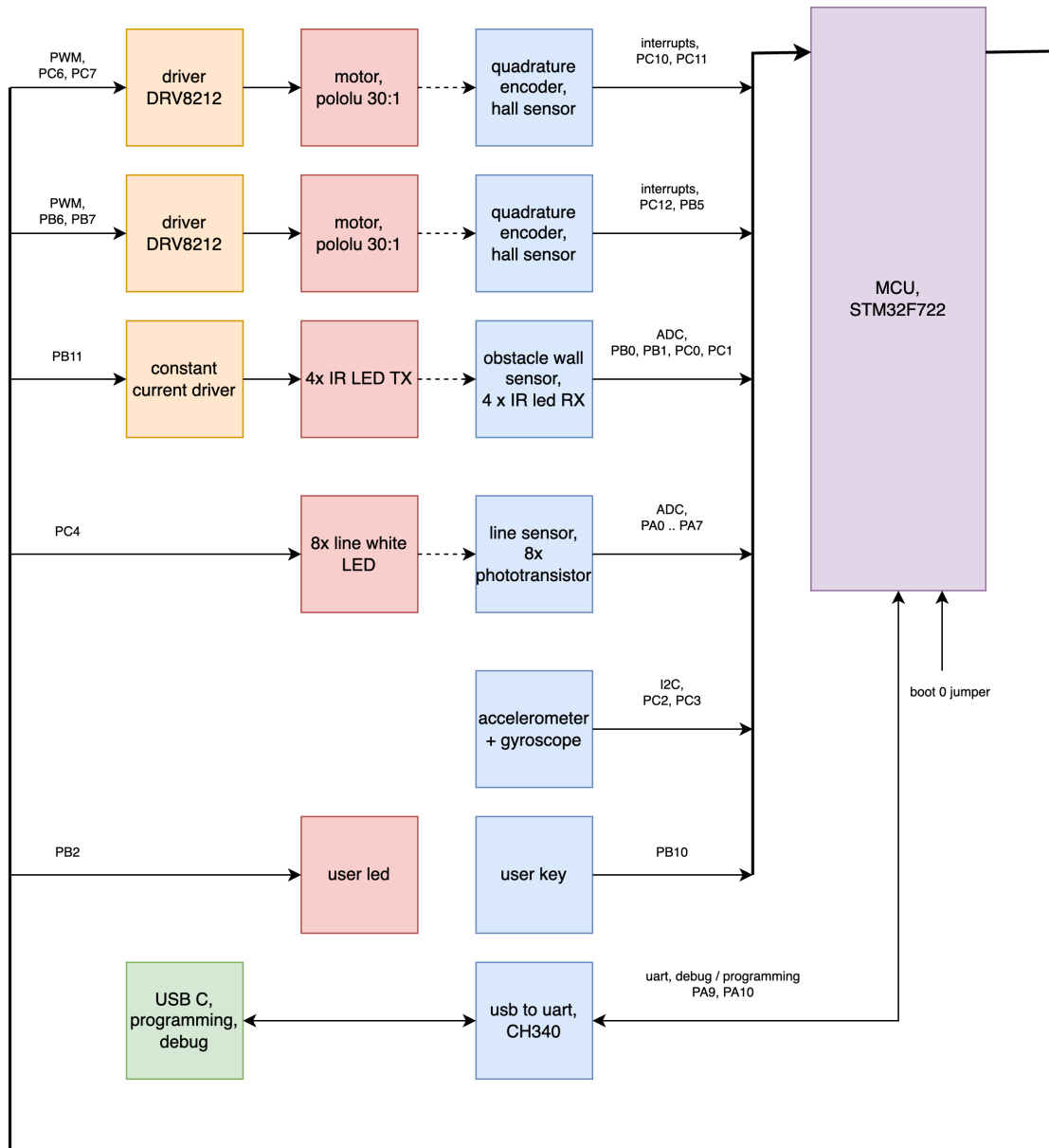


Figure 1.2: block diagram of DC motor version

pin number	pin name	function	peripheral	AF number
14	PA0	line sensor ADC0, right	ADC1	N/A
15	PA1	line sensor ADC1	ADC1	N/A
16	PA2	line sensor ADC2	ADC1	N/A
17	PA3	line sensor ADC3	ADC1	N/A
20	PA4	line sensor ADC4	ADC1	N/A
21	PA5	line sensor ADC5	ADC1	N/A
22	PA6	line sensor ADC6	ADC1	N/A
23	PA7	line sensor ADC7, left	ADC1	N/A
25	PB0	IR sensor ADC8, front left	ADC1	N/A
26	PB1	IR sensor ADC9, left	ADC1	N/A
8	PC0	IR sensor ADC10, right	ADC1	N/A
9	PC1	IR sensor ADC11, front right	ADC1	N/A
51	PC10	encoder left A	GPIO	N/A
52	PC11	encoder left B	GPIO	N/A
53	PC12	encoder right A	GPIO	N/A
57	PB5	encoder right B	GPIO	N/A
37	PC6	PWM left A	TIM 150	N/A
38	PC7	PWM left B	TIM	N/A
58	PB6	PWM right A	TIM	N/A
59	PB7	PWM right B	TIM	N/A
10	PC2	IMU I2C, SDA	GPIO	N/A
11	PC3	IMU I2C, SCL	GPIO	N/A
42	PA9	uart TX	UART1	N/A
43	PA10	uart RX	UART1	N/A
27	PB2	user LED	GPIO	N/A
28	PB10	user Key	GPIO	N/A
29	PB11	IR led control	GPIO	N/A
24	PC4	line led control	GPIO	N/A
7	NRST	reset		
60	BOOT0	firmware bootloader control		

Table 1.1: pin mapping and function