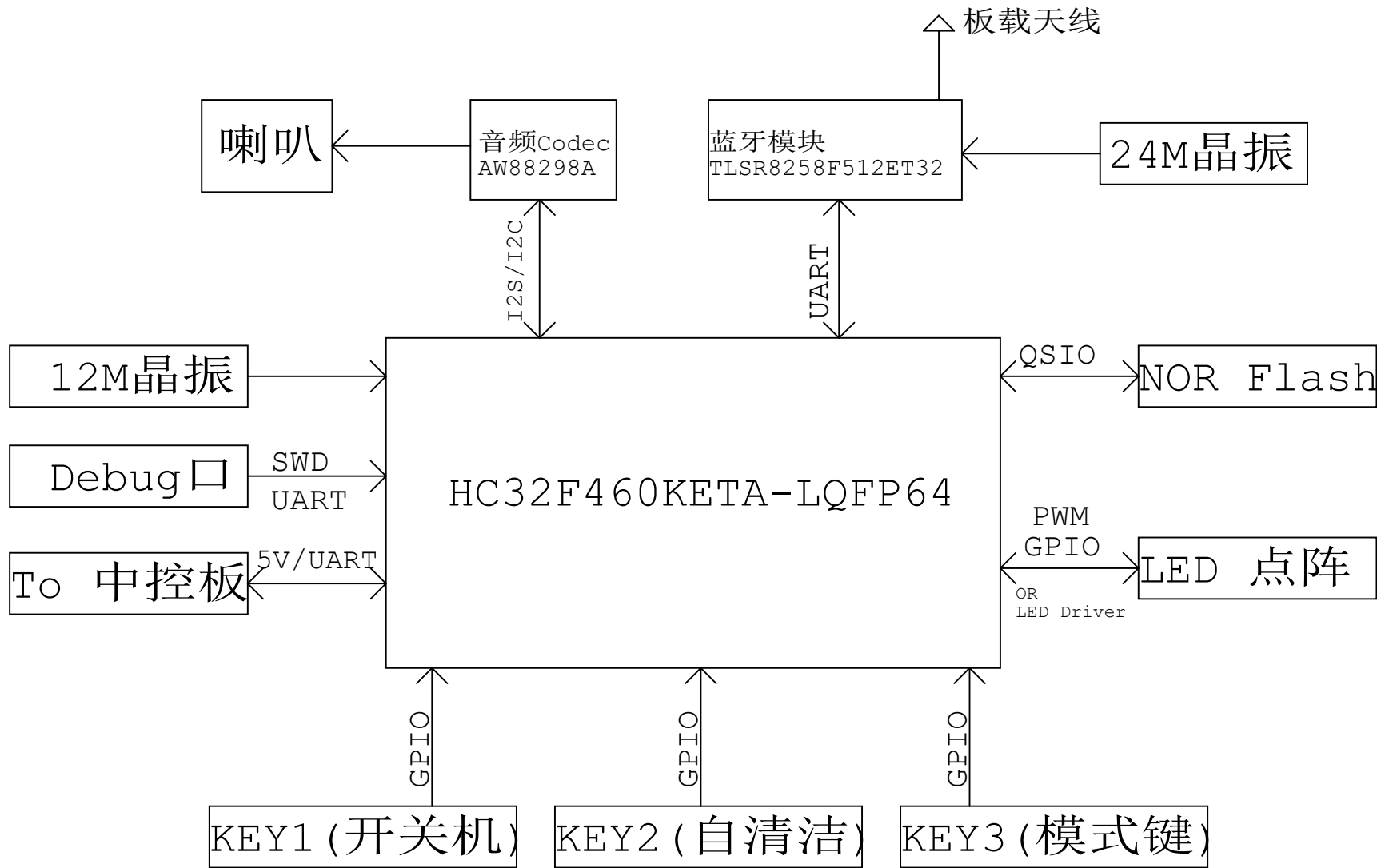


V1版本：
初版

V2版本：
1、音频方案变更，换成AW88298；
2、MCU给蓝牙的复位引脚变更；

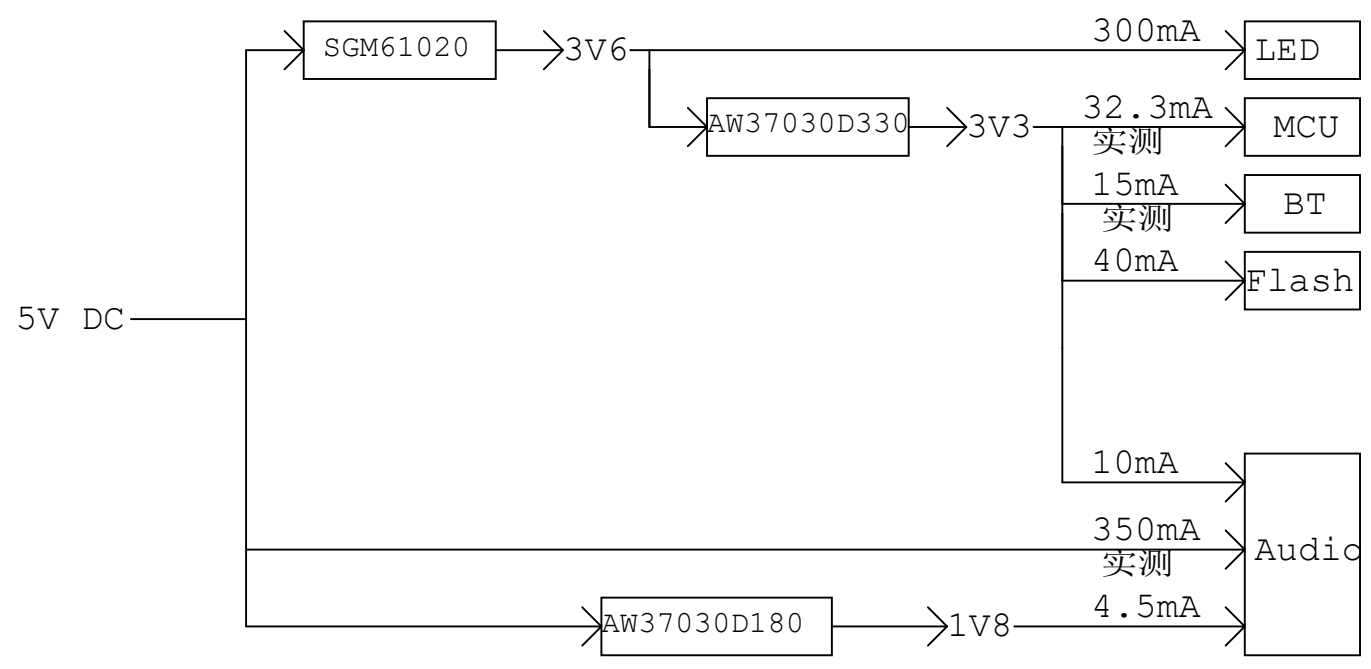
V3版本：
1、增加一路给LED供电的电源；
2、删除LED预留的灯驱IC；

<Variant Name>		
NARWAL 云鲸		
Title	01_Version Illustration	Author Huang Zhilong
Size A3	Document Number _IP2105_ROBOT_DB01_V3	Rev V3
Date:	Tuesday, December 26, 2023	Sheet 1 of 13



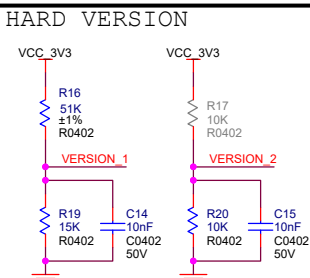
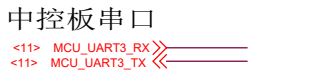
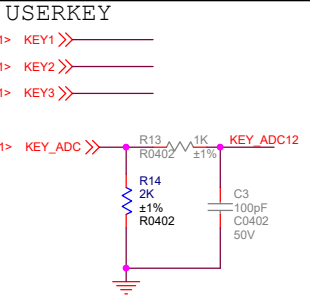
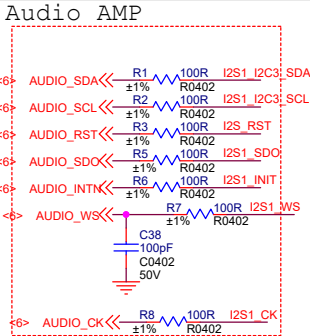
<Variant Name>

NARWAL 云鲸		
Title02_SYSTEM_BLOCK		AuthorHuang Zhilong
SizeA4	Document Number_IP2105_ROBOT_DB01_V3	RevV3
Date:	Tuesday, December 26, 2023	Sheet 2 of 13



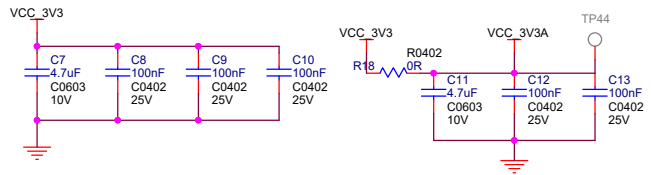
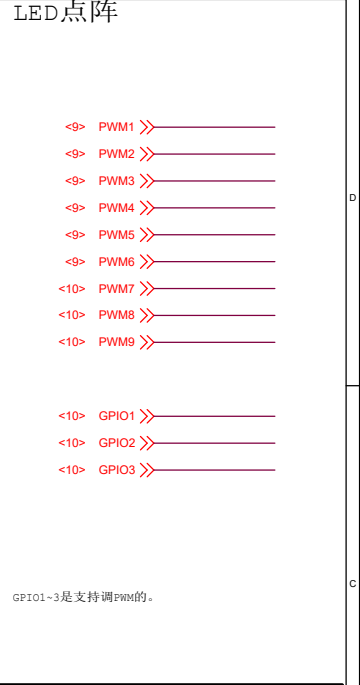
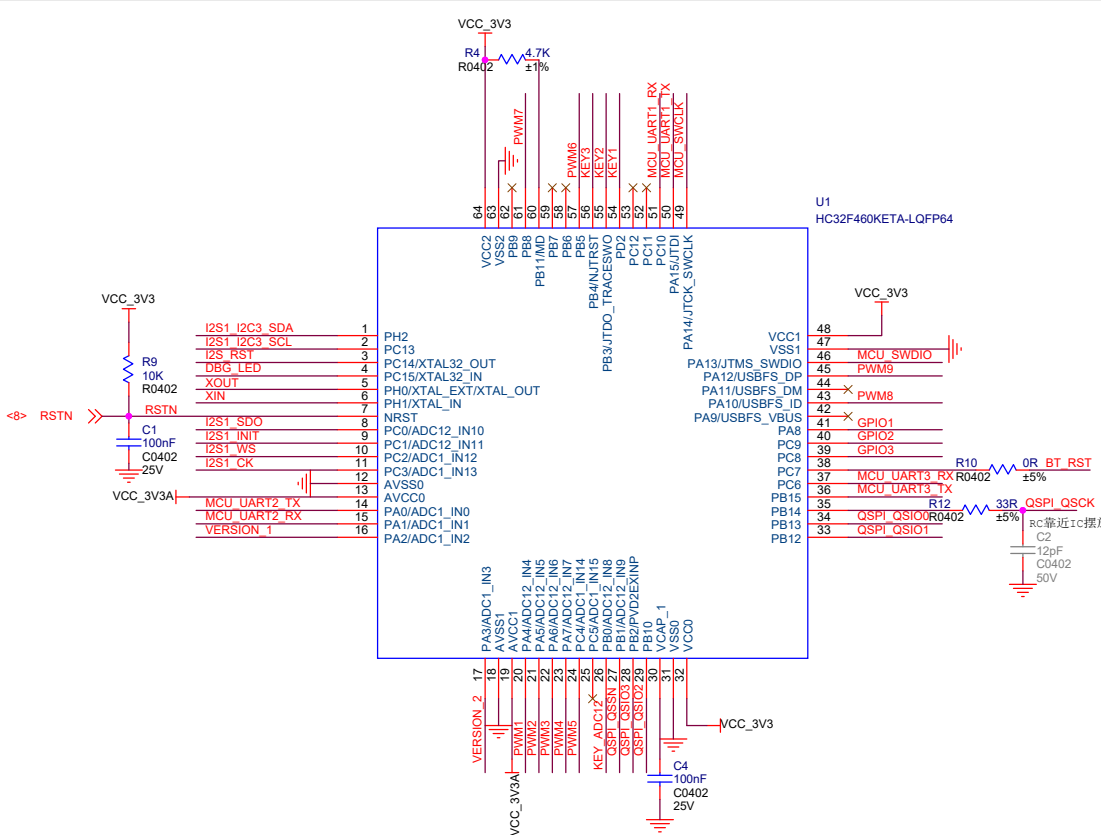
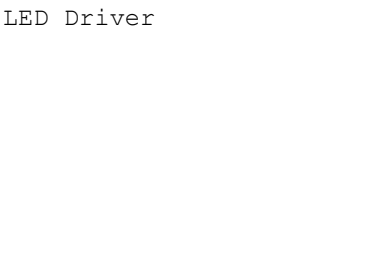
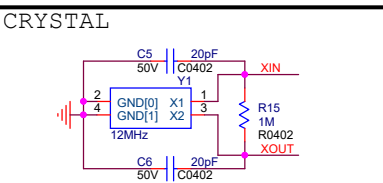
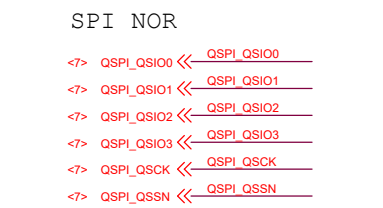
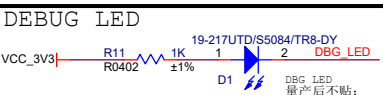
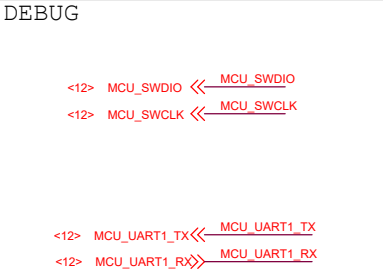
<Variant Name>

NARWAL 云鲸		
Title03_POWER_TREE		AuthorHuang Zhilong
SizeA4	Document Number_IP2105_ROBOT_DB01_V3	RevV3
Date:Wednesday, December 27, 2023	Sheet3	of13



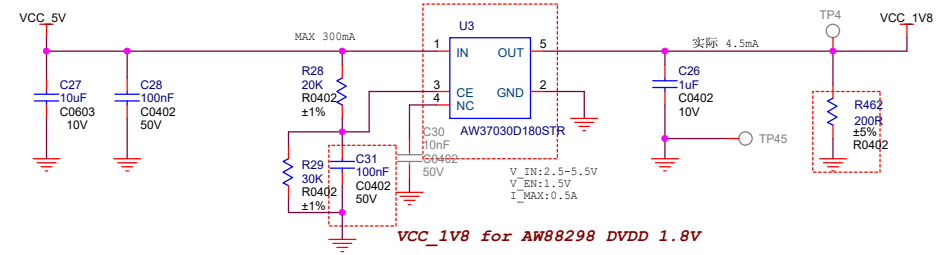
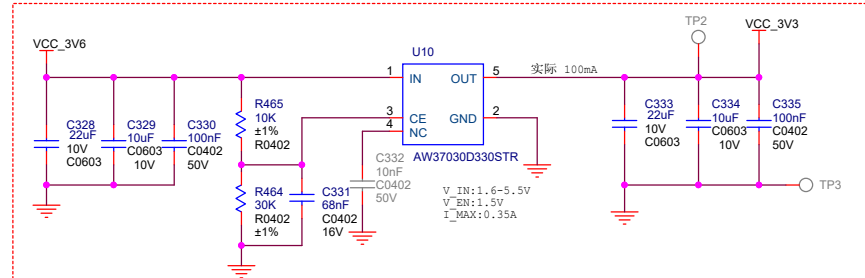
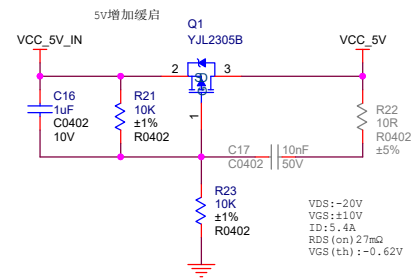
硬件版本号第一版v1，表格中第1档

档位	分压	R16	R19	R17	R20
1	0.43	100K	15K	NC	10K
2	0.75	51K	15K	NC	10K
3	1.1	20K	10K	NC	10K
4	1.32	15K	10K	NC	10K
5	1.58	51K	47K	NC	10K
6	1.88	15K	20K	NC	10K
7	2.2	10K	20K	NC	10K
8	2.55	15K	51K	NC	10K
9	2.87	15K	100K	NC	10K

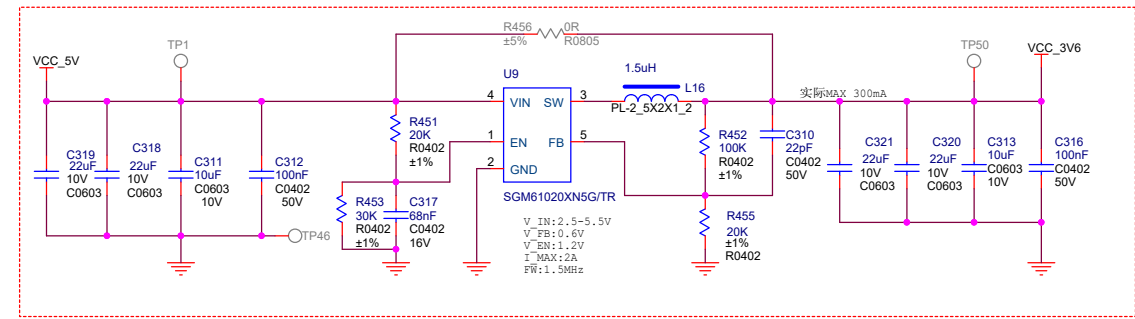


<Variant Name>

NARVAL 云鲸		Author
Title		Huang Zhilong
Size	Document Number	Rev
A3	_IP2105_ROBOT_DB01_V3	v3
Date:	Tuesday, December 26, 2023	Sheet 4 of 13



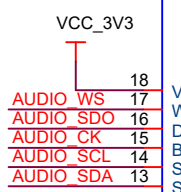
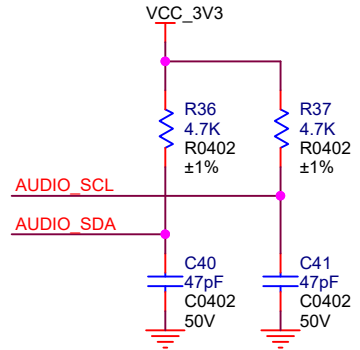
5V->>>3.3V Vout=0.6*(1+100/20)=3.6V FOR LED



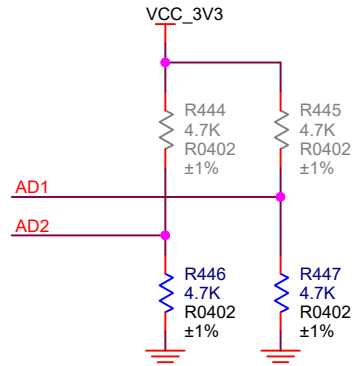
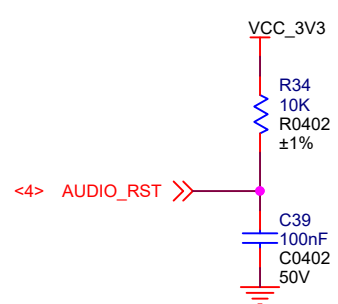
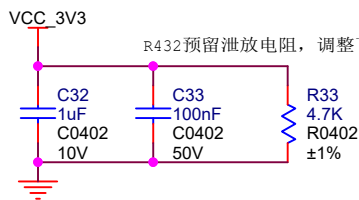
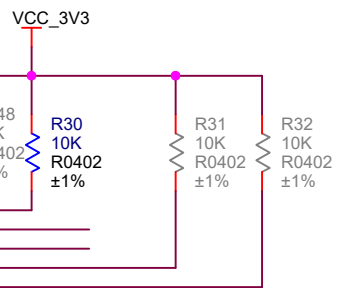
<Variant Name>

NARWAL 云鲸		
Title	05_POWER	Author Huang Zhilong
Size A3	Document Number _IP2105_ROBOT_DB01_V3	Rev V3
Date:	Tuesday, December 26, 2023	Sheet 5 of 13

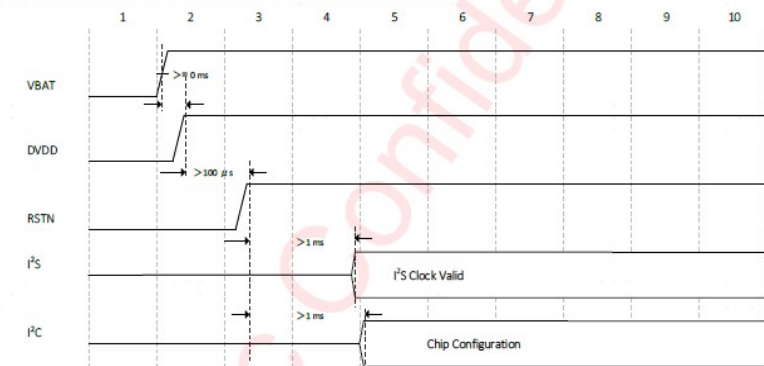
<4> AUDIO_SDO
<4> AUDIO_INTN
<4> AUDIO_SCL
<4> AUDIO_SDA
<4> AUDIO_CK
<4> AUDIO_WS



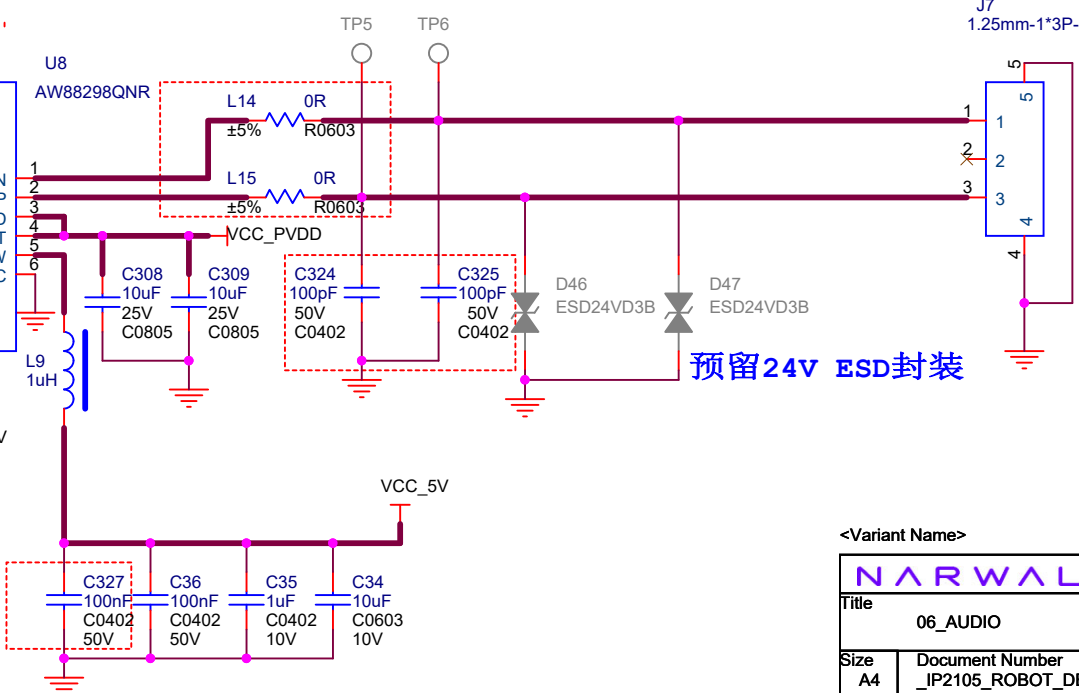
AD: 0
I2C ADDR=0X34
0110100



Power up sequence considering I2S, I2C timing shows as below:



粗体部分走线加粗处理



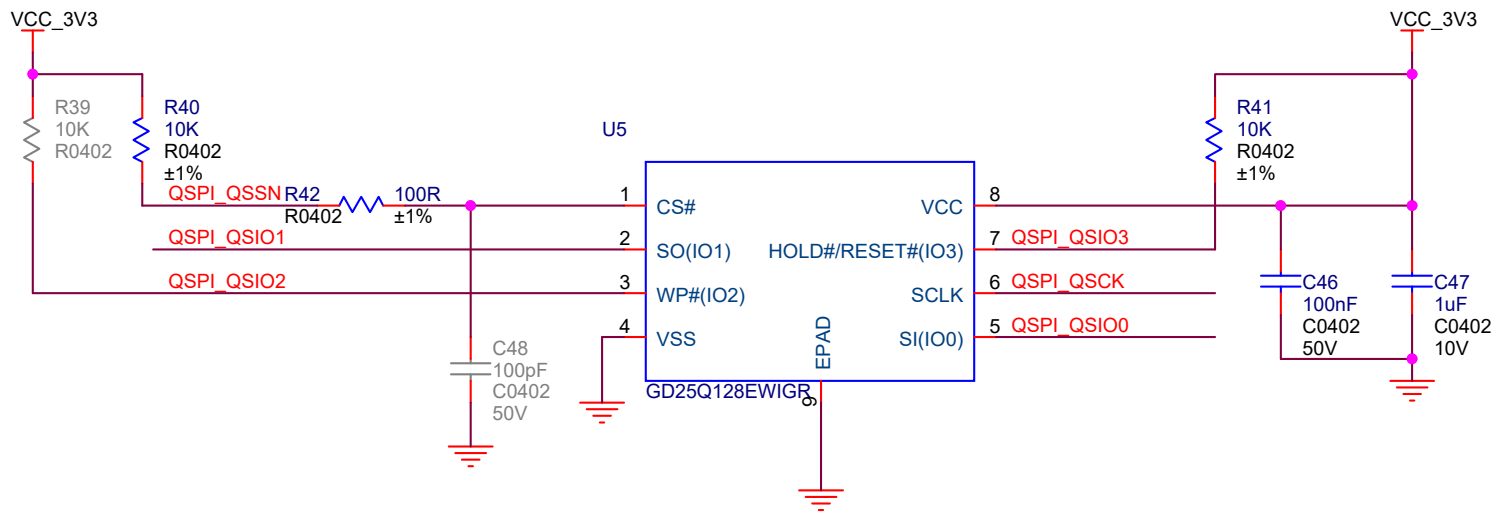
喇叭接口

预留24V ESD封装

<Variant Name>

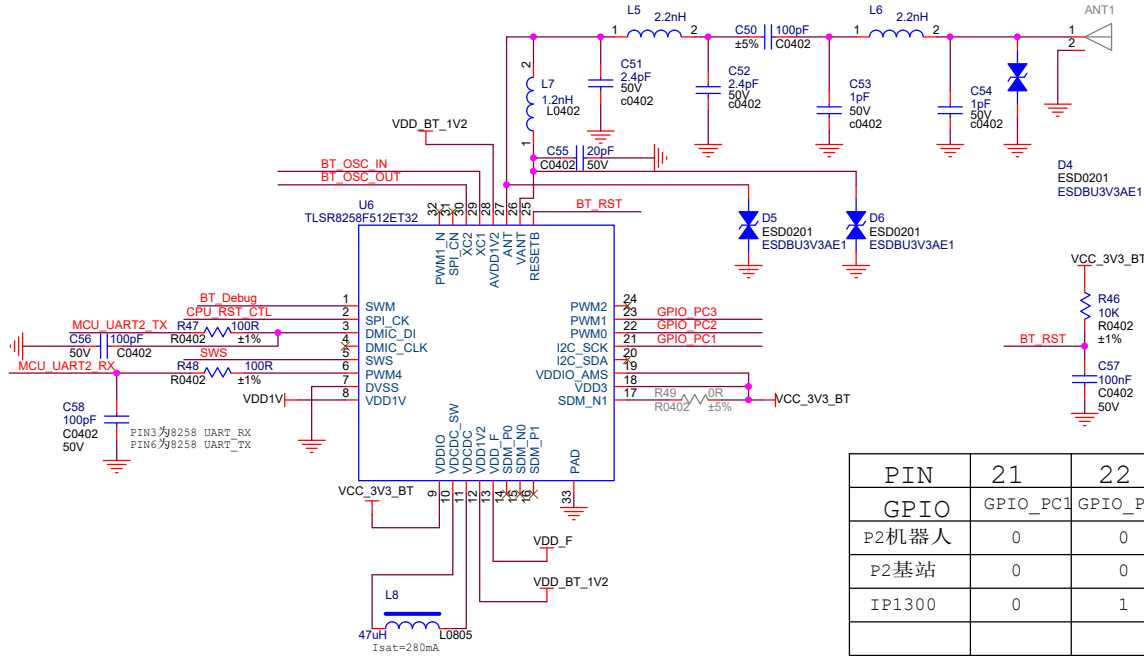
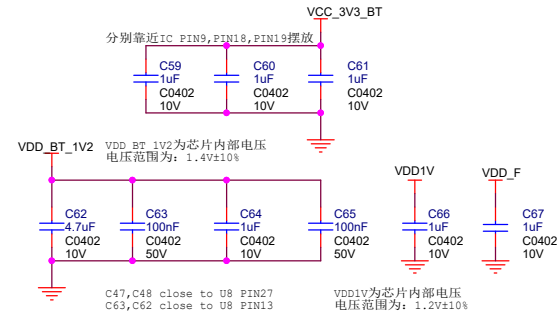
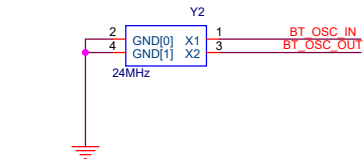
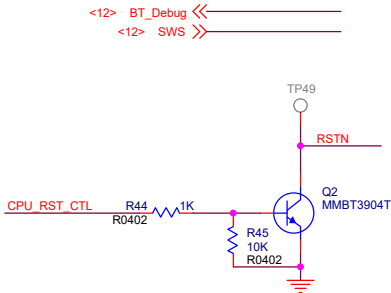
NARWAL 云鲸		
Title 06_AUDIO		Author Huang Zhilong
Size A4	Document Number _IP2105_ROBOT_DB01_V3	Rev V3
Date: Tuesday, December 26, 2023	Sheet 6	of 13

<4> QSPI_QSIO3
<4> QSPI_QSIO2
<4> QSPI_QSIO1
<4> QSPI_QSIO0
<4> QSPI_QSCK
<4> QSPI_QSSN

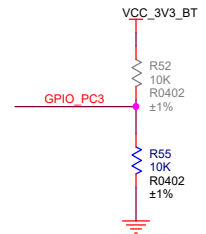
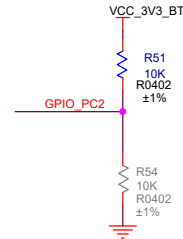
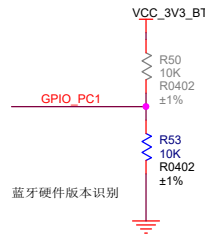


<Variant Name>

NARWAL 云鲸		
Title		Author
07_FLASH		Huang Zhilong
Size	Document Number	Rev
A	_IP2105_ROBOT_DB01_V3	V3
Date:	Tuesday, December 26, 2023	Sheet 7 of 13

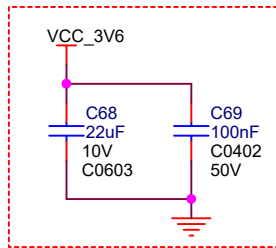


PIN	21	22	23
GPIO	GPIO_PC1	GPIO_PC2	GPIO_PC3
P2机器人	0	0	0
P2基站	0	0	1
IP1300	0	1	0

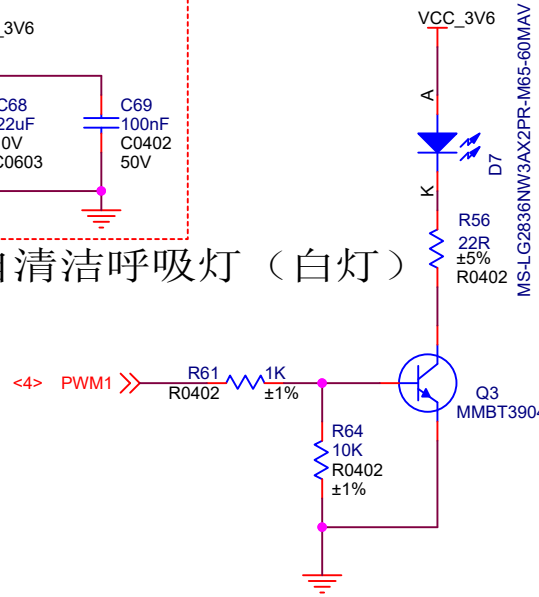


<Variant Name>

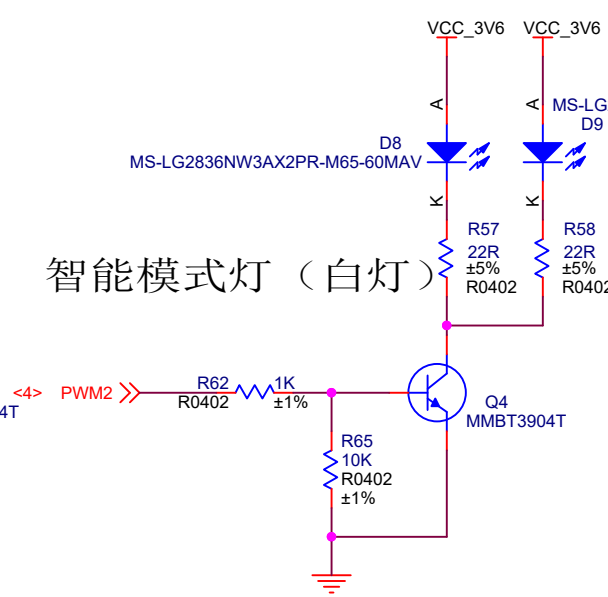
NARWAL 云鲸		
Title	08_TL8258	Author Huang Zhilong
Size A3	Document Number _IP2105_ROBOT_DB01_V3	Rev v3
Date:	Tuesday, December 26, 2023	Sheet 8 of 13



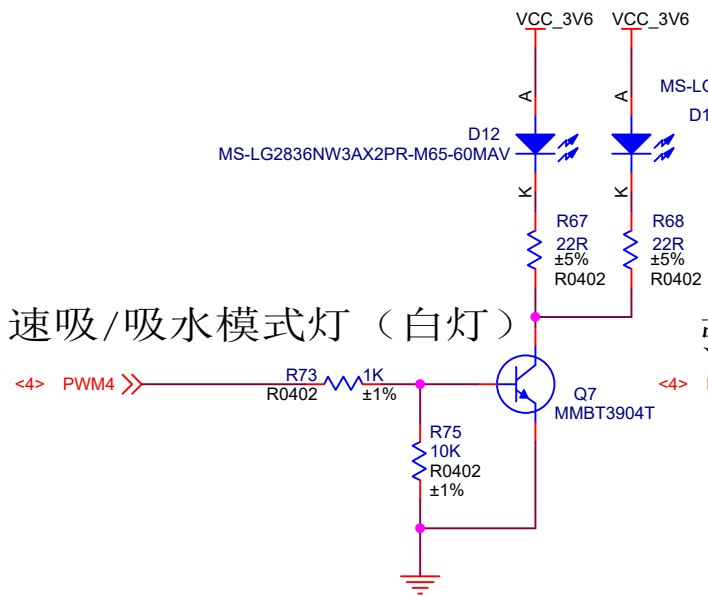
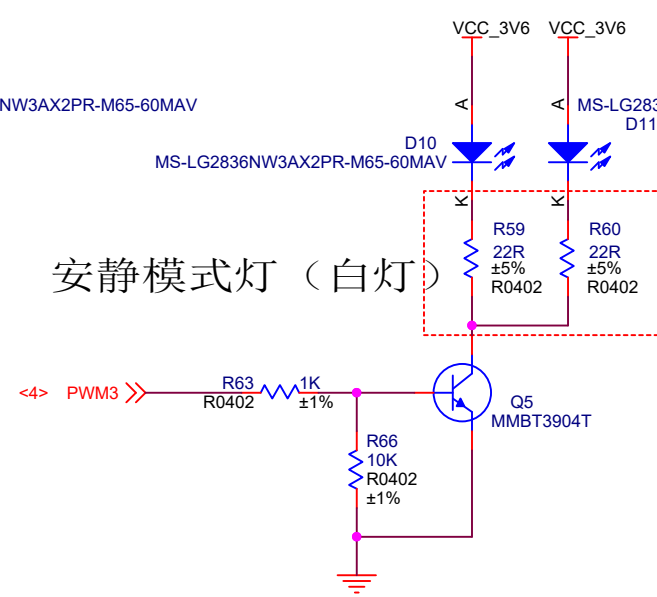
自清洁呼吸灯（白灯）



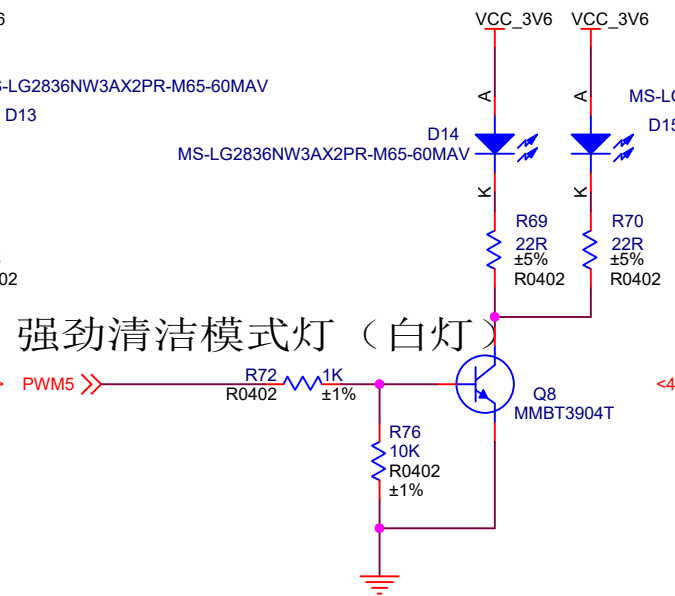
智能模式灯（白灯）



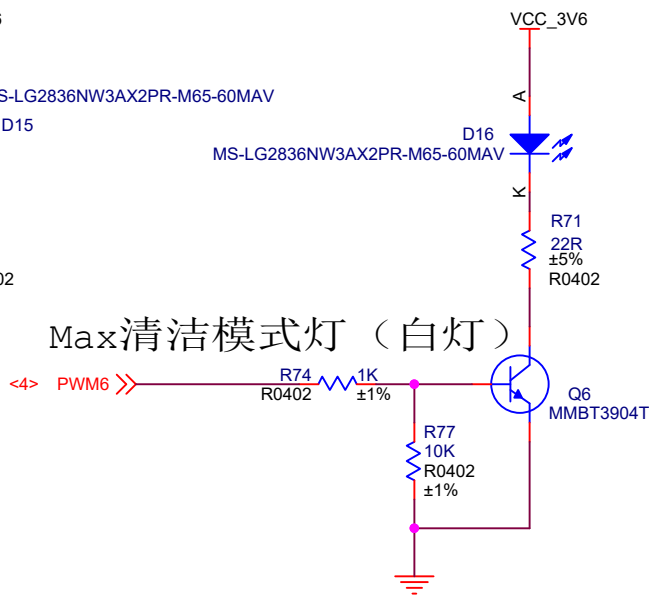
安静模式灯（白灯）



速吸/吸水模式灯（白灯）



强劲清洁模式灯（白灯）

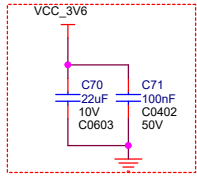


Max清洁模式灯（白灯）

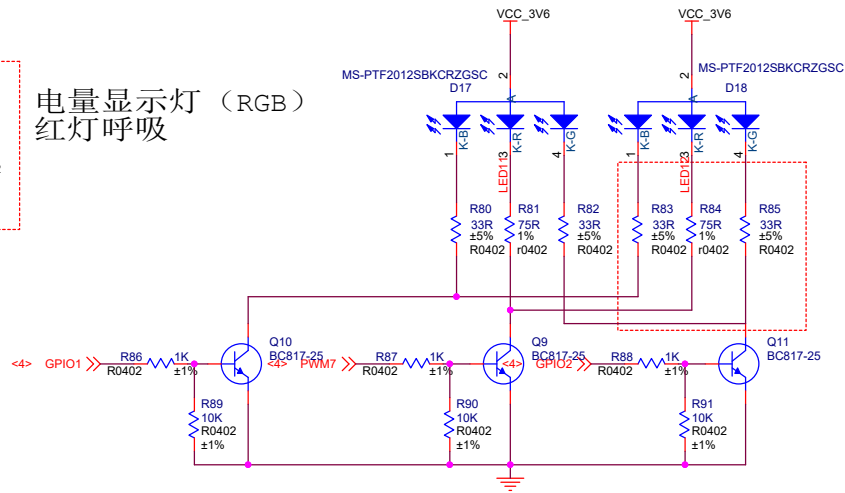
白灯压降为2.6-3.4v，取最小值2.6v，白灯串阻选取：
 $(3.6V - 2.6V - 0.3V) / 0.06 = 11.67R$

<Variant Name>

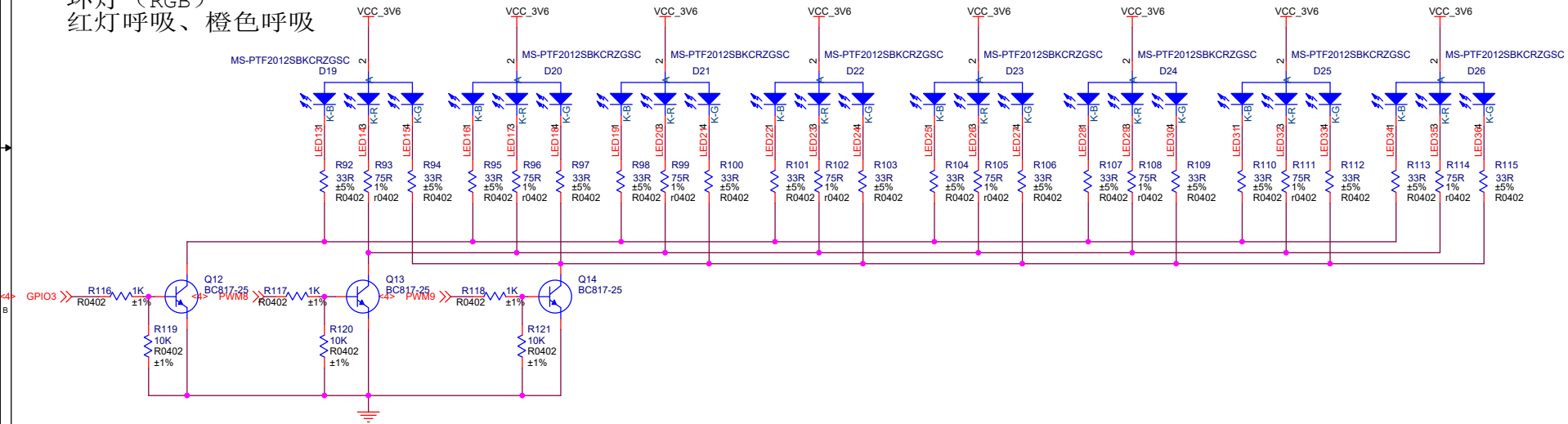
NARWAL 云鲸		
Title 09_LCD_CONN		Author Huang Zhilong
Size A4	Document Number _IP2105_ROBOT_DB01_V3	Rev V3
Date: Tuesday, December 26, 2023	Sheet 9	of 13



电量显示灯（RGB） 红灯呼吸



环灯（RGB） 红灯呼吸、橙色呼吸



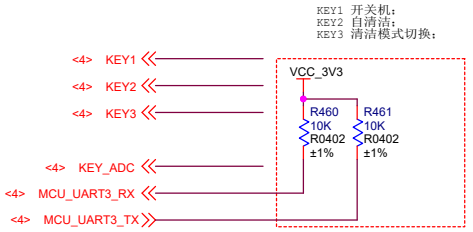
蓝灯压降2.8V-3.6V，串阻选取：
 $(3.6V - 2.8V - 0.3V) / 0.025 = 20R$

红灯压降1.8V-2.6V，串阻选取：
 $(3.6V - 1.8V - 0.3V) / 0.025 = 60R$

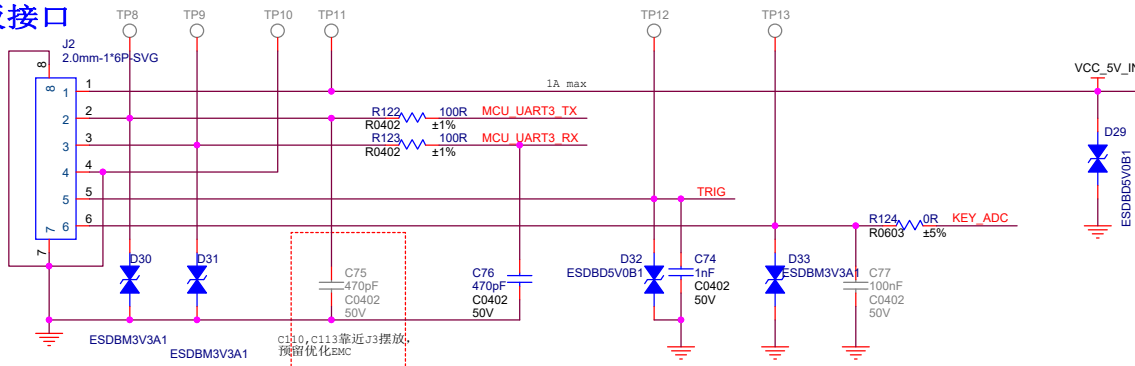
绿灯压降2.8V-3.6V，串阻选取：
 $(3.6V - 2.8V - 0.3V) / 0.025 = 20R$

<Variant Name>

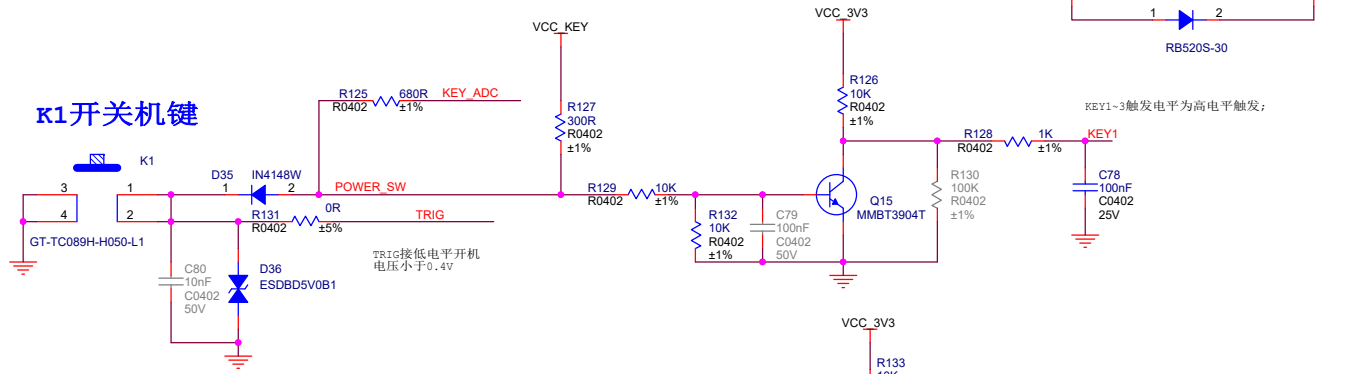
NARWAL 云鲸		
Title	10_LED2	Author Huang Zhilong
Size	Document Number _IP2105_ROBOT_DB01_V3	Rev v3
Date:	Tuesday, December 26, 2023	Sheet 10 of 13



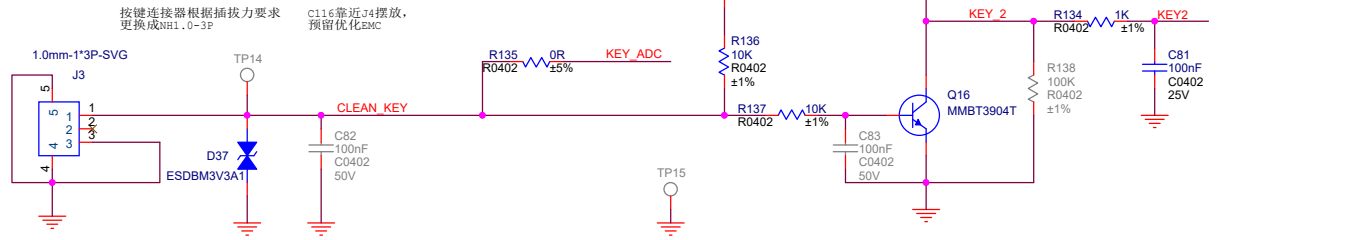
主板接口



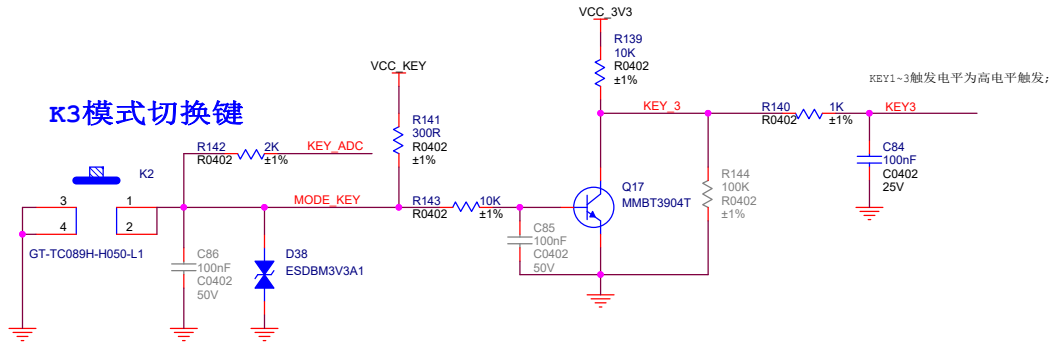
K1开关机键



自清洁按键



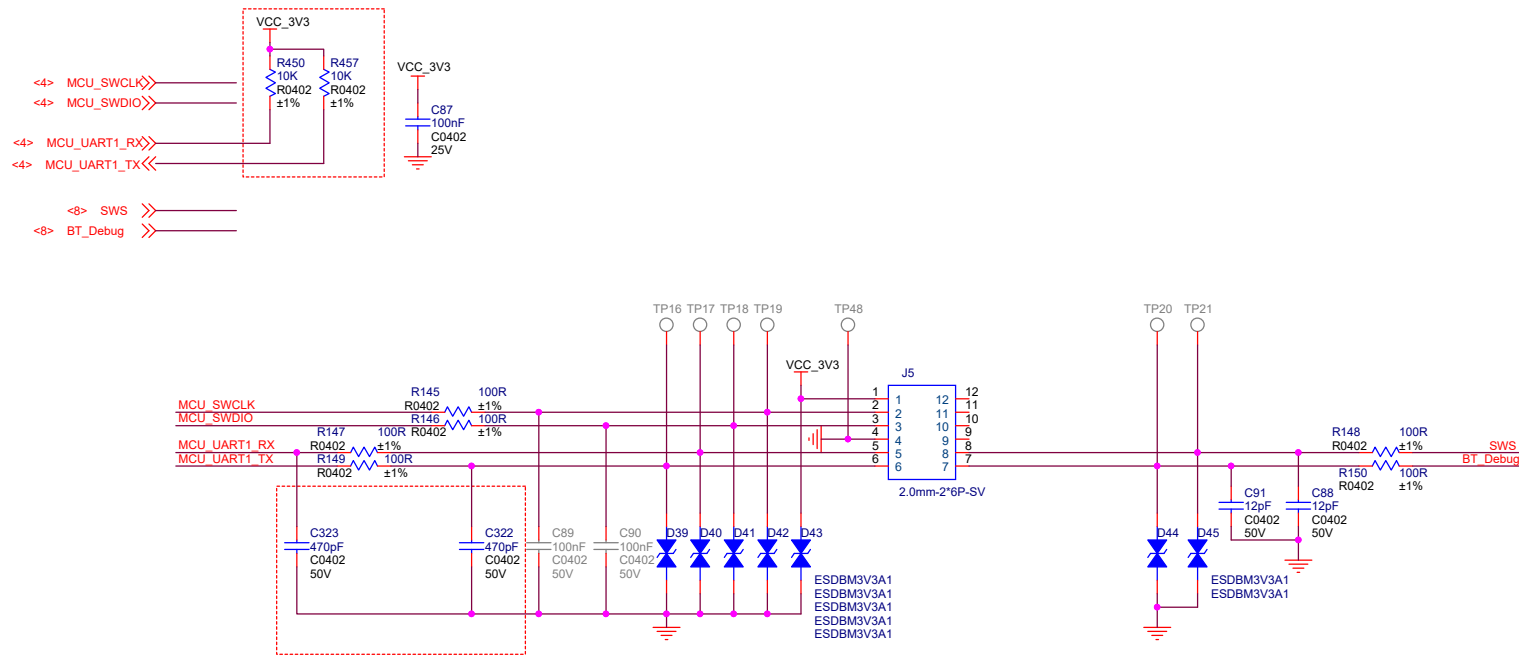
K3模式切换键



k1,k3不做区分, 与K2有差异即可

电阻	按键	KEY_ADC
300R	K1	0.8V~1.2V
10K	K4 (预留)	N/A
430R	K3	0.8V~1.2V
0	K2	0~0.6

<Variant Name>		
NARWAL 云鲸		
Title	11_KEY_DET&Main_board_conn	Author Huang Zhilong
Size A3	Document Number _IP2105_ROBOT_DB01_V3	Rev V3
Date:	Tuesday, December 26, 2023	Sheet 11 of 13



<Variant Name>

NARWAL 云鲸		
Title	12_RESET_AND_DBG_CONN	Author Huang Zhilong
Size A3	Document Number _IP2105_ROBOT_DB01_V3	Rev V3
Date:	Tuesday, December 26, 2023	Sheet 12 of 13