模块接口
Module interface

M1
DX-BT31

Pins (left): 1 UART-TX, 2 UART-RX, 3 UART-CTS, 4 UART-RTS, 5 NC, 6 NC, 7 IO7, 8 VPP, 9 TRAN, 10 KEY, 11 RST, 12 VBAT, 13 GND

Signals left: UART_TX, UART_RX, UART_CTS, UART_RTS, RST, VBAT

Pins (right): 34 IO44, 33 LINK-STATUS, 32 WORK-STATUS, 31 IO41, 30 IO40, 29 IO36, 28 IO35, 27 IO34, 26 DN, 25 LINK-STATUS, 24 WORK-STATUS, 23 KEY, 22 GND

Signals right: LINK_STATUS, WORK_STATUS, KEY

Pins (bottom): 14 IO16, 15 NC, 16 2TX, 17 2RX, 18 NC, 19 NC, 20 NC, 21 GND

电源LDO参考电路
Power LDO reference circuit

DC_5V — LDO_3.3V (VIN VSS VOUT) — VBAT
10uF, 22uF, 0.1uF
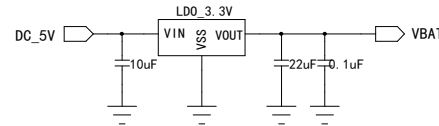
复位参考电路
Reset reference circuit

MCU_IO1 — 4.7K — 47K — RST
RST pulse 200ms
KEY — GND — ESD — RST
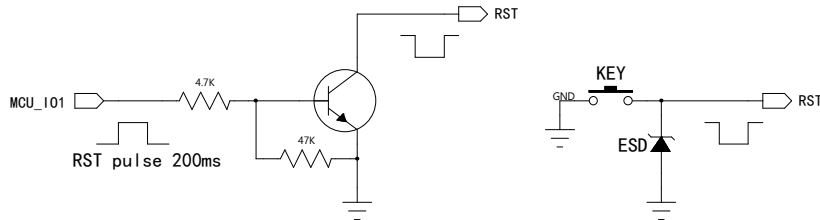
电平转换参考电路
Level conversion reference circuit

3.3V, 5V
10K, 10K, 4.7K, 4.7K, 10K, 10K
Module 3.3V UART_TX, UART_RX
2302 (G D S)
RX MCU 5V, TX
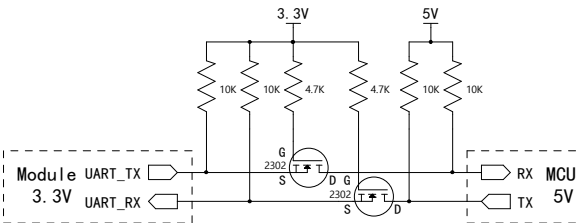
按键参考电路
Button reference circuit

MCU_IO2 — 4.7K — 47K — KEY
WAKE_UP pulse 200ms
KEY — GND — ESD — KEY
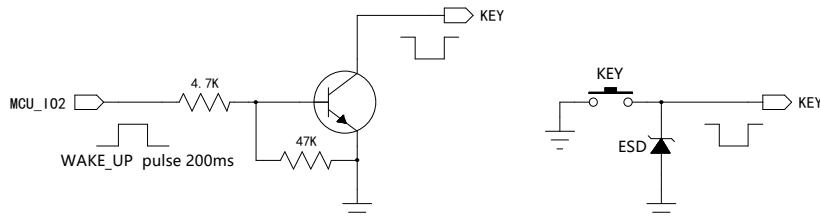
指示灯参考电路
Indicator light reference circuit

LINK_STATUS — RLED — 1K
WORK_STATUS — RLED — 1K
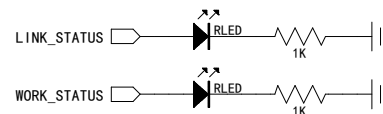
备注:
1、供电范围为 2.8-3.6V，需要确保输入电压不低于 2.8V。
2、为了减少电压跌落，建议给VBAT预留2个(22uF、0.1uF)具有最佳ESR性能的片式多层陶瓷电容(MLCC)，且电容靠近 VBAT引脚放置。
3、由于本模块的芯片工作电流非常低，当断开电源时，外围MCU的IO口若有微弱的电流供给模块，此时模块容易处于异常工作的状态，
　所以断开模块电源后，MCU与模块连接的所有IO口都必须配置为下拉。

Remark:
1. The power supply range is 2.8-3.6V, and it is necessary to ensure that the input voltage is not lower than 2.8V.
2. In order to reduce the voltage drop, it is recommended to reserve 2 (22uF, 0.1uF) chip multilayer ceramic capacitors (MLCC) with the best ESR performance for VBAT, and the capacitors should be placed close to the VBAT pin.
3. Since the working current of the chip of this module is very low, when the power is turned off, if the IO port of the peripheral MCU has a weak current supplying the module, the module is likely to be in an abnormal working state, so after disconnecting the power of the module, the MCU and All IO ports connected to the module must be configured as pull-down.

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