AI8051U主控芯片

U1

AI8051U-34K64-QFN48

| | | | |
|---|---|---|---|
| P53 | 1 | QSPIIO3_2/PWM8_4/TxD4_2/P5.3 | |
| P15 | 2 | I2SSD_2/QSPIIO0/PWM7_2/PWM3N/SCL_2/MOSI/ADC5/P1.5 | |
| P16 | 3 | I2SMCLK_4/I2SMCLK_2/QSPIIO1/PWM4P/MISO/RxD_3/ADC6/P1.6 | |
| P17 | 4 | I2SCK_2/QSPICLK/PWM8_2/PWM4N/SCLK/TxD_3/ADC7/P1.7 | |
| P47 | 5 | PWMAPS6_2/QSPINCS_3/ADC_ETR/MCLKO/nRST/P4.7 | |
| P30_D- | 6 | D-/RxD/INT4/P3.0 | |
| P43 | 7 | I2SCK_4/QSPICLK_2/CCP1_2/SCLK_3/TxD2_2/RxD_4/P4.3 | |
| P31_D+ | 8 | D+/TxD/P3.1 | |
| P32 | 9 | I2SCK/PWM_ETI2/PWM_ETI1/SCL_4/SCLK_4/INT0/P3.2 | |
| P33 | 10 | PWMAPS5/I2SMCLK/SDA_4/MISO_4/INT1/P3.3 | |
| P34 | 11 | PWMAPS6/I2SSD/MOSI_4/T1CLKO/T0/P3.4 | |
| P35 | 12 | I2SWS/PWMFLT/SS_4/T0CLKO/T1/P3.5 | |
| P36 | 13 | P3.6/INT2/WR_2/RxD_2 | |
| P37 | 14 | P3.7/INT3/RD_2/TxD_2 | |
| P56 | 15 | P5.6/XTALO/MCLKO_2/PWMAPS5_3 | |
| P57 | 16 | P5.7/XTALI/PWMAPS6_3 | |
| | 17 | Gnd/ADC_AGnd/ADC_Vref- | |
| P40 | 18 | P4.0/SS_3/ADCETR_2/QSPINCS_2/I2SWS_4 | |
| P20 | 19 | P2.0/A8/T11/CCP0_3/PWM1P_3/ADCETR_3/I2SWS_3 | |
| P21 | 20 | P2.1/A9/T11CLKO/CCP1_3/PWM1N_3/PWM5_3/I2SSD_3 | |
| P22 | 21 | P2.2/A10/CCP2_3/PWM2P_3/I2SMCLK_3 | |
| P23 | 22 | P2.3/A11/SDA/ECI_3/PWM2N_3/PWM6_3/PWM_ETI1_3/PWM_ETI2_3/I2SCK_3 | |
| P24 | 23 | P2.4/A12/SS_2/SCL/PWM3P_3 | |
| P50 | 24 | P5.0/RxD3_2/PWM5_4/CMP+_2 | |
| P52 | 48 | QSPIIO2_2/PWM7_4/RxD4_2/P5.2 | |
| P14 | 47 | I2SWS_2/QSPINCS/PWM3P/CCP1/SDA_2/SS/ADC4/P1.4 | |
| P13 | 46 | QSPIIO2/PWM6_2/PWM2N/CCP0/TxD2/ADC3/P1.3 | |
| P12 | 45 | QSPIIO3/PWMETI2_4/PWMETI1_4/PWM2P/ECI/RxD2/ADC2/P1.2 | |
| P11 | 44 | PWM5_2/PWM1N/CCP2/T2CLKO/ADC1/P1.1 | |
| P10 | 43 | PWM1P/T2/ADC0/P1.0 | |
| P42 | 42 | QSPIIO1_2/CCP0_2/MISO_3/RxD2_2/WR/P4.2 | |
| +5V | 41 | ADC_VRef+/ADC_AVcc/Vcc | |
| P00 | 40 | PWM1P_2/RxD3/AD0/ADC8/P0.0 | |
| P01 | 39 | PWM5/PWM1N_2/TxD3/AD1/ADC9/P0.1 | |
| P02 | 38 | PWM2P_2/RxD4/AD2/ADC10/P0.2 | |
| P03 | 37 | PWM6/PWM2N_2/TxD4/AD3/ADC11/P0.3 | |
| P04 | 36 | P0.4/ADC12/AD4/T3/PWM3P_2 | |
| P05 | 35 | P0.5/ADC13/AD5/T3CLKO/PWM3N_2/PWM7 | |
| P06 | 34 | P0.6/ADC14/AD6/T4/PWM4P_2/PWMFLT_2 | |
| P07 | 33 | P0.7/AD7/T4CLKO/PWM4N_2/PWM8/PWMFLT_3 | |
| P46 | 32 | P4.6/CMP+/QSPIIO2_3 | |
| P41 | 31 | P4.1/CMPO_2/ECI_2/MOSI_3/PWMETI1_2/PWMETI2_2/QSPIIO0_2/I2SSD_4 | |
| P45 | 30 | P4.5/ALE/CMPO/QSPIIO3_3/P4.4/RD/TxD_4/CCP2_2/PWMAPS5_2/CMP- | |
| UCAP | 29 | UCAP | |
| P27 | 28 | P2.7/A15/SCLK_2/PWM4N_3/PWM8_3/QSPICLK_3 | |
| P26 | 27 | P2.6/A14/MISO_2/PWM4P_3/QSPIIO1_3 | |
| P25 | 26 | P2.5/A13/MOSI_2/PWM3N_3/PWM7_3/QSPIIO0_3 | |
| P51 | 25 | P5.1/TxD3_2/PWM6_4/CMP+_3 | |

C2 100nF, C3 100nF

当使用USB下载及USB功能，必须将UCAP通过0.1uF电容去耦

C1 100nF

电源指示灯

R5 5.1kΩ LED1

R6 5.1kΩ LED2 P20

R7 5.1kΩ LED3 P21

R8 5.1kΩ LED4 P22

R9 5.1kΩ LED5 P23

R10 5.1kΩ LED6 P24

R11 5.1kΩ LED7 P25

R12 5.1kΩ LED8 P26

R13 5.1kΩ LED9 P27

R14 5.1kΩ LED10 P32

R15 5.1kΩ LED11 P33

R16 5.1kΩ LED12 P34

R17 5.1kΩ LED13 P35

PWMA输出指示灯&PCA输出指示灯

按键输入电路指示灯

四线制OLED12864接口

H3 2.54-1*4P母

硬件IIC验证接口电路

U3 外部存储记忆芯片

AT24C256C-SSHL-T

C10 100nF

SDA和SCL管脚使用内部上拉电阻进行上拉到VCC,无需外部上拉电阻

硬件SPI验证接口

LED14, LED15

C8 100nF, C9 100nF

两路WS2812彩灯

按键电路

GPIO口输入电路

0805自恢复保险 U2 POWER

电源通断开关

硬件复位按钮

USB1 KH-TYPE-C-16P

R18 33Ω, R1 33Ω

硬件USB下载电路

C4 10pF, C5 10pF, X2 32.768kHz

RTC专用时钟晶振电路

硬件自动追频测试电路

外挂32KHZ低速晶振实验电路

H12, H9, H10, H11

GPIO口全部引出

| | | | |
|---|---|---|---|
| 原理图 | 【SCH】AI8051U | 更新日期 | 2024-12-28 |
| 图页 | P1 | 创建日期 | 2024-12-13 |
| 绘制 | | 物料编码 | |
| 审阅 | AI8051U单片机Demo | | |
| | | 版本 | V1.0 |
| | | 尺寸 | A0 |
| | | 页 1 共 1 | |
| 嘉立创EDA | 嘉立创EDA | | |