Pin Usage

December 10, 2022

11:00 AM

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GPIO** | **Input** | **Output** | **Function** | **ADC** | **DAC** | **RTC** | **Capacitive Touch** | **WT32-SC01** | **CADDeck Std** | **CADDeck 10 Buttons** | **Notes** |
| **0** | pulled up | OK |  | ADC2\_CH1 |  | RTC\_GPI011 | T1 | I2S\_MCLK (Available) |  |  | outputs PWM signal at boot, must be LOW to enter flashing mode |
| **1** | TX pin | OK |  |  |  |  |  |  |  |  | debug output at boot |
| **2** | OK | OK |  | ADC2\_CH2 |  | RTC\_GPI012 | T2 | Available |  |  | connected to on-board LED, must be left floating or LOW to enter flashing mode |
| **3** | OK | RX pin |  |  |  |  |  |  |  |  | HIGH at boot |
| **4** | OK | OK |  | ADC2\_CH0 |  | RTC\_GPI010 | T0 |  |  |  |  |
| **5** | OK | OK |  |  |  |  |  | I2S\_SCLK (Available) |  |  | outputs PWM signal at boot, strapping pin. I2S is a digital audio interface. |
| **6** | x | x | (SCK/CLK) |  |  |  |  |  |  |  | connected to the integrated SPI flash |
| **7** | x | x | (SDO/SD0) |  |  |  |  |  |  |  | connected to the integrated SPI flash |
| **8** | x | x | (SDI/SD1) |  |  |  |  |  |  |  | connected to the integrated SPI flash |
| **9** | x | x | (SHD/SD2) |  |  |  |  |  |  |  | connected to the integrated SPI flash |
| **10** | x | x | (SWP/SD3) |  |  |  |  |  |  |  | connected to the integrated SPI flash |
| **11** | x | x | (CSC/CMD) |  |  |  |  |  |  |  | connected to the integrated SPI flash |
| **12** | OK | OK |  | ADC2\_CH5 |  | RTC\_GPI015 | T5 | (TFT\_MISO) |  |  | boot fails if pulled high, strapping pin |
| **13** | OK | OK |  | ADC2\_CH4 |  | RTC\_GPI014 | T4 | LCD\_SDA (TFT\_MOSI) |  |  |  |
| **14** | OK | OK |  | ADC2\_CH6 |  | RTC\_GPI016 | T6 | Output LCD\_SCL (TFT\_SCLK) |  |  | outputs PWM signal at boot |
| **15** | OK | OK |  | ADC2\_CH3 |  | RTC\_GPI013 | T3 | TFT\_CS |  |  | outputs PWM signal at boot, strapping pin |
| **16** | OK | OK |  |  |  |  |  | Not available on WROVER-B |  |  |  |
| **17** | OK | OK |  |  |  |  |  | Not available on WROVER-B |  |  |  |
| **18** | OK | OK |  |  |  |  |  | I2C\_SDA (TP,EM20918) | Also PC8575 SDA | Also PC8575 SDA | Pulled to 3.3V through 10k |
| **19** | OK | OK |  |  |  |  |  | I2C\_SCL (TP,EM20918) | Also PC8575 SCL | Also PC8575 SCL | Pulled to 3.3V through 10k |
| **21** | OK | OK |  |  |  |  |  | Output LCD\_RS |  |  |  |
| **22** | OK | OK |  |  |  |  |  | Input LCD\_REST |  |  |  |
| **23** | OK | OK |  |  |  |  |  | Output - LCD\_LED (Display brightness) |  |  |  |
| **25** | OK | OK |  | ADC2\_CH8 | DAC1 | RTC\_GPI06 |  | I2S\_LRCK (Available) | ENC\_1\_A |  | I2S is a digital audio interface. |
| **26** | OK | OK |  | ADC2\_CH9 | DAC2 | RTC\_GPI07 |  | I2S\_DSDIN (Available) | ENC\_1\_B |  | I2S is a digital audio interface. |
| **27** | OK | OK |  | ADC2\_CH7 |  | RTC\_GPI017 | T7 | Available | PCF8575 INT | PCF8575 INT |  |
| **32** | OK | OK |  | ADC1\_CH4 |  | RTC\_GPI09 | T9 | Available | Roll (X) | Roll (X) |  |
| **33** | OK | OK |  | ADC1\_CH5 |  | RTC\_GPI08 | T8 | Available | Pitch (Y) | Pitch (Y) |  |
| **34** | OK | NO |  | ADC1\_CH6 |  | RTC\_GPI04 |  | Available | ENC\_2\_A (future) | Zoom (analog) | No pullup resistor available |
| **35** | OK | NO |  | ADC1\_CH7 |  | RTC\_GPI05 |  | I2S\_ASDOUT (Available) | ENC\_2\_B (future) | Rotate (Analog) | No pullup resistor available |
| **36** | OK | NO |  | ADC1\_CH0 |  | RTC\_GPI00 |  | SENSOR\_VP,  EM20918 EM\_INT |  |  | No pullup resistor available |
| **37** |  |  |  | ADC1\_CH1 |  |  |  | Not available |  |  | Not Available on WROVER-B |
| **38** |  |  |  | ADC1\_CH2 |  |  |  | Not available |  |  | Not available on WROVER-B |
| **39** | OK | NO |  | ADC1\_CH3 |  | RTC\_GPI03 |  | Touch Interrupt, SENSOR\_VN |  |  | No pullup resistor available |
|  |  |  |  |  |  |  |  |  |  |  |  |

**PCF8575 Pinout (10 Buttons)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin** | **Function** |  | **Pin** | **Function** | **PCF8574 Pins** |
| P0 | Push-Sensor Knob |  | P8 | BUTTON\_6 | PCB S/W |
| P1 | BUTTON\_1 |  | P9 | BUTTON\_7 | P0-P7 = P0-P7 |
| P2 | BUTTON\_2 |  | P10 | BUTTON\_8 | P10-P17 = P8-P15 |
| P3 | BUTTON\_3 |  | P11 | BUTTON\_9 |  |
| P4 | BUTTON\_4 |  | P12 | BUTTON\_10 |  |
| P5 | BUTTON\_5 |  | P13 |  |  |
| P6 |  |  | P14 |  |  |
| P7 |  |  | P15 |  |  |

**Move to bits 0-7, and/or use a PCF8574 in any future version**

**PCF8575 Pinout (Std)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pin** | **Function** |  | **Pin** | **Function** |
| P0 |  |  | P8 | BUTTON\_1 |
| P1 |  |  | P9 | BUTTON\_2 |
| P2 |  |  | P10 | BUTTON\_3 |
| P3 |  |  | P11 | BUTTON\_4 |
| P4 |  |  | P12 | BUTTON\_JOY\_1 |
| P5 |  |  | P13 | BUTTON\_JOY\_2 |
| P6 |  |  | P14 | ENC\_1\_SW |
| P7 |  |  | P15 | ENC\_2\_SW |

**Move to bits 0-7, and/or use a PCF8574 in any future version**

ESP32- 
WROVER-B 
o 
o 
o 
o 
o 
o 
o 
o 
o 
o 
0 
z 
+3U3 
GND 
GND 
1035/12s_asoou 
1026/12S_OSDIN 
105„12S SCI-K 
100/12S_MCLK 
1023 
1022 
ESP32_EN 
1013 
1015 
104 
GND 
GND 
3143 
39 
*303 
GNO 
GNO 
1033 
1032 
1027 
1014 
1012 
1021 
12C_SDA 
12C_SCL 
1034 
SENSOA_U 
SENSOR U 
GNO 
*303 
Figure 3-3: WT32-SC01 board interface definition diagram 

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