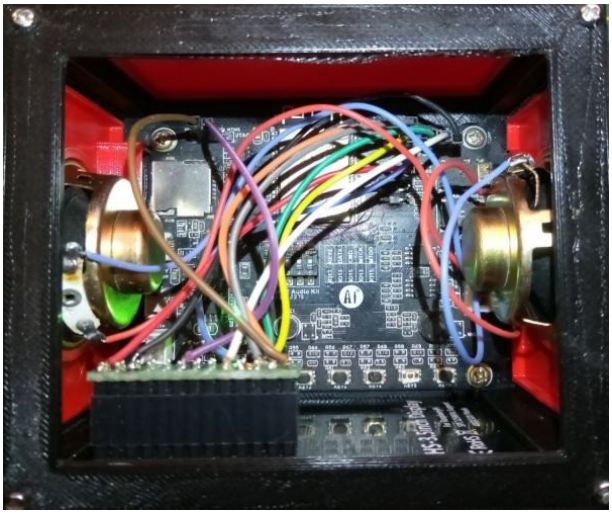
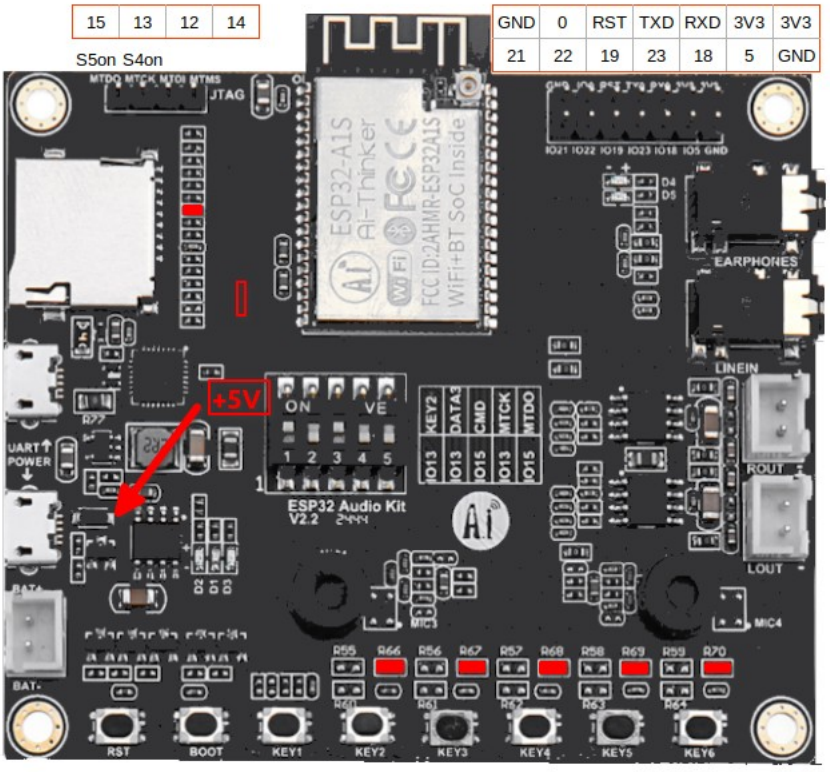
# MWR-V2 / AI Thinker A1S Board




| GPIO | | SD_MMC | SD_SPI | | KEYS |
|---|---|---|---|---|---|
| 0 | | | | At boot high | |
| 1 | TX0 | | | | |
| 2 | | DATA0 | MISO | At boot high | |
| 3 | RX0 | | | | |
| 4 | | DATA1 | | | |
| 5 | | | | | |
| 12 | | DATA2 | | MTDI<br>At boot low | |
| 13 | | DATA3<br>S2 on | CS | MTCK<br>S4 on | KEY2<br>S1 on |
| 14 | | CLK | SCK | MTMS<br>LED4 red | |
| 15 | | CMD<br>S3 on | MOSI | MTDO<br>S5 on | |
| 18 | | | | | KEY5 |
| 19 | | | | LED5 red | KEY3 |
| 21 | Amplifier<br>ShutDown | | | | |
| 22 | | | | | |
| 23 | | | | | KEY4 |
| 34 | SD<br>Detect | | | Input only | |
| 36 | | | | SENSOR VP<br>Input only | KEY1 |
| 39 | Headphones<br>Detect | | | SENSOR VN<br>Input only | |

Schematic:
https://github.com/schreibfaul1/ESP32-audioI2S/blob/master/examples/ESP32-A1S/A1S.pdf

```
// Digital I/O used

    #define TFT_CS 22
    #define TFT_DC 5
    #define TFT_BL -1
    #define TP_IRQ 12
    #define TP_CS 13
    #define SD_MMC_D0 2 // cannot be changed
    #define SD_MMC_CLK 14 // cannot be changed
    #define SD_MMC_CMD 15 // cannot be changed
    #define IR_PIN -1
    #define SPI_MOSI 23 // TFT and TP (VSPI)
    #define SPI_MISO 19 // TFT and TP (VSPI)
    #define SPI_SCK 18 // TFT and TP (VSPI)
#if DECODER == 0
    #define VS1053_CS -1
    #define VS1053_DCS -1
    #define VS1053_DREQ -1
    #define VS1053_MOSI -1 // VS1053 (HSPI)
    #define VS1053_MISO -1 // VS1053 (HSPI)
    #define VS1053_SCK -1 // VS1053 (HSPI) (sometimes we need a 1k resistor against ground)
#else
    #define I2S_DOUT 25
    #define I2S_DIN 35 // pin not used
    #define I2S_BCLK 27
    #define I2S_LRC 26
    #define I2S_MCLK 0
#endif
    #define I2C_DATA 33
    #define I2C_CLK 32
    #define SD_DETECT 34 // some pins on special boards: Lyra, Olimex, A1S …
    #define HP_DETECT 39
    #define AMP_ENABLED 21
```