

SAMPLE BILL OF MATERIAL

| Item | Quantity | Reference | Value | PART TYPE | PCB Footprint | Manufacturer Part Number | Manufacturer Name | Description |
|------|----------|---|--|-------------------|-----------------------------|--------------------------|----------------------------------|---|
| 1 | 7 | C1,C2,C8,C9, C10,C11,C12 | 10pF / | CAP | SMD 0603 | GRM188R61A106KE69J | Murata Electronics | CAP CER 10UF 10V XSR 0603 |
| 2 | 1 | C3 | 100uF/ | CAP | SMD 0805 | GRM218R60J107ME15L | Murata Electronics | CAP CER 100UF 6.3V XSR 0805 |
| 3 | 7 | C4,C6,C13,C14, C15,C16,C17 | 0.1uF/ | CAP | SMD 0603 | 885382206004 | Würth Elektronik | CAP CER 0.1UF 50V X7R 0603 |
| 4 | 3 | C6,C9,C15 | 15.0pF | CAP | SMD 0603 | C0603X150J4HAC7867 | KEMET | CAP CER 0603 15PF 16V ULTRA STAB |
| 5 | 2 | C18,C19 | 22pF | CAP | SMD 0603 | GQM1875C2E220F812D | Murata Electronics | CAP CER 22PF 250V NPO 0603 |
| 6 | 2 | C20,C21 | 2.2uF | CAP | SMD 0603 | C1608X7R1A225K080AE | TDK Corporation | CAP CER 2.2UF 10V X7R 0603 |
| 7 | 2 | C22,C23 | 1uF | CAP | SMD 0603 | 885012206026 | Würth Elektronik | CAP CER 1UF 10V X7R 0603 |
| 8 | 8 | D1,D2,D4, LED1,LED2, LED3,LED4 | LED Indication 0603 | LED | SMD 0603 | 150060G575000 | Würth Elektronik | LED <COLOR> CLEAR 0603 SMD |
| 9 | 4 | R3,R4,R21,R22 | 1K | RES | SMD R0603 | ESR03EZPJ102 | Rohm Semiconductor | RES SMD 1K OHM 5% 1/4W 0603 |
| 10 | 1 | R6 | 1K | RES | SMD R0805 | ESR10EZPF1001 | Rohm Semiconductor | RES SMD 1K OHM 1% 0.4W 0805 |
| 11 | 2 | R1,R2 | 47R | RES | SMD R0603 | ESR03EZPJ470 | Rohm Semiconductor | RES SMD 47 OHM 5% 1/4W 0603 |
| 12 | 6 | R5,R7,R28,R29, R30,R31 | 10K | RES | SMD R0805 | ESR10EZPF1002 | Rohm Semiconductor | RES SMD 10K OHM 1% 0.4W 0805 |
| 13 | 1 | R19 | 10K | RES | SMD R0603 | SDR03EZPJ103 | Rohm Semiconductor | RES SMD 10 KOHM 5% 0.3W 0603 |
| 14 | 10 | R8,R9,R10,R11, R12,R13,R14, R15,R16,R17 | 4.7K | RES | SMD R0603 | ESR03EZPJ472 | Rohm Semiconductor | RES SMD 4.7K OHM 5% 1/4W 0603 |
| 15 | 1 | R18 | 100K | RES | SMD R0603 | ESR03EZPJ104 | Rohm Semiconductor | RES SMD 100K OHM 5% 1/4W 0603 |
| 16 | 1 | R20 | 2K | RES | SMD R0603 | SDR03EZPJ202 | Rohm Semiconductor | RES SMD 2 KOHM 5% 0.3W 0603 |
| 17 | 3 | R23,R32,R33 | 330R | RES | SMD R0603 | SDR03EZPJ331 | Rohm Semiconductor | RES SMD 330 OHM 5% 0.3W 0603 |
| 18 | 4 | R24,R25,R26, R27 | 22R | RES | SMD 0603 | SDR03EZPJ220 | Rohm Semiconductor | RES SMD 22 OHM 5% 0.3W 0603 |
| 19 | 1 | Q1 | 12Mhz | XTAL-4-3225 | SMD NX3225 | FL1200128 | Diodes Incorporated | CRYSTAL CERAMIC SEAM3225 T&R 3K |
| 20 | 1 | Q2 | IRLML2244 | PMOS | SMD SOT23-3 | IRLML2244TRPBF | Infineon Technologies | MOSFET P-CH 20V 4.3A SOT23 |
| 21 | 1 | MK1 | ICS-43432 | MIC MEMS 26DB | SMD ICS-43432 | ICS-43432 | TDK InvenSense | MICROPHONE MEMS DIGITAL I2S OMNI |
| 22 | 1 | U54 | XC6206-1.5V | Voltage Regulator | SMD SOT23-3 | XC6206P152MR-G | Torex Semiconductor Ltd | 1UA LOW QUIESCENT 3 TERMINAL, LO |
| 23 | 1 | U55 | XC6206-2.8V | Voltage Regulator | SMD SOT23-3 | XC6206P282MR-G | Torex Semiconductor Ltd | 1UA LOW QUIESCENT 3 TERMINAL, LO |
| 24 | 1 | U3 | AMS1117-3.3 | Voltage Regulator | SMD SOT-223 | AMS1117-3.3 | Advanced Monolithic Systems | 1-Amp 3.3-Volt Low Drop Out Voltage Regulator |
| 25 | 1 | U4 | PMIC - Battery Chargers | Charge Controller | SMD SOT-23-5 | MCP73831T-2ACI/OT | Microchip Technology | IC CONTROLLER LI-ION 4.2V SOT23-5 |
| 26 | 2 | IC2,IC3 | 8mb/64Mbit | PSRAM 8mb | SMD SOP-8 | IP56404L-SQ | IPUS Limited | 3.3V SOP8 64Mbit PSRAM compatible with ESP-PSRAM64H |
| 27 | 1 | D4 | DIODE-123FL | Diode | SMD DIODE_SOD_123FL | MBR1H1005FT3G | ON Semiconductor | DIODE SCHOTTKY 100V 1A SOD123FL |
| 28 | 2 | U1,U2 | Ai-Thinker ESP32-S | MCU | SMD ESP-32S | ESP32-S | Ai-Thinker | ESP32-S, WiFi+Bluetooth Module Based On ESP32, Built-in 32Mbit Flash, SMD38 Package |
| 29 | 1 | IC1 | Embedded- Microcontrollers | MCU | SMD LQFP144 | STM32F407ZGT6 | STMicroelectronics | IC MCU 32BIT 1MB FLASH 144LQFP |
| 30 | 1 | MICROSD | MICROSD | CONN | CONN_uSD_R_SMT_1 2 | 693071010811 | Würth Elektronik | CONN MICRO SD CARD PUSH-PUSH R/A |
| 31 | 2 | X1,X2 | CONN FFC BOTTOM 24POS 0.50MM R/A | CONN | SMD FH12-24S-0.5SH | FH12-24S-0.5SH(55) | Hirose Electric Co Ltd | CONN FFC BOTTOM 24POS 0.50MM R/A |
| 32 | 2 | J1,J3 | Rectangular Connectors - Headers, Male | CONN | SMD SAMTECH_FTSH- 105-01 | FTSH-105-01-F-DV-K-TR | Samtec Inc. | CONN HEADER SMD 10POS 1.27MM |
| 33 | 1 | J2 | USB CONNECTOR | CONN | USB-C (USB TYPE-C) | 632723100011 | Wurth Elektronik | CONN RCP USB3.1 TYPEC 24P SMD RA |
| 34 | 3 | START/STOP, RESET, BOOT0 | Tactile Switches | SWITCH | SMD | B3U-1000P | Omron Electronics Inc-EMC Div | SWITCH TACTILE SPST-NO 0.05A 12V |
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