2. Bill of Materials (BOM)

Please put a BOM below. Do not forget to put operating temperature range of each component.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | Component | Provider | Model number | Cost (USD) | Operating Temperature |
| 1 | MCU | STMicroelectronics | STM32L431RCT6 | $7.02 | -40 to 85 C° |
| 2 | 5x0.1 µF capacitor | Samsung Electro-Mechanics | CL05B104KO5NNNC | $0.10 | -55℃ to 125℃ |
| 3 | 2x1 µF capacitor | Samsung Electro-Mechanics | CL05A105KA5NQNC | $0.18000 | -55°C to 85°C |
| 4 | 2x12pF capacitor | Samsung Electro-Mechanics | CL05C120JB5NNNC | $0.10000 | -55℃ to 125℃ |
| 5 | 4.7 µF capacitor | Samsung Electro-Mechanics | CL05A475MP5NRNC | $0.10000 | -55℃ to 125℃ |
| 6 | 2x2.2pF capacitor | Samsung Electro-Mechanics | CL05C2R2CC51PNC | $0.10000 | -55℃ to 125℃ |
| 7 | 10kohm Resistor | YAGEO | RT0603DRD0710KL | $0.18000 | -55°C to 155°C |
| 8 | 10µF capacitor | Murata Electronics | GRM21BR61H106KE43L | $0.34000 | -55°C to 85°C |
| 9 | Ferrite Bead | Murata Electronics | BLM18EG601SN1D | $0.21000 | -55°C to 125°C |
| 10 | 12MHz crystal | CTS-Frequency Controls | SA324120F35HLR | $0.63000 | -55 to 125℃ |
| 11 | 32.768KHz crystal | EPSON | FC-135 32.7680KA-E3 | $1.16000 | -40°C to 85°C |
| 12 | 2x circuit RF | Texas instrument | [CC1125RHBR](https://www2.mouser.com/ProductDetail/Texas-Instruments/CC1125RHBR?qs=uuvYgmlZVOsNmcFvwGcWqA%3D%3D) | $6.42 | -40 to 85 |
| 13 | 23xResitor 0 ohm | YAGEO | RC0402FR-070RL | $0.10000 | -55°C ~ 155°C |
| 14 | 6x100nF capacitor | YAGEO | CC0603KRX7R9BB104 | $0.10000 | -55°C ~ 125°C |
| 15 | 6x15pF capacitor | Samsung Electro-Mechanics | CL05C150JB5NNNC | $0.10000 | -55°C ~ 125°C |
| 16 | 24x47nF capacitor | Murata Electronics | GRM033R71C472KE14D | $0.10000 | -55°C ~ 125°C |
| 17 | 2x1.8nF capacitor | Murata Electronics | GRM033R71E182KA12D | $0.10000 | -55°C ~ 125°C |
| 18 | 8x10nF capacitor | YAGEO | CC0603KRX7R9BB103 | $0.10000 | -55°C ~ 125°C |
| 19 | 2x56nH inductor | Murata Electronics | LQG18HN56NJ00D | $0.24000 | -40°C ~ 85°C |
| 20 | 5x5.1pF capacitor | Samsung Electro-Mechanics | CL05C5R1CB5NNNC | $0.10000 | -55°C ~ 125°C |
| 21 | 2x27nH inductor | Murata Electronics | LQG15HS27NJ02D | $0.10000 | -55°C ~ 125°C |
| 22 | 2x15nH inductor | Murata Electronics | LQP03TN15NJ02D | $0.10000 | -55°C ~ 125°C |
| 23 | 2x43nH inductor | TDK Corporation | MLG1005S43NJTD25 | $0.16000 | -55°C ~ 125°C |
| 24 | 2xResistor 56K | YAGEO | RC0402FR-0756KL | $0.10000 | -55°C ~ 155°C |
| 25 | 39pF capacitor | Murata Electronics | GCM1555C1H390JA16D | $0.10000 | -55°C ~ 125°C |
| 26 | 2.2pF capacitor | Samsung Electro-Mechanics | CL05C2R2CB51PNC | $0.10000 | -55°C ~ 125°C |
| 27 | 3x56pF capacitor | Murata Electronics | GRT1555C1H560JA02J | $0.10000 | -55°C ~ 125°C |
| 28 | 2x18ohm Resistor | YAGEO | RC0402FR-0718RL | $0.10000 | -55°C ~ 155°C |
| 29 | 3x100pF capacitor | TDK Corporation | C1608C0G2E101J080AA | $0.17000 | -55°C ~ 125°C |
| 30 | 6.2pF capacitor | KEMET | C0603C629C5GACAUTO | $0.18000 | -55°C ~ 125°C |
| 31 | 180nH inductor | Murata Electronics | LQG15HSR18H02D | $0.10000 | -55°C ~ 125°C |
| 32 | 91nH inductor | Murata Electronics | LQG15WZ91NJ02D | $0.15000 | -55°C ~ 125°C |
| 33 | 19nH inductor | Murata Electronics | LQG15WH19NJ02D | $0.14000 | -55°C ~ 125°C |
| 34 | 120nH inductor | Murata Electronics | LQG15HSR12J02D | $0.10000 | -55°C ~ 125°C |
| 35 | 150nH inductor | Murata Electronics | DFE201612PD-R15M=P2 | $0.54000 | -40°C ~ 125°C |
| 36 | 150pF capacitor | Murata Electronics | GRM1555C2A151GE01J | $0.10000 | -55°C ~ 125°C |
| 37 | 18pF capacitor | YAGEO | CC0402JPNPO9BN180 | $0.10000 | -55°C ~ 125°C |
| 38 | 75nHinductor | TDK Corporation | MLG1005S75NJTD25 | $0.16000 | -55°C ~ 125°C |
| 39 | 1.8pF capacitor | Samsung Electro-Mechanics | CL05C1R8CB5NNNC | $0.10000 | -55°C ~ 125°C |
| 40 | 220pF capacitor | TDK Corporation | CGA4F3X7S2A224M085AB | $0.31000 | 55°C ~ 125°C |
| 41 | 22ohm Resistor | YAGEO | RC0603FR-1322RL | $0.10000 | -55°C ~ 155°C |
| 42 | 22nH inductor | Murata Electronics | LQG15HS22NJ02D | $0.10000 | -55°C ~ 125°C |
| 43 | 2x3.3uF capacitor | Vishay Vitramon | VJ0805V335ZXQTW1BC | $0.42000 | -25°C ~ 85°C |
| 44 | 3x1nF capacitor | TDK Corporation | C0603JB1E102M030BA | $0.10000 | 25°C ~ 85°C |
| 45 | 2x330pF capacitor | TDK Corporation | C0603X7R1C331M | $0.10000 | -55°C ~ 125°C |
| 46 | 2x18pF capacitor | TDK Corporation | C0603CH1H180K030BA | $0.10000 | -25°C ~ 85°C |
| 47 | 2x47pF capacitor | Samsung Electro-Mechanics | CL31C470JBCNNNC | $0.14000 | -55°C ~ 125°C |
| 48 | 3x22pF capacitor | TDK Corporation | C0402CH1C220J020BC | $0.23000 | -25°C ~ 85°C |
| 49 | 6.8pF capacitor | TDK Corporation | C0402C0G1C6R8B | $0.10000 | -55°C ~ 125°C |
| 50 | 4pF capacitor | TDK Corporation | C0402C0G1C040B | $0.10000 | -55°C ~ 125°C |
| 51 | 180ohm Resistor | YAGEO | RC0402FR-07180RL | $0.10000 | -55°C ~ 125°C |
| 52 | 2x crystal | [Epson Timing](https://www2.mouser.com/manufacturer/epson-timing/) | [FA-128 40.0000MF20X-K0](https://www2.mouser.com/ProductDetail/Epson-Timing/FA-128-40.0000MF20X-K0?qs=csoGsJbXmtA9xTYnrGY5Cw%3D%3D) | $0.602 | -40C +85C |
| 53 | Rf amplifier | [Qorvo](https://www2.mouser.com/manufacturer/qorvo/) | RF5110GTR7 | $11.19 | 40C +85C |
| 54 | 2xSMA connector | Würth Elektronik | 60611002111502 | $8.05000 | -55°C ~ 155°C |
| 56 | 2xRegulator | Texas Instruments | TPS79930DDCR | $0.98000 | -40°C ~ 125°C |
| 57 | 2x2.2uF capacitor | Vishay Vitramon | VJ0805V225MXQTW1BC | $0.32000 | -25°C ~ 85°C |
| 58 | 2xFerrite bead | Murata Electronics | BLM15HG102SN1D | $0.13000 | -55°C ~ 125°C |
| 59 | male connector type header | Sullins Connector Solutions | NRPN252PARN-RC | $3.48000 | -40°C ~ 105°C |
| 60 | 3xOCP | [Analog Devices](https://www2.mouser.com/manufacturer/analog-devices/) | LTC4361CTS8-2#TRMPBF | $5.22000 | 0°C ~ 70°C |
| 61 | 3x10µF capacitor | Vishay Vitramon | VJ1206V106ZXQTW1BC | $0.71000 | -25°C ~ 85°C |
| 62 | 3xTransisitor N-Channel | Vishay Siliconix | SI1470DH-T1-GE3 | $1.00 | 55°C ~ 150°C |
| 63 | 3x0.025ohm resistor | YAGEO | RL1206FR-070R025L | $0.76000 | -55°C ~ 155°C |
| 64 | Flash memory | Winbond Electronics | W25Q128JVSIQ | $1.71000 | -40°C ~ 85°C |

NB  
our components are available in different manufacturing such as 7PCB