

| Designator | Value / Comment | Description | Footprint | Library reference | Quantity |
|---|-----------------|---|--------------------------------------|--------------------|----------|
| C1, C3, C11 | 100nF | Capacitor | C0603 | Cap | 3 |
| C2 | 0.33uF | Capacitor Polarised | CAPPRD200W50D500H600 | ECE-A1EKS100 | 1 |
| C4 | 47nF | Capacitor | C0603 | Cap | 1 |
| C5 | 10uF | Capacitor Polarised | CAPPRD200W50D500H600 | ECE-A1EKS100 | 1 |
| C6 | 1nF | Capacitor | C0603 | Cap | 1 |
| C7 | 4.7nF | Capacitor | MKS2C033301C00MI00 | MKS2C033301C00MI00 | 1 |
| C8, C9 | 33uF | Capacitor Polarised | CAPPRD200W50D500H600 | ECE-A1EKS100 | 2 |
| C10 | 0.1uF | Capacitor Polarised | CAPPRD200W50D500H600 | ECE-A1EKS100 | 1 |
| D1, D2, D3, D4, D5, D6, D7, D8, D10 | LED_SMD | LED RED CLEAR 0603 SMD | 0603_LED | LED_SMD | 9 |
| D9, D11 | 1N5817 | Schottky Diode | DIOAD950W60L350D150 | SD103A-TR | 2 |
| IC1 | MAX734CSA+ | Integrated Circuit | SOIC127P600X175-8N | MAX734CSA+ | 1 |
| IC2 | DG419DY | Integrated Circuit | SOIC127P600X175-8N | DG419DY | 1 |
| IC3, IC4, IC9 | 74HC595D | Integrated Circuit | SOIC127P600X175-16N | 74HC595D | 3 |
| IC5, IC6, IC7, IC8 | 74HC257D,652 | Integrated Circuit | 74HC257D652 | 74HC257D,652 | 4 |
| J1 | 691321300002 | Connector | SHDR2W80P0X381_1X2_87 1X700X940P | 691321300002 | 1 |
| J2 | M20-9990645 | Connector | HDRV6W66P0X254_1X6_15 24X254X874P | M20-9990645 | 1 |
| J3 | 54819-0519-v1 | USB - mini B USB 2.0 OTG Receptacle Connector 5 Position Through Hole, Right Angle | MOLEX_54819-0519-v1 | 54819-0519-v1 | 1 |
| L1 | 22uF | Inductor RF Molded Wirewound 22uH 10% 100KHz 27Q-Factor Ferrite 0.14A 2.65Ohm DCR 1210 Automotive T/R | INDC3225X210N | B82422A1223K100 | 1 |
| PW1, PW3, PW4 | 87527-3 | Conn Unshrouded Header HDR 3 POS 2.54mm Solder ST Thru-Hole Carton | TE_87527-3 | 87527-3 | 3 |
| PW2 | TSW-103-07-F-D | | SAMTEC_TSW-103-07-F-D | TSW-103-07-F-D | 1 |
| Q1, Q2, Q4, Q5 | 2N2222A | High Speed Switch, 0.6 A IC, -65 to 175 degC, 3-Pin TO-18, RoHS, Bulk | STM-TO-18-3 | CMP-2000-05381-1 | 4 |
| Q3 | 2N2907A | Transistor BJT PNP | CENTRAL_TO18 | 2N2907A | 1 |
| Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20 | BSS138BK | MOSFET (N-Channel) | TL431CDBZR215 | BSS138BK | 15 |
| R1,R44,R52,R56 | 10k | Resistor | R0805 | Res1 | 104 |
| R2,R3,R4,R5,R6,R7,R8, R9,R18,R46,R48,R105, R106,R107,R108,R109, R110,R111,R112 | 1k | Resistor | R0805 | Res1 | 104 |
| R10,R11,R12,R13,R14, R15,R16,R17,R19,R20, R21,R22,R23,R24,R25, R26,R61,R62,R63,R64, R65,R66,R67,R68,R69, R70,R71,R72,R73,R74 | 1M | Resistor | R0805 | Res1 | 104 |
| R32,R33,R34,R35,R36, R37,R38,R39,R40,R41, R42 | 100k | Resistor | R0805 | Res1 | 104 |
| R43,R47,R59,R60 | 2k | Resistor | R0805 | Res1 | 104 |
| R45,R113 | 240 | Resistor | R0805 | Res1 | 104 |

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|--|------------------------------|---|---------------------------------|---------------------|----------|
| R49 | 220 | Resistor | R0805 | Res1 | 104 |
| R50 | 820 | Resistor | R0805 | Res1 | 104 |
| R51 | 3.3k | Resistor | R0805 | Res1 | 104 |
| R53,R54,R55,R57 | 4.7k | Resistor | R0805 | Res1 | 104 |
| R79,R80,R81,R82,R83, R84,R85,R86,R87,R88, R89,R90,R91,R92,R93, R94,R95,R96,R97,R98, R99,R100,R101,R102, R103,R104 | 2.2k | Resistor | R0805 | Res1 | 104 |
| S1, S2, S3, S4 | 418117270908 | Switch | DIPS762W60P254L2132H6 95Q16N | 418117270908 | 4 |
| U1 | M27C512-90F6 | EPROM - UV Memory IC 512Kb (64K x 8) Parallel 90 ns 28-CDIP Frit Seal with Window | DIP254P1524X572-28 | M27C512-90F6 | 1 |
| U2 | L7805CV | Positive Voltage Regulator, 5V, 3-Pin TO-220 | TO220 | CMP-0244-00483-1 | 1 |
| U3 | LMC6482IN | Operational Amplifiers - Op Amps CMOS Dual Rail- to-Rail Input and Output Operational Amplifier 8- PDIP -40 to 85 | DIP254P762X508-8 | LMC6482IN | 1 |
| U4 | LM317T | Adjustable Voltage Regulator, 3-Pin TO-220 | TO-220 | CMP-0244-00444-1 | 1 |
| U5 | STM32F103C6T6A _BLUE_PILL | | TE_1-535541-8 | STM32F103_BLUE_PILL | 1 |
| U6 | 74HC165D | 8-bit serial or parallel- in/serial-out shift registers, 16-SOIC | SOIC127P600X175-16N | 74HC165D | 1 |
| X1 | 1825910-6 | Body Features: Product Orientation Vertical | 18259106 | 1825910-6 | 1 |