

# Bill of Material List of the Platinfuchs lia board (mechanical fasteners are not included)

Maier 17.02.2022

| Pos | Quantity | Designator  | Type              | Producer   | Footprint       | Description             | Company  | Order Number       | Price 5000+ | Price x Quantity |
|-----|----------|---|-------------------|------------|-----------------|-------------------------|----------|--------------------|-------------|------------------|
| 1   | 1        | C1  | Electrolytic cap. | Rubycon    | D08L13          | 35RX30100M8X11.5        | Digi-Key | 1189-1895-ND       | 0.103       | 0.103            |
| 2   | 1        | C2  | Electrolytic cap. | Rubycon    | D08L17          | 25RX30220M8X11.5        | Digi-Key | 1189-1230-ND       | 0.113       | 0.113            |
| 3   | 23       | C3, C19, C24, C25, C35, C36, C37, C54, C55, C56, C58, C62, C63, C64, C65, C66, C67, C75, C82, C93, C96, C101, C102      | Capacitor         |            | 0805            | 2.2µF / 25V / X7R       | Digi-Key | 1276-2954-2-ND     | 0.019       | 0.430            |
| 4   | 6        | C4, C5, C6, C7, C8, C90   | Capacitor         |            | 1210            | 10µF / 25V / X7R        | Digi-Key | 1276-1807-2-ND     | 0.081       | 0.489            |
| 5   | 10       | C9, C10, C11, C12, C13, C14, C15, C16, C17, C18   | Capacitor         |            | 1210            | 22µF / 16V / X7R        | Digi-Key | 1276-3395-2-ND     | 0.090       | 0.905            |
| 6   | 6        | C20, C68, C69, C84, C85, C97 C21, C26, C28, C31, C32, C33, C34, C38, C39, C57, C61, C77, C79, C80, C81, C83, C112, C113 | Capacitor         |            | 1206            | 4.7µF / 50V / X7R       | Digi-Key | 1276-1292-2-ND     | 0.078       | 0.466            |
| 7   | 18       | C22, C23  | Capacitor         |            | 0805            | 100nF / 50V / X7R       | Farnell  | 175-9265           | 0.009       | 0.160            |
| 8   | 2        | C27, C76, C78, C98, C99,  | Capacitor         |            | 0805            | 150pF / 50V / NPO       | Farnell  | 175-9205           | 0.012       | 0.024            |
| 9   | 15       | C100, C103, C104, C105, C106, C107, C108, C109, C110, C111  | Capacitor         |            | 0805            | 4.7nF / 50V / NPO       | Farnell  | 175-9241           | 0.014       | 0.209            |
| 10  | 9        | C29, C30, C60, C70, C71, C73, C74, C89, C92   | Capacitor         |            | 0805            | 10µF / 6.3V / X7R       | Digi-Key | 1276-3107-2-ND     | 0.024       | 0.212            |
| 11  | 8        | C40, C41, C44, C45, C48, C49, C52, C53  | Capacitor         |            | 0805            | 100pF / 50V / NPO       | Farnell  | 175-9203           | 0.009       | 0.073            |
| 12  | 4        | C42, C43, C50, C51  | Capacitor         |            | 0805            | 82nF / 50V / X7R        | Farnell  | 175-9264           | 0.014       | 0.057            |
| 13  | 1        | C46   | Capacitor         |            | 0805            | 22nF / 50V / X7R        | Farnell  | 175-9252           | 0.015       | 0.015            |
| 14  | 1        | C47   | Capacitor         |            | 0805            | 220pF / 50V / NPO       | Farnell  | 175-9209           | 0.017       | 0.017            |
| 15  | 4        | C86, C91, C94, C95  | Capacitor         |            | 0805            | 6.8nF / 50V / X7R       | Farnell  | 175-9244           | 0.011       | 0.046            |
| 16  | 2        | C87, C88  | Capacitor         |            | 0805            | 22pF / 50V / NPO        | Farnell  | 175-9195           | 0.015       | 0.030            |
| 17  | 2        | C59, C72  | Capacitor         |            | 0805            | 1.2nF / 50V / X7R       | Farnell  | 175-9228           | 0.013       | 0.027            |
| 18  | 1        | D1  | LED green         |            | 0805            | LG R971-KN-1            | Digi-Key | 475-1410-2-ND      | 0.039       | 0.039            |
| 19  | 1        | D2  | LED red           |            | 0805            | LH R974-LP-1            | Digi-Key | 475-1415-2-ND      | 0.039       | 0.039            |
| 20  | 1        | D3  | LED yellow        |            | 0805            | LY R976-PS-36           | Digi-Key | 475-2560-2-ND      | 0.041       | 0.041            |
| 21  | 8        | D4, D5, D9, D10, D17, D18, D21, R66   | Shottky Diode     |            | SOD323          | PMEG4010BEA.135         | Digi-Key | 1727-1202-2-ND     | 0.064       | 0.509            |
| 22  | 2        | D6, D7  | Diode             |            | SOD323          | 1N4148WSTR              | Digi-Key | 1655-1359-2-ND     | 0.018       | 0.036            |
| 23  | 2        | D8, D30   | Zener Diode       |            | SOD123F         | BZT52H-B13,115          | Digi-Key | 1727-2090-2-ND     | 0.026       | 0.052            |
| 24  | 9        | D11, D12, D13, D14, D15, D16, D19, D20, D23   | Shottky Diode     |            | SOD323          | PMEG2010EA,115          | Digi-Key | 1727-4326-2-ND     | 0.078       | 0.702            |
| 25  | 1        | D22   | Zener Diode       |            | SOD323          | BZX384-C33,115          | Digi-Key | 1727-6227-2-ND     | 0.026       | 0.026            |
| 26  | 1        | D24   | Zener Diode       |            | SOD323          | BZX384-C13,115          | Digi-Key | 1727-1636-2-ND     | 0.026       | 0.026            |
| 27  | 3        | D25, D26, D27   | NTC 10K           | Murata     | SOD323          | NCP21XV103J03RA         | Digi-Key | 490-2456-2-ND      | 0.060       | 0.181            |
| 28  | 1        | D28   | Zener Diode       |            | SOD123F         | BZT52H-B20,115          | Digi-Key | 1727-1600-2-ND     | 0.026       | 0.026            |
| 29  | 1        | D29   | Zener Diode       |            | SOT23-3         | CDSOT23-SM712           | Digi-Key | CDSOT23-SM712TR-ND | 0.536       | 0.536            |
| 30  | 1        | F1  | Fuse              | Bel Fuse   | 1206            | 0685H9150-01            | Digi-Key | 507-1944-2-ND      | 0.101       | 0.101            |
| 31  | 1        | F2  | Fuse              | Bel Fuse   | 1206            | 0685H9200-01            | Digi-Key | 508-1945-2-ND      | 0.101       | 0.101            |
| 32  | 1        | J1  | Male header       | Weidmüller | Weidm_4pol_90°  | SL-SMT 5.08HC/04/90     | Farnell  | 177-4782001        | 0.880       | 0.880            |
| 33  | 1        | J2  | Male header       | Molex      | Molex_4pol_90°  | KK 254 Molex 22-05-3041 | Farnell  | 175-6798           | 0.221       | 0.221            |
| 34  | 1        | J3  | Male header       |            | 1x20_0°_Stecker | Header 1x20; 2,54mm, 0° | Farnell  | 102-2262           | 0.263       | 0.263            |
| 35  | 1        | J4  | Female header     |            | Microm_2x8_90°  | MicroMatch 8-215460-6   | Farnell  | 245-2487           | 1.200       | 1.200            |
| 36  | 1        | J5  | Male header       |            | 1,27mm_2x4_THT  | Header 2x03; 1,27mm, 0° | Farnell  | 186-5283           | 0.179       | 0.179            |
| 37  | 1        | J6  | Spring Contact    | Harwin     | String Contact  | Harwin S1761-42R        | Farnell  | 228-9773           | 0.158       | 0.158            |
| 38  | 1        | J7  | Solder Point      |            |                 |                         |          | ---                | 0.000       | 0.000            |
| 39  | 1        | L1  | Inductor          | Fastron    | Fastron_4RCC    | 4RCC-1R8M-00            | Mouser   | 434-4RCC-1R8M      | 0.627       | 0.627            |
| 40  | 1        | L2  | Transformer       | Epcos      | EFD20 Bobbin    | WMPP77Q55-1u25          | Farnell  | 119-0586           | 0.520       | 0.520            |

|    |    |  |                |           |                |                       |          |                         |       |       |
|----|----|--|----------------|-----------|----------------|-----------------------|----------|-------------------------|-------|-------|
|    | 1  |  |                |           | EFD20 N97-1u25 | N97 ferrit            | Farnell  | 142-2729                | 0.279 | 0.279 |
|    | 1  |  |                |           | HF-Litze       |                       |          |                         | 1.000 | 1.000 |
|    | 1  |  |                |           | Produktion     |                       |          |                         | 1.000 | 1.000 |
| 41 | 1  | L3   | Inductor       | Epcos     | EFD20 Bobbin   | WMLL1111d-100n        | Farnell  | 119-0586                | 0.520 | 0.520 |
|    | 1  |  |                |           | EFD20 N87-100n | N87 ferrit            | Farnell  | 178-1885                | 0.253 | 0.253 |
|    | 1  |  |                |           | HF-Litze       |                       |          |                         | 1.000 | 1.000 |
|    | 1  |  |                |           | Produktion     |                       |          |                         | 1.000 | 1.000 |
| 42 | 1  | L4   | Inductor       | Bourns    | SDR1005        | SDR1005-682KL         | Digi-Key | SDR1005-682KLTR-ND      | 0.275 | 0.275 |
| 43 | 1  | L5   | Inductor       | Bourns    | SDR1005        | SDR1005-102KL         | Digi-Key | SDR1005-102KLTR-ND      | 0.275 | 0.275 |
| 44 | 2  | L6, L7   | Inductor       | Multicomp | MCSDC0604      | MCSDC0604-150YU       | Farnell  | 186-4167                | 0.123 | 0.246 |
| 45 | 1  | L8   | Inductor       | TDK       | 0805           | MLZ2012M100WT000      | Digi-Key | 445-6396-2-ND           | 0.037 | 0.037 |
| 46 | 2  | Q1, Q2   | MOSFET         | Nexperia  | LFPAK56        | PSMN3R3-40YS,115      | Digi-Key | 1727-4633-2-ND          | 0.298 | 0.596 |
| 47 | 4  | Q3, Q4, Q5, Q6   | MOSFET         | Nexperia  | LFPAK56        | PSMN2R4-30YLDX        | Digi-Key | 1727-1792-2-ND          | 0.223 | 0.892 |
| 48 | 2  | Q7, Q8   | MOSFET         | Nexperia  | LFPAK56        | PSMN0R9-25YLC,115     | Digi-Key | 1727-5292-2-ND          | 0.365 | 0.730 |
| 49 | 2  | Q9, Q10  | MOSFET         | Infineon  | SOT23-3        | IRLML0040TRPBF        | Digi-Key | IRLML0040TRPBFTR-ND     | 0.102 | 0.204 |
| 50 | 6  | Q11, Q12, Q13, Q14, Q15, Q16   | MOSFET         | Infineon  | SOT23-3        | 2N7002NXAKR           | Digi-Key | 1727-8643-2-ND          | 0.011 | 0.068 |
| 51 | 1  | R1   | Resistor       |           | 0805           | 2.2R / 1% / 125mW     | Farnell  | 268-9852                | 0.003 | 0.003 |
| 52 | 4  | R2, R12, R13, R100   | Resistor       |           | 0805           | 27K / 1% / 125mW      | Farnell  | 244-6937                | 0.003 | 0.011 |
| 53 | 1  | R3   | Resistor       |           | 0805           | 1.2K / 1% / 125mW     | Farnell  | 244-6880                | 0.003 | 0.003 |
| 54 | 17 | R4, R7, R8, R11, R20, R21, R22, R23, R67, R68, R74, R75, R83, R92, R97, R125, R127 | Resistor       |           | 0805           | 620K / 1% / 125mW     | Farnell  | 244-7016                | 0.003 | 0.048 |
| 55 | 7  | R5, R6, R9, R10, R18, R64, R72   | Resistor       |           | 0805           | 2.2R / 1% / 125mW     | Farnell  | 268-9852                | 0.003 | 0.019 |
| 56 | 1  | R14  | Resistor       |           | 0805           | 130K / 1% / 125mW     | Farnell  | 244-6884                | 0.003 | 0.003 |
| 57 | 2  | R76, R87   | Resistor       |           | 0805           | 56K / 1% / 125mW      | Farnell  | 244-7004                | 0.003 | 0.007 |
| 58 | 10 | R15, R16, R19, R26, R28, R78, R79, R85, R95, R103                                  | Resistor       |           | 0805           | 47K / 1% / 125mW      | Farnell  | 244-6981                | 0.003 | 0.030 |
| 59 | 10 | R17, R70, R71, R98, R107, R108, R109, Rext1, Rext2, Rext3                          | Resistor       |           | 0805           | 13K / 1% / 125mW      | Farnell  | 244-6886                | 0.003 | 0.027 |
| 60 | 2  | R24, R25   | Resistor       |           | 0805           | 10R / 1% / 125mW      | Farnell  | 244-6873                | 0.003 | 0.006 |
| 61 | 3  | R27, R30, R31  | Resistor       |           | 0805           | 240K / 1% / 125mW     | Farnell  | 244-6927                | 0.003 | 0.008 |
| 62 | 2  | R29, R88   | Resistor       |           | 0805           | 15K / 1% / 125mW      | Farnell  | 244-6892                | 0.003 | 0.006 |
| 63 | 8  | R32, R33, R46, R47, R48, R49, R62, R63   | Resistor       |           | 0805           | 82K / 0.1% / 25ppm/K  | Digi-Key | P82KDATR-ND             | 0.029 | 0.235 |
| 64 | 8  | R34, R35, R40, R41, R54, R55, R60, R61   | Resistor       |           | 0805           | 56K / 0.1% / 25ppm/K  | Digi-Key | P56KDATR-ND             | 0.029 | 0.235 |
| 65 | 4  | R36, R37, R56, R57   | Resistor       |           | 0805           | 100R / 1% / 125mW     | Farnell  | 244-6869                | 0.003 | 0.013 |
| 66 | 4  | R38, R39, R58, R59   | Resistor       |           | 0805           | 36K / 0.1% / 25ppm/K  | Digi-Key | P36KDATR-ND             | 0.029 | 0.118 |
| 67 | 2  | R42, R50   | Resistor       |           | 0805           | 680R / 0.1% / 25ppm/K | Digi-Key | P680DATR-ND             | 0.029 | 0.059 |
| 68 | 2  | R43, R51   | Resistor       |           | 0805           | 220R / 0.1% / 25ppm/K | Digi-Key | P220DATR-ND             | 0.029 | 0.059 |
| 69 | 2  | R44, R52   | Resistor       |           | 0805           | 22K / 0.1% / 25ppm/K  | Digi-Key | P22KDATR-ND             | 0.029 | 0.059 |
| 70 | 2  | R45, R53   | Resistor       |           | 0805           | 68K / 0.1% / 25ppm/K  | Digi-Key | P68KDATR-ND             | 0.029 | 0.059 |
| 71 | 5  | R65, R73, R110, R111, R124   | Resistor       |           | 0805           | 470R / 1% / 125mW     | Farnell  | 244-6979                | 0.003 | 0.014 |
| 72 | 1  | R69  | Shunt resistor | Bourns    | 2512           | CRF2512-FZ-R004ELF    | Digi-Key | CRF2512-FZ-R004ELFTR-ND | 0.166 | 0.166 |
| 73 | 2  | R77, R101  | Resistor       |           | 0805           | 20K / 1% / 125mW      | Farnell  | 244-6920                | 0.003 | 0.005 |
| 74 | 6  | R81, R99, R104, R105, R106, R123   | Resistor       |           | 0805           | 3.9K / 1% / 125mW     | Farnell  | 244-6971                | 0.003 | 0.017 |
| 75 | 2  | R80, R86   | Resistor       |           | 0805           | 1.8K / 1% / 125mW     | Farnell  | 244-6912                | 0.003 | 0.005 |
| 76 | 1  | R82  | Resistor       |           | 0805           | 470mR / 1% / 330mW    | Farnell  | 171-7822                | 0.039 | 0.039 |
| 77 | 3  | R84, R90, R96  | Resistor       |           | 0805           | 6.8R / 1% / 125mW     | Farnell  | 244-7032                | 0.004 | 0.011 |
| 78 | 1  | R89  | Resistor       |           | 0805           | 120K / 1% / 125mW     | Farnell  | 244-6877                | 0.003 | 0.003 |
| 79 | 1  | R91  | Resistor       |           | 0805           | not equipped          |          | ---                     | 0.000 | 0.000 |
| 80 | 1  | R93  | Resistor       |           | 0805           | 11K / 1% / 125mW      | Farnell  | 244-6876                | 0.003 | 0.003 |
| 81 | 1  | R94  | Resistor       |           | 0805           | 1M / 1% / 125mW       | Farnell  | 244-6913                | 0.003 | 0.003 |
| 82 | 1  | R102   | Resistor       |           | 0805           | 7.5K / 1% / 125mW     | Farnell  | 244-7039                | 0.003 | 0.003 |
| 83 | 2  | R112, R113   | Resistor       |           | 0805           | 120R / 1% / 125mW     | Farnell  | 244-6878                | 0.003 | 0.006 |
| 84 | 8  | R114, R115, R116, R117, R118, R119, R120, R121                                     | Resistor       |           | 0805           | 4.7K / 1% / 125mW     | Farnell  | 244-6989                | 0.003 | 0.026 |

|     |   |                |                  |                      |              |                     |                |                            |       |       |
|-----|---|----------------|------------------|----------------------|--------------|---------------------|----------------|----------------------------|-------|-------|
| 85  | 1 | R126           | Resistor         | 0805                 | not equipped | ---                 | 0.000          | 0.000                      |       |       |
| 86  | 1 | R122           | Resistor         | 0805                 | not equipped | ---                 | 0.000          | 0.000                      |       |       |
| 87  | 1 | T1             | Transistor       | SOT23-3              | BC857C,215   | Digi-Key            | 1727-4243-2-ND | 0.017                      | 0.017 |       |
| 88  | 3 | T2, T3, T5     | Transistor       | SOT23-3              | BC846B,215   | Digi-Key            | 1727-2920-2-ND | 0.017                      | 0.051 |       |
| 89  | 1 | T4             | Darlington       | SOT23-3              | BCV47TA      | Digi-Key            | BCV47TR-ND     | 0.049                      | 0.049 |       |
| 90  | 4 | T6, T7, T8, T9 | Transistor       | SOT23-3              | BC847C,215   | Digi-Key            | 1727-2924-2-ND | 0.017                      | 0.068 |       |
| 91  | 1 | U1             | Microcontroller  | Microchip            | TQFP44       | dsPIC33EP512GM604   | Digi-Key       | DSPIC33EP512GM604T-I/PT-ND | 4.002 | 4.002 |
| 92  | 1 | U2             | Reference        | Analog Devices       | SOT23-6      | ADR3430ARJZ         | Digi-Key       | ADR3430ARJZ-R7TR-ND        | 1.072 | 1.072 |
| 93  | 1 | U3             | LDO regulator    | Texas Instruments    | SOT23-5      | LP3985im5-3.0       | Digi-Key       | LP3985IM5-3.0/NOPBTR-ND    | 0.162 | 0.162 |
| 94  | 1 | U4             | Schmitt trigger  | Texas Instruments    | SOIC14       | 74LVC14ADR          | Digi-Key       | 296-1699-2-ND              | 0.079 | 0.079 |
| 95  | 2 | U5, U16        | Buck converter   | Microchip            | SOT23-6      | MCP16301T-I/CHY     | Digi-Key       | MCP16301T-I/CHYTR-ND       | 0.659 | 1.318 |
| 96  | 1 | U6             | Op amplifier     | Microchip            | SOT23-5      | MCP6071T-E/DT       | Digi-Key       | MCP6071T-E/OTTR-ND         | 0.387 | 0.387 |
| 97  | 1 | U7             | Op amplifier     | Analog Devices       | SOIC8        | ADA4522-1ARZ-R7     | Digi-Key       | ADA4522-1ARZ-R7TR-ND       | 1.067 | 1.067 |
| 98  | 1 | U8             | Op amplifier     | Microchip            | SOIC14       | MCP6074T-E/SL       | Digi-Key       | MCP6074T-E/SLTR-ND         | 1.054 | 1.054 |
| 99  | 2 | U9, U10        | MOSFET driver    | Microchip            | SOIC8        | MIC4604YM-TR        | Digi-Key       | 576-4396-2-ND              | 0.469 | 0.939 |
| 100 | 2 | U11, U12       | MOSFET driver    | Texas Instruments    | SOIC8        | LM5111-1MX/NOPB     | Digi-Key       | LM5111-1MX/NOPBTR-ND       | 0.588 | 1.176 |
| 101 | 1 | U13            | Digital isolator | Skyworks             | SOIC16-W     | SI8651BB-B-ISR1     | Digi-Key       | 336-5215-2-ND              | 1.582 | 1.582 |
| 102 | 1 | U14            | EIA-485 driver   | Texas Instruments    | SOIC8        | SN65HVD72DR         | Digi-Key       | 296-39179-2-ND             | 0.988 | 0.988 |
| 103 | 1 | U15            | LDO regulator    | Texas Instruments    | SOIC8        | LP2951-50DR         | Digi-Key       | 296-31677-2-ND             | 0.183 | 0.183 |
| 104 | 1 | U17            | Comparator       | Texas Instruments    | SOIC8        | TS393DR2G           | Digi-Key       | TS393DR2GOSTR-ND           | 0.185 | 0.185 |
| 105 | 1 | U18            | Microcontroller  | Microchip            | SOIC14       | PIC16F18325T-I/SL   | Digi-Key       | PIC16F18325T-I/SLTR-ND     | 0.752 | 0.752 |
| 106 | 1 | U19            | EEPROM           | Microchip            | SOIC8        | 24LC64-E/SM         | Digi-Key       | 24LC64-E/SM-ND             | 0.371 | 0.371 |
| 107 | 1 | X1             | Quartz           | TXC                  | AA-quarz     | AA-8.000MALV-T      | Digi-Key       | 887-1667-2-ND              | 0.358 | 0.358 |
| 108 | 1 |                | PCB              | multi circuit boards | ---          | 130x60 mm, 4 layers | multi-PCB      | 130x60, 4layers 75µm ENIG  | 2.080 | 2.080 |