

dipBoardF4 Modules

Basic connection Modules for [dipBoardF4](#) and [dipCoreF4](#).

Features

- Dual OTG USB, one Dual role(mini-AB, B) and second is Host only(A).
- DC Input 9-12V with 5V regulator, switch and led.
- In device Mode, VBUS is switched off when DC Input is enough to supply the 5V regulator.
- Power switch also acts on USB powering.
- micro-SD Card socket with push-push.
- Reset and User buttons, 2 leds for user purpose.
- Dual MCAN bus RJ11 connectors with 120Ω termination switch.

Dimension



PCB

2 layers PCB design.
Fits 2 layer mostly common design rules.



- min. drill 10mil
- min. width 6mil



BOMs

USB Module

version 1. Mouser BOM: [ToDo](#)

| Qty | Value | Package | Parts | Mouser | Reichelt | Conrad | Other | Notes |
|--|--------------|---------|----------------|----------------------------------|----------|--------|-------|----------------|
| Resistors | | | | | | | | |
| 4 | 22R 5% | 0603 | R1, R2, R3, R4 | 667-ERJ-PA3J220V | | | | |
| 1 | 680R 5% | 0603 | R5 | 667-ERJ-PA3J681V | | | | Depends on Led |
| PTC fuses, resettable thermistors | | | | | | | | |
| 1 | 1206L150THWR | 1206 | F1 | 576-1206L150THWR | | | | |
| Capacitors | | | | | | | | |

| Qty | Value | Package | Parts | Mouser | Reichelt | Conrad | Other | Notes |
|-------------------------------------|-----------------|-------------|-------------------------------------|---|----------|--------|-------|-----------------------|
| Resistors | | | | | | | | |
| 1 | 100n | 0603 | C2 | 710-885012206071 | | | | |
| 1 | 4,7u Tantalum | SMC_A(1206) | C1 | 647-F931C475MAA | | | | |
| ESD Suppressors / TVS Diodes | | | | | | | | |
| 7 | CG0603MLC-05E | 0603 | Z1, Z2, Z3, Z4, Z5, Z6, Z7 | 652-CG0603MLC-05E | | | | |
| Ferrite Bead | | | | | | | | |
| 1 | BLM21 | 0805 | L1 | 81-BLM21P331SG | | | | |
| LEDs | | | | | | | | |
| 1 | - | 0805 or THT | LED_OC | 755-SML-H12U8TT86C(0805) | | | | 2x5mm rectangular THT |
| Transistor | | | | | | | | |
| 1 | FDN304P | SSOT-3 | Q1 | 512-FDN304P | | | | P-Channel MOSFET |
| IC | | | | | | | | |
| 1 | STMPS2161STR | SOT23-5L | IC1 | 511-STMPS2161STR | | | | Power Switch IC |
| Connectors | | | | | | | | |
| 1 | mini-USB | THT | MINI-USB | 571-1734510-1 | | | | |
| 1 | USB-B | THT | USB-B | 538-67068-8000 | | | | |
| 1 | USB-A | THT | USB-A | 538-48204-0001 | | | | |
| 1 | micro-match 2x4 | Female | J2A | 571-7-215079-8 or 571-2178710-8 (value line) | | | | |
| 1 | micro-match 2x6 | Female | J1A | 571-8-215079-2 or 571-1-2178710-2 (value line) | | | | |
| Others | | | | | | | | |
| 2 | Screw terminal | - | - | 534-7790 | | | | |

External Power Module

version 1. Mouser BOM: [ToDo](#)

| Qty | Value | Package | Parts | Mouser | Reichelt | Conrad | Other | Notes |
|-------------------|---------|---------|--------|-----------------------------------|----------|--------|-------|---------------------------------|
| Resistors | | | | | | | | |
| 1 | 680R 5% | 0603 | R10 | 667-ERJ-PA3J681V | | | | Depends on Led |
| 2 | 10K 1% | 0603 | R6, R7 | 755-ESR03EZPF1002 | | | | |
| 1 | 22K 1% | 0603 | R8 | 755-ESR03EZPF2202 | | | | |
| 1 | 33K 1% | 0603 | R7 | 667-ERJ-PA3F3302V | | | | |
| Capacitors | | | | | | | | |
| 2 | 100n | 0603 | C5, C6 | 710-885012206071 | | | | |
| 2 | 10u | THT | C3, C4 | 667-ECE-A1HKA100I | | | | 6mm diam. max, 2.5mm lead space |
| Diode | | | | | | | | |
| 1 | SB240 | DO15 | D1 | 625-SB240-E3 | | | | |
| LEDs | | | | | | | | |

| Qty | Value | Package | Parts | Mouser | Reichelt | Conrad | Other | Notes |
|-------------------|--------------------|-------------|---------|--|----------|--------|-------|--|
| Resistors | | | | | | | | |
| 1 | - | 0805 or THT | LED_PWR | 755-SML-H12U8TT86C(0805) | | | | 2x5mm rectangular THT |
| IC | | | | | | | | |
| 1 | LD1086DT50TR | DPACK | IC2 | 511-LD1086DT50TR | | | | |
| 1 | LM321MF | SOT23-5 | IC3 | 926-LM321MF/NOPB | | | | Low Power Single Op Amp |
| Switch | | | | | | | | |
| 1 | E201J1AV2 | - | PWR_SW | 611-E201-004 | | | | DPDT power switch(same as Sammich...) |
| Connectors | | | | | | | | |
| 1 | micro-match 2x4 | Female | J2B | 571-7-215079-8 or 571-2178710-8 (value line) | | | | |
| 1 | DC in Socket Opt*1 | Female | DC_IN | 651-1729128 | | | | Jack on board |
| 1 | DC in Socket Opt*2 | Female | DC_IN | 651-1729128 + 502-712A | | | | Screw terminal on board(Board/Switch on front) + Jack on backpanel |
| Others | | | | | | | | |
| 2 | Screw terminal | - | - | 534-7790 | | | | |

SD Card Module

version 1. Mouser BOM: [ToDo](#)

| Qty | Value | Package | Parts | Mouser | Reichelt | Conrad | Other | Notes |
|-------------------|----------------|-------------|-------------|--|----------|--------|-------|-----------------------|
| Resistors | | | | | | | | |
| 2 | 680R 5% | 0603 | R15, R16 | 667-ERJ-PA3J681V | | | | Depends on Led |
| 2 | 100K 5% | 0603 | R13, R14 | 755-ESR03EZPJ104 | | | | |
| Capacitors | | | | | | | | |
| 2 | 100n | 0603 | C11, C12 | 710-885012206071 | | | | |
| LEDs | | | | | | | | |
| 2 | - | 0805 or THT | LED1, LED2 | 755-SML-H12U8TT86C(0805) | | | | 2x5mm rectangular THT |
| Switches | | | | | | | | |
| 2 | B3F-31xx | - | USER, RESET | 653-B3F-3122 | | | | |
| Connectors | | | | | | | | |
| 1 | DM3AT-SF-PEJM5 | Socket | micro-SD | 571-8-215079-4 | | | | with push-push |
| 1 | 2x7 | Female | J16E | 571-8-215079-4 or 571-1-2178710-4 (value line) | | | | |
| Others | | | | | | | | |
| 2 | Screw terminal | - | - | 534-7790 | | | | |

MCAN Module

version 1. Mouser BOM:ToDo

| Qty | Value | Package | Parts | Mouser | Reichelt | Conrad | Other | Notes |
|--|----------------|-------------------|------------|--|----------|--------|-------|----------------------|
| Resistors | | | | | | | | |
| 1 | 100R 5% | 0603 | R12 | | | | | |
| 1 | 1K 5% | 0603 | R11 | | | | | |
| PTC fuses, resettable thermistors | | | | | | | | |
| 1 | 1206L150THWR | 1206 | F2 | 576-1206L150THWR | | | | |
| Capacitors | | | | | | | | |
| 2 | 100n | 0603 | C8, C10 | | | | | |
| 2 | 1u | 3225 | C7, C9 | | | | | |
| ESD Suppressors / TVS Diodes | | | | | | | | |
| 1 | PESD1CAN | SOT23 | Z8 | 771-PESD1CAN-T/R | | | | |
| Diodes | | | | | | | | |
| 1 | LSM115J | DO214BA | D2 | 494-LSM115JE3/TR13 | | | | |
| Ferrite Bead | | | | | | | | |
| 1 | BLM21 | 0805 | L2 | 81-BLM21P331SG | | | | |
| Relay | | | | | | | | |
| 1 | TLP175A | SOP4 | Q1 | 757-TLP175A(TPLE | | | | Photorelay MOSFET |
| IC | | | | | | | | |
| 1 | TCAN1042GV | SOIC8 | IC4 | 595-TCAN1042GVDRQ1 | | | | CAN transceiver |
| Switch | | | | | | | | |
| 1 | 1101M2S3AV2BE2 | - | TERM | 611-1101M2S3AV2BE2 | | | | |
| Connectors | | | | | | | | |
| 1 | RJE0166202 | dual RJ11 6p6c | MCAN | 523-RJE01-662-02 | | | | |
| 1 | micro-match2x3 | Female | J18 | 571-215079-6 or 571-2178710-6 (value line) | | | | |
| Others | | | | | | | | |
| 2 | Screw terminal | - | - | 534-7790 | | | | |

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