

# 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
<b>Resistors</b>								
4	22R 5%	0603	R1, R2, R3, R4	<a href="#">667-ERJ-PA3J220V</a>				
1	680R 5%	0603	R5	<a href="#">667-ERJ-PA3J681V</a>				Depends on Led
<b>PTC fuses, resettable thermistors</b>								
1	1206L150THWR	1206	F1	<a href="#">576-1206L150THWR</a>				
<b>Capacitors</b>								

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

## External Power Module

version 1. Mouser BOM: ToDo

Qty	Value	Package	Parts	Mouser	Reichelt	Conrad	Other	Notes
<b>Resistors</b>								
1	680R 5%	0603	R10	<a href="#">667-ERJ-PA3J681V</a>				Depends on Led
2	10K 1%	0603	R6, R7	<a href="#">755-ESR03EZPF1002</a>				
1	22K 1%	0603	R8	<a href="#">755-ESR03EZPF2202</a>				
1	33K 1%	0603	R7	<a href="#">667-ERJ-PA3F3302V</a>				
<b>Capacitors</b>								
2	100n	0603	C5, C6	<a href="#">710-885012206071</a>				
2	10u	THT	C3, C4	<a href="#">667-ECE-A1HKA100I</a>				6mm diam. max. 2.5mm lead space
<b>Diode</b>								
1	SB240	DO15	D1	<a href="#">625-SB240-E3</a>				
<b>LEDs</b>								
1	-	0805 or THT	LED_PWR	<a href="#">755-SML-H12U8TT86C(0805)</a>				2x5mm rectangular THT
<b>IC</b>								
1	LD1086DT50TR	DPACK	IC2	<a href="#">511-LD1086DT50TR</a>				
1	LM321MF	SOT23-5	IC3	<a href="#">926-LM321MF/NOPB</a>				Low Power Single Op Amp
<b>Switch</b>								
1	E201J1AV2	-	PWR_SW	<a href="#">611-E201-004</a>				DPDT power switch (same as Sammich...)
<b>Connectors</b>								

Qty	Value	Package	Parts	Mouser	Reichelt	Conrad	Other	Notes
<b>Resistors</b>								
1	micro-match 2x4	Female	J2B	<a href="#">571-7-215079-8</a> or <a href="#">571-2178710-8</a> (value line)				
1	DC in Socket Opt*1	Female	DC_IN	<a href="https://www.mouser.fr/ProductDetail/CUI/PJ-037A?qs=sGAEpiMZZMtnOp%252bbbqA009IE0K0K%252bPZGXdtP%252b8QKyFYI3vf3%2fM6lw%3d%3d">https://www.mouser.fr/ProductDetail/CUI/PJ-037A?qs=sGAEpiMZZMtnOp%252bbbqA009IE0K0K%252bPZGXdtP%252b8QKyFYI3vf3%2fM6lw%3d%3d</a>				

490-PJ-037A ] ] | | | ] Jack on board |

1	DC in Socket Opt*2	Female	DC_IN	<a href="#">651-1729128</a> + <a href="#">502-712A</a>				Screw terminal on board(Board/Switch on front) + Jack on backpanel
<b>Others</b>								
2	Screw terminal	-	-	<a href="#">534-7790</a>				

## SD Card Module

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

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

## MCAN Module

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

Qty	Value	Package	Parts	Mouser	Reichelt	Conrad	Other	Notes
<b>Resistors</b>								
1	100R 5%	0603	R12	<a href="#">755-ESR03EZPF1000</a>				
1	1K 5%	0603	R11	<a href="#">755-ESR03EZPJ102</a>				
<b>PTC fuses, resettable thermistors</b>								

Qty	Value	Package	Parts	Mouser	Reichelt	Conrad	Other	Notes
<b>Resistors</b>								
1	1206L150THWR	1206	F2	<a href="#">576-1206L150THWR</a>				
<b>Capacitors</b>								
2	100n	0603	C8, C10	<a href="#">710-885012206071</a>				
2	1u	1210	C7, C9	<a href="#">710-885012209047</a>				
<b>ESD Suppressors / TVS Diodes</b>								
1	PESD1CAN	SOT23	Z8	<a href="#">771-PESD1CAN-T/R</a>				
<b>Diodes</b>								
1	LSM115J	DO214BA	D2	<a href="#">494-LSM115JE3/TR13</a>				
<b>Ferrite Bead</b>								
1	BLM21	0805	L2	<a href="#">81-BLM21P331SG</a>				
<b>Relay</b>								
1	TLP175A	SOP4	Q1	<a href="#">757-TLP175A(TPLE</a>				Photorelay MOSFET
<b>IC</b>								
1	TCAN1042GV	SOIC8	IC4	<a href="#">595-TCAN1042GVDRQ1</a>				CAN transceiver
<b>Switch</b>								
1	1101M2S3AV2BE2	-	TERM	<a href="#">611-1101M2S3AV2BE2</a>				
<b>Connectors</b>								
1	RJE0166202	dual RJ11 6p6c	MCAN	<a href="#">523-RJE01-662-02</a>				
1	micro-match2x3	Female	J18	<a href="#">571-215079-6</a> or <a href="#">571-2178710-6</a> (value line)				
<b>Others</b>								
2	Screw terminal	-	-	<a href="#">534-7790</a>				

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