

Supply configuration		Supply	Supply Rails			External Supply Rating		Pi Pico SMPS or Linear 3.3 V regulation (note 1)		3.3V System Rail		3.3V Analogue Rail		Components Needed				
From Pi Pico USB only		Input	5V	3.3V system	3.3V analogue	JP4		JP5.1	JP5.2	JP3		JP7		Connectors / Jumpers (note 2)	Capacitors	Diodes	Regulators (note 3)	Other
						Ext 5V	Ext >5V	Lin 3.3V	Pi Pico SMPS enable	3.3V Lin	3.3V SMPS	Separate 3.3V linear rail	=3.3V system rail					
						1-2	2-3			1-2	2-3	1-2	2-3					
Basic	Pico USB supply only (no analogue 3.3V rail)	Pi Pico USB	Pi Pico 5V	Pico SMPS	n/a	n/a		X	Link	X	Link	n/a	n/a	JP3, JP5.2	C1, C7, C9, C10	D14	n/a	n/a
	Pico USB supply + 3.3V SMPS analogue rail	Pi Pico USB	Pi Pico 5V	Pico SMPS		n/a		X	Link	X	Link	X	Link	JP3, JP5.2, JP7	C1, C4, C5, C7, C9, C10	D14	n/a	n/a
Split	5V USB supply + linear 3.3V system rail only	Pi Pico USB	Pi Pico 5V	Linear U5	n/a	n/a		Link	X	Link	X	n/a	n/a	JP3, JP5.2	C1, C7, C9, C10	D14	U5	n/a
	5V USB supply + linear 3.3V analogue rail only	Pi Pico USB	Pi Pico 5V	Pico SMPS	Linear U4	n/a		X	Link	X	Link	Link	X	JP3, JP5.2, JP7	C1, C4, C5, C7, C8, C9, C10	D14	U4	n/a
	5V USB supply + shared linear 3.3V rails	Pi Pico USB	Pi Pico 5V	Linear U5		n/a		Link	X	Link	X	X	Link	JP3, JP5.2, JP7	C1, C4, C5, C7, C9, C10	D14	U5	n/a
	5V USB supply + separated linear 3.3V rails	Pi Pico USB	Pi Pico 5V	Linear U5	Linear U4	n/a		Link	X	Link	X	Link	X	JP3, JP5.2, JP7	C1, C4, C5, C7, C8, C9, C10	D14	U4, U5	n/a
From External 5V regulated supply																		
Basic	Ext 5V supply only (no analogue 3.3V)	Ext 5V	Ext 5V	Pico SMPS	n/a	Link	n/a	X	Link	X	Link	n/a	n/a	JP3, JP4, JP5.2, J9, J21	C1, C6, C7, C9, C10	D14, D25	n/a	F1, R59 (opt)
	Ext 5V supply + 3.3V SMPS analogue rail	Ext 5V	Ext 5V	Pico SMPS		Link	n/a	X	Link	X	Link	X	Link	JP3, JP4, JP5.2, JP7, J9, J21	C1, C4, C5, C6, C7, C9, C10	D14, D25	n/a	F1, R59 (opt)
Split	Ext 5V + linear 3.3V system rail only	Ext 5V	Ext 5V	Linear U5	n/a	Link	n/a	Link	X	Link	X	n/a	n/a	JP3, JP4, JP5.2, J9, J21	C1, C6, C7, C9, C10	D14, D25	U5	F1, R59 (opt)
	Ext 5V supply + linear 3.3V analogue rail only	Ext 5V	Ext 5V	Pico SMPS	Linear U4	Link	n/a	X	Link	X	Link	Link	X	JP3, JP4, JP5.2, JP7, J9, J21	C1, C4, C5, C6, C7, C8, C9, C10	D14, D25	U4	F1, R59 (opt)
	Ext 5V supply + shared linear 3.3V rails	Ext 5V	Ext 5V	Linear U5		Link	n/a	Link	X	Link	X	X	Link	JP3, JP4, JP5.2, JP7, J9, J21	C1, C4, C5, C6, C7, C9, C10	D14, D25	U5	F1, R59 (opt)
	Ext 5V supply + separated linear 3.3V rails	Ext 5V	Ext 5V	Linear U5	Linear U4	Link	n/a	Link	X	Link	X	Link	X	JP3, JP4, JP5.2, JP7, J9, J21	C1, C4, C5, C6, C7, C8, C9, C10	D14, D25	U4, U5	F1, R59 (opt)
From External >5V supply																		
Basic	Ext >5V supply only (no analogue 3.3V)	Ext >5V	Linear U1	Pico SMPS	n/a	n/a	Link	X	Link	X	Link	n/a	n/a	JP3, JP4, JP5.2, J9, J21	C1, C6, C7, C9, C10	D14, D25, D26	U1	F1, R59 (opt)
	Ext >5V supply + 3.3V SMPS analogue rail	Ext >5V	Linear U1	Pico SMPS		n/a	Link	X	Link	X	Link	X	Link	JP3, JP4, JP5.2, JP7, J9, J21	C1, C4, C5, C6, C7, C9, C10	D14, D25, D26	U1	F1, R59 (opt)
Split	Ext >5V + linear 3.3V system rail only	Ext >5V	Linear U1	Linear U5	n/a	n/a	Link	Link	X	Link	X	n/a	n/a	JP3, JP4, JP5.2, J9, J21	C1, C6, C7, C9, C10	D14, D25, D26	U5, U1	F1, R59 (opt)
	Ext >5V supply + linear 3.3V analogue rail only	Ext >5V	Linear U1	Pico SMPS	Linear U4	n/a	Link	X	Link	X	Link	Link	X	JP3, JP4, JP5.2, JP7, J9, J21	C1, C4, C5, C6, C7, C8, C9, C10	D14, D25, D26	U4, U1	F1, R59 (opt)
	Ext >5V supply + shared linear 3.3V rails	Ext >5V	Linear U1	Linear U5		n/a	Link	Link	X	Link	X	X	Link	JP3, JP4, JP5.2, JP7, J9, J21	C1, C4, C5, C6, C7, C9, C10	D14, D25, D26	U5, U1	F1, R59 (opt)
	Ext >5V supply + separated linear 3.3V rails	Ext >5V	Linear U1	Linear U5	Linear U4	n/a	Link	Link	X	Link	X	Link	X	JP3, JP4, JP5.2, JP7, J9, J21	C1, C4, C5, C6, C7, C8, C9, C10	D14, D25, D26	U4, U5, U1	F1, R59 (opt)

Notes: 1 JP5.1 and JP5.2 **MUST NOT** be linked at the same time, otherwise the Pi Pico SMPS will conflict with U5's output

2 J9 can be used to input a supply from an external connector, or to tap off the supply from the barrel jack to a peripheral e.g. pass-through supply to a low-voltage LCD monitor. If not needed, it can be omitted.

3 Linear regulator U1 may be replaced by a "7805" style DC-DC converter module for better efficiency/lower heat dissipation.

4 R59 can be omitted if Barrel Jack switch detection is not needed