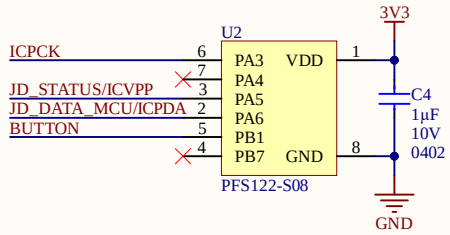
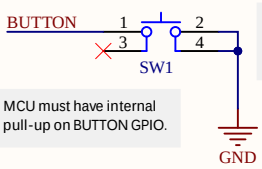
MCU



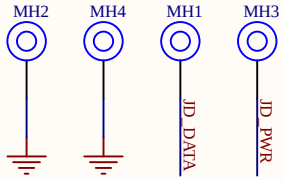
Button



SW1 pin 4 is grounded to aid routing.

MCU must have internal pull-up on BUTTON GPIO.

Mounting holes



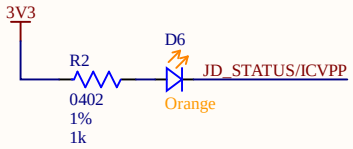
This design uses PTH mounting holes with finished diameter of 3.1mm, annular copper ring of 4.4mm diameter, resist keepout of 5.0mm & copper/component keepout of 7.0mm. The mounting holes must be on a 10mm pitch.

Mounting holes should have appropriate silkscreen marker on both sides of PCB, and MH1 should have a pin 1 marker in copper on the top side only. There is a notch in the PCB outline adjacent to MH1.

Mounting holes are electrically connected to the Jacdac bus nets so they can be used as an alternative to the PCB edge connector. Please use the following reference designators and net mapping:

MH1: JD_DATA
MH2 & MH4: GND
MH3: JD_PWR

Status LED



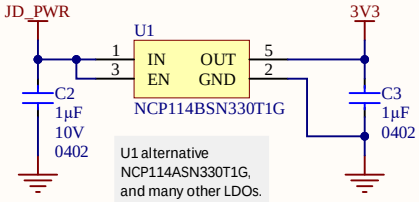
D6 alternative parts:
SML-D12D
E6C0603SEAC1UDA
NCD0603O1

Place a status LED adjacent to edge connector. If using alternative part check R2 value.

3V3 regulator

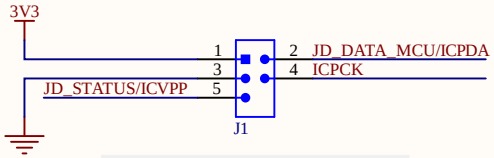
Consider using an LDO that is robust to spikes over 6V on input in case of noise on JD_PWR.

This component is a power-consumer.



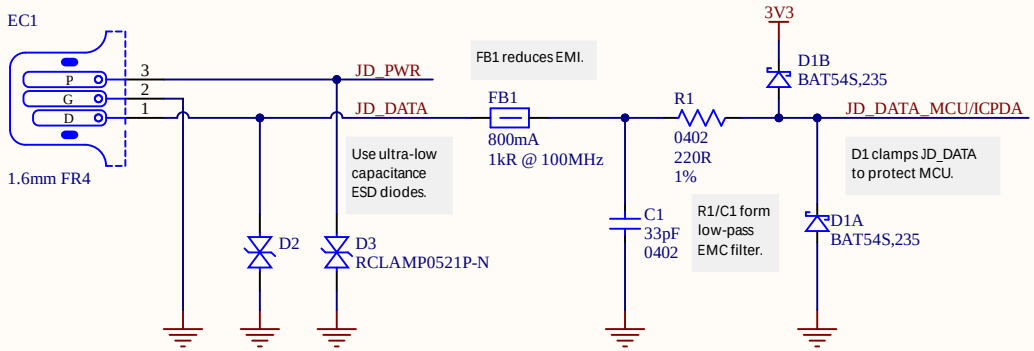
U1 alternative NCP114ASN330T1G, and many other LDOs.

Programming header



"Hack-connect" SWD adapter.
https://arcade.makecode.com/hardware/dbg

Jacdac connector



FB1 reduces EMI.

Use ultra-low capacitance ESD diodes.

R1/C1 form low-pass EMC filter.

D1 clamps JD_DATA to protect MCU.

This reference design is a guideline. Please refer to the Jacdac docs online at https://aka.ms/jacdac for the definitive and most up-to-date information.

Silkscreen should include manufacturer & module name and identify the version number and optionally a QR code.

This design uses the 'EC30' board shape.

Silkscreen & layout notes

Block name

Design notes

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When this PDF is viewed with Adobe Reader, clicking on components shows part numbers and other details.

PROJECT FILENAME JacdacTactEc30 115.PrjPCB	PROJECT CODENAME JacdacTactEc30	Microsoft	PROJECT DESCRIPTION Jacdac tact button using PADAUK MCU
SHEET FILENAME JacdacTactEc30 115.SchDoc	LICENCE Attribution 4.0 International (CC BY 4.0)	LAST MODIFIED 12/06/2022	PAGE 1 OF 1
		DRAWN BY DG, JD & SH	SHEET DESCRIPTION Complete design
			REVISION 1.1 PCB ID 115-1.1