



ochin_CM4v2 Hardware test number 2

Power Supply circuits:

Inversion polarity protection circuit

Devices used for tests

1. ochin CM4v2 carrier board
2. Raspberry Pi CM4 module with eMMC
3. Multimeter
4. Power Supply 0-30Vdc

Test description

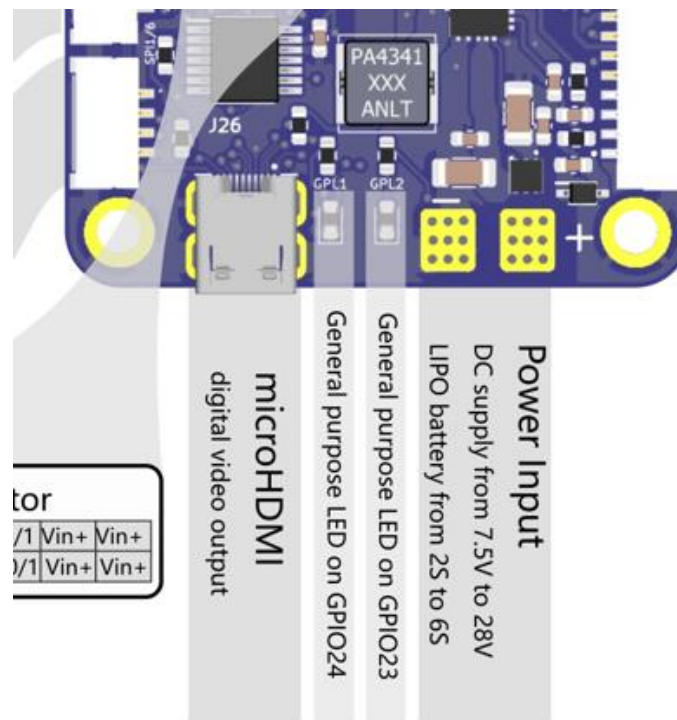
The ochin board is equipped with a reverse polarity protection circuit. The power supply is blocked in case of inversion, thanks to the U1-SIA471DJ mosfet. In the case that the Vin is mistakenly reversed, the gate of the mosfet-p opens the junction, preventing current to pass damaging the board.

Test execution

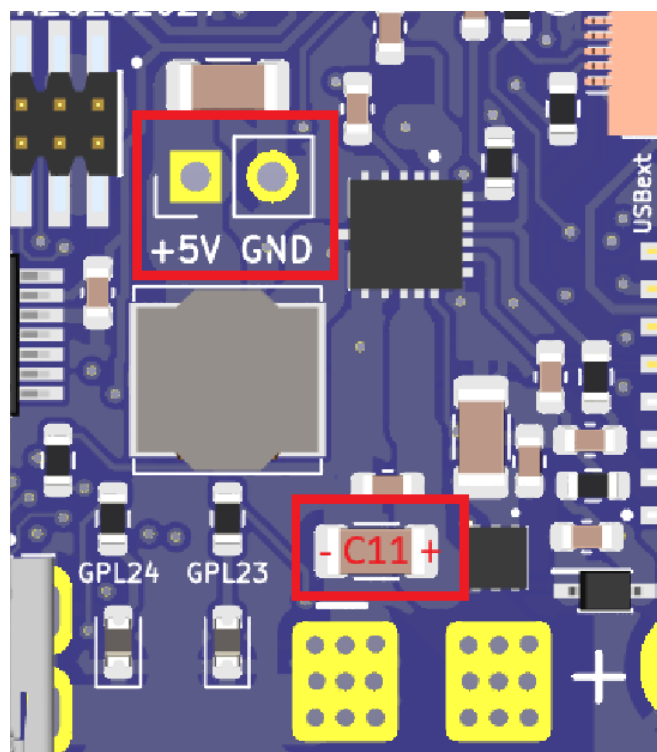
To verify the functioning of the U1-SIA471DJ mosfet, it is necessary to arbitrarily invert the polarity of Vin and therefore check that the voltage across C11 is equal to zero.

1. To prevent the CM4 module from being damaged in the event of a protection malfunction, it is advisable to **perform the test with the CM4 module NOT MOUNTED.**

2. Apply a reverse voltage between 7,5Vdc and 25Vdc on the power pad. The positive pole is the one on the left and negative pole is on the right (top view).



Verify the "Zero Volt" present on the source of the SIA471DJ mosfet, placing the multimeter across the C11 capacitor.



Test results

The test was performed numerous times on different boards and never presented any problems.

Test Passed