

(updated 2017-04-05)

About this document

This is a soldering guide for JoyFi v1.0, an adapter letting you use joysticks wireless. The adapter is confirmed working 100% on the Commodore Amiga and Commodore 64. In theory, the adapter should work on VIC20 and Atari as well, but as of today this has not been tested..

The product is delivered in two parts: a transmitter (MASTER) and a receiver (SLAVE). The transmitter has ports for hooking up joysticks into. The joystick movements are then transmitted by air to the receiver, which is residing in the computer's port 1. Port 2 is connected using a small piece of flat-cable.

Currently, as for v1.0, the hardware does not support paddles or mice.



Rikard B. IT Karlsbergsvägen 10 S-462 60 Vänersborg Sweden service@ribit.se http://www.ribit.se

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This kit contains:

Amount	Description	MASTER	SLAVE
1	9V battery contact	Х	
1	7805	Х	
2	PIC16F628A	Х	Х
2	D-sub 9 male	Х	
1	D-sub 9 female		Х
1	D-sub 9 female (IDC-cable)		Х
1	IDC-boxheader, 10-pin		Х
2	20MHz crystal	Х	Х
4	ceramic capacitors, 33pF	Х	Х
1	red LED	Х	
1	330 ohm resistor	Х	
7	10 kohm resistor	Х	Х
2	electrolytic capacitor, 100uF	Х	Х
1	electrolytic capacitor, 10uF	Х	
2	decoupling capacitor, 100nF	X	Х
2	BT-modules	Х	Х
1	patch-cable	X	Х
2	pin headers	Х	Х

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1. Start by soldering a PIC16F628A on each board. Both these IC's contains the same firmware, so it does not matter which IC goes to which board, but take **GREAT CARE** about the orientation of the chips!

Use the dent (pin 1) as a reference, like this:





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2. Grab the seven 10k resistors (colored **brown-black-black-red-brown**) and solder them. Their orientation does not matter, but for aesthetic purposes it's best to let them have their colors lined up.

MASTER: R1, R2, R3, R4, R5, R8 **SLAVE**: R1





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3. Grab the LED and the 330ohm resistor (color code **orange-orange-black-black-brown**) and solder them on the board. The LED has a **long** leg, and that goes to the hole marked with "+". The orientation of the resistor does not matter.

MASTER: D1, R7 SLAVE: -





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4. Grab crystals, ceramic discs and decouplers, and solder these. The orientation of any of these components does not matter.

MASTER: X1 - crystal, C1, C2 - ceramic disc (brown-orange), C5 - decoupler (blue) **SLAVE**: as above



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5. Find the electrolytic capacitors. For these, the orientation is important! The **short** leg goes to grounded hole, while the **long** leg goes to the hole marked with a plus sign ("+"). Do **not** solder these in the opposite direction.

MASTER: C3 - 100uF, C4 - 10uF **SLAVE**: C4 - 100uF





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6. Find the battery connector and the switch.

MASTER: J5 - switch, BATTERY - battery contact (red in "+", black in "-") SLAVE: -





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7. Find the DB9-connectors, put the circuit board between the pins and solder. Make **sure** you use the correct contact!

MASTER: J1/J2 - (MALE) SLAVE: J1 - (FEMALE)





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8. Find the box header and the 7805. Both of these can be soldered in the wrong direction, so take great care during this step!

MASTER: 7805 - the text should be faced right (relative the picture), i.e. the blank side should be faced the same way as the hatched area on the circuit board.

SLAVE: J2 - boxheader. On the circuit board and on the header there is a small arrow. These arrows should point at each other so that the longer side (with the hole) is faced towards the **left**.





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9. Find the pin-headers and the BT-modules, and straighten their legs with pliers so the boards are "flying" over the circuit boards. The modules are marked "master" and "slave" respectively, depending on which board they should go to. Solder either the pin-headers (if you want to easily remove the modules), or the modules straight on the boards. If you solder the modules directly, it's imperative you do **NOT** solder the wrong module on the wrong board!

MASTER: HC-05 SLAVE: HC-05





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11. Unfortunately two small errors were introduced during the manufacturing of the boards, so the final step is to patch these errors. Turn the board upside down, making the back side face up.



The lower row of the box-header is mirrored. Patch the first and the last pin, then patch the second and the second to last pin.

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Congratulations! You are done!

Hook up a 9V-battery to the master board, put the slave board in port 1 on your Amiga/C64, attach joysticks to the master board, and enjoy!

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