

SIO2SD adapter

english manual

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1 Description

With this adapter, it is possible to use micro SD cards in the memory card slot of a PlayStation 2 in combination with homebrew software. The PCB is designed to fit into a case of an original memory card SCPH-10020.

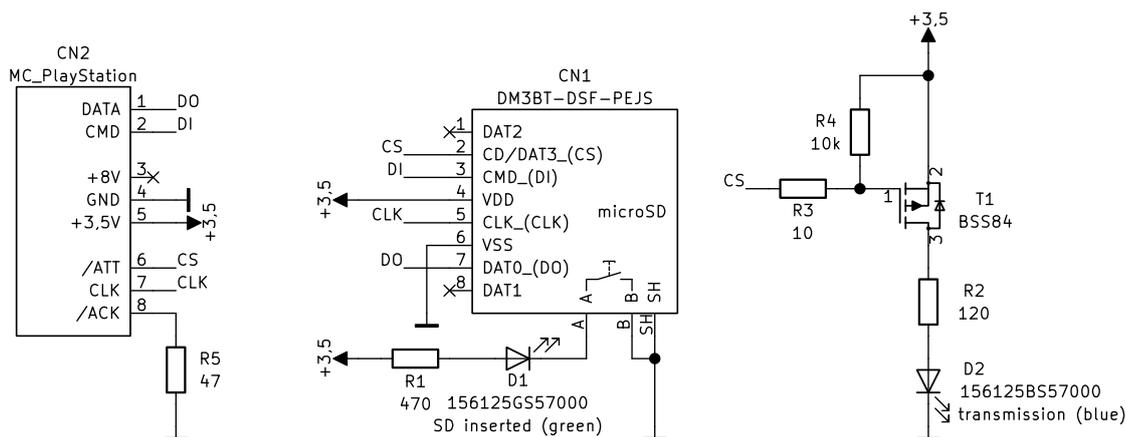
There are two LED. D1 lights up when an SD card is inserted. D2 lights up when data is transmitted.

The groundwork for this board was laid by users on psxtools.de and psx-place.com. Thanks for this! With my work, I want to support this project. Therefore, it is explicitly allowed to share this data package and to manufacture the board yourself. It would be appreciated, if the data package was only shared as a whole. Furthermore, I payed attention to mainly use large components to allow people with little soldering experience to easily assemble the board.

Currently (2020-05-01) this design is still untested, but a test will follow soon. I'm looking forward to your own test results.

2 Production

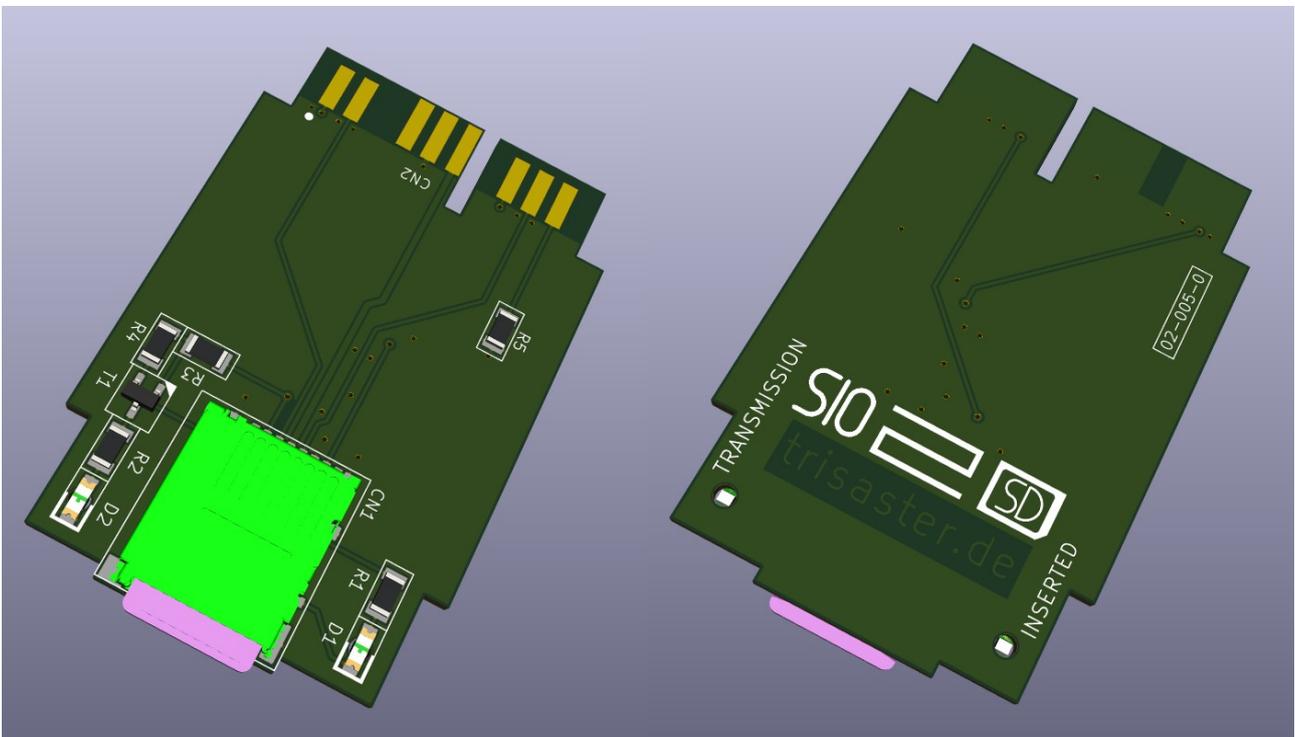
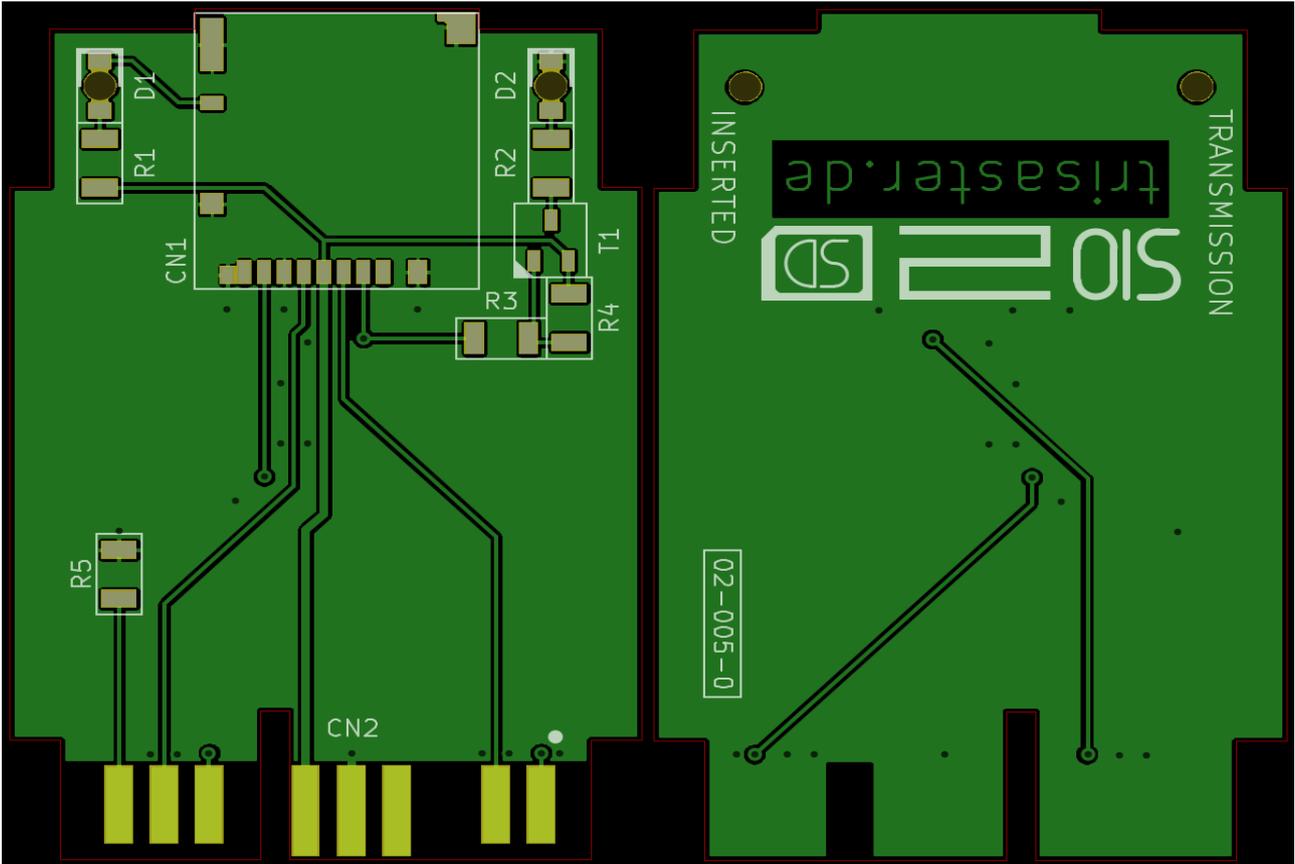
2.1 Schematic



2.2 Circuit board

With the included Gerber data, it is possible for almost every PCB manufacturer to produce this board. Please pay attention to the necessary board **thickness of 1.0 mm** instead of the more common 1.55 mm thickness! Also "**Electroless nickel/immersion gold (ENIG)**" plating is recommended, do not use "**lead-free HAL**".

Please do not use Chinese circuit board manufacturers, but rely on regional companies in order to support the local economy. It isn't as expensive as you might think.



2.3 Bill of material

The components are sold by most of the major distributors. For some of them, I compiled the supplier part number. The listed components are only suggestions and may be replaced by similar ones.

Position	Value	Case	Manufacturer	MPN	Digi-Key	Farnell	Mouser	RS
CN1	microSD	-	HRS	DM3BT-DSF-PEJS	HR1942CT-ND	1764375	798-DM3BT-DSF-PEJS	7388818
D1	green	1205	Würth Elektronik	156125GS57000	732-13393-1-ND	2900800	710-156125GS57000	1766195
D2	blue	1205	Würth Elektronik	156125BS57000	732-13391-1-ND	2900798	710-156125BS57000	1766137
R1	470 Ω	1206	Vishay	CRCW1206470RFKEA	541-470FCT-ND	1653132	71-CRCW1206-470-E3	8429250
R2	120 Ω	1206	Vishay	CRCW1206120RFKEA	541-120FCT-ND	1653057	71-CRCW1206-120-E3	6791787
R3	10 Ω	1206	Vishay	CRCW120610R0FKEA	541-10.0FCT-ND	1469974	71-CRCW1206-10-E3	6791774
R4	10 k Ω	1206	Vishay	CRCW120610K0FKEA	541-10.0KFCT-ND	1469970	71-CRCW1206-10K-E3	6791765
R5	47 Ω	1206	Vishay	CRCW120647R0FKEA	541-47.0FCT-ND	1470017	71-CRCW1206-47-E3	6792168
T1	BSS84 (PMOS)	SOT23-3	ON Semiconductor	BSS84	BSS84CT-ND	1094997	512-BSS84	6710328

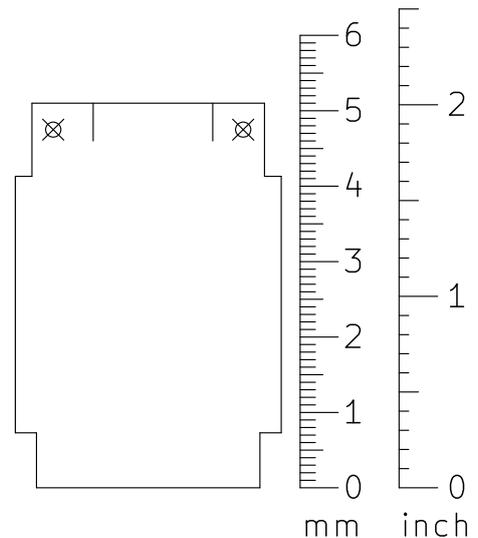
For the basic function, only CN1 and R5 are necessary. All other components are used for the LED indications.

2.4 Case modification

The drawing shown on the right side conduces the adaption of the case. Print it out and check the dimensions.

For the microSD port, it is essential to file out a slot between the lines.

For non-transparent cases you have to drill two holes into the case. The diameter is 2 mm ($\frac{3}{4}$ inch). Afterwards, the holes can be sealed with hot glue or transparent silicone.



3 Development

3.1 3D printed case

... doesn't exist yet. But maybe someone will create a model and allow me to add the data to this package.

3.2 Development of your own circuit board

This circuit board was developed with KiCAD. If you need the exact dimensions of the Memory Card's board, you'll find the KiCAD model in this ZIP file to adopt them from in case you want to build your own. If you use KiCAD too, feel free to use this model.

4 File list

```
09-001-1_SIO2SD.zip
├── Gerber
│   ├── 02-005-0-B_Cu.gbr
│   ├── 02-005-0-B_Mask.gbr
│   ├── 02-005-0-B_Paste.gbr
│   ├── 02-005-0-B_SilkS.gbr
│   ├── 02-005-0-Edge_Cuts.gbr
│   ├── 02-005-0-F_Cu.gbr
│   ├── 02-005-0-F_Mask.gbr
│   ├── 02-005-0-F_Paste.gbr
│   ├── 02-005-0-F_SilkS.gbr
│   ├── 02-005-0-NPTH.drl
│   └── 02-005-0-PTH.drl
├── KiCAD
│   └── PlayStation2_MemoryCard.kicad_mod
├── DE_Handbuch.pdf
└── EN_manual.pdf
```

5 Credits

Thanks to TnA, wisi, Maximus32 and Anakin94 for the groundwork, software development and other support. Also a big thank you to all members from psxtools.de and psx-place.com working on the project, who I didn't mention by name.