Project Documentation

Commodore PET/CBM80xx/40xx Diagnostic User Port PCB

Project number: 165

Revision: 0

Date: 27.10.2020

Commodore PET/CBM80xx/40xx Diagnostic User Port PCB **Rev. 0**

Module Description

Introduction

The User Port PCB is part of the Diagnostic Clip project. Originally, it was made with a connector and wires, but since PCBs got cheap and provide interconnects very reproduceable with a low failure rate, it is a very simple board design.

The user port dongle/PCB connects the video signals and, IEEE Control signals and DIAGSENS & GRAPHIC to the GPIO pins of the user port. Further, it connects the tape read #1/#2 to the tape write signal. Not all user port signals are involved, so the user port is not completely tested.

Pins	Connected Signals
2-B	TVVIDEO - CA1
3-C	IEEESRQ - PA0
4-D	IEEEEOI - PA1
5-E-11	DIAGSENS - PA2 - GRAPHIC
6-7-8	TPREAD2 - TPWRITE - TPREAD1
9-K	TVVERT - PA6
10-L	TVHOR - PA7

The source of the information, that was required to design this PCB was retrieved from http://www.zimmers.net/anonftp/pub/cbm/schematics/computers/pet/diagnostics.txt

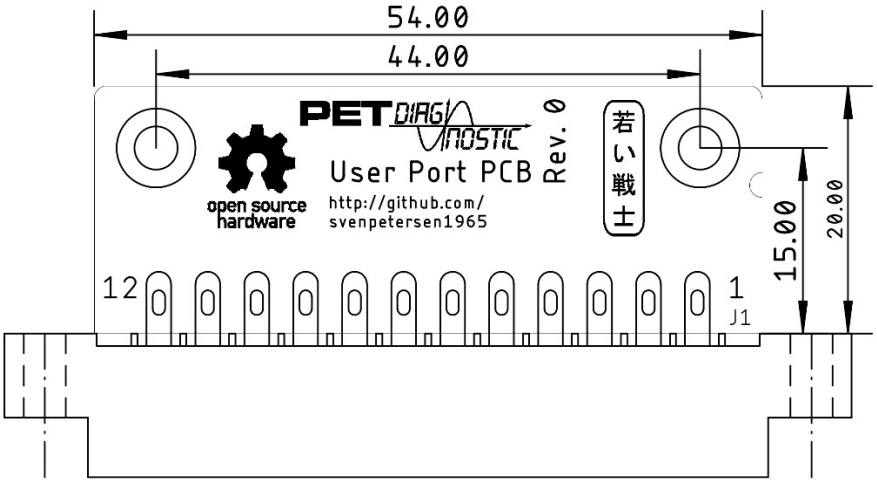


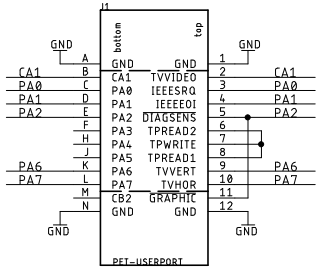
Figure 1: Dimensions of the User Port PCB

The 3D printable case requires two screws. Type C2.9 x 9.5 (DIN7981) self-tapping plastic screws are recommended.

Revision History

Rev. 0

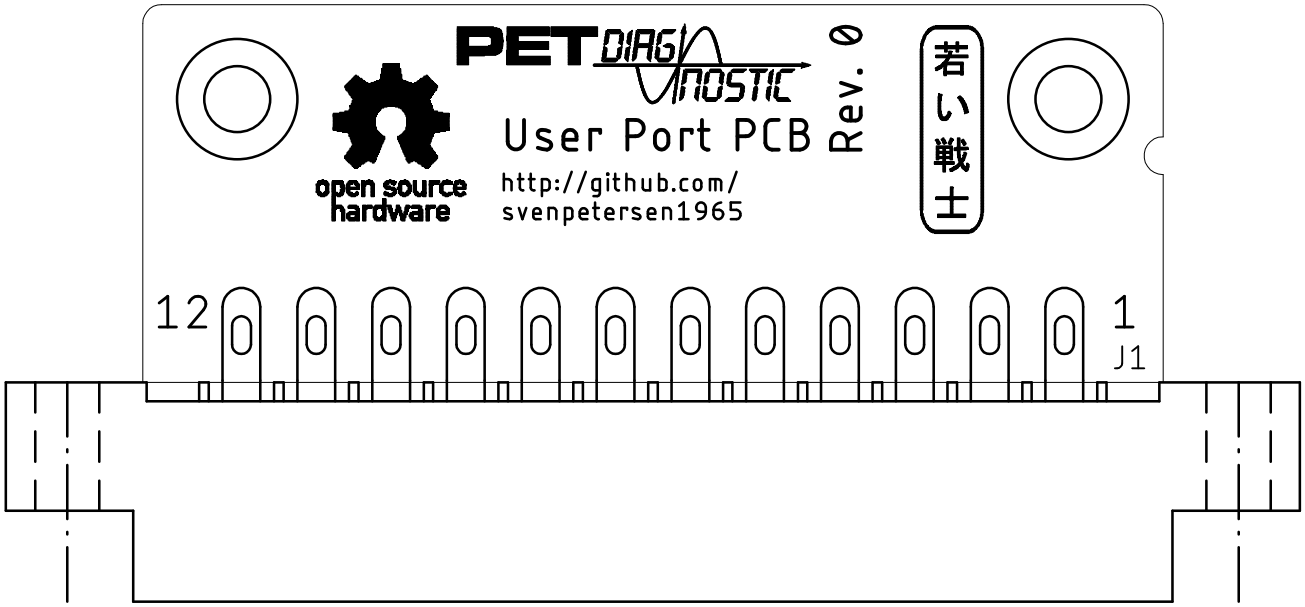
- Fully functional prototype



open source hardware

Title: PET Diagnostic User Port PCB		Doc.-No.:	165-1-01-00
		Draft.:	Sven Petersen
Date: 27.10.2020 13:33	Rev.: 0	Page 1/1	
File: PET_Diag_UP			
http://github.com/svenpetersen1965			A3

Sven Petersen 2020	Doc.-No.: 165-2-01-00	
	Cu: 35µm	Cu-Layers: 2
PET_Diag_UP		
04.01.2023 18:18		Rev.: 0
placement component side		



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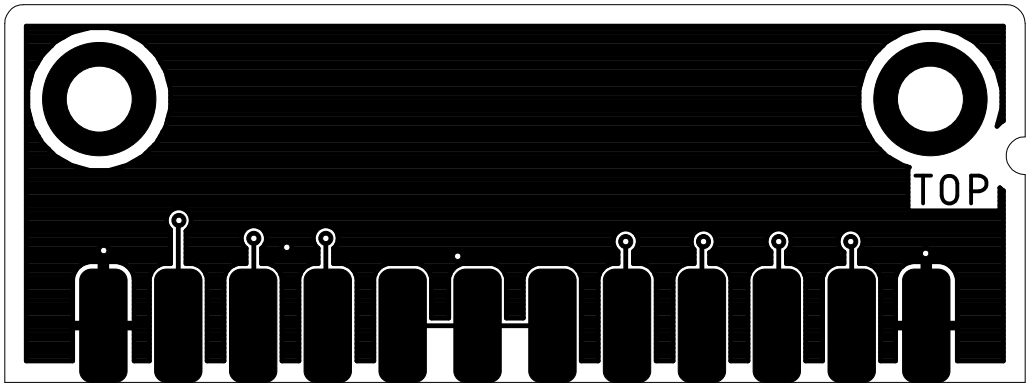

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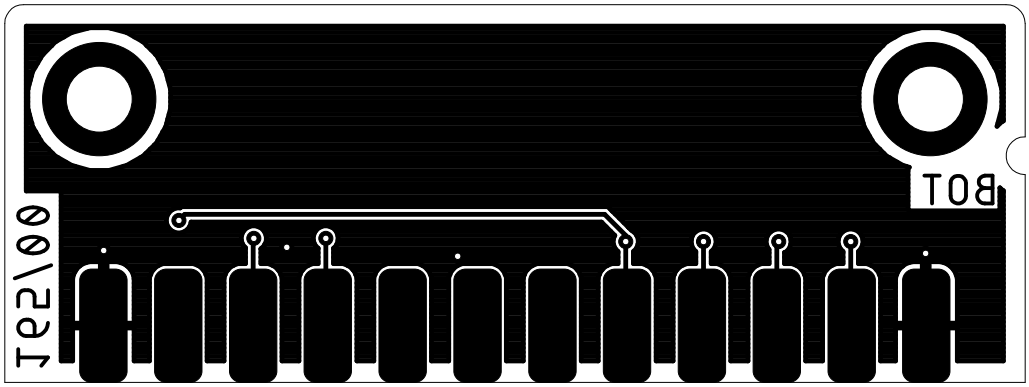

Sven Petersen 2020	Doc.-No.: 165-2-01-00	
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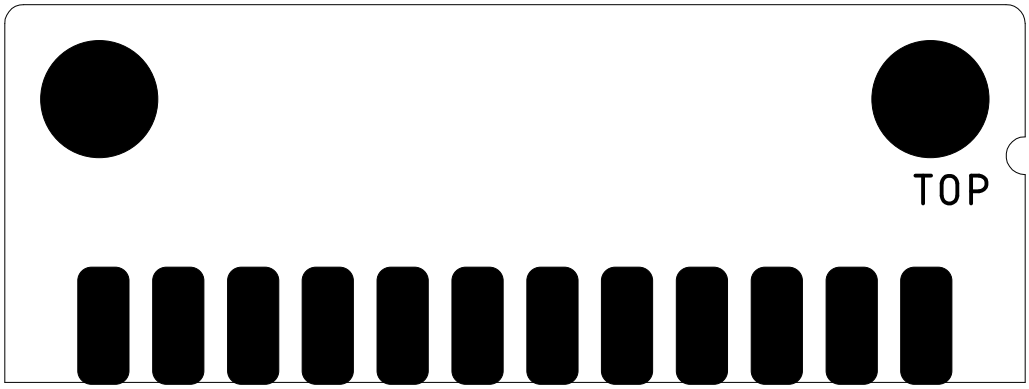
PET_Diag_UP		
04.01.2023 18:18		Rev.: 0
stopmask component side		



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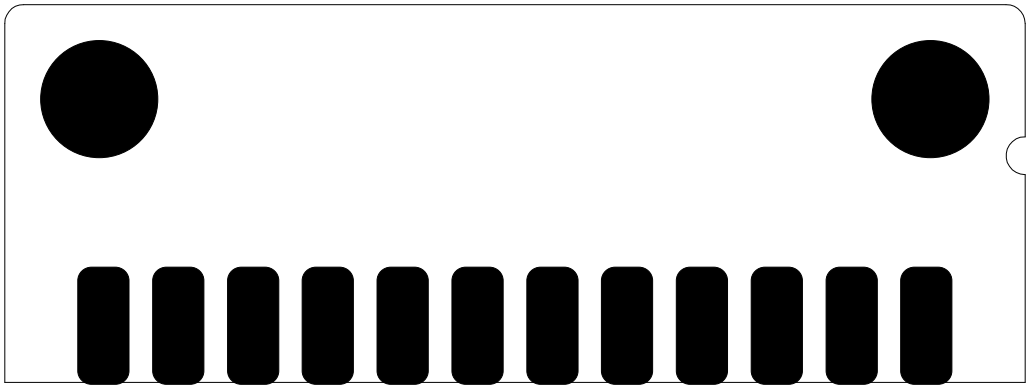
stopmask solder side		



Sven Petersen 2020	Doc.-No.: 165-2-01-00	
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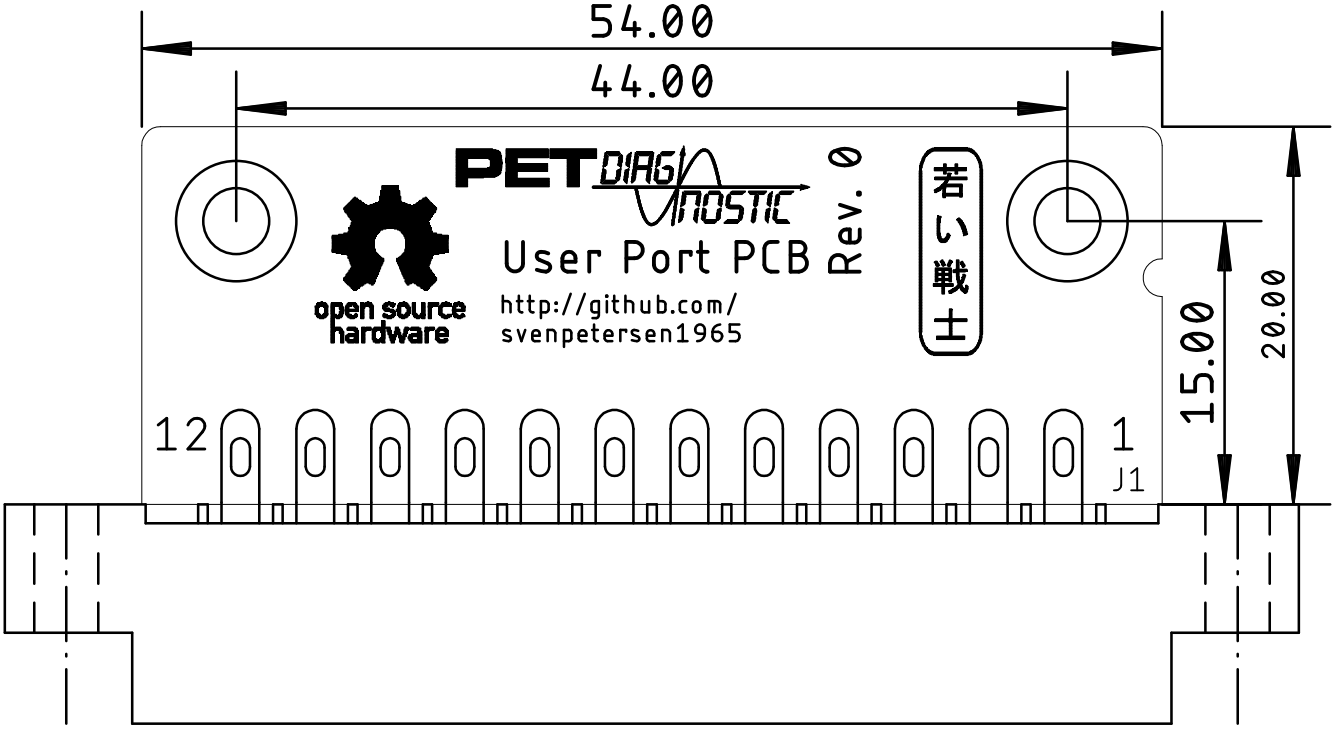
PET_Diag_UP		
04.01.2023 18:18		Rev.: 0
placement component side measures		



Commodore PET Diagnostic Clip: User Port Dongle Rev. 0
Bill of Material Rev. 0.0

Pos.	Qty	Value	Footprint	Ref.-No.	Comment
1	1	165-2-01-00	2 Layer	PCB Rev. 0	2 layer, Cu 35μ, HASL, 54.0mm x 20.0mm, 1.6mm FR4
2	1	2x12, 3.96mm pitch	USERPORT	J1	edge connector, C64 user port, Ali Express: Series 805