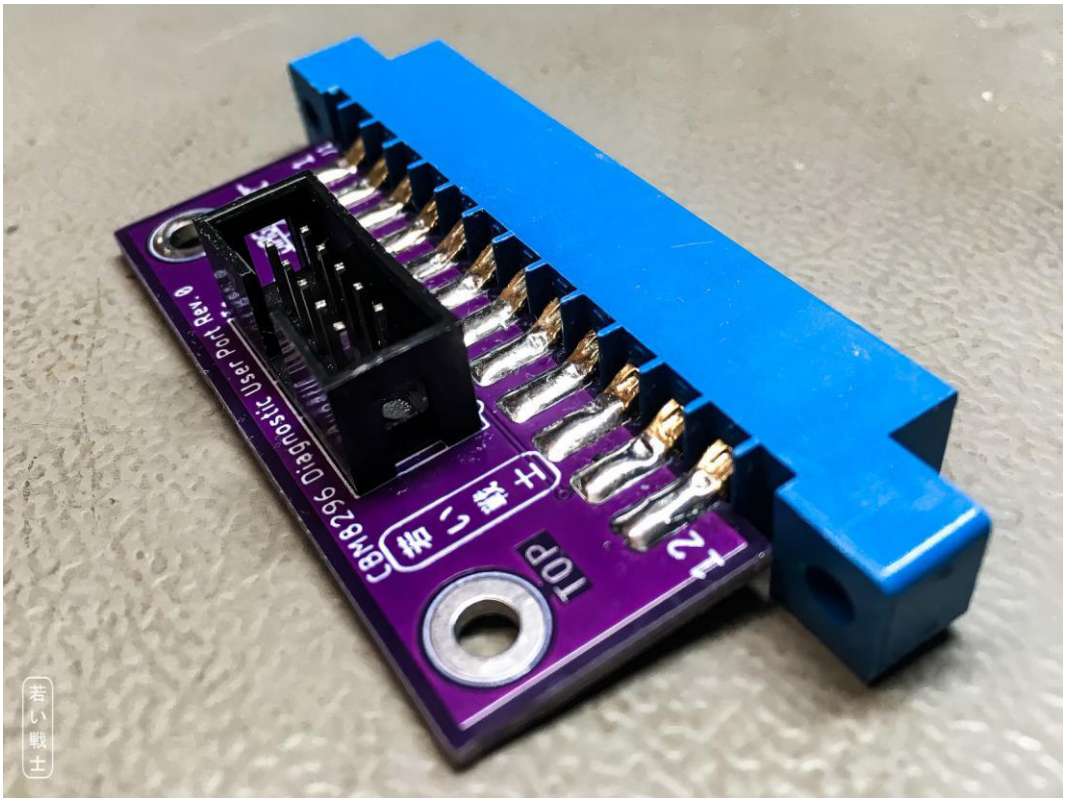
Project Documentation

Commodore CBM8296 Diagnostic: User Port Dongle

Project number: 209

Revision: 0

Date: 16.05.2023



Commodore CBM8296 Diagnostic: User Port Dongle Rev. 0

Module Description

Introduction

This User Port Dongle is part of the diagnostic clip set for the Commodore CBM8296. The original 324805-01 part incorporated a connector for the J4 memory expansion pin header. This dongle has a 2x5 box connector, which attaches to the J4 breakout board (project number 210) via a ribbon cable.

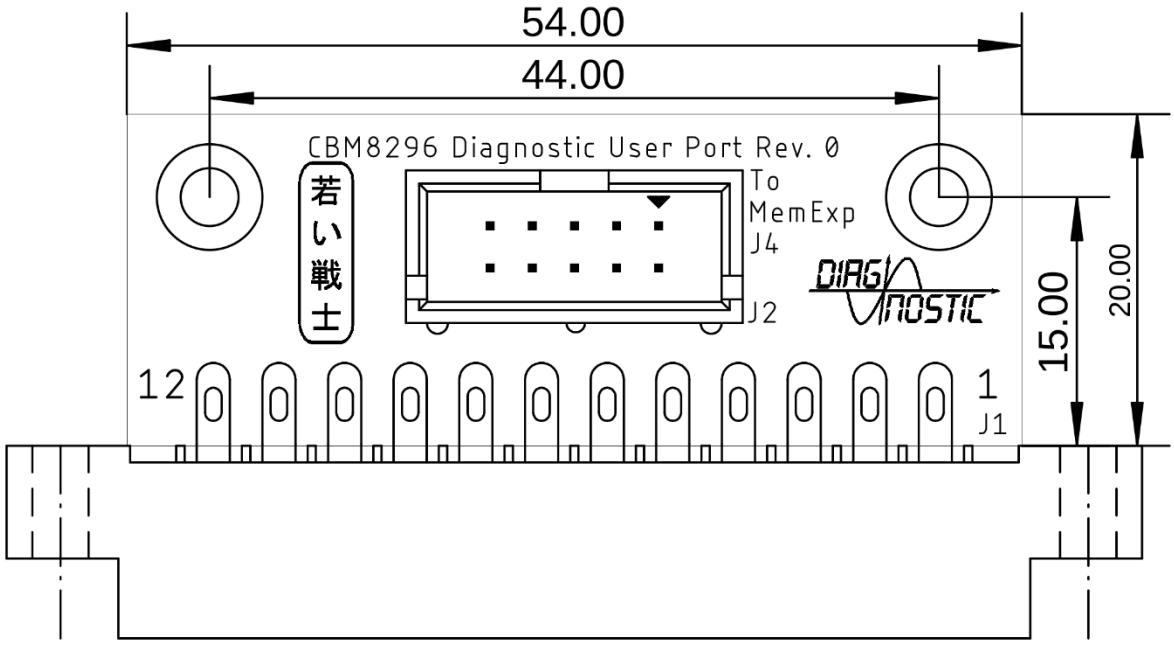


Figure 1: Dimensions of the User Port Dongle

Connections

Connection	Signals
B - M	CA1 - CB2
C - J4.13	PA0 - $\overline{\text{RAMSELA}}$
D - J4.14	PA1 - $\overline{\text{RAMON}}$
E - J4.12	PA2 - $\overline{\text{RAMSEL9}}$

Soldering The Edge Connector

To provide a defined position of the edge connector, it is recommended to solder it flat on the bottom side of the PCB. Then bending the top solder latches towards the board on the top side, so that a part lays flat. A suitable tool for this is a screw driver or tweezers. Finally soldering the latches to the top solder pads while holding them down until the solder joint has cooled down. It is best to do this before any through hole component is installed.

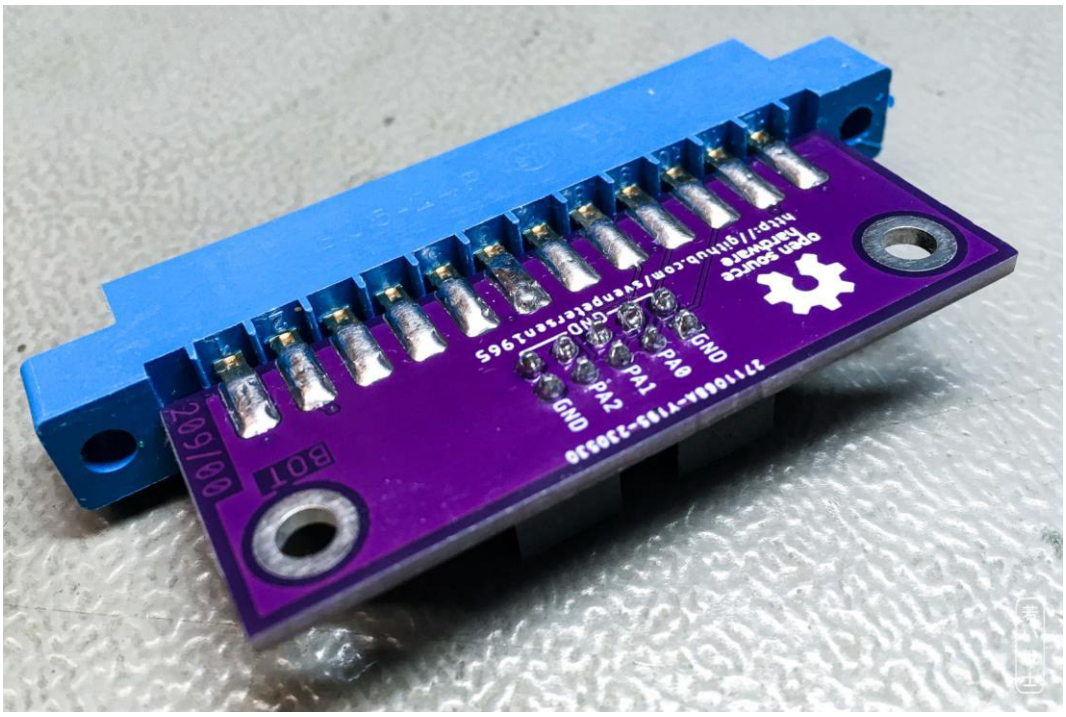


Figure 2: Step 1: Solder the bottom latches flat on the bottom side of the PCB

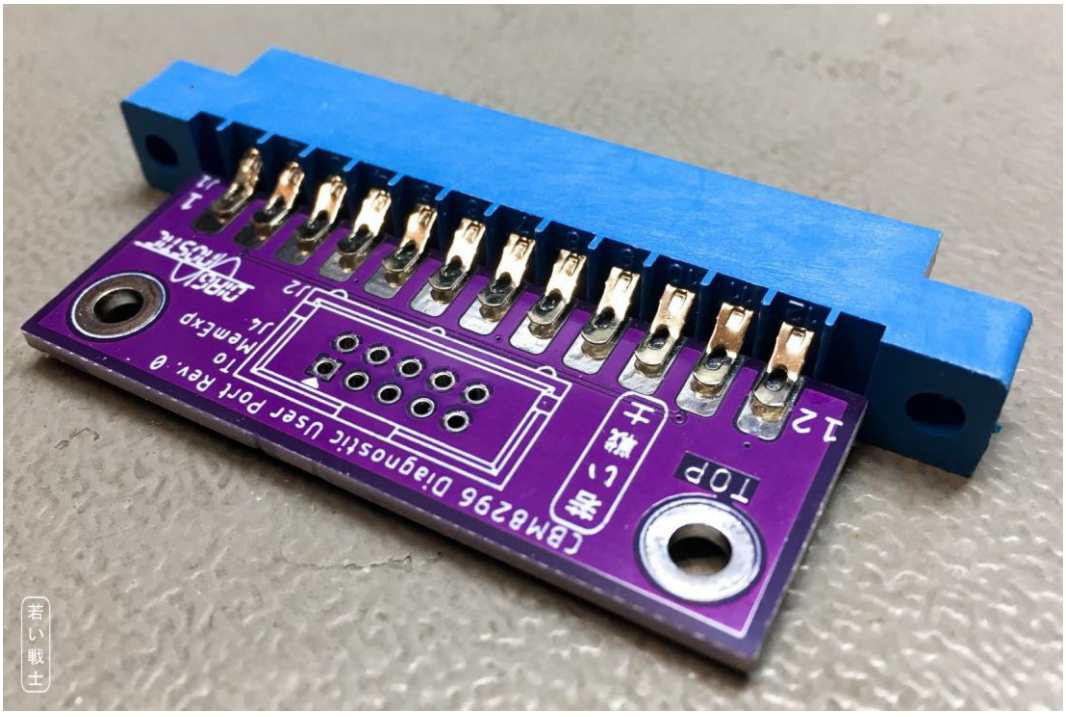


Figure 3: Step 2: The top latches are bent towards the PCB

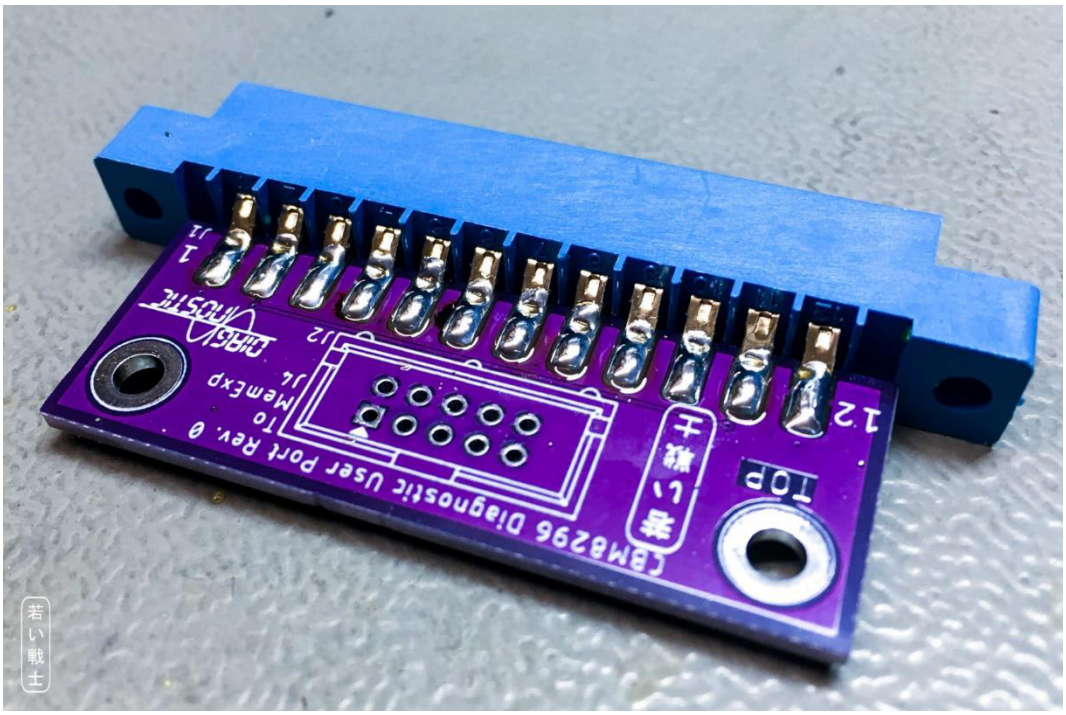


Figure 4: Step 3: The top latches are solder to the solder pads on the top side

3D-printed Case

The STL-files of the case are provided in the respective sub-folder of this project as is the label print.

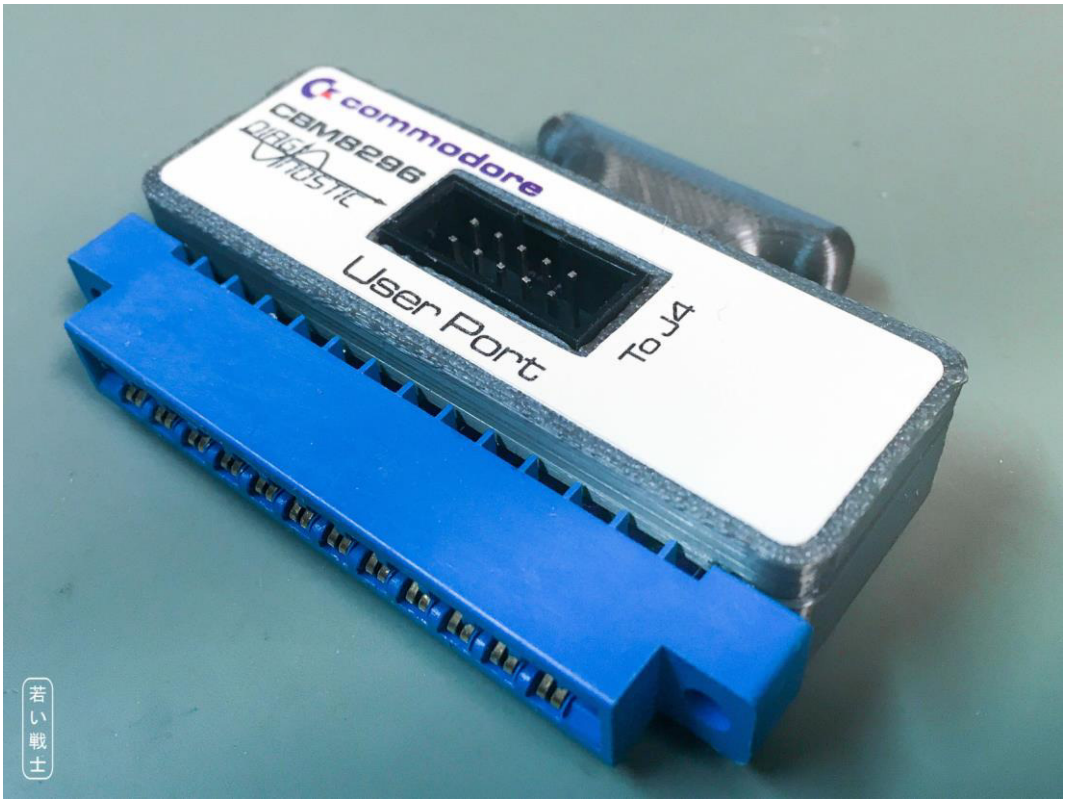


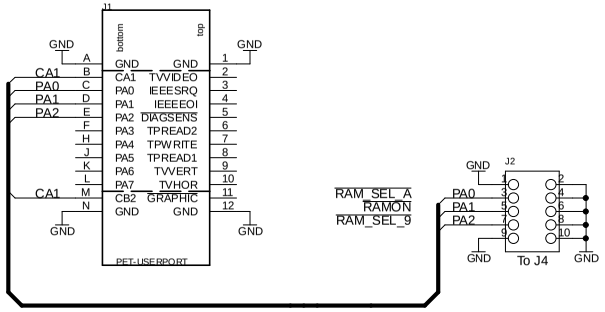
Figure 5: CBM8296 User Port dongle in a 3D printed case with label

Recommended screws: 2 each of C2.9x9.5 self-tapping screws for sheet metal (C 2,9x9,5H, DIN 7981).

Revision History

Rev. 0

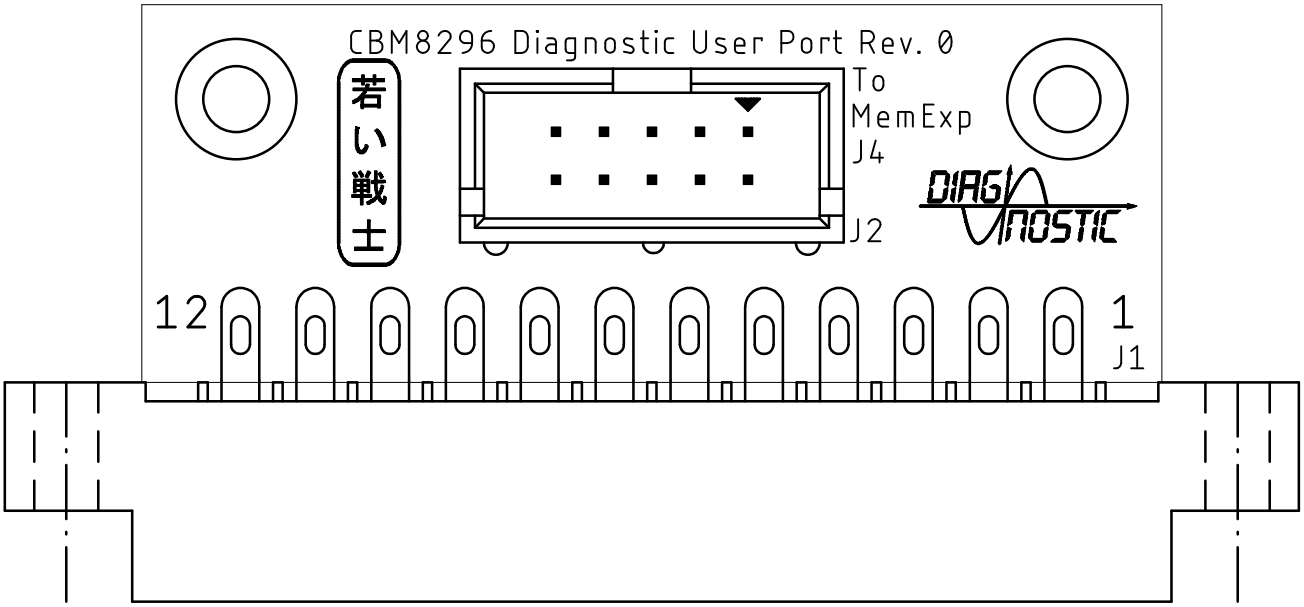
- Prototype, not yet tested.



open source hardware

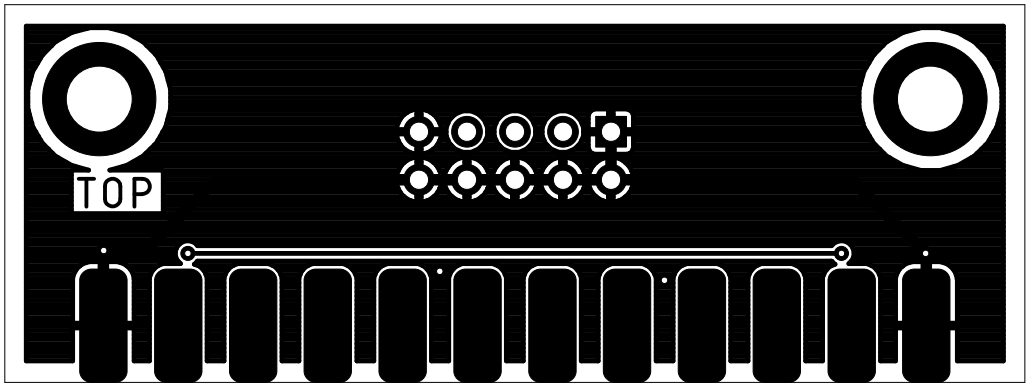
Title: CBM8296 Diagnostic User Port Dongle		Doc.-No.: 209-1-01-00	
		Draft.: Sven Petersen	
Date: 16.05.2023 20:23		Rev.: 0	Page 1/1
File: 8296 Diagnostic UP			
http://github.com/svenpetersen1965			A3

Sven Petersen 2023	Doc.-No.: 209-2-01-00	
	Cu: 35µm	Cu-Layers: 2
8296 Diagnostic UP		
16.05.2023 20:46		Rev.: 0
placement component side		

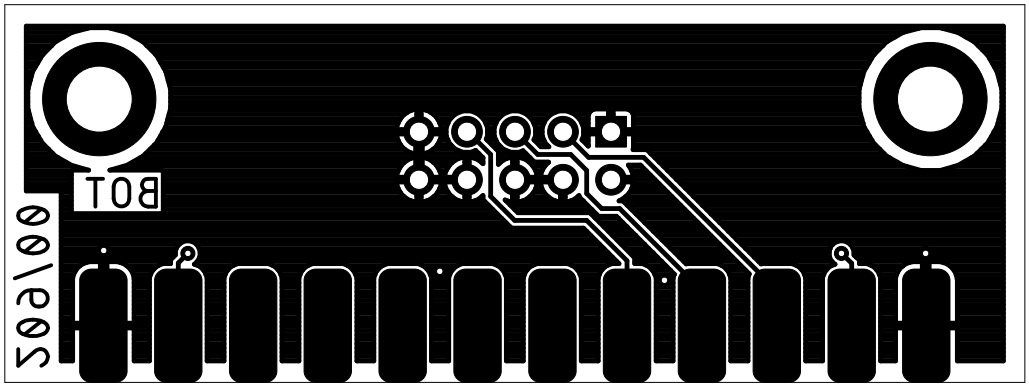


Sven Petersen 2023	Doc.-No.: 209-2-01-00	
	Cu: 35µm	Cu-Layers: 2
8296 Diagnostic UP		
16.05.2023 20:46		Rev.: 0
placement solder side		

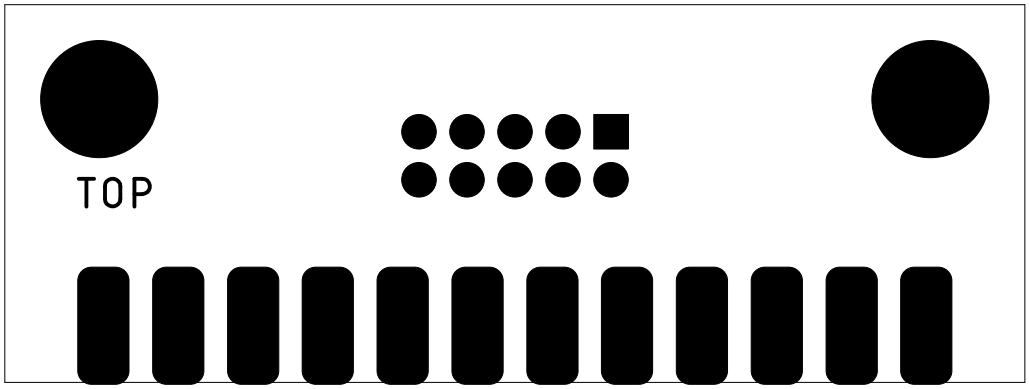
Sven Petersen 2023	Doc.-No.: 209-2-01-00	
	Cu: 35µm	Cu-Layers: 2
8296 Diagnostic UP		
16.05.2023 20:46		Rev.: 0
top	[redacted]	



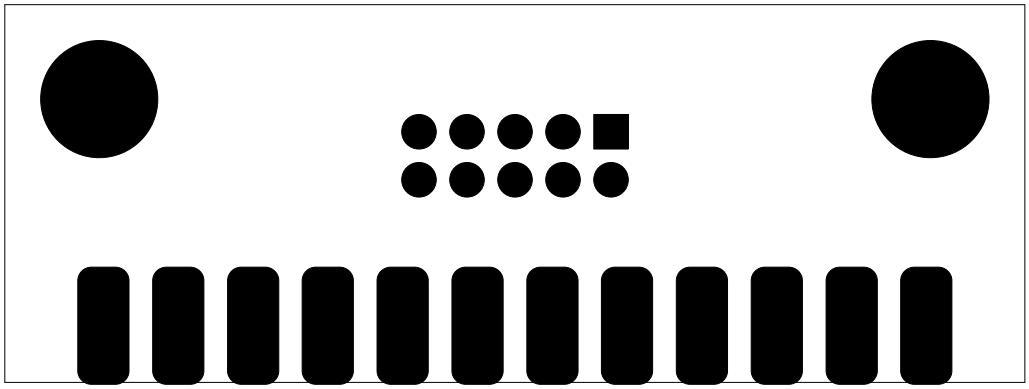
Sven Petersen 2023	Doc.-No.: 209-2-01-00	
	Cu: 35µm	Cu-Layers: 2
8296 Diagnostic UP		
16.05.2023 20:46		Rev.: 0
bottom		



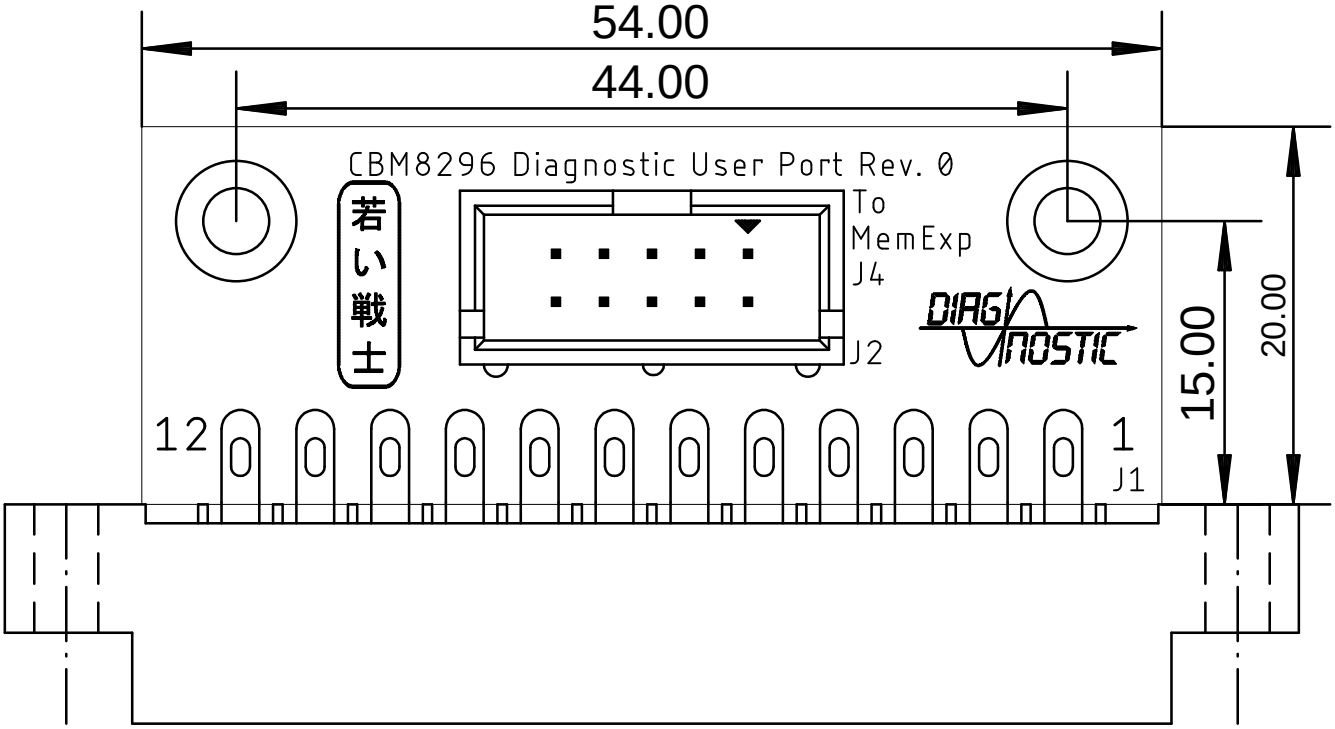
Sven Petersen 2023	Doc.-No.: 209-2-01-00	
	Cu: 35µm	Cu-Layers: 2
8296 Diagnostic UP		
16.05.2023 20:46		Rev.: 0
stopmask component side		

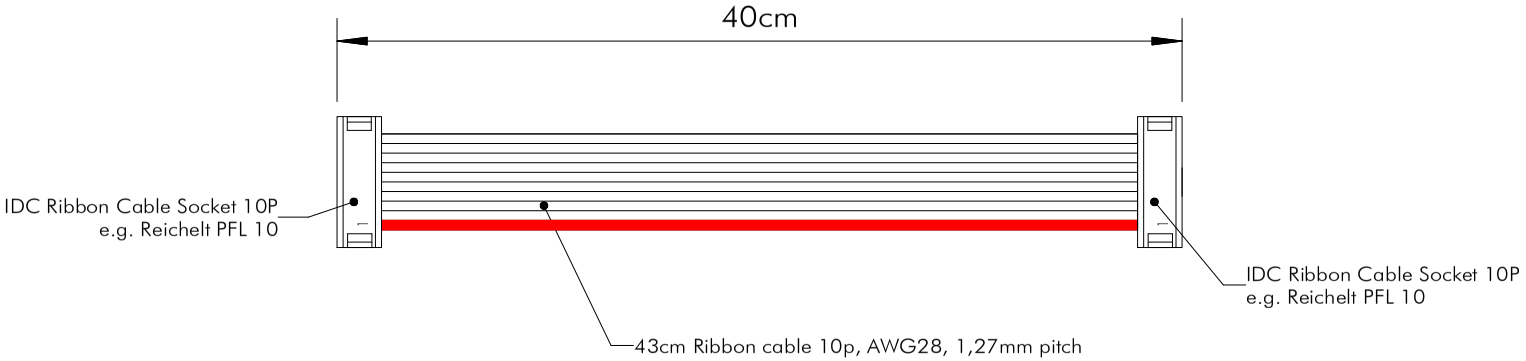


Sven Petersen 2023	Doc.-No.: 209-2-01-00	
	Cu: 35µm	Cu-Layers: 2
8296 Diagnostic UP		
16.05.2023 20:46		Rev.: 0
stopmask solder side		



Sven Petersen 2023	Doc.-No.: 209-2-01-00	
	Cu: 35µm	Cu-Layers: 2
8296 Diagnostic UP		
16.05.2023 20:46		Rev.: 0
placement component side measures		





Diagnostic 586220 Harness	Titel: User Port - J4 Breakout Board Cable	Draft.: Sven Petersen File: UP-J4.SKF
	Doc.-No.: 209-3-01-00	Rev.: 0
	Date: 18.05.2023 12:42	M 1 mm = 1 mm

Commodore CBM8296 Diagnostic: User Port Dongle Rev. 0
Bill of Material Rev. 0.0

Pos.	Qty	Value	Footprint	Ref.-No.	Comment
1	1	209-2-01-00	2 Layer	PCB Rev. 0	2 layer, Cu 35µ, HASL, 54.0mm x 20.0mm, 1.6mm FR4
2	1	box connector, 2x5, 2.54mm	2X05WV	J2	e.g. Reichelt WSL 10G
3	1	2x12, 3.96mm pitch	USERPORT	J1	edge connector, C64 user port, Ali Express: "Series 805"
4	2	10-pin IDC socket with strain relief		cable drawing 209-3-01-00	e.g. Reichelt PFL 10
5	43cm	ribbon cable		cable drawing 209-3-01-00	ribbon cable, 10 wires, AWG28, 1.27mm pitch