Project Documentation

Diagnostic Rev. 586220 Harness - Cassette Port/SMD

Project number: 180

Revision: 1

Date: 19.04.2021

Diagnostic Rev. 586220 Harness - Cassette Port/SMD Rev. 1

Module Description

This PCB is a part of the harness for the Diagnostic Rev. 586220 test software for the Commodore C64.

The cassette port PCB connects to the cassette port of the C64 and provides the signal on a 2x3 pin header, which is connected to the central component of the Diagnostic Rev. 586220 harness, the user port PCB.

J3 provides the WRITE signals, which serves for switching off the analog switches on the extended Keyboard Dongle (Project No. 143).

This version of the Cassette Port Dongle can be used with version 0 of the user port dongle and the previous keyboard dongle (Project No. 116) or the extended keyboard dongle. The WRITE signal only connects to the latter.

There are two LEDs on this PCB. One showing the status of the Motor Signal and the other showing the status of the SENSE signal. To keep the load low on the sense signal, a transistor amplifies the SENSE to provide enough current for the latter LED.

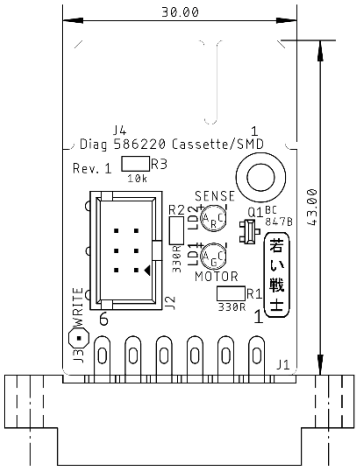


Figure 1: The CASSETTE Port PCB

The male Cassette Port edge connector was added to make this a real break out board, which fits between the C64 and the Datassette.

Pin outs

Cassette Port

J1 – 2 x 6p edge connector (pitch 3.96mm)

Pin	Signal	Pin	Signal
1	GND	A	GND
2	+5V	B	+5V
3	MOTOR	C	MOTOR
4	READ	D	READ
5	WRITE	E	WRITE
6	SENSE	F	SENSE

Harness Connector

J2 – 2x3p Pin Header (pitch 2.54mm)

Pin	Signal	Pin	Signal
1	GND	2	+5V
3	MOTOR	4	READ
5	WRITE	6	SENSE

WRITE Pin

J3 – 1x1p Pin Header

Pin	Signal
1	WRITE

Test

The test was passed successfully. It is described in the document of the User Port Dongle.

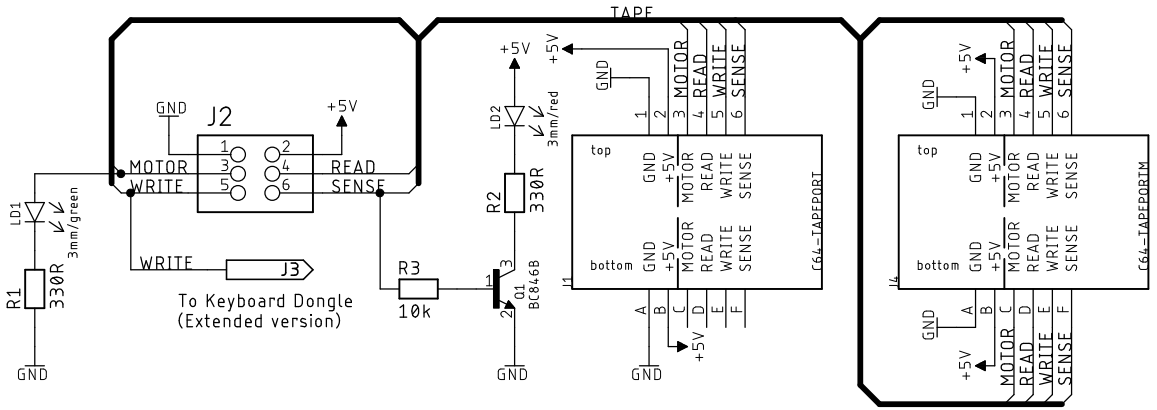
Revision History

Rev. 0 → Rev. 1

- J3 is new. It provides the WRITE Signal for the Extended Keyboard Dongle.
- The Sense LED was added.
- The male edge connector was added to make this PCB a cassette breakout board

Rev. 1 → Rev. 1/SMD

- Resistors and transistor in an SMD case.

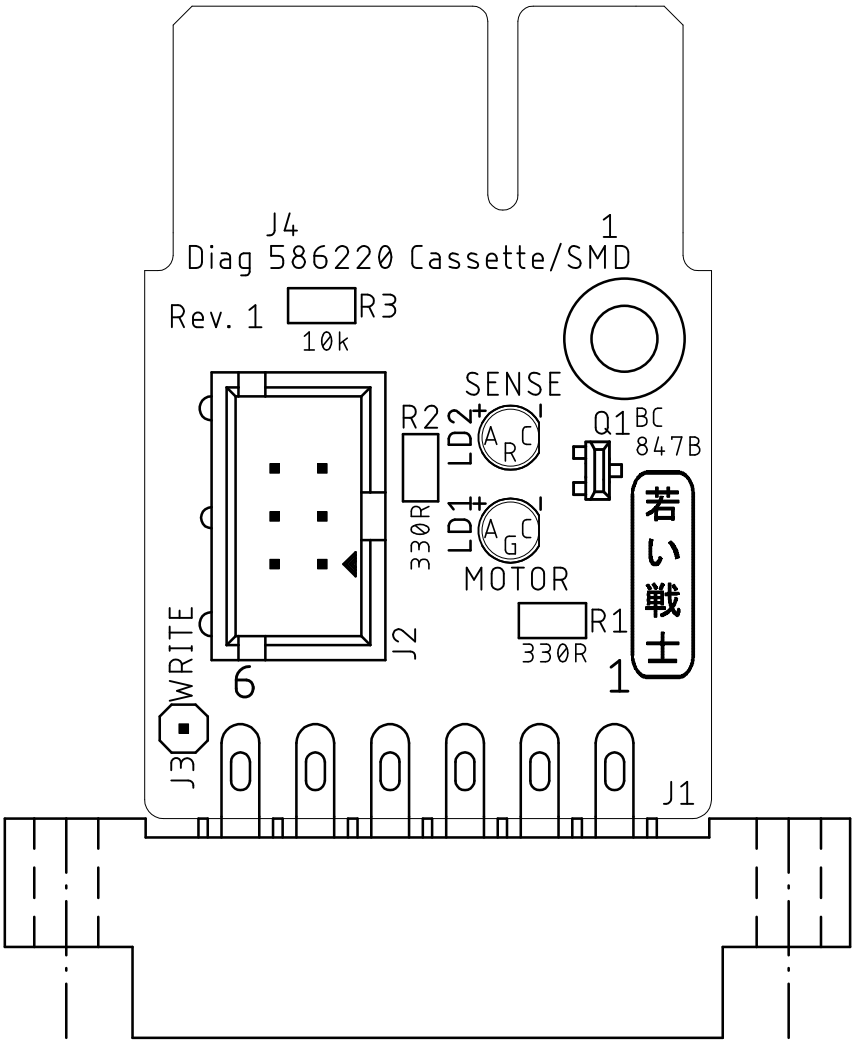


DRL1

open source hardware

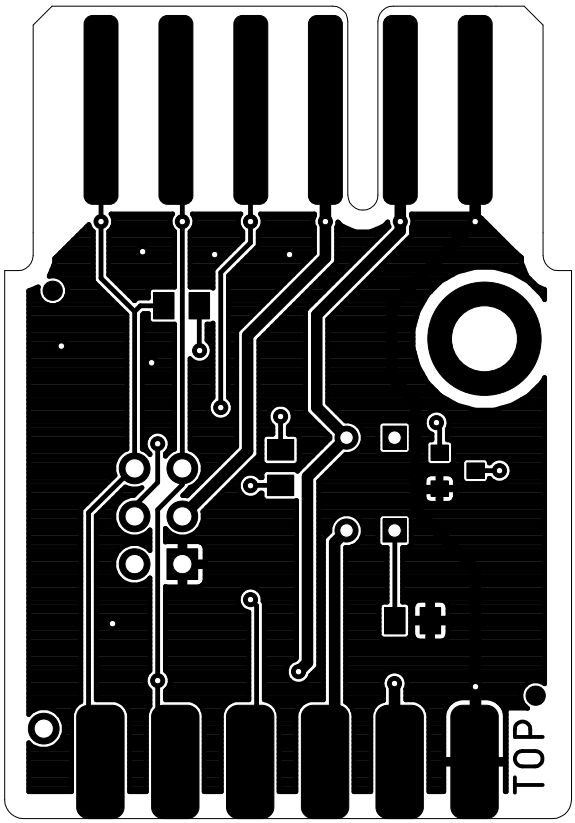
Title:	Diag 586220 C64 Cassette Harness/SMD	Doc.-No.: 180-1-01-01 Draft.: Sven Petersen	
Date:	18.04.2021 21:15	Rev.: 1	Page 1/1
File:	Diag_586220_Cassette_SMD		
	http://github.com/svenpetersen1965		A4

Diag 586220 Harness	Doc.-No.: 180-2-01-01	
	Cu: 35µm	Cu-Layers: 2
Diag_586220_Cassette_SMD		
nicht gespeichert!		Rev.: 1
placement component side		

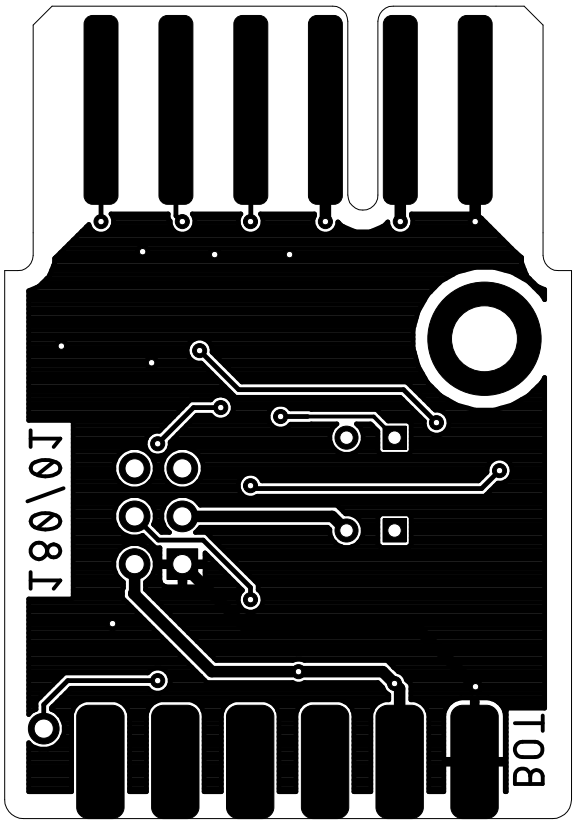


Diag 586220 Harness	Doc.-No.: 180-2-01-01	
	Cu: 35µm	Cu-Layers: 2
Diag_586220_Cassette_SMD		
nicht gespeichert!		Rev.: 1
placement solder side		

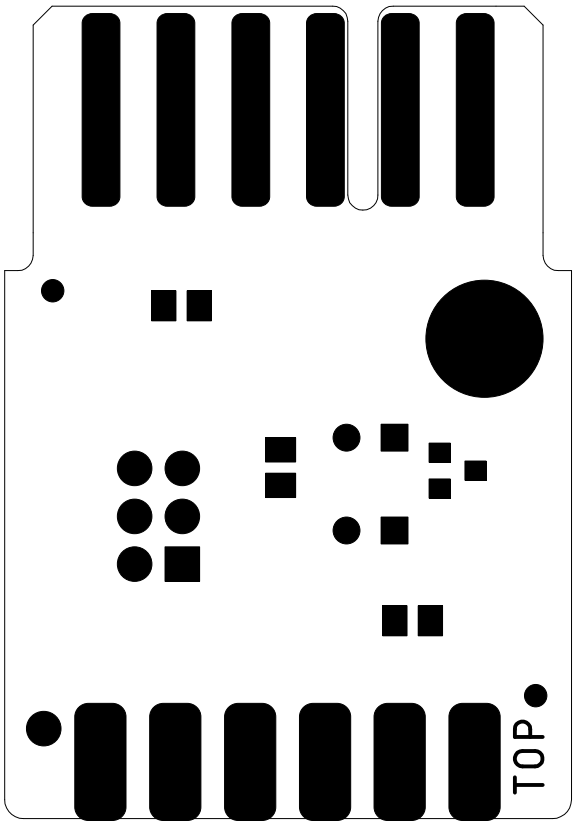
Diag 586220 Harness	Doc.-No.: 180-2-01-01	
	Cu: 35µm	Cu-Layers: 2
Diag_586220_Cassette_SMD		
nicht gespeichert!		Rev.: 1
top	[redacted]	



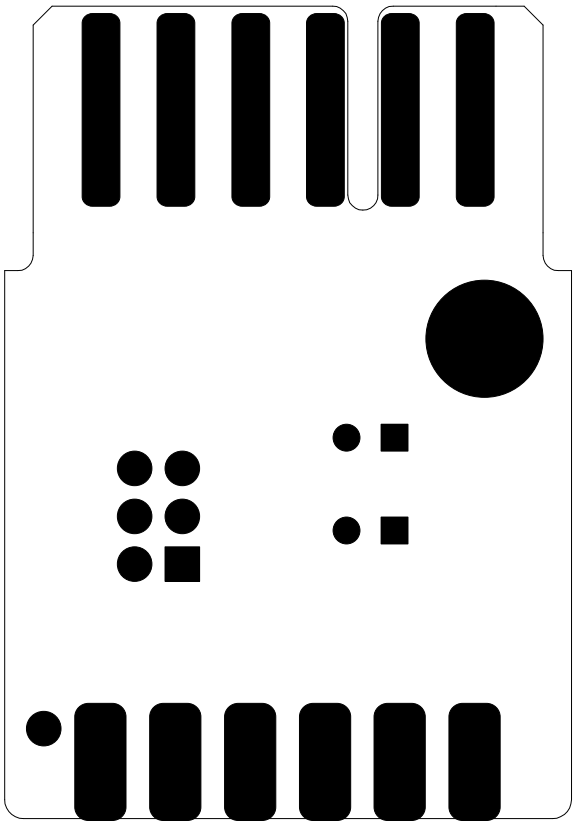
Diag 586220 Harness	Doc.-No.: 180-2-01-01	
	Cu: 35µm	Cu-Layers: 2
Diag_586220_Cassette_SMD		
nicht gespeichert!		Rev.: 1
bottom	[redacted]	



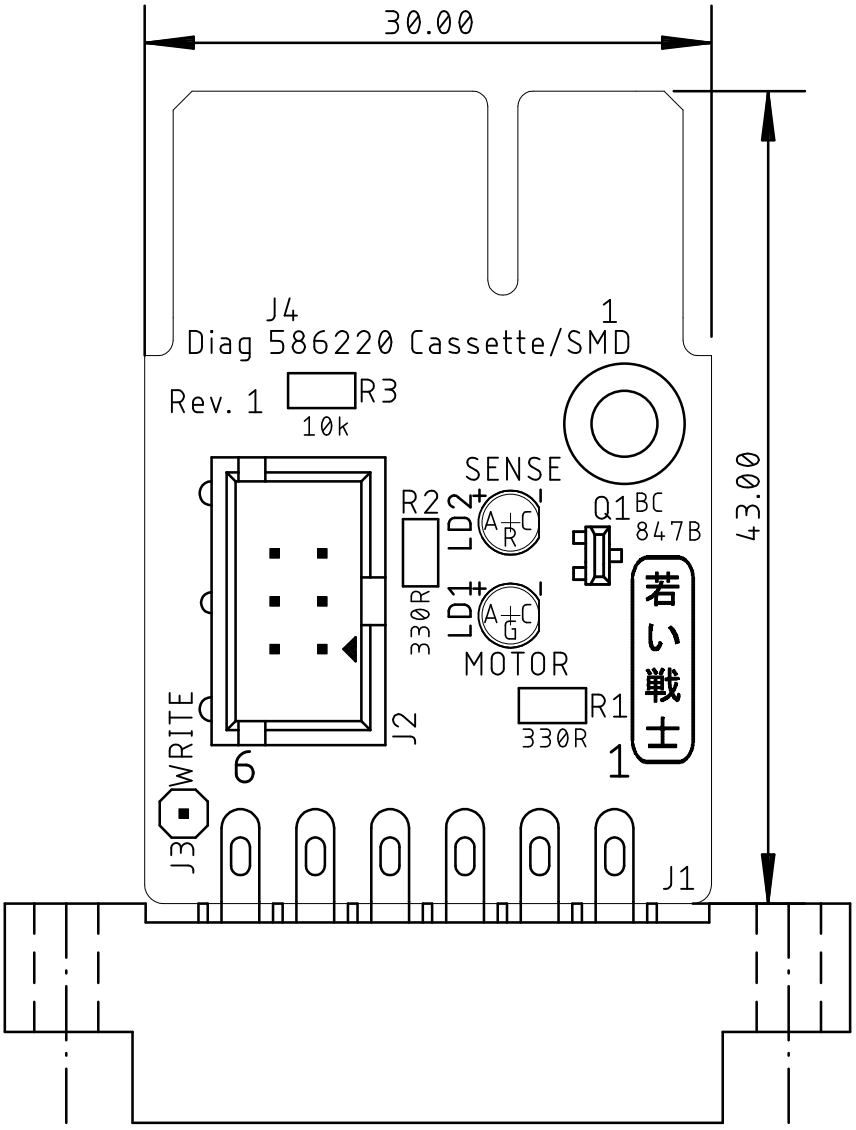
Diag 586220 Harness	Doc.-No.: 180-2-01-01	
	Cu: 35µm	Cu-Layers: 2
Diag_586220_Cassette_SMD		
nicht gespeichert!		Rev.: 1
stopmask component side		



Diag 586220 Harness	Doc.-No.: 180-2-01-01	
	Cu: 35µm	Cu-Layers: 2
Diag_586220_Cassette_SMD		
nicht gespeichert!		Rev.: 1
stopmask solder side		



Diag 586220 Harness	Doc.-No.: 180-2-01-01	
	Cu: 35µm	Cu-Layers: 2
Diag_586220_Cassette_SMD		
nicht gespeichert!		Rev.: 1
placement component side measures		



Diagnostic Rev. 586220 Harness - Cassette Port SMD Rev. 1
Bill of Material Rev. 1.0

Pos.	Qty	Value	Footprint	Ref.-No.	Comment
1	1	180-2-01-01	2 Layer	PCB Rev. 1	2 layer, Cu 35µ, HASL, 30.0mm x 43.0mm, 1.6mm FR4
2	1	2x6, 3.96mm pitch	C64-TAPEPORT	J1	edge connector, C64 cassette port
3	1	2x3 box connector	2X03WV	J2	e.g. Reichelt WSL 6G
4	1	3mm/green	3MM	LD1	LED, 3mm, green
5	2	330R	0805	R1, R2	1/4 Watt, 5%
6	1	BC846B	SOT23	Q1	Transistor, universal NPN (or BC847 etc.)
7	1	10K	0805	R3	1/4 Watt, 5%
8	1	3mm/red	3MM	LD2	LED, 3mm, red
9	1	pin header 1p	1x01	J3	Pin header for DuPont contact/do not place
10	1	C64 Tapeport M	C64-TAPEPORTM	J4	do not place. Structure in copper/PCB