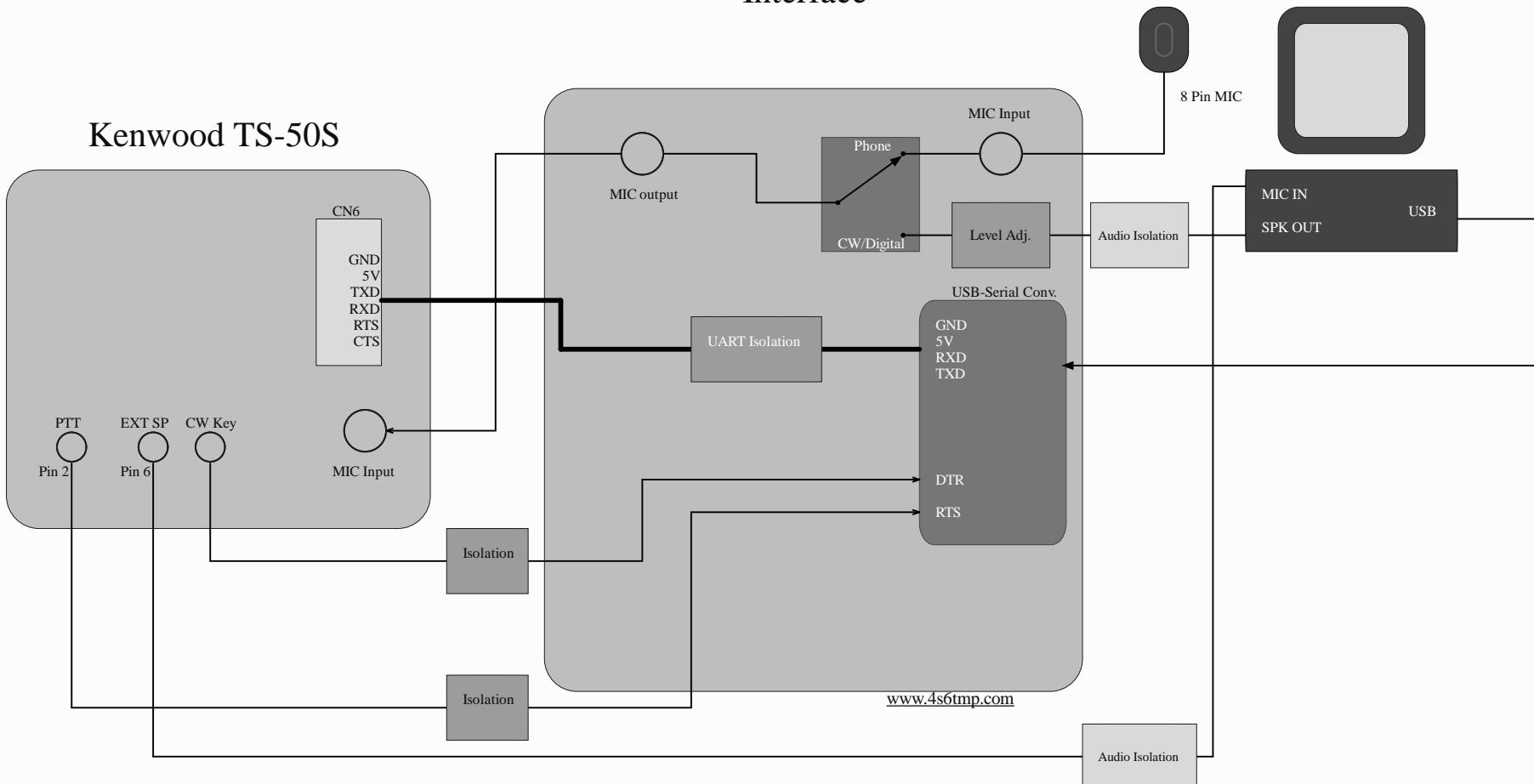


# Interface

**Kenwood TS-50S**



Title **Block Diagram**

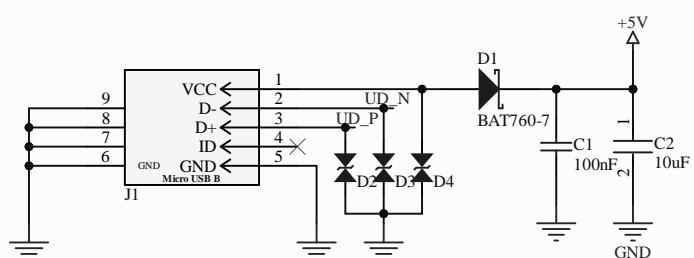
Size: A4 Number: 1 Revision: 1

Date: 16/08/2022 Time: 10:50:46 AM Sheet 1 of 4

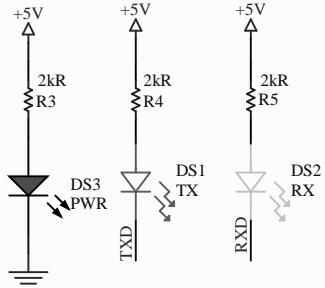
File: E:\Amateur Radio\Projects\kenwood-ts50s-digital-interface\Block Diagram.SchDoc

**4S6TMP**  
[www.4s6tmp.com](http://www.4s6tmp.com)

A

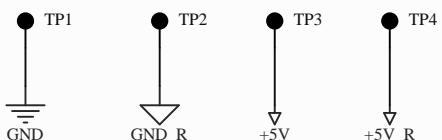
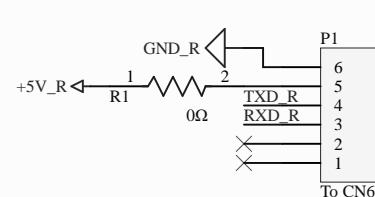
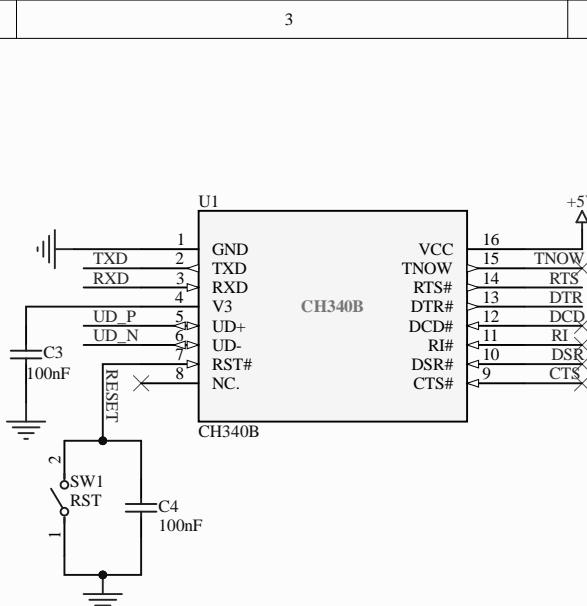


B



C

▲ CW--DTR  
 PTT-RTS  
 +5V from Computer  
 +5V\_R from Radio  
 Check if TXD/RXD is Active low/high  
 Add POT for SPK OUT  
 Add Hardware & TPs

Title **TS50S USB CAT**

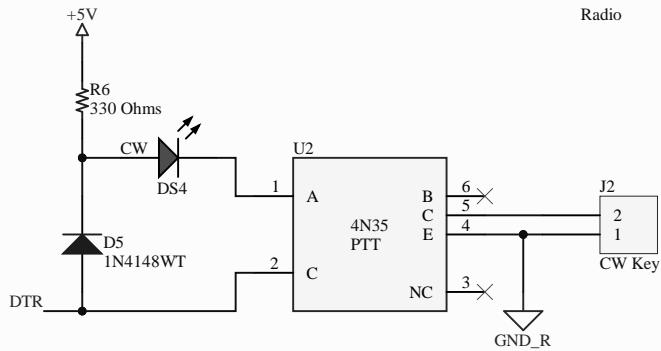
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Date: 16/08/2022 Time: 10:50:46 AM Sheet 2 of 4

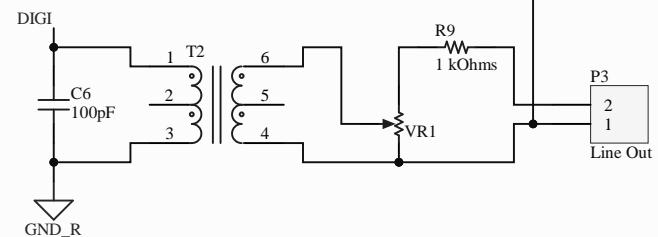
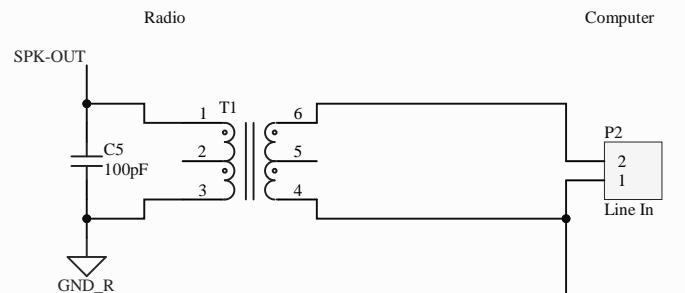
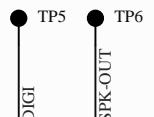
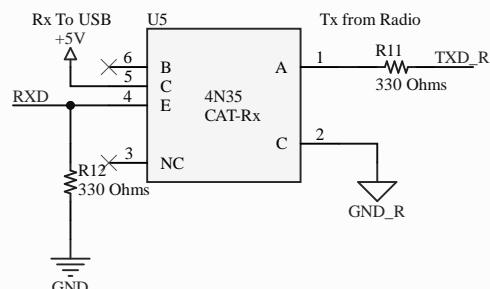
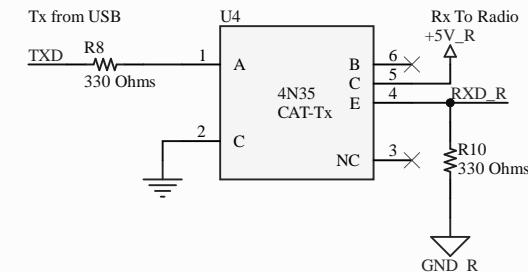
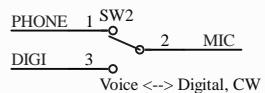
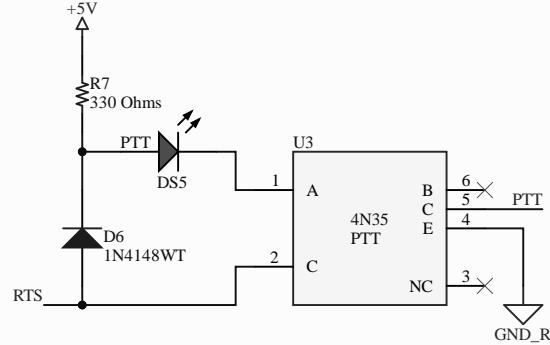
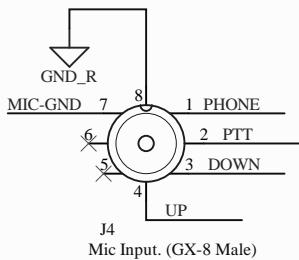
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**4S6TMP**  
[www.4s6tmp.com](http://www.4s6tmp.com)

Computer



Radio



Title **Kenwood TS50s Digital Interface**

4S6TMP  
Sri Lanka

Size: A4 Number: 3 Revision: 1.0

Date: 16/08/2022 Time: 10:50:46 AM Sheet 3 of 4

File: E:\Amateur Radio\Projects\kenwood-ts50s-digital-interface\ts-50s-digi-interface.SchDoc

**4S6TMP**  
www.4s6tmp.com

A

A

B

B

C

C

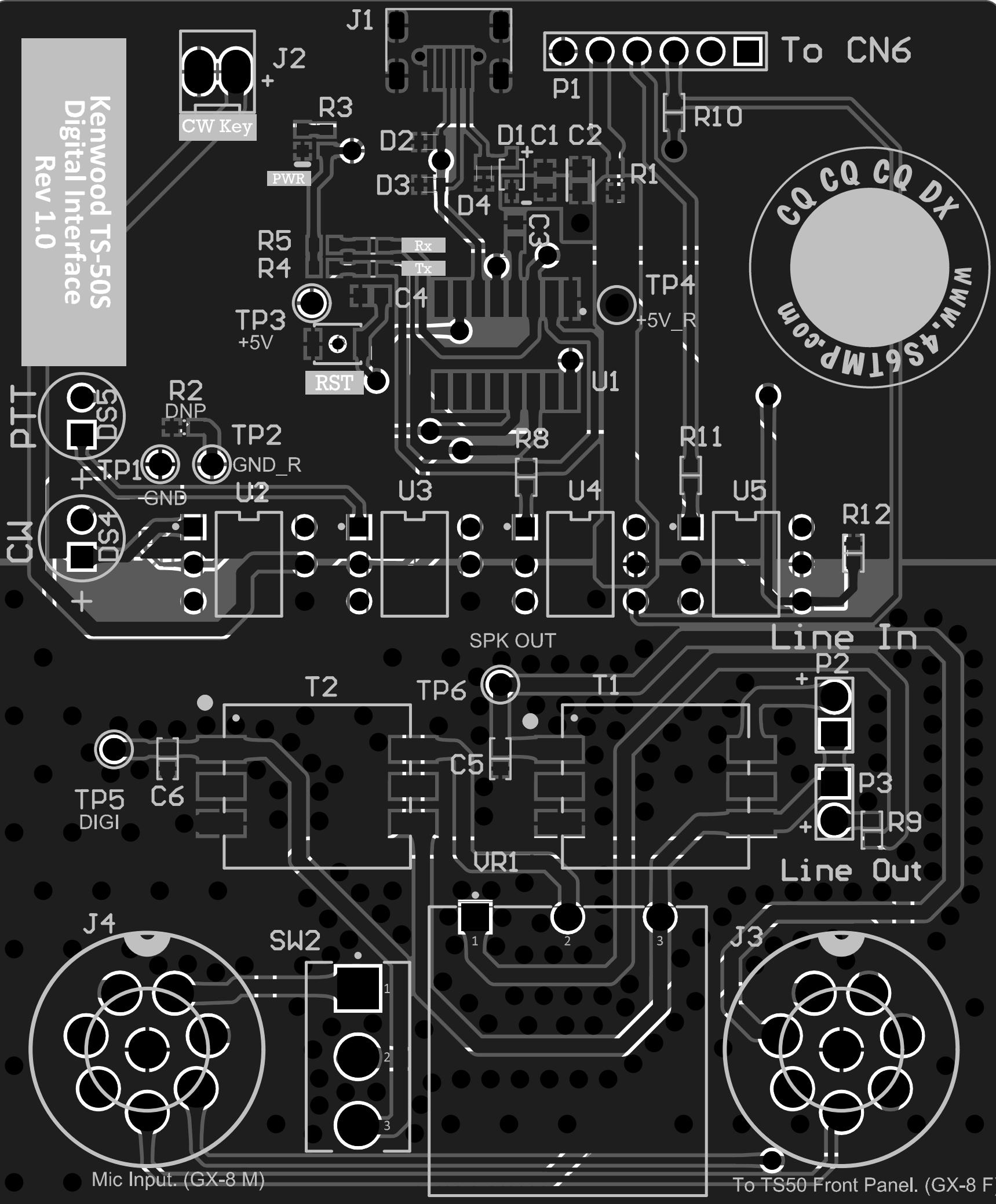
D

D

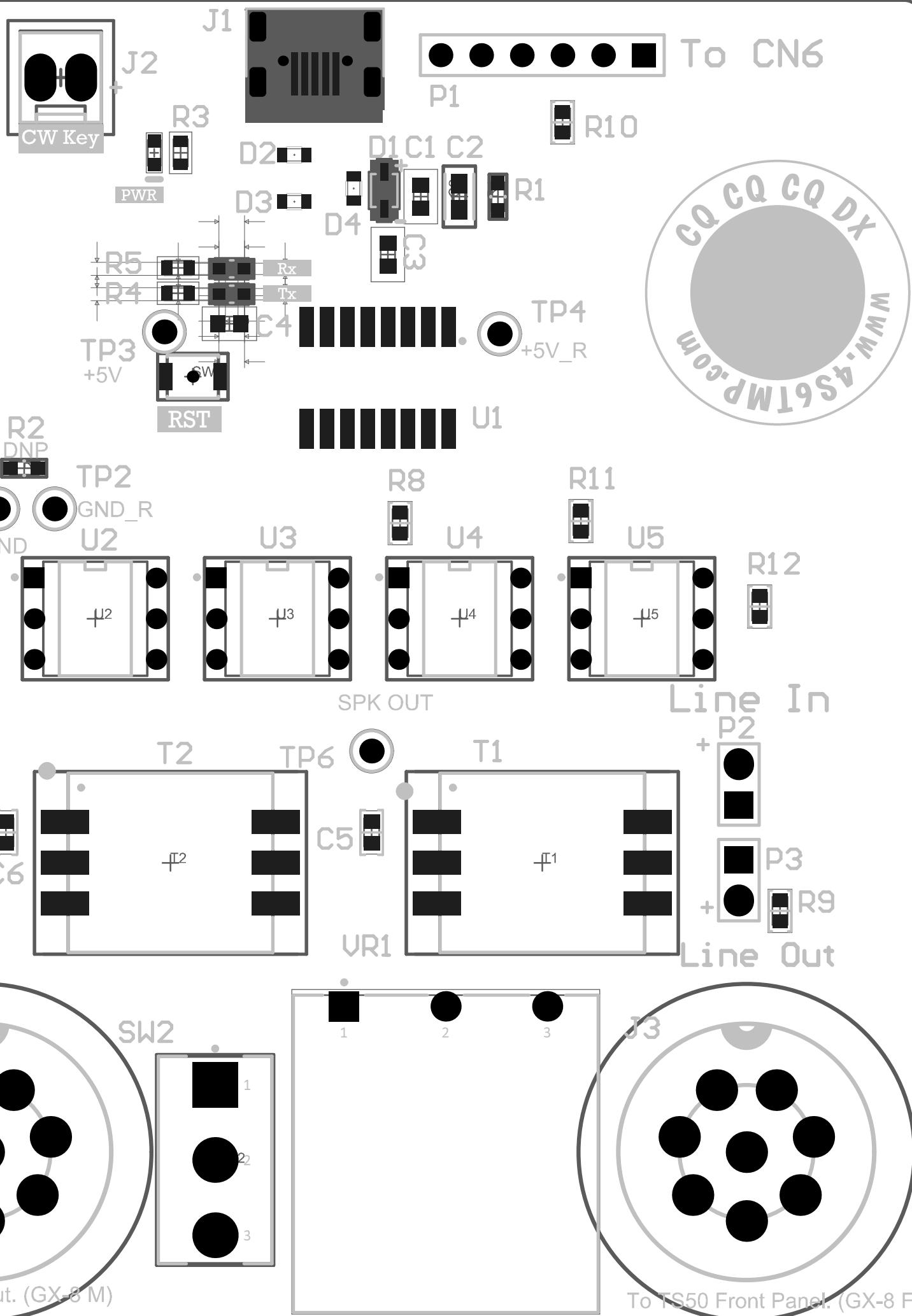
Logo1  
PCB Logo  
*4S6TMP*

Title <b><i>Hardware</i></b>			*
Size: A4	Number:4	Revision: 1	*
Date: 16/08/2022	Time: 10:50:46 AM	Sheet 4 of 4	*
File: E:\Amateur Radio\Projects\kenwood-ts50s-digital-interface\Hardware.SchDoc			4S6TMP www.4s6tmp.com

# Kenwood TS-50S Digital Interface Rev 1.0

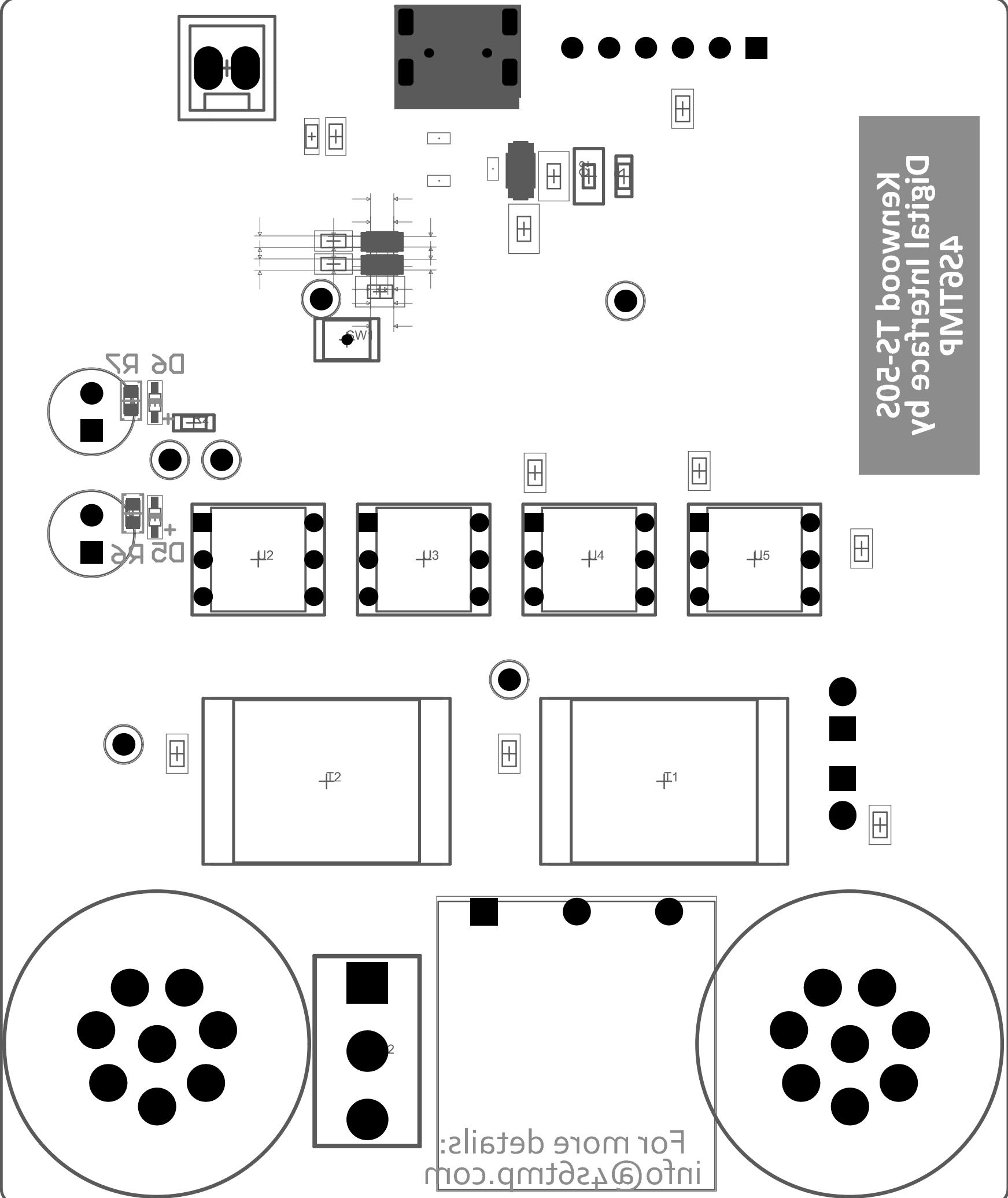


**Kenwood TS-50S  
Digital Interface  
Rev 1.0**

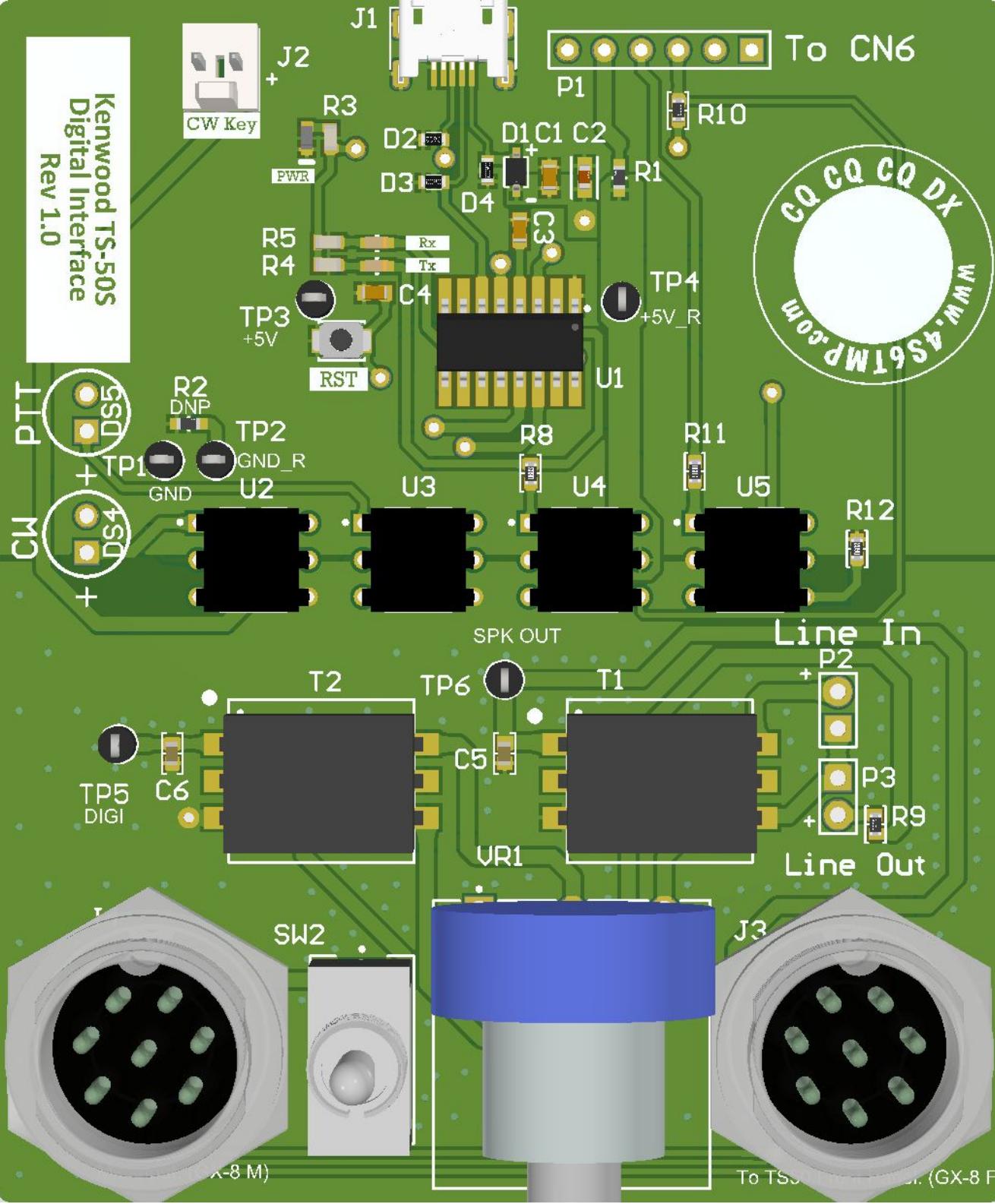


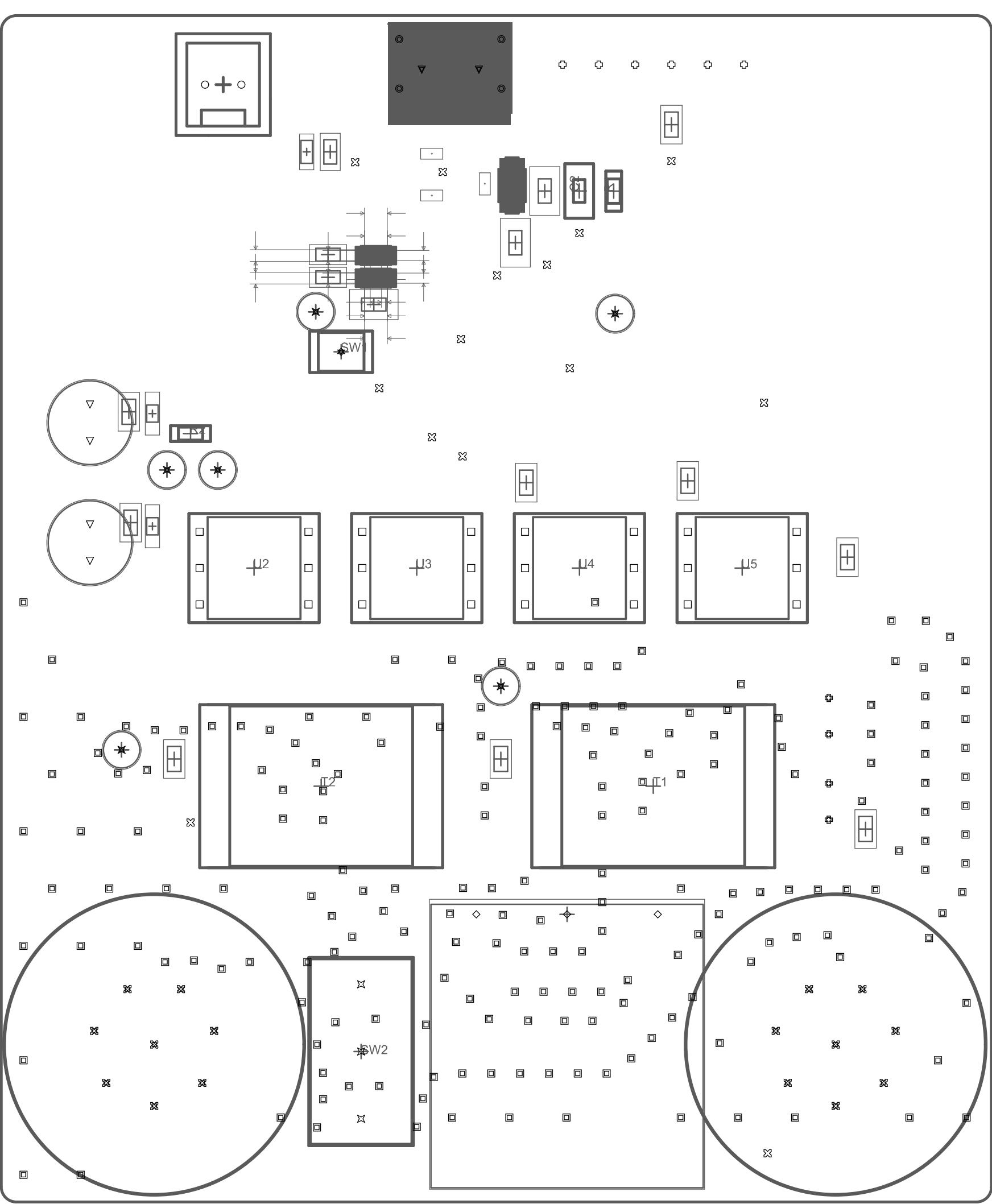
# Digital Interface Kemwoob LS-205

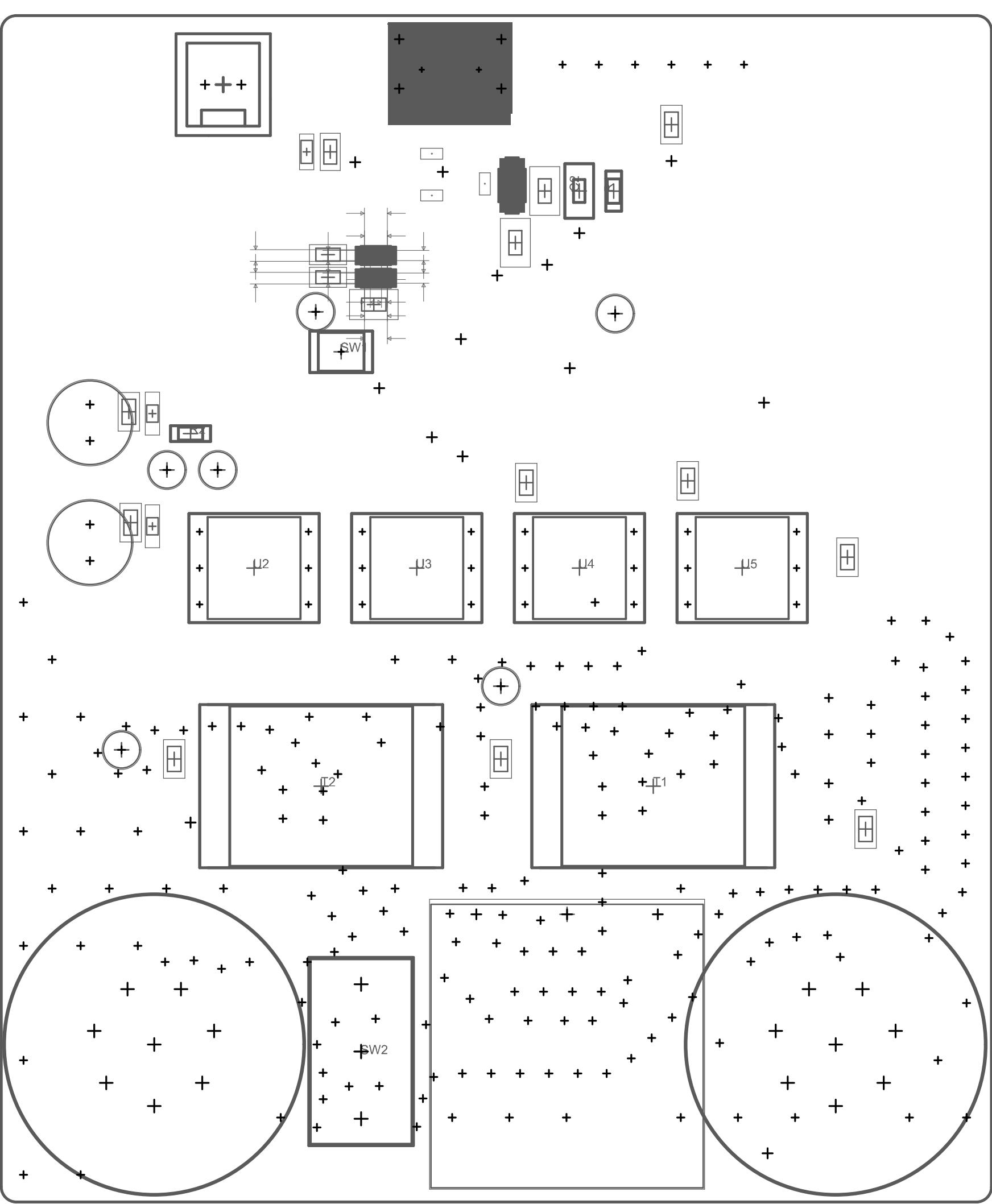
For more details:  
[info@tsgfmb.com](mailto:info@tsgfmb.com)











# Board Stack Report

Stack Up		Layer Stack			
Layer	Board Layer Stack	Name	Material	Thickness	Constant
1		Top Paste			
2		Top Overlay			
3		Top Solder	Solder Resist	0.40mil	3.5
4		Top Layer	Copper	1.40mil	
5		Dielectric 1	FR-4	12.60mil	4.8
6		Bottom Layer	Copper	1.40mil	
7		Bottom Solder	Solder Resist	0.40mil	3.5
8		Bottom Overlay			
9		Bottom Paste			
	Height : 16.20mil				

## Design Rules Verification Report

Filename : E:\Amateur Radio\Projects\kenwood-ts50s-digital-interface\ts-50s-digi-interface.PcbDoc

Warnings 0  
Rule Violations 0

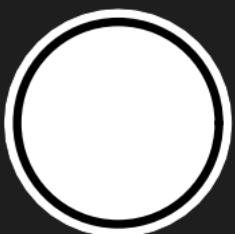
Warnings	
Total	0
Rule Violations	
Clearance Constraint (Gap=0.254mm) (All),(All)	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Un-Routed Net Constraint ( All) )	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Width Constraint (Min=0.254mm) (Max=1mm) (Preferred=0.45mm) (All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=0.508mm) (Conductor Width=0.254mm) (Air Gap=0.254mm)	0
Hole Size Constraint (Min=0.025mm) (Max=2.54mm) (All)	0
Hole To Hole Clearance (Gap=0.254mm) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0.05mm) (Disabled)(All),(All)	0
Silk To Solder Mask (Clearance=0.01mm) (Disabled)(IsPad),(All)	0
Silk to Silk (Clearance=0.1mm) (Disabled)(All),(All)	0
Net Antennae (Tolerance=0mm) (All)	0
Room Hardware (Bounding Region = (166.497mm, 472.694mm, 222.885mm, 497.078mm)	0
Room ts-50s-digi-interface (Bounding Region = (38.735mm, 314.579mm, 108.077mm, 374.015mm)	0
Room CAT-PTT (Bounding Region = (39.141mm, 314.706mm, 108.61mm, 396.748mm)	0
Height Constraint (Min=0mm) (Max=25.4mm) (Preferred=12.7mm) (All)	0
Total	0

## Electrical Rules Check Report

Class	Document	Message
Warning	CAT-PTT.SchDoc	Component TP1 GND at 6600mil,2900mil: Component revision is Out of Date.
Warning	CAT-PTT.SchDoc	Component TP2 GND_R at 7300mil,2900mil: Component revision is Out of Date.
Warning	CAT-PTT.SchDoc	Component TP3 +5V at 7900mil,2900mil: Component revision is Out of Date.
Warning	CAT-PTT.SchDoc	Component TP4 +5V_R at 8500mil,2900mil: Component revision is Out of Date.
Warning	ts-50s-digi-interface.SchDoc	Component TP5 DIGI at 5600mil,1500mil: Component revision is Out of Date.
Warning	ts-50s-digi-interface.SchDoc	Component TP6 SPK OUT at 6000mil,1500mil: Component revision is Out of Date.
Warning	CAT-PTT.SchDoc	Net RESET has no driving source (Pin C4-2, Pin SW1-2, Pin U1-7)
Warning	CAT-PTT.SchDoc	Net RXD has no driving source (Pin DS2-1, Pin R12-1, Pin U1-3, Pin U5-4)
Warning	ts-50s-digi-interface.SchDoc	Off grid J3 at 9723.071mil,6162.122mil
Warning	Hardware.SchDoc	Off grid Logo1 at 69.23mm,86.23mm
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label DOWN at 6722.047mil,5942.52mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label DOWN at 10023.859mil,6004.642mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label MIC at 10105.748mil,6319.602mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label MIC-GND at 5677.953mil,6257.48mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label MIC-GND at 9001.024mil,6319.602mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label PHONE at 6700mil,6257.48mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label PTT at 10123.071mil,6162.122mil
Warning	CAT-PTT.SchDoc	Off grid Net Label RESET at 6200mil,5673.677mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label SPK-OUT at 8923.071mil,6162.122mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Net Label UP at 10038.032mil,5822.752mil
Warning	ts-50s-digi-interface.SchDoc	Off grid No ERC at 6177.953mil,5942.52mil
Warning	ts-50s-digi-interface.SchDoc	Off grid No ERC at 9501.024mil,6004.642mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J3-1 at 9945.118mil,6319.602mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J3-2 at 10023.071mil,6162.122mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J3-3 at 9945.118mil,6004.642mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J3-4 at 9723.071mil,5862.122mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J3-5 at 9501.024mil,6004.642mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J3-6 at 9423.071mil,6162.122mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J3-7 at 9501.024mil,6319.602mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J3-8 at 9723.071mil,6462.122mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J4-1 at 6622.047mil,6257.48mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J4-3 at 6622.047mil,5942.52mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J4-5 at 6177.953mil,5942.52mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Pin J4-7 at 6177.953mil,6257.48mil
Warning	ts-50s-digi-interface.SchDoc	Off grid Power Object GND_R at 9300mil,6717.083mil



To PC



Line In



Line Out



To Radio

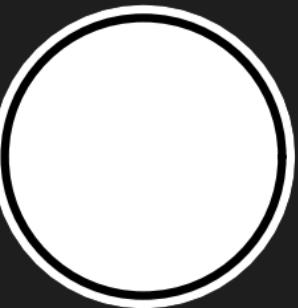


CW Key

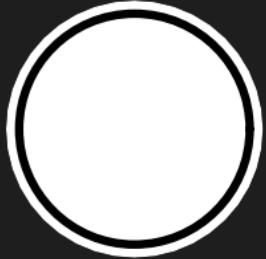


TS-50S CN6

# Kenwood TS-50S Computer Interface with CAT Control



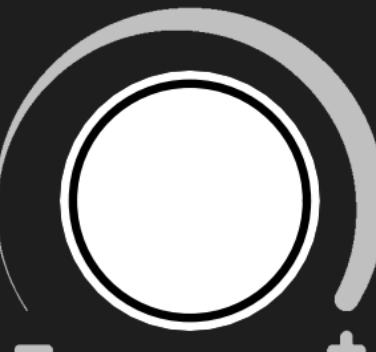
To Radio



CW

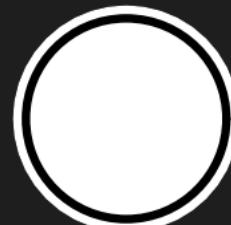


PTT

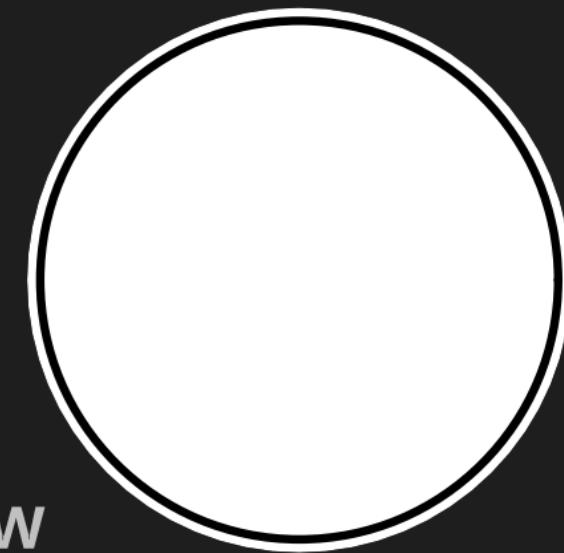


INPUT LEVEL

PHONE



DIGITAL & CW



MIC IN