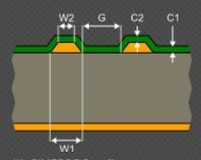
TEST Board

Impedance Profile

Description	diff1
Type	Differential
Target Impedance	100
Target Tolerance	10%

Transmission Line



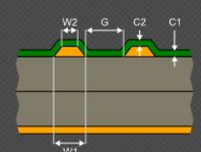
Simulated with SIMBEOR® software

Use Solder Mask	☑
Trace Inverted	☐
Etch [?]	0
Width (W1)	0.24132mm
Width (W2)	0.24132mm
Covering (C1)	0.0127mm
Covering (C2)	0.0127mm
Trace Gap (G)	0.2mm
Impedance (Zdiff)	99.98
Deviation	0.02%
Delay (Tp)	5.67449ns/m
Inductance	567.24685nH/m
Capacitance	56.76082pF/m

Impedance Profile

Description	diff2
Type	Differential
Target Impedance	120
Target Tolerance	10%

Transmission Line



Simulated with SIMBEOR® software

Use Solder Mask	☐
Trace Inverted	☐
Etch [?]	0
Width (W1)	0.29395mm
Width (W2)	0.29395mm
Covering (C1)	0.0127mm
Covering (C2)	0.0127mm
Trace Gap (G)	0.2mm
Impedance (Zdiff)	120.05
Deviation	0.04%
Delay (Tp)	5.27201ns/m
Inductance	632.87657nH/m
Capacitance	43.91525pF/m

Single ended impedance = 50 ohm
Differential impedance #1,#3=100 Ohm
Differential impedance #2=120 Ohm

edge to edge span = 0.68mm
distance to return plane = 0.21mm

edge to edge span = 0.787mm
distance to return plane = 1.27mm

Differential Pair 1

J2 — RF2-19A-T-00-50-G — GND
J3 — RF2-19A-T-00-50-G — GND
DIFF1_P
DIFF1_N
edge to edge span > distance to return plane
R8 50
R9 100
R10 50
C2 100nF
GND
GAP in GROUND

Differential Pair 2

J4 — RF2-19A-T-00-50-G — GND
J5 — RF2-19A-T-00-50-G — GND
DIFF2_P
DIFF2_N
edge to edge span < distance to return plane
R15 50
R16 100
R17 50
C3 100nF
GND
GAP in GROUND

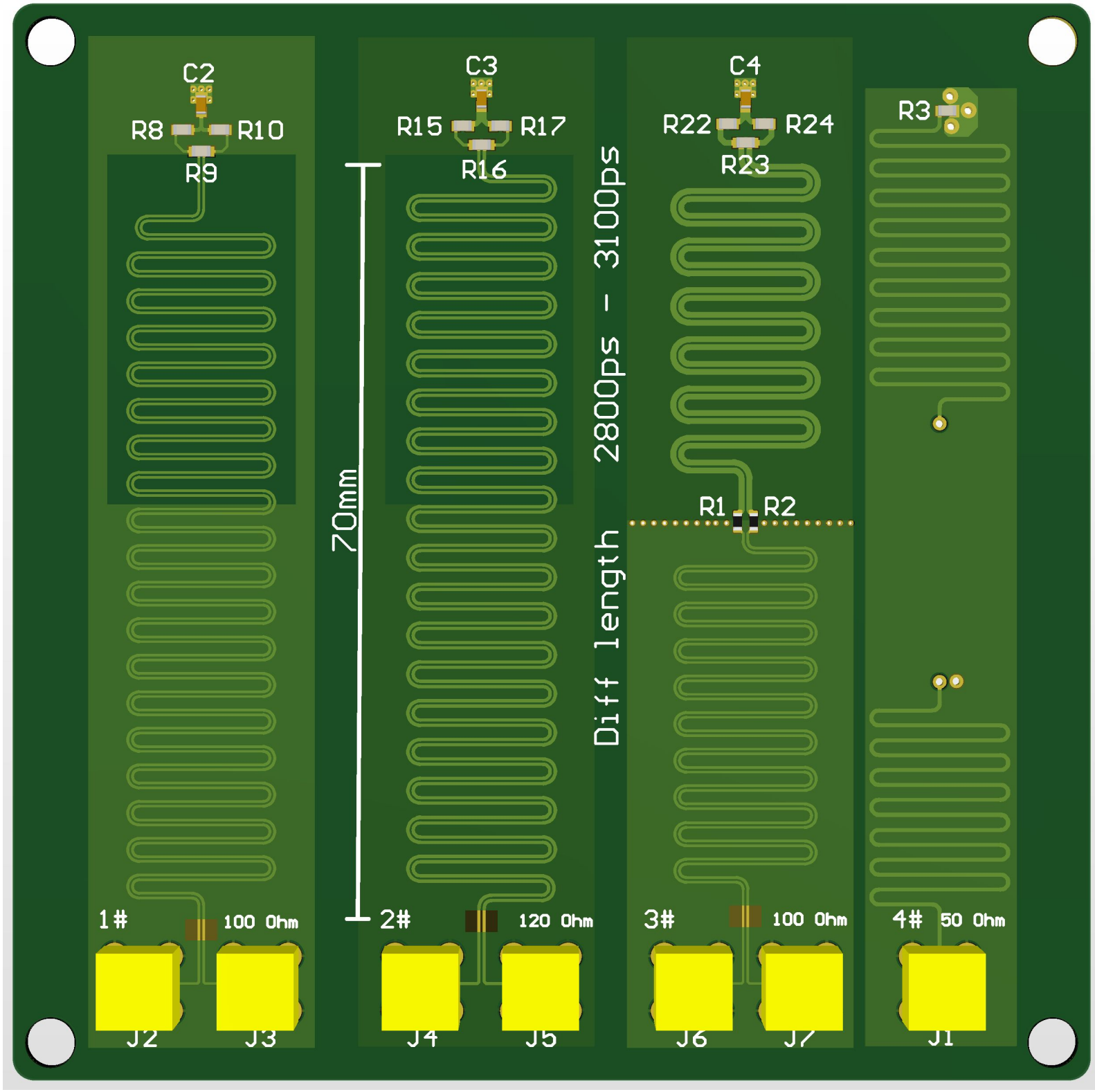
Differential Pair 3

J6 — RF2-19A-T-00-50-G — GND
J7 — RF2-19A-T-00-50-G — GND
DIFF3_1_P
DIFF3_1_N
R1 0
R2 0
DIFF3_2_P
DIFF3_2_N
R22 50
R23 100
R24 50
C4 100nF
GND
Change reference plane with change differential pair to maintain impedance

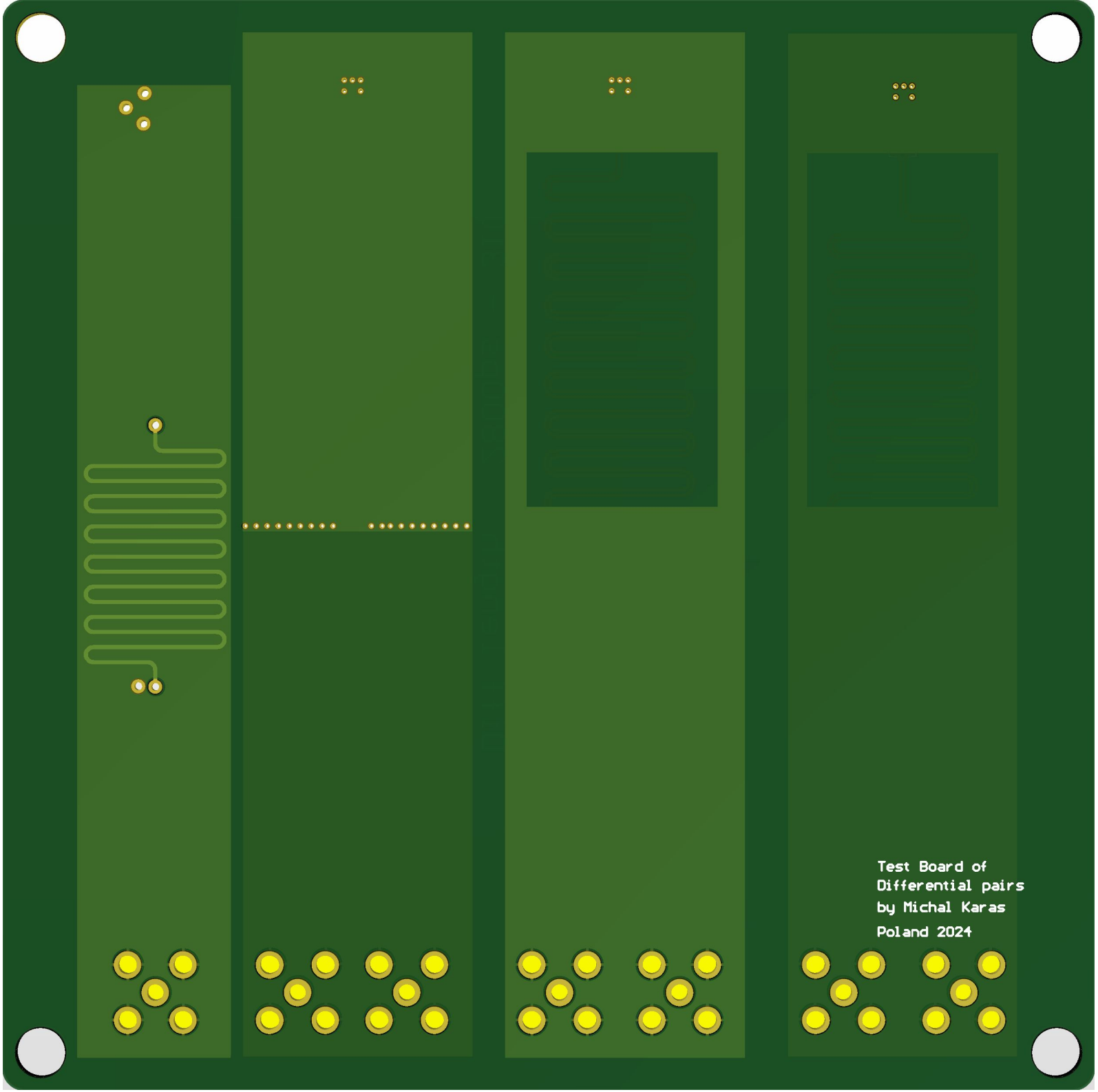
J1 — RF2-19A-T-00-50-G
R3 50
GND_SE

ST1 ST2 ST3 ST4
PTH-M3D5X5 PTH-M3D5X5
PTH-M3D5X5 PTH-M3D5X5

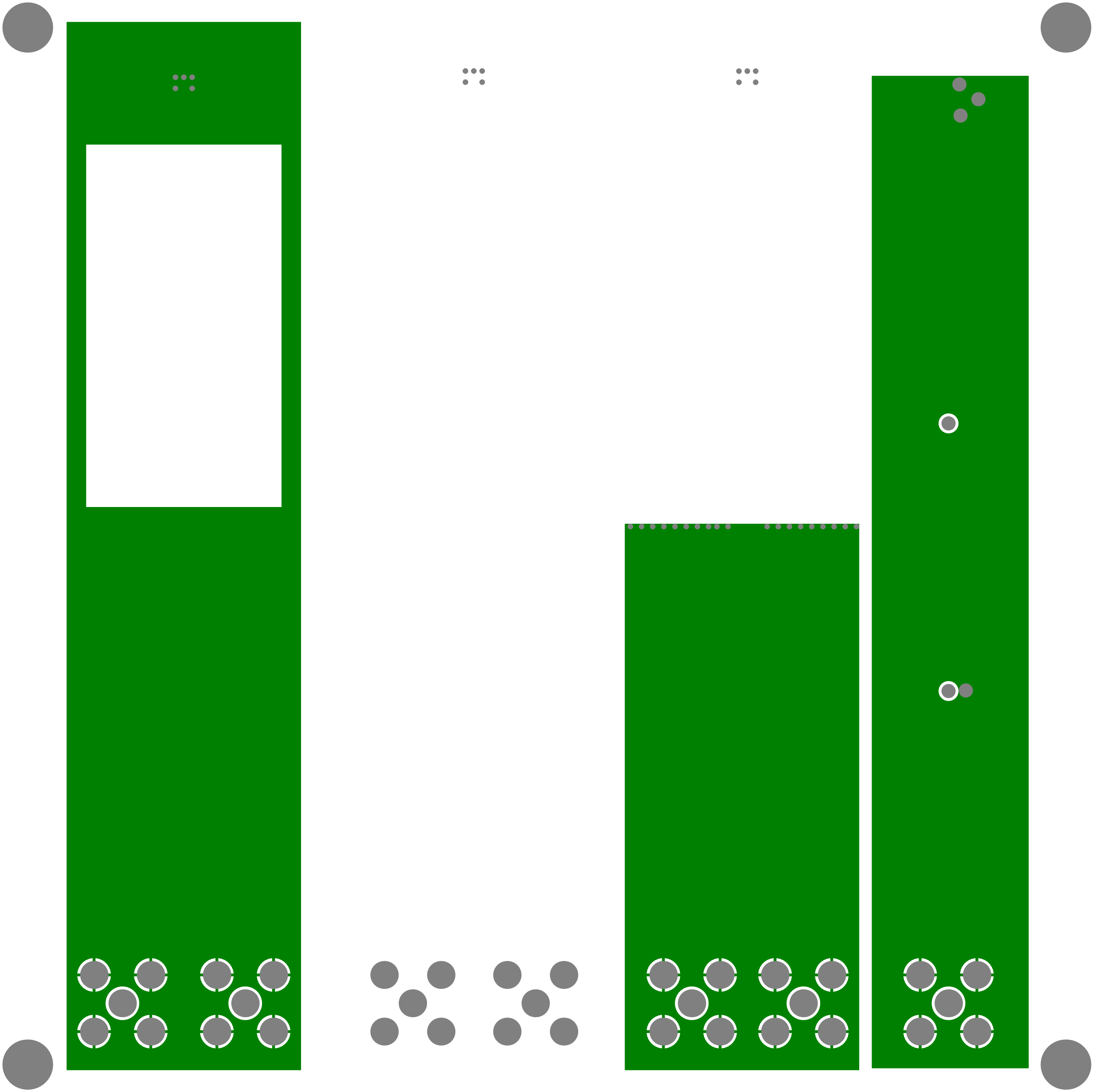
Title		
Size A3	Number	Revision
Date: 9.06.2024		Sheet of
File: C:\Users\..\Test Board.SchDoc		Drawn By:

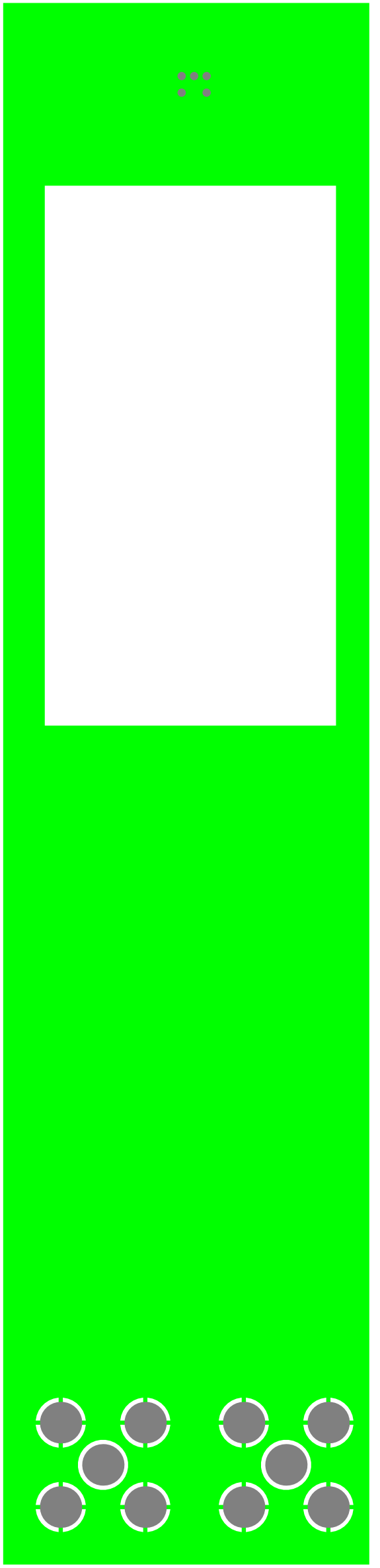

C2
R8
R10
R9
C3
R15
R17
R16
C4
R22
R24
R23
R3
70mm
2800ps - 3100ps
Diff length
R1
R2
1#
100 Ohm
2#
120 Ohm
3#
100 Ohm
4#
50 Ohm
J2
J3
J4
J5
J6
J7
J1

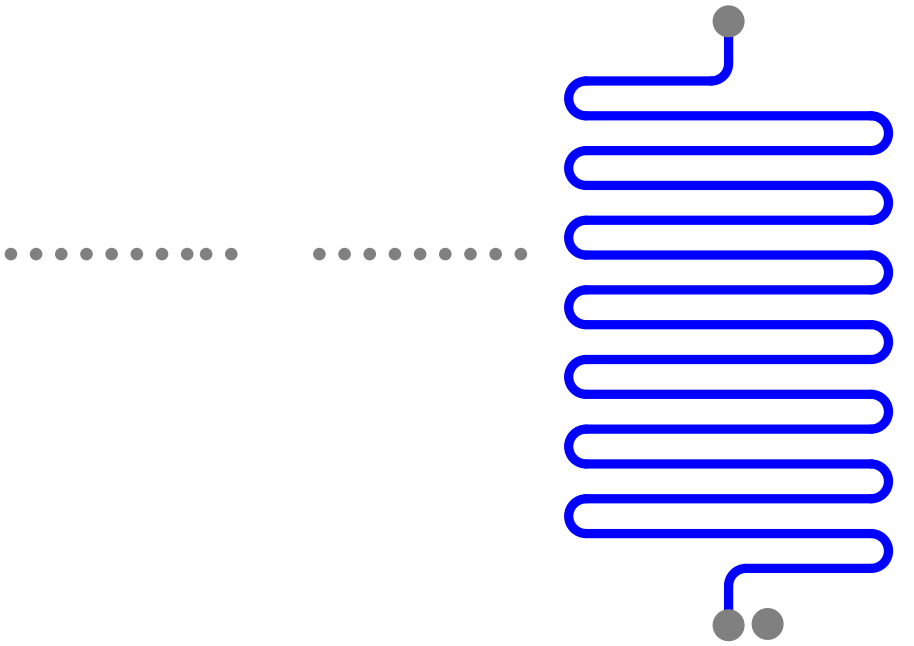
C2
R8
R10
R9
C3
R15
R17
R16
70mm
C4
R22
R24
R23
R3
2800ps - 3100ps
Diff length
R1
R2
1#
100 Ohm
2#
120 Ohm
3#
100 Ohm
4#
50 Ohm
J2
J3
J4
J5
J6
J7
J1


Test Board of
Differential pairs
by Michal Karas
Poland 2024

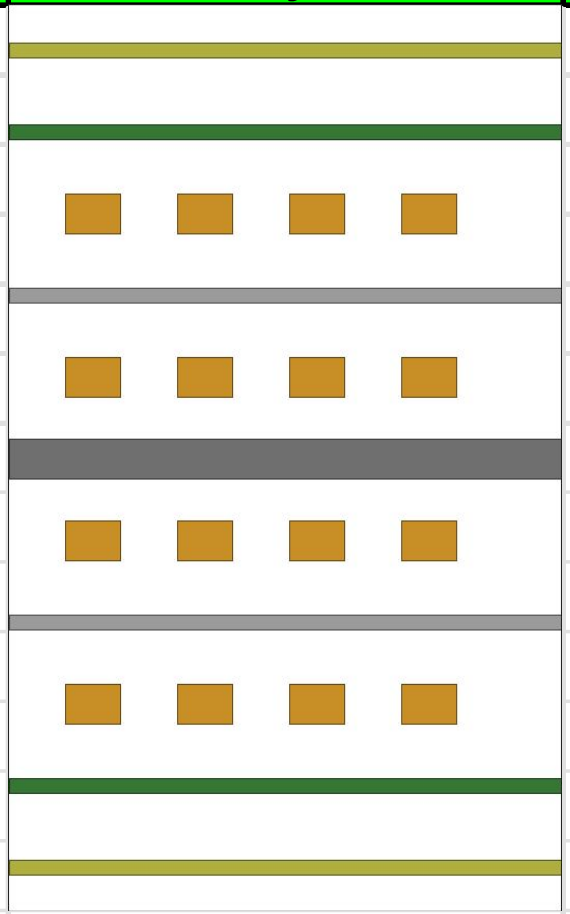
C2
R8
R10
R9
C3
R15
R17
R16
70mm
C4
R22
R24
R23
R3
2800ps - 3100ps
Diff length
R1
R2
1#
100 Ohm
2#
120 Ohm
3#
100 Ohm
4#
50 Ohm
J2
J3
J4
J5
J6
J7
J1







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	0.50mil	3.8
4		Top Layer	Copper	1.38mil	
5		Dielectric 1	7628	8.28mil	4.4
6		Mid Layer 1	Copper	0.69mil	
7		Core	FR-4	41.93mil	4.5
8		Mid Layer 2	Copper	0.69mil	
9		Dielectric 2	7628	8.28mil	4.4
10		Bottom Layer	Copper	1.38mil	
11		Bottom Solder	Solder Resist	0.50mil	3.8
12		Bottom Overlay			
13		Bottom Paste			
	Height : 63.63mil				