## **Checklist of CEM TCM L110\_L110CVF**

## L110 CVF CARD

CT N	D' D / !!		Obse	erved
SL No.	Pin Details	Expected	ISRC	FSRC
1.	TMR1-1 wrt TMR2-3	>100MΩ	>100MΩ	>100MΩ
2.	TMR2-3 wrt TMR3-3			>100MΩ
3.	TMR1-3 wrt TMR3-3	>100MΩ	>100MΩ	>100MΩ
4.	TMR1-3 wrt TMR2-3	>100MΩ	>100MΩ	>100MΩ
5.	TMR1-3 wrt TMR1-1	>100MΩ	>100MΩ	>100MΩ
6.	TMR1-3 wrt TMR2-1	>100MΩ	>100MΩ	>100MΩ
7.	TMR1-3 wrt TMR3-1	>100MΩ	>100MΩ	>100MΩ
8.	TMR1-3 wrt TMR1-23	>100MΩ	>100MΩ	>100MΩ
9.	TMR1-3 wrt PO-7,9	>100MΩ	>100MΩ	>100MΩ
10.	TMR1-3 wrt PO-18,19	>100MΩ	>100MΩ	>100MΩ
11.	TMR1-3 wrt TMR1-25	>100MΩ	>100MΩ	>100MΩ
12.	TMR2-3 wrt TMR1-1	>100MΩ	>100MΩ	>100MΩ
13.	TMR2-3 wrt TMR2-1	>100MΩ	>100MΩ	>100MΩ
14.	TMR2-3 wrt TMR3-1	>100MΩ	>100MΩ	>100MΩ
15.	TMR2-3 wrt TMR1-23	>100MΩ	>100MΩ	>100MΩ
16.	TMR2-3 wrt PO-7,9	>100MΩ	>100MΩ	>100MΩ
17.	TMR2-3 wrt PO-18,19	>100MΩ	>100MΩ	>100MΩ
18.	TMR2-3 wrt TMR1-25	>100MΩ	>100MΩ	>100MΩ
19.	TMR3-3 wrt TMR1-1	>100MΩ	>100MΩ	>100MΩ
20.	TMR3-3 wrt TMR2-1	>100MΩ	>100MΩ	>100MΩ
21.	TMR3-3 wrt TMR3-1	>100MΩ	>100MΩ	>100MΩ
22.	TMR3-3 wrt TMR1-23	>100MΩ	>100MΩ	>100MΩ
23.	TMR3-3 wrt PO-7,9	>100MΩ	>100MΩ	>100MΩ
24.	TMR3-3 wrt PO-18,19	>100MΩ	>100MΩ	>100MΩ
25.	TMR3-3 wrt TMR1-25	>100MΩ	>100MΩ	>100MΩ
26.	TMR1-1 wrt TMR2-1	>100MΩ	>100MΩ	>100MΩ
27.	TMR3-1wrt TMR2-1	>100MΩ	>100MΩ	>100MΩ
28.	TMR1-1 wrt TMR1-23	>100MΩ	>100MΩ	>100MΩ
29.	TMR3-1 wrt TMR1-23	>100MΩ	>100MΩ	>100MΩ
30.	TMR1-1 wrt PO-7,9	>100MΩ	>100MΩ	>100MΩ
31.	TMR1-1 wrt PO-18,19	>100MΩ	>100MΩ	>100MΩ
32.	TMR3-1 wrt PO-7,9	>100MΩ	>100MΩ	>100MΩ
33.	TMR3-1 wrt PO-18,19	>100MΩ	>100MΩ	>100MΩ
34.	TMR2-1 wrt TMR1-23	>100MΩ	>100MΩ	>100MΩ
35.	TMR2-1 wrt PO-7,9	>100MΩ	>100MΩ	>100MΩ
36.	TMR2-1 wrt PO-18,19	>100MΩ	>100MΩ	>100MΩ
37.	PO-34 wrt TMR1-25	>100MΩ	>100MΩ	>100MΩ
38.	TMR2-1 wrt TMR3-25	<100mΩ	$17 \mathrm{m}\Omega$	16mΩ
39.	TMR2-1 wrt PO 23	1.47 kΩ <u>+</u> 1%	1.475kΩ	1.475kΩ
40.	PO 23 wrt PO - 24	2 kΩ <u>+</u> 1%	$2.005 \mathrm{k}\Omega$	$2.005 \mathrm{k}\Omega$
41.	PO 23 wrt PO - 25	2 kΩ <u>+</u> 1%	$2.004 \mathrm{k}\Omega$	2.004kΩ
42.	PO 24 wrt PO - 25	2 kΩ <u>+</u> 1%	$2.003$ k $\Omega$	2.003kΩ
43.	TMR1-1 wrt TMR1-2	<100mΩ	$7 \mathrm{m}\Omega$	$6 \mathrm{m}\Omega$

44.	TMR3-1 wrt TMR3-2	<100mΩ	$7 \mathrm{m}\Omega$	5mΩ
45.	TMR1-23 wrt TMR1-24	MR1-24 <100mΩ 8mΩ		5mΩ
46.	TMR1-23 wrt TMR2-23	<100mΩ	$11 \mathrm{m}\Omega$	$11 \mathrm{m}\Omega$
47.	TMR1-23 wrt TMR2-24	<100mΩ	$14\mathrm{m}\Omega$	$12m\Omega$
48.	TMR1-23 wrt PO 34 to 41	<100mΩ	$9 \mathrm{m}\Omega$	9mΩ
49.	TMR1-23 wrt RO 34 to 41	<100mΩ	$10 \mathrm{m}\Omega$	8mΩ
50.	TMR1-3 wrt TMR1-4	<100mΩ	8mΩ	$7 \mathrm{m}\Omega$
51.	TMR2-3 wrt TMR2-4	<100mΩ	$7 \mathrm{m}\Omega$	8mΩ
52.	TMR3-3 wrt TMR3-4	<100mΩ	9mΩ	$7 \mathrm{m}\Omega$
53.	TMR1-25 wrt TMR2-25	<100mΩ	$16 \mathrm{m}\Omega$	$14\mathrm{m}\Omega$
54.	PO -1 wrt RO -1	<100mΩ	$43\mathrm{m}\Omega$	43mΩ
55.	PO-1 wrt PO-2	2-2.5Ω	$2.055\Omega$	$2.055\Omega$
56.	PO 1 wrt PO 26	17.40kΩ $\pm$ 2% +500mΩ(max)	17.650kΩ	17.650kΩ
57.	PO 26 wrt PO 34	$2.131k\Omega \pm 2\%$	$2.135$ k $\Omega$	2.135kΩ
58	PO 34 wrt RO 34	<100mΩ	6mΩ	6mΩ
58.	PO 2 & RO 2	<100mΩ	$38 \mathrm{m}\Omega$	$38 \mathrm{m}\Omega$
59.	RO 2 & RO 26	$17.40$ k $\Omega \pm 2\%$ + $500$ m $\Omega$ (max)	17.651kΩ	17.650kΩ
60.	RO 26 wrt RO 35			2.132kΩ
61.	PO 35 wrt RO 35	<100mΩ	6mΩ	6mΩ
62.	PO 3 wrt RO 3	<100mΩ	$45 \mathrm{m}\Omega$	$45 \mathrm{m}\Omega$
63.	PO 4 wrt RO 4	<100mΩ	$46 \mathrm{m}\Omega$	$46 \mathrm{m}\Omega$
64.	PO 3 wrt PO 27	$17.40$ k $\Omega \pm 2\%$ + $500$ m $\Omega$ (max)	17.663kΩ	17.663kΩ
65.	PO 27 wrt PO 36	$2.131k\Omega + 2\%$	2.133kΩ	2.133kΩ
66.	PO 36 wrt RO 36	<100mΩ	6mΩ	6mΩ
67.	RO 4 wrt RO 27	$17.40$ k $\Omega \pm 2\%$ + $500$ m $\Omega$ (max)	17.664kΩ	17.663kΩ
68.	RO 27 wrt RO 37	$2.131k\Omega + 2\%$	2.131kΩ	2.131kΩ
69.	PO 37 wrt RO 37	<100mΩ	6mΩ	6mΩ
70.	PO-3 wrt PO-4	3 -3.5 Ω	3.081Ω	3.081Ω
71.	PO-5 wrt PO-6	3 - 3.5 Ω	$3.114\Omega$	3.115Ω
72.	PO 5 wrt RO 5	<100mΩ	$71 \mathrm{m}\Omega$	$71 \mathrm{m}\Omega$
73.	PO-6 wrt RO-6	<100mΩ	$46 \mathrm{m}\Omega$	$47\mathrm{m}\Omega$
74.	PO- 5 wrt PO-28	$17.40$ k $\Omega \pm 2\%$ + $500$ m $\Omega$ (max)	17.652kΩ	17.651kΩ
75.	PO-28 wrt PO-38	$2.131k\Omega + 2\%$	$2.131$ k $\Omega$	2.131kΩ
76.	PO- 38 wrt RO-38	<100mΩ	6mΩ	6mΩ
77.	RO- 6 wrt RO-28	$17.40k\Omega \pm 2\%$ $+500m\Omega(max)$	17.655kΩ	17.655kΩ
78.	RO-28 wrt RO-39	$2.131 k\Omega \pm 2\%$	$2.132$ k $\Omega$	2.133kΩ
79.	PO 39 wrt RO 39	<100mΩ	6mΩ	6mΩ
80.	PO 18 wrt RO 18	<500mΩ	368mΩ	371mΩ
81.	PO-7 wrt RO-7	<100mΩ	83mΩ	$84\mathrm{m}\Omega$
82.	PO-19 wrt PO-20	<100mΩ	$5 \mathrm{m}\Omega$	5mΩ
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83.	PO-19 wrt RO-19	<500mΩ	208mΩ	210mΩ
84.	PO-19 wrt RO-19	<500mΩ	206mΩ	$\frac{210\text{m}\Omega}{208\text{m}\Omega}$
85.	PO-9 wrt PO-10	<300mΩ	$\frac{200 \text{M} \Omega}{7 \text{m} \Omega}$	$7m\Omega$
86.	PO-9 wrt PO-11	<100mΩ	$9m\Omega$	$8m\Omega$
87.	PO-9 wrt PO-12	<100mΩ	$\frac{911152}{10\text{m}\Omega}$	$10 \text{m}\Omega$
88.	PO-9 wrt RO-9	<100mΩ	$\frac{10002}{77m\Omega}$	77mΩ
89.	PO-9 wrt RO-10	<100mΩ	$78 \mathrm{m}\Omega$	$77 \text{ms2}$ $78 \text{m}\Omega$
90.	PO-9 wrt RO-11	<100mΩ	$79 \mathrm{m}\Omega$	79mΩ
90. 91.	PO-9 wrt RO-11	<100mΩ	7911 <u>Ω</u>	80mΩ
91. 92.	PO-8 wrt RO-8	<100mΩ	56mΩ	56mΩ
93.	PO-8 wrt PO-29	$33.2 \text{ k}\Omega + 2\%$	33.211kΩ	33.209kΩ
93. 94.	PO-29 wrt PO-40	$\begin{array}{c c} 33.2 \text{ k}\Omega \pm 2\% \\ \hline 2.2 \text{ k}\Omega + 2\% \end{array}$	$2.199$ k $\Omega$	$2.200$ k $\Omega$
94.	FO-29 WILFO-40	2.2 KS2 ± 270	6mΩ	2.200KS2
95.	PO-40 wrt RO-40	<100mΩ		6mΩ
96.	PO-41 wrt PO-42 to 50	<100mΩ	$6 \mathrm{m}\Omega$	6mΩ
97.	PO-41 wrt RO-41 to 50	<100mΩ	6mΩ	6mΩ
98.	PO-21 wrt PO-22	<100mΩ	6mΩ	5mΩ
99.	PO-21 wrt RO-21,22	<500mΩ	185mΩ	186mΩ
100.	PO-13 wrt PO-14 to 16	<100mΩ	$9 \mathrm{m}\Omega$	9mΩ
101.	PO-13 wrt RO-13 to 16	<100mΩ	91mΩ	91mΩ
102.	PO-30 wrt RO-30	<500mΩ	$282 \mathrm{m}\Omega$	$285 \mathrm{m}\Omega$
103.	PO-31 wrt RO-31	<100mΩ	$74 \mathrm{m}\Omega$	74mΩ
104.	TMR1-3 wrt TMR1-7	$225 \pm 22.5\Omega / 360 \pm 36 \Omega$	$359.694\Omega$	362.683Ω
105.	TMR2-3 wrt TMR2-7	$225 \pm 22.5\Omega/$ $360 \pm 36 \Omega$	356.519Ω	359.503Ω
106.	TMR3-3 wrt TMR3-7	300± 30 Ω/ 600± 60 Ω	599.295Ω	604.299Ω
107.	TMR1-3 wrt TMR1-8	320± 32 Ω	311.341Ω	313.963Ω
108.	TMR2-3 wrt TMR2-8	320± 32 Ω	$315.373\Omega$	$318.036\Omega$
109.	TMR3-3 wrt TMR3-8	320± 32 Ω	$312.380\Omega$	$314.970\Omega$
110.	TMR1-3 wrt TMR1-9	320± 32 Ω	318.595Ω	321.042Ω
111.	TMR2-3 wrt TMR2-9	320± 32 Ω	315.965Ω	318.547Ω
112.	TMR3-3 wrt TMR3-9	320± 32 Ω	315.650Ω	318.264Ω
113.	TMR1-3 wrt TMR1-10	900± 90 Ω	901.181Ω	908.737Ω
114.	TMR2-3 wrt TMR2-10	900± 90 Ω	906.812Ω	914.402Ω
115.	TMR3-3 wrt TMR3-10	900± 90 Ω	901.944Ω	909.465Ω
116.	TMR1-3 wrt TMR1-11	320± 32 Ω	316.085Ω	318.692Ω
117.	TMR2-3 wrt TMR2-11	320± 32 Ω	309.431Ω	312.052Ω
118.	TMR3-3 wrt TMR3-11	320± 32 Ω	318.531Ω	321.194Ω
119.	TMR1-3 wrt TMR1-12	900± 90 Ω	$915.314\Omega$	923.123Ω
120.	TMR2-3 wrt TMR2-12	900± 90 Ω	911.178Ω	919.044Ω

121.	TMR3-3 wrt TMR3-12	900± 90 Ω	913.752Ω	921.590Ω
122.	TMR1-20 wrt TMR1-21	900± 90 Ω	918.728Ω	926.567Ω
123.	TMR1-3 wrt TMR1-13	900± 90 Ω	899.552Ω	906.628Ω
124.	TMR2-3 wrt TMR2-13	900± 90 Ω	918.942Ω	926.671Ω
125.	TMR3-3 wrt TMR3-13	900± 90 Ω	922.282Ω	930.174Ω
126.	TMR2-20 wrt TMR2-21	900± 90 Ω	908.693Ω	916.430Ω
127.	TMR1-3 wrt TMR1-5	900± 90 Ω	917.260Ω	925.104Ω
128.	TMR2-3 wrt TMR2-5	900± 90 Ω	913.207Ω	921.023Ω
129.	TMR3-3 wrt TMR3-5	900± 90 Ω	921.934Ω	929.789 $\Omega$
130.	All pins wrt chassis	>100MΩ	>100MΩ	>100MΩ
131.	Connector mounting post (TMR1, TMR2, TMR3, PO, RO) wrt chassis	<100mΩ	<100mΩ	<100mΩ

## List of Connectors in the package 1. TMR1,TMR2 and TMR3=25M 2.PO and RO=50F

## **50V** Insulation Test

SL	Connector Pins	Description	SPEC >100MΩ	
NO.	Connector Pins	Description	ISRC	FSRC
1	KM1.6 & KF1.18	28V Return w.r.t. 28V <sub>1</sub> Return	$2.09x\ 10^{09}\Omega$	$9.17 \times 10^{09} \Omega$
2	KM1.6 & KF2.18	28V Return w.r.t. 28V <sub>3</sub> Return	$1.80 \mathrm{x} \ 10^{09}  \Omega$	$9.41 \times 10^{09} \Omega$
3	KM1.6 & KF3.18	28V Return w.r.t. 28V <sub>5</sub> Return	$4.69 \mathrm{x} \ 10^{09}  \Omega$	$8.76 \mathrm{x} \ 10^{09}  \Omega$
4	KM2.6 & KF1.18	28V Return w.r.t. 28V <sub>1</sub> Return	$6.89 \mathrm{x} \ 10^{09}  \Omega$	$7.56 \text{x } 10^{09} \Omega$
5	KM2.6 & KF2.18	28V Return w.r.t. 28V <sub>3</sub> Return	$1.01 \mathrm{x} \ 10^{10}  \Omega$	$7.20 \mathrm{x} \ 10^{09}  \Omega$
6	KM2.6 & KF3.18	28V Return w.r.t. 28V <sub>5</sub> Return	$4.18 \times 10^{10} \Omega$	$5 \text{x } 10^{10} \Omega$
7	KM3.6 & KF1.18	28V Return w.r.t. 28V <sub>1</sub> Return	$2.26 \mathrm{x} \ 10^{10}  \Omega$	$4.87 \times 10^{10} \Omega$
8	KM3.6 & KF2.18	28V Return w.r.t. 28V <sub>3</sub> Return	$2.05 \mathrm{x} \ 10^{10}  \Omega$	$4.25 \text{x } 10^{10} \Omega$
9	KM3.6 & KF3.18	28V Return w.r.t. 28V <sub>5</sub> Return	$1.73 \mathrm{x} \ 10^{10}  \Omega$	$6.93 \times 10^{10} \Omega$
10	KF1.18 & KF2.18	28V1 Return w.r.t. 28V <sub>3</sub> Return	$5.61 \mathrm{x} \ 10^{09}  \Omega$	$2.99 \mathrm{x} \ 10^{10} \Omega$
11	KF1.18 & KF3.18	28V1 Return w.r.t.28V <sub>5</sub> Return	$4.64 \mathrm{x} \ 10^{09}  \Omega$	$2.55 \text{x } 10^{10} \Omega$
12	KF2.18 & KF3.18	28V3 Return w.r.t. 28V <sub>5</sub> Return	$9.42 \times 10^{09} \Omega$	$2.28 \mathrm{x} \ 10^{10}  \Omega$
13	KM1.6 & KM1.5	28V Input Return w.r.t. Chassis	$3.82 \times 10^{09} \Omega$	$7.18 \times 10^{10} \Omega$
14	KM2.6 & KM2.5	28V Input Return w.r.t. Chassis	$8.32 \times 10^{09} \Omega$	$6.55 \times 10^{09} \Omega$
15	KM3.6 & KM3.5	28V Input Return w.r.t. Chassis	$1.75 \mathrm{x} \ 10^{10}  \Omega$	$8.84 \times 10^{09} \Omega$
16	KF1.18 & KF1.50	28V1 Return w.r.t. Chassis	$5.98 \mathrm{x} \ 10^{09}  \Omega$	$3.01 \mathrm{x} \ 10^{10}  \Omega$
17	KF2.18 & KF2.50	28V3 Return w.r.t. Chassis	$7.53 \times 10^{09} \Omega$	$2.39 \mathrm{x} \ 10^{10}  \Omega$
18	KF3.18 & KF3.50	28V5 Return w.r.t. Chassis	$1.60 \mathrm{x} \ 10^{10}  \Omega$	$2.49 \mathrm{x} \ 10^{10}  \Omega$