



AAEON Technology INC.
ISO-9001/ISO-14001 Certified
Industrial Automation PCs

PCM-4896L
Reliability Prediction Report
(MTBF)

Release Date: MAY.31, 2002

Issue Stamp

QA Manager

QE Manager

Test Engineer

Reliability Prediction (MTBF)

I . Model Name: PCM-4896L(Rev.C1.0)

II . Description: AIO Compact Board. GX1. LCD/Ethernet/Audio/4COMs, CPU-300.

III . Prediction Date: MAY.31, 2002

IV . Prediction Site: AAEON QE Dept.

V . Predicted by : Linda Sun

VI . Equipment: Relx Ver.7.2 Visual Reliability Software

VII. Simulation Environment:

- Temperature: 60 degrees C(No temperature rise condition)
- Standard: Telcordia (Bellcore) Standard

VIII. Term and Definition:

- Unit An assembly of device.
- Duty Cycle Used to specify the percentage of time that the element is in an on state, and it is equal to the percentage of total time the item is in the active environment.
- Quantity The quantity of the selected item.
- Failure Rate Used to specify that the failure rate is to be calculated based the selected Calculation models. The multiplier is 1,000,000.
- MTBF MTBF is always specified in hours.

IX. Prediction Result:

- Failure Rate: 34.649754ppm
- MTBF: 28,860Hours

X. Prediction Table:

AAEON Reliability Prediction Report

Part Number 9697489642
Reference Des
Date 05. 31, 2002
Environment GF, GU - Ground Fixed, Uncontrolled
Temperature 60.00

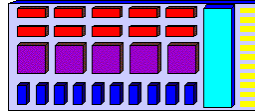


Description Top-level assembly
File Name PCM-4896LC10-60DC.RPJ
Time 5:48 PM
Failure Rate 34.649754
MTBF 28,860

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
PCM-4896L-C10	9697489642	Bellcore	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	34.649754	28,860

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Environment GF, GU - Ground Fixed, Uncontrolled
Temperature 60.00

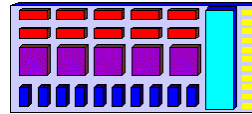


Description Top-level assembly
File Name PCM-4896LC10-60DC.RPJ
Time 5:48 PM
Failure Rate 34.649754
MTBF 28,860

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A707503	Resistor	R83,R86,R288,R291,R295,R299,R-302	Bellcore Issue 6	Level I		0.004189	7.00	.0846	0.029325	238706812.20
105A705623	Resistor	R70,R218,R312	Bellcore Issue 6	Level I		0.004189	3.00	.0363	0.012568	238706812.20
105A710003	Resistor	R16,R38,R73,R289	Bellcore Issue 6	Level I		0.004189	4.00	.0484	0.016757	238706812.20
105A733003	Resistor	R106,R178,R183,R217,R219,R223-R281	Bellcore Issue 6	Level I		0.004189	7.00	.0846	0.029325	238706812.20
105A747003	Resistor	R69,R87-89	Bellcore Issue 6	Level I		0.004189	4.00	.0484	0.016757	238706812.20
105A710053	Resistor	R74,R165	Bellcore Issue 6	Level I		0.025135	2.00	.1451	0.050271	39784468.70
105A700303	Resistor	R25,R31	Bellcore Issue 6	Level I		0.004189	2.00	.0242	0.008378	238706812.20
105A701823	Resistor	R319	Bellcore Issue 6	Level I		0.004189	1.00	.0121	0.004189	238706812.20
105A702233	Resistor	R19	Bellcore Issue 6	Level I		0.004189	1.00	.0121	0.004189	238706812.20
105A702723	Resistor	R91,R94,R100,R103,R148,R151-152,R155,R158,R161-162	Bellcore Issue 6	Level I		0.004189	11.00	.1330	0.046082	238706812.20
105A704733	Resistor	R273-274,R278-279,R282-284	Bellcore Issue 6	Level I		0.004189	7.00	.0846	0.029325	238706812.20
105A705103	Resistor	R138	Bellcore Issue 6	Level I		0.004189	1.00	.0121	0.004189	238706812.20
105A710033	Resistor	R67,R259-260,R272	Bellcore Issue 6	Level I		0.004189	4.00	.0484	0.016757	238706812.20
105A701533	Resistor	R201,R204,R212,R215,R290,R298	Bellcore Issue 6	Level I		0.004189	6.00	.0725	0.025135	238706812.20
105A718003	Resistor	R326	Bellcore Issue 6	Level I		0.004189	1.00	.0121	0.004189	238706812.20
105A711003	Resistor	R325	Bellcore Issue 6	Level I		0.004189	1.00	.0121	0.004189	238706812.20
105A701033	Resistor	R14,R17,R21-22,R36-37,R40,R59,-R61,R68,R71,R79,R92-93,R126-127,R134-136,R143,R154,R157,R170-,R188,R196,R206,R209-210,R214,-R220-222,R232-234,R237-239,R2-44-248,R250-252,R255,R257,R262-264,R266,R268-271,R277,R293-294,R296-297	Bellcore Issue 6	Level I		0.004189	61.00	.7375	0.255544	238706812.20
105A702033	Resistor	R253,R261	Bellcore Issue 6	Level I		0.004189	2.00	.0242	0.008378	238706812.20
106B501030	Resistor	J2	Bellcore Issue 6	Level I		0.058468	1.00	.1687	0.058468	17103497.91
1121701050	Capacitor	C65,C82-85	Bellcore Issue 6	Level I		0.003115	5.00	.0450	0.015577	320984724.52
1122701680	Capacitor	C25,C151-152,M1-38,M42-79,M81--86,M88-106,M109-117,M119-120,-M122,M125-150	Bellcore Issue 6	Level I		0.001960	142.00	.8033	0.278353	510144237.08
1122747880	Capacitor	C75	Bellcore Issue 6	Level I		0.001960	1.00	.0057	0.001960	510144237.08
1124447080	Capacitor	C27-30,C104-105,C108-109,C111,-C115-116	Bellcore Issue 6	Level I		0.001301	11.00	.0413	0.014310	768694409.41

AAEON Reliability Prediction Report

Part Number 9697489642
Reference Des
Date 05. 31, 2002
Environment GF, GU - Ground Fixed, Uncontrolled
Temperature 60.00



Description Top-level assembly
File Name PCM-4896LC10-60DC.RPJ
Time 5:48 PM
Failure Rate 34.649754
MTBF 28,860

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1124433080	Capacitor	C26,C77	Bellcore Issue 6	Level I		0.001301	2.00	.0075	0.002602	768694409.41
1124415080	Capacitor	C5-7,C13,C36-42,C52-55,C69	Bellcore Issue 6	Level I		0.001301	16.00	.0601	0.020815	768694409.41
1124410080	Capacitor	C81	Bellcore Issue 6	Level I		0.001301	1.00	.0038	0.001301	768694409.41
1124501780	Capacitor	C20,C22-24,C56,C67,C71	Bellcore Issue 6	Level I		0.001301	7.00	.0263	0.009106	768694409.41
1124547180	Capacitor	C101-102,C107,C110	Bellcore Issue 6	Level I		0.001301	4.00	.0150	0.005204	768694409.41
1124522180	Capacitor	C66,C70,C100,C106,C119-148	Bellcore Issue 6	Level I		0.001301	34.00	.1277	0.044231	768694409.41
1124515281	Capacitor	C11,C17	Bellcore Issue 6	Level I		0.001301	2.00	.0075	0.002602	768694409.41
1124515180	Capacitor	C16	Bellcore Issue 6	Level I		0.001301	1.00	.0038	0.001301	768694409.41
1124510280	Capacitor	C86-88,C90-93	Bellcore Issue 6	Level I		0.001301	7.00	.0263	0.009106	768694409.41
1124510180	Capacitor	C43-44,C46-47,C57-58,C60,C94,C-114	Bellcore Issue 6	Level I		0.001301	9.00	.0338	0.011708	768694409.41
1129610260	Capacitor	C103	Bellcore Issue 6	Level I		0.000874	1.00	.0025	0.000874	1144122829.73
1129701080	Capacitor	C73-74,C79,C95-97,C117,M40,M87-M154	Bellcore Issue 6	Level I		0.006706	10.00	.1935	0.067064	149111374.05
1129710060	Capacitor	C10,C14,C61-64,C68,C72,C76,C78-C80,C89,C149-150,F7-19,F21-22	Bellcore Issue 6	Level I		0.006706	29.00	.5613	0.194485	149111374.05
1119610299	Capacitor	F3-4	Bellcore Issue 6	Level I		0.365422	2.00	2.1092	0.730845	2736559.67
1119610291	Capacitor	C12,F1-2,F5-6,F21	Bellcore Issue 6	Level I		0.387089	6.00	6.7029	2.322532	2583387.44
1112610190	Capacitor	C34-35	Bellcore Issue 6	Level I		0.106722	2.00	.6160	0.213444	9370131.77
1141601090	Capacitor	C21	Bellcore Issue 6	Level I		0.004354	1.00	.0126	0.004354	229657465.36
1143610080	Capacitor	C2,C4	Bellcore Issue 6	Level I		0.002402	2.00	.0139	0.004803	416376091.45
1231114350	Miscellaneous	Y1	Bellcore Issue 6	Level I		0.150000	1.00	.4329	0.150000	6666666.67
1231232720	Miscellaneous	Y2	Bellcore Issue 6	Level I		0.150000	1.00	.4329	0.150000	6666666.67
1233325053	Miscellaneous	OSC1	Bellcore Issue 6	Level I		0.360000	1.00	1.0390	0.360000	2777777.78
1211100100	Inductor	L3	Bellcore Issue 6	Level I		0.159191	1.00	.4594	0.159191	6281758.22
1211102762	Inductor	L1	Bellcore Issue 6	Level I	6.70	0.004644	1.00	.0134	0.004644	215329468.05
1212106350	Inductor	L4	Bellcore Issue 6	Level I		0.004189	1.00	.0121	0.004189	238706812.20
1212303610	Inductor	L10,L14,L16,L24,L26-27	Bellcore Issue 6	Level I		0.004189	6.00	.0725	0.025135	238706812.20
1212306031	Inductor	L15,L17-19,L28-29,L32,L34-35,L37-45	Bellcore Issue 6	Level I		0.004189	18.00	.2176	0.075406	238706812.20
1212308050	Inductor	L2-3,L5-9,L11-12,L20,L30,L46-47	Bellcore Issue 6	Level I		0.004189	13.00	.1572	0.054460	238706812.20
1314108312	Integrated Circuit	Q1	Bellcore Issue 6	Level I	6.00	0.829107	1.00	2.3928	0.829107	1206117.63
1314101010	Integrated Circuit	Q10	Bellcore Issue 6	Level I	6.60	0.857659	1.00	2.4752	0.857659	1165964.28

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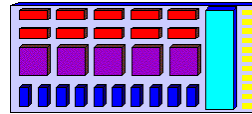
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Date 05. 31, 2002
Environment GF, GU - Ground Fixed, Uncontrolled
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File Name PCM-4896LC10-60DC.RPJ
Time 5:48 PM
Failure Rate 34.649754
MTBF 28,860

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1300414840	Semiconductor	D1,D3-8	Bellcore Issue 6	Level I		0.058748	7.00	1.1868	0.411233	17021992.65
1302001240	Semiconductor	Q7	Bellcore Issue 6	Level I		0.050271	1.00	.1451	0.050271	19892234.35
1301005400	Semiconductor	D10	Bellcore Issue 6	Level I		0.058748	1.00	.1695	0.058748	17021992.65
1300034040	Semiconductor	ZD1	Bellcore Issue 6	Level I	2.50	0.062200	1.00	.1795	0.062200	16077090.97
1304100540	Semiconductor	D2	Bellcore Issue 6	Level I		0.085507	1.00	.2468	0.085507	11694881.11
1315550310	Semiconductor	Q2-3	Bellcore Issue 6	Level I		0.391650	2.00	2.2606	0.783300	2553298.90
1310222210	Semiconductor	Q5-6,Q8	Bellcore Issue 6	Level I		0.058748	3.00	.5086	0.176243	17021992.65
14S4030000	Integrated Circuit	U7	Bellcore Issue 6	Level I	6.80	0.339031	1.00	.9785	0.339031	2949586.06
14S5500800	Integrated Circuit	U20	Bellcore Issue 6	Level I		0.271918	1.00	.7848	0.271918	3677581.17
14S5512500	Integrated Circuit	U17	Bellcore Issue 6	Level I		0.271918	1.00	.7848	0.271918	3677581.17
14S3149100	Integrated Circuit	U5	Bellcore Issue 6	Level I	5.40	0.318153	1.00	.9182	0.318153	3143146.21
14S5324500	Integrated Circuit	U37	Bellcore Issue 6	Level I	6.70	0.355633	1.00	1.0264	0.355633	2811885.11
14S5801400	Integrated Circuit	U15	Bellcore Issue 6	Level I		0.238868	1.00	.6894	0.238868	4186410.66
14S5537300	Integrated Circuit	U34	Bellcore Issue 6	Level I	5.40	0.353859	2.00	2.0425	0.707719	2825982.17
14S5537300	Integrated Circuit	U35	Bellcore Issue 6	Level I	6.10	0.362733	2.00	2.0937	0.725467	2756846.71
14S5517400	Integrated Circuit	U38	Bellcore Issue 6	Level I	6.70	0.360826	1.00	1.0414	0.360826	2771415.27
14S8203280	Integrated Circuit	U13	Bellcore Issue 6	Level I	9.30	0.445877	1.00	1.2868	0.445877	2242771.55
14S8416803	Integrated Circuit	U19	Bellcore Issue 6	Level I	6.40	0.332947	2.00	1.9218	0.665894	3003478.83
14S8416803	Integrated Circuit	U36	Bellcore Issue 6	Level I	6.20	0.329941	2.00	1.9044	0.659883	3030842.41
14S1486300	Integrated Circuit	U23	Bellcore Issue 6	Level I	6.60	0.857659	1.00	2.4752	0.857659	1165964.28
14S2143000	Integrated Circuit	U2	Bellcore Issue 6	Level I		0.587018	1.00	1.6941	0.587018	1703525.41
14S2252600	Integrated Circuit	U11	Bellcore Issue 6	Level I		0.587018	1.00	1.6941	0.587018	1703525.41
14S3181900	Integrated Circuit	U22	Bellcore Issue 6	Level I	17.50	1.554823	1.00	4.4873	1.554823	643159.83
14S4021300	Integrated Circuit	U28-31	Bellcore Issue 6	Level I		0.587018	4.00	6.7766	2.348072	1703525.41
14S9055500	Integrated Circuit	U9	Bellcore Issue 6	Level I		0.587018	1.00	1.6941	0.587018	1703525.41
14S4048500	Integrated Circuit	U26-27	Bellcore Issue 6	Level I		0.587018	2.00	3.3883	1.174036	1703525.41
14S3128400	Integrated Circuit	U32-33	Bellcore Issue 6	Level I		0.495399	2.00	2.8595	0.990798	2018574.09
14S3200400	Integrated Circuit	TF1	Bellcore Issue 6	Level I		0.587018	1.00	1.6941	0.587018	1703525.41
14S4070610	Integrated Circuit	U16	Bellcore Issue 6	Level I		0.587018	1.00	1.6941	0.587018	1703525.41
14S4866100	Integrated Circuit	U25	Bellcore Issue 6	Level I	5.40	0.318153	1.00	.9182	0.318153	3143146.21
14S4378100	Integrated Circuit	U3	Bellcore Issue 6	Level I		0.247737	1.00	.7150	0.247737	4036540.93

AAEON Reliability Prediction Report



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Temperature 60.00

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MTBF 28,860

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
14S4553011	Integrated Circuit	U14	Bellcore Issue 6	Level I	14.10	0.468343	1.00	1.3516	0.468343	2135189.19
14S4813904	Integrated Circuit	U10	Bellcore Issue 6	Level I	8.40	0.364341	1.00	1.0515	0.364341	2744678.50
14S4731700	Integrated Circuit	U24	Bellcore Issue 6	Level I		0.247737	1.00	.7150	0.247737	4036540.93
14S6334610	Integrated Circuit	U12	Bellcore Issue 6	Level I		0.302557	1.00	.8732	0.302557	3305164.13
14S6202000	Integrated Circuit	U1	Bellcore Issue 6	Level I		2.387720	1.00	6.8910	2.387720	418809.58
1540701380	Resistor	RN2,RP1,RP3	Bellcore Issue 6	Level I		0.026155	3.00	.2264	0.078464	38234279.63
1540710080	Resistor	RN3-23	Bellcore Issue 6	Level I		0.026155	21.00	1.5851	0.549245	38234279.63
1540710380	Resistor	RN30-31,RN42,RN44-45,RP2	Bellcore Issue 6	Level I		0.026155	6.00	.4529	0.156927	38234279.63
1540722080	Resistor	RN40-41,RN43	Bellcore Issue 6	Level I		0.026155	3.00	.2264	0.078464	38234279.63
1540733082	Resistor	RN24-29,RN32-39	Bellcore Issue 6	Level I		0.026155	14.00	1.0568	0.366164	38234279.63
1540700080	Resistor	RN46-49	Bellcore Issue 6	Level I		0.026155	4.00	.3019	0.104618	38234279.63
1653003201	Connection	J6,J11-12,J14	Bellcore Issue 6	Level I		0.017540	4.00	.2025	0.070161	57011659.71
1653005201	Connection	CN15	Bellcore Issue 6	Level I		0.029234	1.00	.0844	0.029234	34206995.83
1653025201	Connection	CN7	Bellcore Issue 6	Level I		0.146169	1.00	.4218	0.146169	6841399.17
1653207200	Connection	CN10	Bellcore Issue 6	Level I		0.040927	1.00	.1181	0.040927	24433568.45
1653208200	Connection	CN9	Bellcore Issue 6	Level I		0.046774	1.00	.1350	0.046774	21379372.39
1653213201	Connection	CN11	Bellcore Issue 6	Level I		0.076008	1.00	.2194	0.076008	13156536.86
1653002101	Connection	J1	Bellcore Issue 6	Level I		0.005847	1.00	.0169	0.005847	171034979.13
1653003101	Connection	J4,J9,J10	Bellcore Issue 6	Level I		0.008770	3.00	.0759	0.026310	114023319.42
1653222200	Connection	CN4	Bellcore Issue 6	Level I		0.128629	1.00	.3712	0.128629	7774317.23
1655304020	Connection	J7	Bellcore Issue 6	Level I		0.011694	1.00	.0337	0.011694	85517489.57
1653120225	Connection	CN3	Bellcore Issue 6	Level I		0.116935	1.00	.3375	0.116935	8551748.96
1653132220	Connection	CN1	Bellcore Issue 6	Level I		0.187096	1.00	.5400	0.187096	5344843.10
1651032220	Connection	U4	Bellcore Issue 6	Level I		0.093548	1.00	.2700	0.093548	10689686.20
1651584490	Connection	DIMM1	Bellcore Issue 6	Level I		0.491128	1.00	1.4174	0.491128	2036130.70
1654260201	Connection	PCI1	Bellcore Issue 6	Level I		0.350805	1.00	1.0124	0.350805	2850582.99
1651203291	Connection	U1	Bellcore Issue 6	Level I		0.093548	1.00	.2700	0.093548	10689686.20
1653003200	Connection	LED1	Bellcore Issue 6	Level I		0.017540	1.00	.0506	0.017540	57011659.71
1653003201	Connection	J13*2	Bellcore Issue 6	Level I		0.017540	2.00	.1012	0.035081	57011659.71
1653004200	Connection	CN2,CN5	Bellcore Issue 6	Level I		0.023387	2.00	.1350	0.046774	42758744.78
1653004205	Connection	CN8	Bellcore Issue 6	Level I		0.020464	1.00	.0591	0.020464	48867136.90

