



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

PCM-5894

Reliability Prediction Report

(MTBF)

Release Date: Nov. 05, 1999

Issue Stamp

QA Manager

QE Manager

Test Engineer



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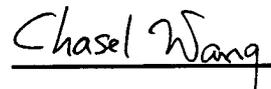
Issue Stamp



QA Manager



QE Manager



Test Engineer

Reliability Prediction (MTBF)

I . Model Name: PCM-5894

II . Description: Pentium MMX, K6 Compact Board with LCD, Ethernet, SSD, & 4 COMs

III. Prediction Date: Nov. 05, 1999

IV. Prediction Site: AAEON QE Dept.

V. Predicted by : Chasel Wang

VI. Equipment: Relx Ver.7.0 Visual Reliability Software

VII. Simulation Environment:

- **Temperature: 25 degrees C**
- **Standard: Telcordia (Bellcore) Standard**

VIII. Prediction Result:

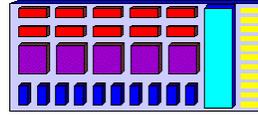
- **Failure Rate: 9.101170 ppm**
- **MTBF: 109,876. hours**

IX. 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.**

AAEON Reliability Prediction Report

Part Number 9697589405
Reference Des
Date 11. 9, 1999
Environment GF, GU - Ground Fixed, Uncontrolled
Temperature 25.00

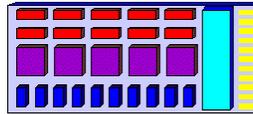


Description Top-level assembly
File Name 5894.rpj
Time 4:37 PM
Failure Rate 9.101170
MTBF 109,876

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
PCM-5894	9697589405	Bellcore	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	9.101170	109,876

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Temperature 25.00

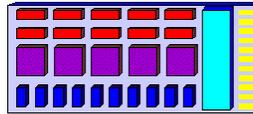


Description Top-level assembly
File Name 5894.rpj
Time 4:37 PM
Failure Rate 9.101170
MTBF 109,876

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1019710007	Resistor	R52	Bellcore Issue 6	Level I		0.002268	1.00	.0249	0.002268	440974090.03
101A700009	Resistor	M3,M47,M53,M57,R10,R25,R31,R-139,R319,R320	Bellcore Issue 6	Level I		0.002268	10.00	.2492	0.022677	440974090.03
101A701009	Resistor	R4,R7,R9,R11,R17,R144,R163,R1-79,R182,R152	Bellcore Issue 6	Level I		0.002268	10.00	.2492	0.022677	440974090.03
101A701059	Resistor	R180	Bellcore Issue 6	Level I		0.002268	1.00	.0249	0.002268	440974090.03
101A702059	Resistor	R202	Bellcore Issue 6	Level I		0.013606	1.00	.1495	0.013606	73495681.67
101A702209	Resistor	RR16,R154,R321	Bellcore Issue 6	Level I		0.002268	3.00	.0747	0.006803	440974090.03
101A702229	Resistor	R13,R15,R27	Bellcore Issue 6	Level I		0.002268	3.00	.0747	0.006803	440974090.03
101A703309	Resistor	R1,R2,R14,R18-R22,R62,R63,R67-,R71,R89,R94,R95,R102,R117,R1-18,R120,R123,R161,R219,R220,R-231,R232,R285,R289,R291-R298,-R322	Bellcore Issue 6	Level I		0.002268	36.00	.8970	0.081637	440974090.03
101A704729-1	Resistor	R6,R8,R28,R29,R32,R33,R36,R40-,R42,R44-50,R56-58,R60,R68,R70-,R72-88,R90-93,R97,R99-101,R103-108,R111-115,R124-127,R129-133-,R135,R136,R140,R141,R145,R147-151,R155,R156,R158-160	Bellcore Issue 6	Level I		0.002268	79.00	1.9684	0.179149	440974090.03
101A704729-2	Resistor	R164,R166-172,R174-178,R183-1-85,R187,R188,R190,R191,R193,R-195-200,R205,R207,R209,R210,R-215,R217,R221,R223,R224,R227,-R228,R230,R234-244,R246-266,R-268-270,R273-277,R279-281,R284-,R287,R288,R303-306,R313,R34,R-162	Bellcore Issue 6	Level I		0.002268	95.00	2.3671	0.215432	440974090.03
101A707509	Resistor	R24,R30,R134	Bellcore Issue 6	Level I		0.002268	3.00	.0747	0.006803	440974090.03
101A710009	Resistor	R212	Bellcore Issue 6	Level I		0.002268	1.00	.0249	0.002268	440974090.03
101A710019	Resistor	R41,R96,R98,R192,R194,R204,R2-67,R286,R307,R308,R309,R165,R-310,R311	Bellcore Issue 6	Level I		0.002268	14.00	.3488	0.031748	440974090.03
101A710029	Resistor	R35,R119,R173,R181,R186,R318	Bellcore Issue 6	Level I		0.002268	6.00	.1495	0.013606	440974090.03
101A715029	Resistor	R65,R69,R116,R122,R206,R213	Bellcore Issue 6	Level I		0.002268	6.00	.1495	0.013606	440974090.03
101A733009	Resistor	R39,R51,R146,R218,R222,R271,R-300,R225	Bellcore Issue 6	Level I		0.002268	8.00	.1993	0.018142	440974090.03
101A756009	Resistor	R189	Bellcore Issue 6	Level I		0.002268	1.00	.0249	0.002268	440974090.03

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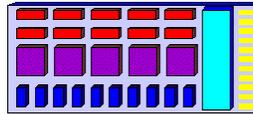


Description Top-level assembly
File Name 5894.rpj
Time 4:37 PM
Failure Rate 9.101170
MTBF 109,876

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1124510080	Capacitor	C3,C4,C5,C7-C12,C29,C35,C42,C-44,	Bellcore Issue 6	Level I		0.001060	13.00	.1514	0.013783	943198589.05
1124510180	Capacitor	C24,C27,C76	Bellcore Issue 6	Level I		0.001060	3.00	.0349	0.003181	943198589.05
1124515180	Capacitor	C17	Bellcore Issue 6	Level I		0.001060	1.00	.0116	0.001060	943198589.05
1124515281	Capacitor	C14,C16	Bellcore Issue 6	Level I		0.001060	2.00	.0233	0.002120	943198589.05
1124518180	Capacitor	C55-C71	Bellcore Issue 6	Level I		0.001060	17.00	.1980	0.018024	943198589.05
1124520080	Capacitor	C1,C2,C38	Bellcore Issue 6	Level I		0.001060	3.00	.0349	0.003181	943198589.05
1124522080	Capacitor	C33,C34	Bellcore Issue 6	Level I		0.001060	2.00	.0233	0.002120	943198589.05
1124522180	Capacitor	C25,C26	Bellcore Issue 6	Level I		0.001060	2.00	.0233	0.002120	943198589.05
1124527080	Capacitor	C22,C28,C30,C31	Bellcore Issue 6	Level I		0.001060	4.00	.0466	0.004241	943198589.05
1124547080	Capacitor	C15,C19,C20,C21,C46,C47,C51,C-73,C75,C48	Bellcore Issue 6	Level I		0.001060	10.00	.1165	0.010602	943198589.05
1124547180	Capacitor	C18,C39,C40,C41	Bellcore Issue 6	Level I		0.001060	4.00	.0466	0.004241	943198589.05
1141601090	Capacitor	C72	Bellcore Issue 6	Level I		0.002357	1.00	.0259	0.002357	424256814.77
1141610050	Capacitor	F1,F6,F9,F11-F13,F15-F19,F21-F2-6,F28-F36,F39,F41-F45,F47	Bellcore Issue 6	Level I		0.002357	33.00	.8546	0.077783	424256814.77
1149610180	Capacitor	F2-F4,F14,F27,F37,F38,F46,EC7,-EC8	Bellcore Issue 6	Level I		0.002502	10.00	.2749	0.025016	399749835.57
1149622050	Capacitor	C50	Bellcore Issue 6	Level I		0.002502	1.00	.0275	0.002502	399749835.57
1149633190	Capacitor	F5,F10,F20F40,EC5,EC6	Bellcore Issue 6	Level I		0.004933	6.00	.3252	0.029597	202722669.92
1169701700	Capacitor	C23	Bellcore Issue 6	Level I		0.000808	1.00	.0089	0.000808	1238107076.23
1211102761	Inductor	L3	Bellcore Issue 6	Level I		0.086173	1.00	.9468	0.086173	11604581.32
1211104700	Inductor	L2	Bellcore Issue 6	Level I		0.086173	1.00	.9468	0.086173	11604581.32
1212303160	Inductor	L1,L4-L7,L9,L19,L21-L24,L29-L32	Bellcore Issue 6	Level I		0.002268	15.00	.3737	0.034016	440974090.03
1212308050	Inductor	L11,L13,L15,L25-L28	Bellcore Issue 6	Level I		0.002268	7.00	.1744	0.015874	440974090.03
1231143180	Miscellaneous	Y1	Bellcore Issue 6	Level I		0.150000	1.00	1.6481	0.150000	6666666.67
1231327680	Miscellaneous	Y2,Y3	Bellcore Issue 6	Level I		0.150000	2.00	3.2963	0.300000	6666666.67
1233350050	Miscellaneous	X1	Bellcore Issue 6	Level I		0.360000	1.00	3.9555	0.360000	2777777.78
1300001240	Semiconductor	D2	Bellcore Issue 6	Level I		0.023881	1.00	.2624	0.023881	41874327.58
1300001440	Semiconductor	D4	Bellcore Issue 6	Level I		0.023881	1.00	.2624	0.023881	41874327.58
1300034040	Semiconductor	D1	Bellcore Issue 6	Level I	8.00	0.029874	1.00	.3282	0.029874	33473896.01
1300414800	Semiconductor	D3,D5	Bellcore Issue 6	Level I		0.023881	2.00	.5248	0.047762	41874327.58
1304100200	Semiconductor	LED1	Bellcore Issue 6	Level I		0.004877	1.00	.0536	0.004877	205063180.81

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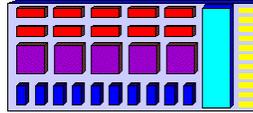


Description Top-level assembly
File Name 5894.rpj
Time 4:37 PM
Failure Rate 9.101170
MTBF 109,876

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1314288000	Semiconductor	Q1	Bellcore Issue 6	Level I	12.00	0.221790	1.00	2.4369	0.221790	4508777.72
1315160310	Semiconductor	Q2,Q7	Bellcore Issue 6	Level I	6.00	0.094263	2.00	2.0715	0.188526	10608600.69
1428474125	Integrated Circuit	U31	Bellcore Issue 6	Level I	8.00	0.092724	1.00	1.0188	0.092724	10784640.85
1428474244	Integrated Circuit	U10	Bellcore Issue 6	Level I	6.00	0.086033	1.00	.9453	0.086033	11623437.01
1440274138	Integrated Circuit	U21	Bellcore Issue 6	Level I	7.00	0.090945	1.00	.9993	0.090945	10995597.54
1440474004	Integrated Circuit	U6	Bellcore Issue 6	Level I	5.00	0.081652	1.00	.8972	0.081652	12247109.08
14D1605200	Semiconductor	Q4	Bellcore Issue 6	Level I		0.039802	1.00	.4373	0.039802	25124596.55
14S2143000	Integrated Circuit	U5	Bellcore Issue 6	Level I	6.00	0.091286	1.00	1.0030	0.091286	10954631.16
14S3200400	Integrated Circuit	U20	Bellcore Issue 6	Level I		0.059366	1.00	.6523	0.059366	16844654.92
14S4021300	Integrated Circuit	U22,U23,U24,U25	Bellcore Issue 6	Level I	5.00	0.085069	4.00	3.7388	0.340277	11755142.30
14S4048500	Integrated Circuit	U26,U27	Bellcore Issue 6	Level I	5.00	0.085069	2.00	1.8694	0.170138	11755142.30
14S4061600	Semiconductor	U1	Bellcore Issue 6	Level I	7.00	0.121117	1.00	1.3308	0.121117	8256457.13
14S4555400	Integrated Circuit	U4	Bellcore Issue 6	Level I	9.00	0.065672	1.00	.7216	0.065672	15227088.64
14S4558200	Integrated Circuit	U3	Bellcore Issue 6	Level I	4.00	0.049558	1.00	.5445	0.049558	20178332.80
14S4813901	Integrated Circuit	U13	Bellcore Issue 6	Level I	10.00	0.069400	1.00	.7625	0.069400	14409189.92
14S4866100	Integrated Circuit	U18	Bellcore Issue 6	Level I	5.00	0.052468	1.00	.5765	0.052468	19059380.43
14S4866300	Integrated Circuit	U14	Bellcore Issue 6	Level I	6.00	0.055527	1.00	.6101	0.055527	18009235.63
14S5513800	Integrated Circuit	U17	Bellcore Issue 6	Level I	7.00	0.090945	1.00	.9993	0.090945	10995597.54
14S5800400	Integrated Circuit	U30	Bellcore Issue 6	Level I	5.00	0.050589	1.00	.5559	0.050589	19767021.97
14S5A24500	Integrated Circuit	U15,U19	Bellcore Issue 6	Level I	5.00	0.086275	2.00	1.8959	0.172550	11590817.91
14S6024000	Integrated Circuit	U29	Bellcore Issue 6	Level I	13.00	0.835437	1.00	9.1794	0.835437	1196977.85
14S6025610	Integrated Circuit	U28	Bellcore Issue 6	Level I	8.00	0.361500	1.00	3.9720	0.361500	2766249.36
14S6125802	Integrated Circuit	U7,U8,U32,U33	Bellcore Issue 6	Level I	6.00	0.136348	4.00	5.9926	0.545394	7334150.23
14S6202001	Integrated Circuit	U12	Bellcore Issue 6	Level I	6.00	0.233170	1.00	2.5620	0.233170	4288723.38
14S6334600	Integrated Circuit	U34	Bellcore Issue 6	Level I	4.00	0.040841	1.00	.4487	0.040841	24485291.95
14S8203250	Integrated Circuit	U9	Bellcore Issue 6	Level I	9.00	0.065672	1.00	.7216	0.065672	15227088.64
14S8416800	Integrated Circuit	U11	Bellcore Issue 6	Level I	8.00	0.062123	1.00	.6826	0.062123	16097220.79
14S9055500	Integrated Circuit	U35	Bellcore Issue 6	Level I	6.00	0.091286	1.00	1.0030	0.091286	10954631.16
1540700008	Resistor	RN2,RN3,RN4	Bellcore Issue 6	Level I		0.006246	3.00	.2059	0.018738	160102772.00
1540710008	Resistor	RN5,RN8,RN9,RN19,RN22,RN20,-RN21	Bellcore Issue 6	Level I		0.006246	7.00	.4804	0.043722	160102772.00

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1540722008	Resistor	RN6,RN7	Bellcore Issue 6	Level I		0.006246	2.00	.1373	0.012492	160102772.00
1540733008	Resistor	RN10-13,RN15,RN17	Bellcore Issue 6	Level I		0.006246	6.00	.4118	0.037476	160102772.00
1540747208	Resistor	RN1,RN14,RN16,RN18	Bellcore Issue 6	Level I		0.006246	4.00	.2745	0.024984	160102772.00
1651003222	Connection	U16	Bellcore Issue 6	Level I		0.018207	1.00	.2001	0.018207	54923766.92
1651203291	Connection	U12	Bellcore Issue 6	Level I		0.018207	1.00	.2001	0.018207	54923766.92
1651572000	Connection	SM1,SM2	Bellcore Issue 6	Level I		0.040966	2.00	.9002	0.081932	24410563.08
1651605920	Connection	U2	Bellcore Issue 6	Level I		0.182640	1.00	2.0068	0.182640	5475266.48
1652508204	Connection	CN18	Bellcore Issue 6	Level I		0.004552	1.00	.0500	0.004552	219695067.68
1653002200	Connection	J5&J6	Bellcore Issue 6	Level I		0.002276	1.00	.0250	0.002276	439390135.35
1653003101	Connection	J3,J7,J11	Bellcore Issue 6	Level I		0.001707	3.00	.0563	0.005121	585853513.81
1653003200	Connection	J10,J14&J15&J16	Bellcore Issue 6	Level I		0.003414	2.00	.0750	0.006828	292926756.90
1653003201	Connection	J2,J8,J13,J17,J21,J18,J19,J20	Bellcore Issue 6	Level I		0.003414	9.00	.3376	0.030724	292926756.90
1653004200	Connection	CN5	Bellcore Issue 6	Level I		0.004552	1.00	.0500	0.004552	219695067.68
1653004201	Connection	CN6,J12	Bellcore Issue 6	Level I		0.004552	2.00	.1000	0.009104	219695067.68
1653005100	Connection	CN10	Bellcore Issue 6	Level I		0.002845	1.00	.0313	0.002845	351512108.28
1653020200	Connection	CN15	Bellcore Issue 6	Level I		0.022759	1.00	.2501	0.022759	43939013.54
1653025201	Connection	CN3	Bellcore Issue 6	Level I		0.028449	1.00	.3126	0.028449	35151210.83
1653120225	Connection	CN7	Bellcore Issue 6	Level I		0.022759	1.00	.2501	0.022759	43939013.54
1653132220	Connection	CN4	Bellcore Issue 6	Level I		0.036414	1.00	.4001	0.036414	27461883.46
1653208200	Connection	CN1	Bellcore Issue 6	Level I		0.009104	1.00	.1000	0.009104	109847533.84
1653213201	Connection	CN13	Bellcore Issue 6	Level I		0.014793	1.00	.1625	0.014793	67598482.36
1653217202	Connection	CN16	Bellcore Issue 6	Level I		0.019345	1.00	.2126	0.019345	51692957.10
1653222200	Connection	CN11	Bellcore Issue 6	Level I		0.025035	1.00	.2751	0.025035	39944557.76
1654066400	Connection	CN12	Bellcore Issue 6	Level I		0.085346	1.00	.9377	0.085346	11717070.28
1654270200	Connection	PC11	Bellcore Issue 6	Level I		0.068276	1.00	.7502	0.068276	14646337.85
1655003000	Connection	CN2,CN17	Bellcore Issue 6	Level I		0.001707	2.00	.0375	0.003414	585853513.81
1655004011	Connection	CN8,CN19	Bellcore Issue 6	Level I		0.002276	2.00	.0500	0.004552	439390135.35
1657254008	Connection	CN9	Bellcore Issue 6	Level I		0.004552	1.00	.0500	0.004552	219695067.68
1750119012	Miscellaneous	BT1	Bellcore Issue 6	Level I		0.900000	1.00	9.8888	0.900000	1111111.11
1752000500	Miscellaneous	F7,F8	Bellcore Issue 6	Level I		0.030000	2.00	.6593	0.060000	33333333.33
1759400002	Miscellaneous	BZ1	Bellcore Issue 6	Level I		0.150000	1.00	1.6481	0.150000	6666666.67