

# PCM-9150 Reliability Prediction Report (MTBF)

Report NO : 05E070017

**08-22-2005**

Issue Date

**Wenyuan Yang**

Manager

**Jessica Chou**

Test Engineer

## Reliability Prediction (MTBF)

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**I . Model Name:** PCM-9150 (5.25" Board.S-M478.LCD-DVI-TV,DDRII.LAN+GbE,Audio.COM,USB2.0.CF,M-PCI.PCI-E.ATX)

**II . Prediction Date:** Aug. 22, 2005

**III . Prediction Site:** AAEON Q.E. Dept.

**IV . Predicted by :** Jessica Chou

**V . Equipment:** Relex Ver.7.3 Visual Reliability Software

### **VI. Simulation Environment:**

- Temperature: 28.5 degrees C
- Standard: Telcordia (Bellcore) Standard

### **VII. Term and Definition:**

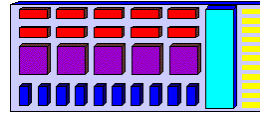
- Unit : An assembly of device.
- Duty Cycle : Used to specify the percentage of time that the element is in an on state, and it is equal to the percentage of total time the item is in the active environment.
- Quantity : The quantity of the selected item.
- Failure Rate : Used to specify that the failure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

### **VIII. Prediction Result:**

- Failure Rate: 15.734699 ppm
- MTBF: 63,554 Hours

**AAEON Reliability Prediction Report**

**Part Number** 9697830012  
**Reference Des**  
**Date** 01. 23, 2008  
**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temp. (°C)** 28.50



**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
PCM-9150	9697830012	Bellcore	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	15.734699	63,554

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**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temp. (°C)** 28.50



**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
14S6200403	Integrated Circuit	U25	Bellcore Issue 6	Level I		0.220199	1.00	1.3994	0.220199	4541356.37
1750220323	Connection	BAT1	Bellcore Issue 6	Level I		0.001363	1.00	.0087	0.001363	733456804.54
1655417020	Connection	CN1	Bellcore Issue 6	Level I		0.013634	1.00	.0866	0.013634	73345680.45
1655003010	Connection	CN6,CN8	Bellcore Issue 6	Level I		0.002045	2.00	.0260	0.004090	488971203.02
1189656190	Capacitor	C117	Bellcore Issue 6	Level I		0.015138	1.00	.0962	0.015138	66059220.60
1654907000	Connection	SATA1,SATA2	Bellcore Issue 6	Level I		0.004772	2.00	.0607	0.009544	209559087.01
1653003101	Connection	JP3	Bellcore Issue 6	Level I		0.002045	1.00	.0130	0.002045	488971203.02
1654260201	Connection	PCI1	Bellcore Issue 6	Level I		0.081804	1.00	.5199	0.081804	12224280.08
1750119011	Miscellaneous	BAT1	Bellcore Issue 6	Level I		0.900000	1.00	5.7198	0.900000	1111111.11
1653900034	Connection	CFD1	Bellcore Issue 6	Level I		0.001363	1.00	.0087	0.001363	733456804.54
1653006101	Connection	CN14	Bellcore Issue 6	Level I		0.004090	1.00	.0260	0.004090	244485601.51
1189682192	Capacitor	C23	Bellcore Issue 6	Level I		0.004854	1.00	.0308	0.004854	206036146.43
1653003100	Connection	JP2	Bellcore Issue 6	Level I		0.002045	1.00	.0130	0.002045	488971203.02
1111610211	Capacitor	EC2	Bellcore Issue 6	Level I		0.054399	1.00	.3457	0.054399	18382555.93
1652508204	Connection	LAN1,LAN2	Bellcore Issue 6	Level I		0.005454	2.00	.0693	0.010907	183364201.13
1654218200	Connection	PCIE1	Bellcore Issue 6	Level I		0.024541	1.00	.1560	0.024541	40747600.25
1759100008	Miscellaneous	BUZZ1	Bellcore Issue 6	Level I		0.150000	1.00	.9533	0.150000	6666666.67
1653005200	Connection	CN21	Bellcore Issue 6	Level I		0.006817	1.00	.0433	0.006817	146691360.91
1119615295	Capacitor	EC1	Bellcore Issue 6	Level I		0.056665	1.00	.3601	0.056665	17647641.52
1311006910	Semiconductor	Q6,Q7,Q9	Bellcore Issue 6	Level I		0.026377	3.00	.5029	0.079132	37911387.59
1311006910	Semiconductor	Q8	Bellcore Issue 6	Level I	17.10	0.041548	1.00	.2641	0.041548	24068747.69
105A702223	Resistor	R583,R592	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
1311390610	Semiconductor	Q18	Bellcore Issue 6	Level I	23.60	0.048765	1.00	.3099	0.048765	20506661.95
1311390610	Semiconductor	Q28	Bellcore Issue 6	Level I		0.026377	1.00	.1676	0.026377	37911387.59
1315600311	Semiconductor	Q23	Bellcore Issue 6	Level I		0.087924	1.00	.5588	0.087924	11373416.28
1540710380	Resistor	RN1	Bellcore Issue 6	Level I		0.007316	1.00	.0465	0.007316	136680423.17
1540782280	Resistor	RN2-RN8	Bellcore Issue 6	Level I		0.007316	7.00	.3255	0.051214	136680423.17
106B501031	Resistor	RT1-RT3	Bellcore Issue 6	Level I		0.013634	3.00	.2599	0.040902	73345680.45
105A507533	Resistor	R2	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A554923	Resistor	R4	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87

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**Reference Des**  
**Date** 01. 23, 2008  
**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temp. (°C)** 28.50



**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A733009	Resistor	R111,R140,R292,R294,R37-R39,R-48-R50,R6,R619	Bellcore Issue 6	Level I		0.002427	12.00	.1851	0.029121	412072292.87
1315700211	Semiconductor	Q12-Q15,Q19,Q20-Q22,Q24,Q29,-Q3,Q30	Bellcore Issue 6	Level I		0.026377	13.00	2.1793	0.342905	37911387.59
1315700310	Semiconductor	Q16,Q5	Bellcore Issue 6	Level I		0.087924	2.00	1.1176	0.175849	11373416.28
1315700310	Semiconductor	Q25	Bellcore Issue 6	Level I	13.30	0.125727	1.00	.7990	0.125727	7953719.08
1315700310	Semiconductor	Q27	Bellcore Issue 6	Level I	14.40	0.129327	1.00	.8219	0.129327	7732318.34
1315700310	Semiconductor	Q26	Bellcore Issue 6	Level I	13.30	0.125727	1.00	.7990	0.125727	7953719.08
1124405090	Capacitor	C577,C581,C628-C630,C658-C660	Bellcore Issue 6	Level I		0.001084	8.00	.0551	0.008676	922125268.46
16515A0996	Connection	DIMM1	Bellcore Issue 6	Level I		0.136341	1.00	.8665	0.136341	7334568.05
16515A0997	Connection	DIMM2	Bellcore Issue 6	Level I		0.136341	1.00	.8665	0.136341	7334568.05
1301005444	Semiconductor	D1,D16,D3,D7,D8	Bellcore Issue 6	Level I		0.026377	5.00	.8382	0.131886	37911387.59
1301005440	Semiconductor	D15,D17,D18,D2,D24,D26,D4,D5,D9	Bellcore Issue 6	Level I		0.026377	9.00	1.5087	0.237396	37911387.59
1301005440	Semiconductor	D11	Bellcore Issue 6	Level I	14.80	0.039197	1.00	.2491	0.039197	25512397.75
1301005442	Semiconductor	D10,D13	Bellcore Issue 6	Level I		0.026377	2.00	.3353	0.052755	37911387.59
1301003440	Semiconductor	D12,D14	Bellcore Issue 6	Level I		0.026377	2.00	.3353	0.052755	37911387.59
1301005441	Semiconductor	D21-D23,D25	Bellcore Issue 6	Level I		0.026377	4.00	.6706	0.105509	37911387.59
1129610260	Capacitor	HC1,HC2	Bellcore Issue 6	Level I		0.000729	2.00	.0093	0.001457	1372488935.28
1304101340	Semiconductor	LED1	Bellcore Issue 6	Level I		0.006691	1.00	.0425	0.006691	149452304.62
121230603H	Inductor	L1,L14,L17,L2,L20,L21,L25,L3,L30,-L40,L45,L50,L52-L55	Bellcore Issue 6	Level I		0.002427	16.00	.2468	0.038828	412072292.87
1211103366	Inductor	L5	Bellcore Issue 6	Level I	18.40	0.128524	1.00	.8168	0.128524	7780662.82
1211101005	Inductor	L15,L19	Bellcore Issue 6	Level I		0.092217	2.00	1.1721	0.184434	10844007.71
1211112080	Inductor	L16	Bellcore Issue 6	Level I		0.092217	1.00	.5861	0.092217	10844007.71
1212306033	Inductor	L26-L29,L33,L38,L39,L41-L44,L48,-L56-L58,L60-L64,R570-R574,R586-R589,R593	Bellcore Issue 6	Level I		0.002427	28.00	.4318	0.067949	412072292.87
1212306033	Inductor	R594	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
121230805M	Inductor	L46,L47	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
1654262300	Connection	MPC11	Bellcore Issue 6	Level I		0.084531	1.00	.5372	0.084531	11829948.46
105A532413	Resistor	R11,R94	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
1653008204	Connection	CN16	Bellcore Issue 6	Level I		0.010907	1.00	.0693	0.010907	91682100.57
1654030000	Connection	CN20	Bellcore Issue 6	Level I		0.020451	1.00	.1300	0.020451	48897120.30

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**Description** Top-level assembly  
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**Time** 3:25 下午  
**Failure Rate** 15.734699  
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Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
11E9501090	Capacitor	C154,C156,C25,C262,C265-C267,-C269,C272,C287,C298,C299,C348-C4,C44,C461	Bellcore Issue 6	Level I		0.006169	16.00	.6273	0.098698	162110956.55
11E9501090	Capacitor	C466,C52,C522,C523,C55,C56,C59-C625,C663,C665,C682,C686,C716-C720	Bellcore Issue 6	Level I		0.006169	17.00	.6665	0.104866	162110956.55
1189647190	Capacitor	C124,C148,C567,C579	Bellcore Issue 6	Level I		0.005279	4.00	.1342	0.021115	189436062.80
1129710090	Capacitor	C157,C255,C258,C294,C413,C414-C512,C685,C704,C721-C723	Bellcore Issue 6	Level I		0.001084	12.00	.0827	0.013013	922125268.46
1124427080	Capacitor	C263,C636,C676,C677	Bellcore Issue 6	Level I		0.001084	4.00	.0276	0.004338	922125268.46
1124568280	Capacitor	C284	Bellcore Issue 6	Level I		0.001084	1.00	.0069	0.001084	922125268.46
1653925216	Connection	CFD1	Bellcore Issue 6	Level I		0.034085	1.00	.2166	0.034085	29338272.18
1653003202	Connection	CN5,CN7,JP4,JP5	Bellcore Issue 6	Level I		0.004090	4.00	.1040	0.016361	244485601.51
1653013207	Connection	CN11	Bellcore Issue 6	Level I		0.017724	1.00	.1126	0.017724	56419754.20
105A701053	Resistor	R104,R279	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
14S4653700	Integrated Circuit	U5	Bellcore Issue 6	Level I	16.50	0.233882	1.00	1.4864	0.233882	4275661.99
14S4070610	Integrated Circuit	U12	Bellcore Issue 6	Level I		0.076462	1.00	.4859	0.076462	13078383.25
14S4021310	Integrated Circuit	U17-U20	Bellcore Issue 6	Level I		0.076462	4.00	1.9438	0.305848	13078383.25
14S6341602	Integrated Circuit	U27	Bellcore Issue 6	Level I		0.061605	1.00	.3915	0.061605	16232348.22
14S3020100	Integrated Circuit	U30	Bellcore Issue 6	Level I		0.076462	1.00	.4859	0.076462	13078383.25
14S6340808	Integrated Circuit	U35,U36	Bellcore Issue 6	Level I		0.061636	2.00	.7834	0.123272	16224322.22
14S4121600	Integrated Circuit	U40	Bellcore Issue 6	Level I		0.048158	1.00	.3061	0.048158	20765154.39
14S4048500	Integrated Circuit	U43,U44	Bellcore Issue 6	Level I		0.076462	2.00	.9719	0.152924	13078383.25
14S5A12505	Integrated Circuit	U47	Bellcore Issue 6	Level I		0.048158	1.00	.3061	0.048158	20765154.39
1231314350	Miscellaneous	Y4	Bellcore Issue 6	Level I		0.150000	1.00	.9533	0.150000	6666666.67
1124556180	Capacitor	C2	Bellcore Issue 6	Level I		0.001084	1.00	.0069	0.001084	922125268.46
1651203291	Connection	U25	Bellcore Issue 6	Level I		0.021815	1.00	.1386	0.021815	45841050.28
105A700139	Resistor	R119,R13,R135,R147,R15,R159,R-189,R332,R339,R353,R36,R365,R3-73,R377	Bellcore Issue 6	Level I		0.002427	14.00	.2159	0.033975	412072292.87
105A700139	Resistor	R393,R449,R47,R578,R579,R581,-R599,R68	Bellcore Issue 6	Level I		0.002427	8.00	.1234	0.019414	412072292.87
1124515850	Capacitor	C18	Bellcore Issue 6	Level I		0.001084	1.00	.0069	0.001084	922125268.46
1121701790	Capacitor	C112,C20,C308,C309,C312,C313,-C316,C317,C320,C321,C325,C448	Bellcore Issue 6	Level I		0.002597	12.00	.1981	0.031165	385053047.93

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**Reference Des**  
**Date** 01. 23, 2008  
**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temp. (°C)** 28.50



**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

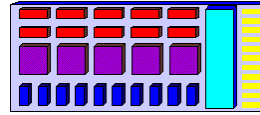
Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1189922180	Capacitor	C139,C166,C204,C27-C29,C324,C-344,C369,C409,C425,C452,C507,C-620	Bellcore Issue 6	Level I		0.004854	14.00	.4318	0.067949	206036146.43
1189922180	Capacitor	C412	Bellcore Issue 6	Level I	19.10	0.006845	1.00	.0435	0.006845	146087189.06
1189922180	Capacitor	C730,C731,C77	Bellcore Issue 6	Level I		0.004854	3.00	.0925	0.014561	206036146.43
1129710390	Capacitor	C105,C107,C109,C110,C221,C222-,C307,C310,C311,C314,C315,C318-,C319,C322	Bellcore Issue 6	Level I		0.001084	14.00	.0965	0.015182	922125268.46
1129710390	Capacitor	C326,C328,C330,C34,C345,C359-,C41,C53,C54,C57,C58,C664,C666-,C683,C692	Bellcore Issue 6	Level I		0.001084	15.00	.1034	0.016267	922125268.46
1129710390	Capacitor	C700,C71,C72,C79,C87,C88	Bellcore Issue 6	Level I		0.001084	6.00	.0414	0.006507	922125268.46
105A524963	Resistor	R114,R412,R417,R602,R76	Bellcore Issue 6	Level I		0.002427	5.00	.0771	0.012134	412072292.87
105A510003	Resistor	R116,R137,R414,R418	Bellcore Issue 6	Level I		0.002427	4.00	.0617	0.009707	412072292.87
105A708229	Resistor	R125,R127,R129,R299,R352,R354-,R361,R366,R379,R382,R388,R399-,R401,R407	Bellcore Issue 6	Level I		0.002427	15.00	.2313	0.036401	412072292.87
105A708229	Resistor	R561,R562,R563	Bellcore Issue 6	Level I		0.002427	3.00	.0463	0.007280	412072292.87
105A701003	Resistor	R130,R284,R285,R313,R482,R484-,R486	Bellcore Issue 6	Level I		0.002427	7.00	.1080	0.016987	412072292.87
105A703303	Resistor	R481,R483	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
105A515003	Resistor	R149,R153,R158,R163,R167,R172-,R303,R404,R548-R550,R552-R554	Bellcore Issue 6	Level I		0.002427	14.00	.2159	0.033975	412072292.87
105A525503	Resistor	R168	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A702229	Resistor	R176,R177,R181,R182,R185,R186	Bellcore Issue 6	Level I		0.002427	6.00	.0925	0.014561	412072292.87
105A703903	Resistor	R179,R183	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
105A747033	Resistor	R222,R224	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
105A506823	Resistor	R235,R261	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
105A501039	Resistor	R244,R254,R259,R265,R268,R271-,R273,R276,R289,R367,R464	Bellcore Issue 6	Level I		0.002427	11.00	.1697	0.026694	412072292.87
1074502579	Resistor	R330,R384	Bellcore Issue 6	Level I		0.014561	2.00	.1851	0.029121	68678715.48
105A524363	Resistor	R337	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A512103	Resistor	R338,R433,R440	Bellcore Issue 6	Level I		0.002427	3.00	.0463	0.007280	412072292.87
105A520003	Resistor	R385,R415	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
105A539263	Resistor	R403	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87





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**Temp. (°C)** 28.50



**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A704729	Resistor	R107-R110,R121,R264,R269,R277-,R281,R298,R325,R356,R363,R421-,R443,R453	Bellcore Issue 6	Level I		0.002427	16.00	.2468	0.038828	412072292.87
105A704729	Resistor	R471,R473,R477,R545,R551,R555-,R559,R566,R628,R74,R86,R88,R9-1,R92	Bellcore Issue 6	Level I		0.002427	14.00	.2159	0.033975	412072292.87
1211101564	Inductor	L4,L8	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
1211100860	Inductor	L6,L7	Bellcore Issue 6	Level I		0.092217	2.00	1.1721	0.184434	10844007.71
1211100102	Inductor	L10,L11,L18,L51,L9	Bellcore Issue 6	Level I		0.002427	5.00	.0771	0.012134	412072292.87
121230603J	Inductor	L22-L24	Bellcore Issue 6	Level I		0.002427	3.00	.0463	0.007280	412072292.87
121230805L	Inductor	L31,L32,L34-L37,L59	Bellcore Issue 6	Level I		0.002427	7.00	.1080	0.016987	412072292.87
1315992601	Semiconductor	Q1	Bellcore Issue 6	Level I		0.175849	1.00	1.1176	0.175849	5686708.14
1314158210	Integrated Circuit	Q17	Bellcore Issue 6	Level I		0.076462	1.00	.4859	0.076462	13078383.25
1314158210	Integrated Circuit	Q4	Bellcore Issue 6	Level I	30.70	0.560077	1.00	3.5595	0.560077	1785469.36
1315441012	Semiconductor	Q11	Bellcore Issue 6	Level I		0.087924	1.00	.5588	0.087924	11373416.28
1315035200	Semiconductor	Q31	Bellcore Issue 6	Level I		0.087924	1.00	.5588	0.087924	11373416.28
1310390410	Semiconductor	Q34	Bellcore Issue 6	Level I		0.026377	1.00	.1676	0.026377	37911387.59
1310390410	Semiconductor	Q33	Bellcore Issue 6	Level I	13.40	0.037815	1.00	.2403	0.037815	26444224.62
1059700001	Resistor	R1,R312,R432,R535,R567	Bellcore Issue 6	Level I		0.002427	5.00	.0771	0.012134	412072292.87
105A545323	Resistor	R3	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A513723	Resistor	R8	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A535713	Resistor	R10	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A710039	Resistor	R170,R226,R340,R341,R364,437,R-438,R451,R472,R584,R590,R620,R-621	Bellcore Issue 6	Level I		0.002427	13.00	.2005	0.031548	412072292.87
105A510009	Resistor	R193,R194,R293,R355	Bellcore Issue 6	Level I		0.002427	4.00	.0617	0.009707	412072292.87
105A756033	Resistor	R223,R225	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
105A503033	Resistor	R253	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A516513	Resistor	R307	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A511313	Resistor	R336	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A705139	Resistor	R362,R426-R429,R622	Bellcore Issue 6	Level I		0.002427	6.00	.0925	0.014561	412072292.87
105A710053	Resistor	R390	Bellcore Issue 6	Level I		0.014561	1.00	.0925	0.014561	68678715.48
105A580663	Resistor	R447,R456	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87

### AAEON Reliability Prediction Report

**Part Number** 9697830012  
**Reference Des**  
**Date** 01. 23, 2008  
**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temp. (°C)** 28.50

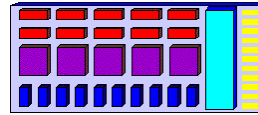


**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A701523	Resistor	R480,R531	Bellcore Issue 6	Level I		0.002427	2.00	.0308	0.004854	412072292.87
105A549963	Resistor	R513,R517,R521,R524,R527,R530	Bellcore Issue 6	Level I		0.002427	6.00	.0925	0.014561	412072292.87
105A502033	Resistor	R42	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
105A549969	Resistor	R492,R495,R505,R506,R508,R509,- R512,R516,R52,R520,R523,R526,- R529,R53-R67	Bellcore Issue 6	Level I		0.002427	28.00	.4318	0.067949	412072292.87
105A554963	Resistor	R301,R302,R335,R416,R420,R71	Bellcore Issue 6	Level I		0.002427	6.00	.0925	0.014561	412072292.87
105A522663	Resistor	R136,R304,R305	Bellcore Issue 6	Level I		0.002427	3.00	.0463	0.007280	412072292.87
105A705609	Resistor	R143,R144,R146,R148,R150,R152- R154,R157,R161,R162,R165,R166- R169,R171	Bellcore Issue 6	Level I		0.002427	14.00	.2159	0.033975	412072292.87
105A705609	Resistor	R175,R178,R180,R184,R188,R192- R197,R200,R203,R208,R209,R214- R387,R394	Bellcore Issue 6	Level I		0.002427	14.00	.2159	0.033975	412072292.87
105A705609	Resistor	R398,R439,R441,R442,R444,R448- R452,R454,R457,R459,R463,R465- R467,R468	Bellcore Issue 6	Level I		0.002427	14.00	.2159	0.033975	412072292.87
105A705609	Resistor	R469,R487,R489,R491,R493,R494- R504,R507,R510,R511,R515,R518- R522,R78	Bellcore Issue 6	Level I		0.002427	14.00	.2159	0.033975	412072292.87
105A705609	Resistor	R96	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
1124410190	Capacitor	C602-C617,C640-C653,C702,C703	Bellcore Issue 6	Level I		0.001084	32.00	.2205	0.034702	922125268.46
14S2303700	Integrated Circuit	U1	Bellcore Issue 6	Level I	25.90	0.420466	1.00	2.6722	0.420466	2378314.03
14S5A00702	Integrated Circuit	U2,U29	Bellcore Issue 6	Level I		0.076462	2.00	.9719	0.152924	13078383.25
14S4621700	Integrated Circuit	U3	Bellcore Issue 6	Level I		0.076462	1.00	.4859	0.076462	13078383.25
1315668011	Semiconductor	U13,U4,U6	Bellcore Issue 6	Level I		0.087924	3.00	1.6764	0.263773	11373416.28
1315668011	Semiconductor	U10	Bellcore Issue 6	Level I	19.60	0.147405	1.00	.9368	0.147405	6784036.89
14S4805300	Integrated Circuit	U8	Bellcore Issue 6	Level I	18.00	0.127735	1.00	.8118	0.127735	7828677.60
14S4805300	Integrated Circuit	U9	Bellcore Issue 6	Level I	16.50	0.118260	1.00	.7516	0.118260	8455912.86
14S5A00700	Integrated Circuit	U11	Bellcore Issue 6	Level I		0.046434	1.00	.2951	0.046434	21536128.35
1315970110	Semiconductor	U22,U23,U31,U33	Bellcore Issue 6	Level I		0.175849	4.00	4.4703	0.703395	5686708.14
14S5A00600	Integrated Circuit	U28,U45	Bellcore Issue 6	Level I		0.046434	2.00	.5902	0.092867	21536128.35
1315776010	Semiconductor	U34,U38,U39	Bellcore Issue 6	Level I		0.175849	3.00	3.3528	0.527546	5686708.14
1315776010	Semiconductor	U37	Bellcore Issue 6	Level I	19.90	0.297005	1.00	1.8876	0.297005	3366945.63
1122722080	Capacitor	C478,C491	Bellcore Issue 6	Level I		0.001084	2.00	.0138	0.002169	922125268.46

### AAEON Reliability Prediction Report

**Part Number** 9697830012  
**Reference Des**  
**Date** 01. 23, 2008  
**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temp. (°C)** 28.50



**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
14S4813000	Integrated Circuit	U41	Bellcore Issue 6	Level I	17.40	0.247763	1.00	1.5746	0.247763	4036117.54
14S5A12503	Integrated Circuit	U46	Bellcore Issue 6	Level I		0.048158	1.00	.3061	0.048158	20765154.39
1231325050	Miscellaneous	Y1,Y2	Bellcore Issue 6	Level I		0.150000	2.00	1.9066	0.300000	6666666.67
1231332721	Miscellaneous	Y3	Bellcore Issue 6	Level I		0.150000	1.00	.9533	0.150000	6666666.67
12313012A0	Miscellaneous	Y5	Bellcore Issue 6	Level I		0.150000	1.00	.9533	0.150000	6666666.67
1651611990	Connection	U7	Bellcore Issue 6	Level I		0.001363	1.00	.0087	0.001363	733456804.54
105A700003	Resistor	R105,R12,R288,R31,R40,R402,R5-97,R603,R626	Bellcore Issue 6	Level I		0.002427	9.00	.1388	0.021841	412072292.87
105A702233	Resistor	R120,R14,R360	Bellcore Issue 6	Level I		0.002427	3.00	.0463	0.007280	412072292.87
1124518280	Capacitor	C5	Bellcore Issue 6	Level I		0.001084	1.00	.0069	0.001084	922125268.46
11E9647680	Capacitor	C16,C164,C286,C417,C433,C46,C-487,C566,C8,C92	Bellcore Issue 6	Level I		0.006169	10.00	.3920	0.061686	162110956.55
1129701690	Capacitor	C100-C104,C106,C108,C11,C113,-C118,C119,C122,C123,C125-C145,-C13,C14,C147	Bellcore Issue 6	Level I		0.002597	36.00	.5942	0.093494	385053047.93
1129701690	Capacitor	C15,C153,C155,C159-C163,C165,-C167,C168,C170,C174,C177-C182,-C184-C200	Bellcore Issue 6	Level I		0.002597	35.00	.5777	0.090897	385053047.93
1129701690	Capacitor	C203,C205-C209,C21,C210-C220,-C225,C226,C228-C231,C238-C250,-C252,C253	Bellcore Issue 6	Level I		0.002597	39.00	.6437	0.101285	385053047.93
1129701690	Capacitor	C256,C260,C261,C264,C277,C281,-C285,C30,C327,C329,C331-C338,-C340,C341	Bellcore Issue 6	Level I		0.002597	20.00	.3301	0.051941	385053047.93
1129701690	Capacitor	C343,C346,C349-C351,C353-C357,-C360-C365,C370-C374,C381-C385,-C387-C394	Bellcore Issue 6	Level I		0.002597	34.00	.5612	0.088300	385053047.93
1129701690	Capacitor	C397,C398,C40,C407,C408,C410,-C411,C415,C416,C418,C426-C430,-C434-C447	Bellcore Issue 6	Level I		0.002597	29.00	.4787	0.075314	385053047.93
1129701690	Capacitor	C449,C45,C450,C454-C458,C462--C465,C469,C470,C473,C475-C477,-C479,C481	Bellcore Issue 6	Level I		0.002597	20.00	.3301	0.051941	385053047.93
1129701690	Capacitor	C482,C484,C486,C49,C493,C494,-C497-C500,C50,C503,C504,C506,-C508,C510	Bellcore Issue 6	Level I		0.002597	16.00	.2641	0.041553	385053047.93
1129701690	Capacitor	C511,C515-C517,C519-C521,C524,-C526,C528-C532,C534,C536,C538--C541,C543	Bellcore Issue 6	Level I		0.002597	21.00	.3466	0.054538	385053047.93

### AAEON Reliability Prediction Report

**Part Number** 9697830012  
**Reference Des**  
**Date** 01. 23, 2008  
**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temp. (°C)** 28.50



**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1129701690	Capacitor	C545,C547,C548,C551-C553,C555-C561,C563-C565,C568,C570-C573-C576,C582	Bellcore Issue 6	Level I		0.002597	23.00	.3796	0.059732	385053047.93
1129701690	Capacitor	C589,C590,C592,C593,C595,C60,-C61,C619,C621-C624,C626,C627,-C631,C633	Bellcore Issue 6	Level I		0.002597	16.00	.2641	0.041553	385053047.93
1129701690	Capacitor	C635,C65,C654,C66,C662,C67,C68-C680,C681,C69,C696,C70,C71,C7-08-C713,C73	Bellcore Issue 6	Level I		0.002597	20.00	.3301	0.051941	385053047.93
1129701690	Capacitor	C74-C76,C78,C81-C84,C86,C89,C9-C90,C91,C93-C99	Bellcore Issue 6	Level I		0.002597	20.00	.3301	0.051941	385053047.93
1129610051	Capacitor	C10,C115,C12,C169,C171,C175,C-223,C251,C254,C288,C290-C293,-C295,C297	Bellcore Issue 6	Level I		0.002785	16.00	.2831	0.044552	359128793.47
1129610051	Capacitor	C300-C306,C323,C339,C352,C358-C368,C375-C378,C386,C399-C405-C419-C424	Bellcore Issue 6	Level I		0.002785	30.00	.5309	0.083535	359128793.47
1129610051	Capacitor	C432,C453,C460,C472,C474,C492-C502,C513,C525,C527,C533,C535-C542,C544	Bellcore Issue 6	Level I		0.002785	14.00	.2478	0.038983	359128793.47
1129610051	Capacitor	C546,C554,C562,,C583-C585,C591-C599,C601,C63,C632,C634,C684,-C714,C715	Bellcore Issue 6	Level I		0.002785	15.00	.2654	0.041768	359128793.47
1129610051	Capacitor	C80,C85	Bellcore Issue 6	Level I		0.002785	2.00	.0354	0.005569	359128793.47
1121733780	Capacitor	C19,C22	Bellcore Issue 6	Level I		0.002597	2.00	.0330	0.005194	385053047.93
1124527850	Capacitor	C26	Bellcore Issue 6	Level I		0.001084	1.00	.0069	0.001084	922125268.46
1124547290	Capacitor	C32,C33,C35,C36,C38,C39,C42,C-43	Bellcore Issue 6	Level I		0.001084	8.00	.0551	0.008676	922125268.46
11E9610190	Capacitor	C150,C224,C236,C259,C289,C596-C661,C694,C695,C732	Bellcore Issue 6	Level I		0.006169	10.00	.3920	0.061686	162110956.55
1214309000	Inductor	CH1-CH5	Bellcore Issue 6	Level I		0.002427	5.00	.0771	0.012134	412072292.87
165300420B	Connection	CN2	Bellcore Issue 6	Level I		0.005454	1.00	.0347	0.005454	183364201.13
1653005203	Connection	CN10,CN17,CN9	Bellcore Issue 6	Level I		0.006817	3.00	.1300	0.020451	146691360.91
165322020B	Connection	CN13	Bellcore Issue 6	Level I		0.027268	1.00	.1733	0.027268	36672840.23
1653010207	Connection	CN15	Bellcore Issue 6	Level I		0.013634	1.00	.0866	0.013634	73345680.45
105A703309	Resistor	R187,R191,R198,R199,R201,R202-R204,R205,R210,R211,R215,R216-R220,R221	Bellcore Issue 6	Level I		0.002427	14.00	.2159	0.033975	412072292.87

### AAEON Reliability Prediction Report

**Part Number** 9697830012  
**Reference Des**  
**Date** 01. 23, 2008  
**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temp. (°C)** 28.50



**Description** Top-level assembly  
**File Name** PCM-9150.RPJ  
**Time** 3:25 下午  
**Failure Rate** 15.734699  
**MTBF** 63,554

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A703309	Resistor	R229,R230,R236,R237,R240-R243-,R245,R246,R249,R251,R255,R258-,R263,R274	Bellcore Issue 6	Level I		0.002427	16.00	.2468	0.038828	412072292.87
105A703309	Resistor	R280,R282,R286,R287,R297,R422-,R461,R470,R478,R534,R537,R556	Bellcore Issue 6	Level I		0.002427	12.00	.1851	0.029121	412072292.87
1653007206	Connection	CN18,CN19	Bellcore Issue 6	Level I		0.009544	2.00	.1213	0.019088	104779543.51
1124433180	Capacitor	C1,C273	Bellcore Issue 6	Level I		0.001084	2.00	.0138	0.002169	922125268.46
1124522280	Capacitor	C3	Bellcore Issue 6	Level I		0.001084	1.00	.0069	0.001084	922125268.46
1189633181	Capacitor	C114,C120,C121,C149,C296,C395-,C396,C431,C459,C467,C468,C47-,C48,C480	Bellcore Issue 6	Level I		0.005279	14.00	.4697	0.073904	189436062.80
1122722780	Capacitor	C146,C283,C451,C485,C495,C505-,C509,C518,C537	Bellcore Issue 6	Level I		0.001634	9.00	.0935	0.014707	611968665.07
1129722680	Capacitor	C172,C173,C183,C201,C202,C488-,C489,C490,C514,C549,C550	Bellcore Issue 6	Level I		0.006169	11.00	.4312	0.067855	162110956.55
1124418190	Capacitor	C268,C270,C271,C274,C667-C671-,C687-C690,C693,C697,C698,C705-,C706,C725	Bellcore Issue 6	Level I		0.001084	19.00	.1309	0.020605	922125268.46
1124418190	Capacitor	C726	Bellcore Issue 6	Level I		0.001084	1.00	.0069	0.001084	922125268.46
1129747090	Capacitor	C275,C276,C280,C282,C655-C657-,C673-C675,C678,C679	Bellcore Issue 6	Level I		0.001084	12.00	.0827	0.013013	922125268.46
1124433080	Capacitor	C366,C367,C379,C380	Bellcore Issue 6	Level I		0.001084	4.00	.0276	0.004338	922125268.46
1653004202	Connection	CN12	Bellcore Issue 6	Level I		0.005454	1.00	.0347	0.005454	183364201.13
105A510513	Resistor	R9	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
14S3128420	Integrated Circuit	U21	Bellcore Issue 6	Level I		0.064528	1.00	.4101	0.064528	15497089.40
1121610060	Capacitor	C111,C37,C496	Bellcore Issue 6	Level I		0.002597	3.00	.0495	0.007791	385053047.93
1121701080	Capacitor	C278,C279	Bellcore Issue 6	Level I		0.002597	2.00	.0330	0.005194	385053047.93
105A522103	Resistor	R115,R419,R606	Bellcore Issue 6	Level I		0.002427	3.00	.0463	0.007280	412072292.87
105A501623	Resistor	R359	Bellcore Issue 6	Level I		0.002427	1.00	.0154	0.002427	412072292.87
1315030210	Semiconductor	Q32	Bellcore Issue 6	Level I		0.000000	1.00	.0000	0.000000	.00
14S4730701	Integrated Circuit	U26	Bellcore Issue 6	Level I	15.30	0.216466	1.00	1.3757	0.216466	4619667.49
1314043210	Integrated Circuit	Q35	Bellcore Issue 6	Level I		0.076462	1.00	.4859	0.076462	13078383.25
14S3420601	Integrated Circuit	U24	Bellcore Issue 6	Level I	25.90	0.420466	1.00	2.6722	0.420466	2378314.03
14S6065500	Integrated Circuit	U32	Bellcore Issue 6	Level I		0.076462	1.00	.4859	0.076462	13078383.25
1653002201	Connection	JP6	Bellcore Issue 6	Level I		0.002727	1.00	.0173	0.002727	366728402.27

