



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

PCM-4897

Reliability Prediction Report

(MTBF)

Release Date: Nov. 18, 1999

Issue Stamp

QA Manager

QE Manager

Test Engineer



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Test Engineer

Reliability Prediction (MTBF)

I . Model Name: PCM-4897

II . Description: MediaGXm SBC with LCD, Audio, TV output, & 2 COMs

III. Prediction Date: Nov. 18, 1999

IV. Prediction Site: AAEON QE Dept.

V. Predicted by : Chasel Wang

VI. Equipment: Relex Ver.7.0 Visual Reliability Software

VII. Simulation Environment:

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

VIII. Prediction Result:

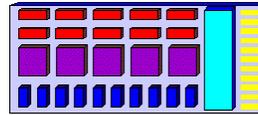
- **Failure Rate: 7.299340 ppm**
- **MTBF: 136,999. hours**

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 9697489704
Reference Des
Date 11. 18, 1999
Environment GF, GU - Ground Fixed, Uncontrolled
Temperature 25.00

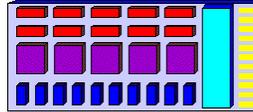


Description Top-level assembly
File Name 4897a21.RPJ
Time 3:41 PM
Failure Rate 7.299340
MTBF 136,999

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
PCM-4897	9697489704	Bellcore	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	7.299340	136,999

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Temperature 25.00

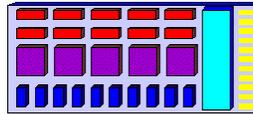


Description Top-level assembly
File Name 4897a21.RPJ
Time 3:41 PM
Failure Rate 7.299340
MTBF 136,999

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1111610100	Capacitor	C4,C58,C62,C110,C113	Bellcore Issue 6	Level I		0.027242	5.00	1.8661	0.136210	36707972.85
1111622191	Capacitor	C5,C26,C41,C81-82	Bellcore Issue 6	Level I		0.027242	5.00	1.8661	0.136210	36707972.85
1119610291	Capacitor	C42-44,C54,C57	Bellcore Issue 6	Level I		0.075338	5.00	5.1606	0.376691	13273483.15
1211101560	Inductor	L2	Bellcore Issue 6	Level I		0.086173	1.00	1.1806	0.086173	11604581.32
1211104560	Inductor	L1	Bellcore Issue 6	Level I		0.086173	1.00	1.1806	0.086173	11604581.32
1231143180	Miscellaneous	Y2	Bellcore Issue 6	Level I		0.150000	1.00	2.0550	0.150000	6666666.67
1231327680	Miscellaneous	Y1	Bellcore Issue 6	Level I		0.150000	1.00	2.0550	0.150000	6666666.67
1300581700	Semiconductor	D8,D10	Bellcore Issue 6	Level I		0.023881	2.00	.6543	0.047762	41874327.58
1302001200	Semiconductor	U8	Bellcore Issue 6	Level I		0.027212	1.00	.3728	0.027212	36747840.84
1304023000	Semiconductor	D1	Bellcore Issue 6	Level I		0.004877	1.00	.0668	0.004877	205063180.81
14S6202000	Integrated Circuit	U6	Bellcore Issue 6	Level I	5.00	0.213493	1.00	2.9248	0.213493	4683987.20
1651003222	Connection	U4	Bellcore Issue 6	Level I		0.018207	1.00	.2494	0.018207	54923766.92
1651584490	Connection	DIMM1	Bellcore Issue 6	Level I		0.095587	1.00	1.3095	0.095587	10461669.89
1651605920	Connection	U2	Bellcore Issue 6	Level I		0.182640	1.00	2.5021	0.182640	5475266.48
1652505200	Connection	CN11-13	Bellcore Issue 6	Level I		0.002845	3.00	.1169	0.008535	351512108.28
1652902200	Connection	J2	Bellcore Issue 6	Level I		0.001138	1.00	.0156	0.001138	878780270.71
1653002100	Connection	J1	Bellcore Issue 6	Level I		0.001138	1.00	.0156	0.001138	878780270.71
1653003100	Connection	JP9,JP13-14,JP16	Bellcore Issue 6	Level I		0.001707	4.00	.0935	0.006828	585853513.81
1653003200	Connection	JP8,JBFA1,JCLK1,(JP5/JP6/JP7),(-JP2/JP3/JP4)	Bellcore Issue 6	Level I		0.003414	5.00	.2338	0.017069	292926756.90
1653004100	Connection	CN6,CN7,JP1,JWOM1	Bellcore Issue 6	Level I		0.002276	4.00	.1247	0.009104	439390135.35
1653005100	Connection	JP15,JSIR1	Bellcore Issue 6	Level I		0.002845	2.00	.0779	0.005690	351512108.28
1653208200	Connection	CN2	Bellcore Issue 6	Level I		0.009104	1.00	.1247	0.009104	109847533.84
1653217202	Connection	CN3	Bellcore Issue 6	Level I		0.019345	1.00	.2650	0.019345	51692957.10
1653222200	Connection	CN1,CN4	Bellcore Issue 6	Level I		0.025035	2.00	.6859	0.050069	39944557.76
1654294200	Connection	EISA1	Bellcore Issue 6	Level I		0.106966	1.00	1.4654	0.106966	9348726.28
1654418100	Connection	(CN15/CN16)	Bellcore Issue 6	Level I		0.010241	1.00	.1403	0.010241	97642252.30
1654440300	Connection	(CN8/CN9)	Bellcore Issue 6	Level I		0.022759	1.00	.3118	0.022759	43939013.54
1654604300	Connection	J3	Bellcore Issue 6	Level I		0.002276	1.00	.0312	0.002276	439390135.35
1654606200	Connection	CN14	Bellcore Issue 6	Level I		0.003414	1.00	.0468	0.003414	292926756.90
1654808300	Connection	CN10	Bellcore Issue 6	Level I		0.004552	1.00	.0624	0.004552	219695067.68

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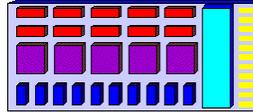


Description Top-level assembly
File Name 4897a21.RPJ
Time 3:41 PM
Failure Rate 7.299340
MTBF 136,999

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1122701680(1)	Capacitor	C1-C3,C10,C28,C33,C45-48,C51,-C55,C59,C61,C64,C67,C70,C72,C74,C77-78,C91,C98,C120-122,C125-126,C132,C136-139,C145,C148,-C150-C152,C155,C157-158,C160--161,C163,C165-166,C181,C184-186,C194-195,C200,C207-208,C224,-C226,C231,C241-244	Bellcore Issue 6	Level I		0.001598	62.00	1.3570	0.099049	625953979.55
1122701680(2)	Capacitor	BC1-2,BC4-9,BC11-17,BC19-20,B-C23-35,BC37-39,BC42,BC44-54,B-C56-57,BC59-60,BC62-67	Bellcore Issue 6	Level I		0.001598	55.00	1.2038	0.087866	625953979.55
1122747880	Capacitor	C192	Bellcore Issue 6	Level I		0.001598	1.00	.0219	0.001598	625953979.55
1124482080	Capacitor	C25	Bellcore Issue 6	Level I		0.001060	1.00	.0145	0.001060	943198589.05
1124501780	Capacitor	C11,C85,C114,C147,C164,C182,C225,C236,BC3,BC18,BC21-22,BC3-6,BC40-41,BC43,BC55,BC58,BC61,C153	Bellcore Issue 6	Level I		0.001060	19.00	.2760	0.020144	943198589.05
1124510080	Capacitor	C101-104,C183	Bellcore Issue 6	Level I		0.001060	1.00	.0145	0.001060	943198589.05
1124510180	Capacitor	C101-104,C183	Bellcore Issue 6	Level I		0.001060	5.00	.0726	0.005301	943198589.05
1124510280	Capacitor	C68,C73,C86-87,C93,C124,C162,-C172,C179	Bellcore Issue 6	Level I		0.001060	9.00	.1307	0.009542	943198589.05
1124515080	Capacitor	C49,C66	Bellcore Issue 6	Level I		0.001060	2.00	.0290	0.002120	943198589.05
1124515180	Capacitor	C199	Bellcore Issue 6	Level I		0.001060	1.00	.0145	0.001060	943198589.05
1124518180	Capacitor	C205-206,C209-223	Bellcore Issue 6	Level I		0.001060	17.00	.2469	0.018024	943198589.05
1124522180	Capacitor	C134-135,C202,C227-230,C232-2-35,C245-256	Bellcore Issue 6	Level I		0.001060	23.00	.3341	0.024385	943198589.05
1124522280	Capacitor	C175,C177	Bellcore Issue 6	Level I		0.001060	2.00	.0290	0.002120	943198589.05
1124522880	Capacitor	C159	Bellcore Issue 6	Level I		0.001060	1.00	.0145	0.001060	943198589.05
1124527180	Capacitor	C190-191,C201	Bellcore Issue 6	Level I		0.001060	3.00	.0436	0.003181	943198589.05
1124533080	Capacitor	C100,C105-109,C154	Bellcore Issue 6	Level I		0.001060	7.00	.1017	0.007422	943198589.05
1124547080	Capacitor	C198,C203-204,C237-240,C257-2-65	Bellcore Issue 6	Level I		0.001060	16.00	.2324	0.016964	943198589.05
1124547180	Capacitor	C83,C167-171	Bellcore Issue 6	Level I		0.001060	6.00	.0871	0.006361	943198589.05
1124547280	Capacitor	C127-130,C141-144	Bellcore Issue 6	Level I		0.001060	8.00	.1162	0.008482	943198589.05
1124582180	Capacitor	C149	Bellcore Issue 6	Level I		0.001060	1.00	.0145	0.001060	943198589.05
1129701080	Capacitor	C133	Bellcore Issue 6	Level I		0.005466	1.00	.0749	0.005466	182961702.19

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Failure Rate 7.299340
MTBF 136,999

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1141610050	Capacitor	C27,C39,C50,C52,C60,C63,C69,C-71,C75,C80,C84,C94-97,C99,C111-C156,TC1-23	Bellcore Issue 6	Level I		0.002357	44.00	1.4208	0.103711	424256814.77
1211101261	Inductor	L3,L4	Bellcore Issue 6	Level I		0.002268	2.00	.0621	0.004535	440974090.03
1212304320	Inductor	FB12-13,FB17-19	Bellcore Issue 6	Level I		0.002268	5.00	.1553	0.011339	440974090.03
1212306032	Inductor	R288	Bellcore Issue 6	Level I		0.002268	1.00	.0311	0.002268	440974090.03
1212308050	Inductor	FB1-11,FB14-16,FB24-36	Bellcore Issue 6	Level I		0.002268	27.00	.8388	0.061228	440974090.03
1212308053	Inductor	FB20-23	Bellcore Issue 6	Level I		0.002268	4.00	.1243	0.009071	440974090.03
1213106008	Inductor	PR44	Bellcore Issue 6	Level I		0.004535	1.00	.0621	0.004535	220487045.01
1252026360	Integrated Circuit	U15	Bellcore Issue 6	Level I	8.00	0.104969	1.00	1.4381	0.104969	9526603.44
1300164040	Semiconductor	D4	Bellcore Issue 6	Level I	6.00	0.028279	1.00	.3874	0.028279	35362002.30
1300414800	Semiconductor	D2-3,D6-7	Bellcore Issue 6	Level I		0.023881	4.00	1.3087	0.095524	41874327.58
1305099140	Semiconductor	D9,D11-12	Bellcore Issue 6	Level I		0.023881	3.00	.9815	0.071643	41874327.58
1310222210	Semiconductor	Q1,Q2,Q3,Q6,Q7,Q8	Bellcore Issue 6	Level I		0.023881	6.00	1.9630	0.143286	41874327.58
1315160310	Semiconductor	Q4	Bellcore Issue 6	Level I	6.00	0.033344	1.00	.4568	0.033344	29990032.08
1315993300	Semiconductor	Q5	Bellcore Issue 6	Level I	6.00	0.103465	1.00	1.4175	0.103465	9665065.38
1428474008	Integrated Circuit	U1	Bellcore Issue 6	Level I	5.00	0.081309	1.00	1.1139	0.081309	12298773.80
1428474125	Integrated Circuit	U17	Bellcore Issue 6	Level I	7.00	0.088777	1.00	1.2162	0.088777	11264182.63
1428474245	Integrated Circuit	U27	Bellcore Issue 6	Level I	7.00	0.091290	1.00	1.2507	0.091290	10954135.97
1440474004	Integrated Circuit	U19	Bellcore Issue 6	Level I	7.00	0.089151	1.00	1.2214	0.089151	11216864.02
14S1230800	Integrated Circuit	U22	Bellcore Issue 6	Level I	8.00	0.104969	1.00	1.4381	0.104969	9526603.44
14S2252600	Integrated Circuit	U18	Bellcore Issue 6	Level I	6.00	0.091286	1.00	1.2506	0.091286	10954631.16
14S3149100	Integrated Circuit	U12	Bellcore Issue 6	Level I	6.00	0.091286	1.00	1.2506	0.091286	10954631.16
14S3181900	Integrated Circuit	U23	Bellcore Issue 6	Level I	15.00	0.168759	1.00	2.3120	0.168759	5925622.25
14S3700300	Integrated Circuit	U13	Bellcore Issue 6	Level I	7.00	0.122715	1.00	1.6812	0.122715	8148995.64
14S4418500	Integrated Circuit	U20-21	Bellcore Issue 6	Level I	10.00	0.064302	2.00	1.7619	0.128605	15551534.82
14S4553010	Integrated Circuit	U3	Bellcore Issue 6	Level I	8.00	0.062123	1.00	.8511	0.062123	16097220.79
14S5537300	Integrated Circuit	U14	Bellcore Issue 6	Level I	5.00	0.052468	1.00	.7188	0.052468	19059380.43
14S5537300	Integrated Circuit	U24,U25	Bellcore Issue 6	Level I	6.00	0.091028	2.00	2.4941	0.182055	10985671.94
14S5801400	Integrated Circuit	U16	Bellcore Issue 6	Level I	7.00	0.056640	1.00	.7760	0.056640	17655322.22
14S5803200	Integrated Circuit	U26	Bellcore Issue 6	Level I	6.00	0.053432	1.00	.7320	0.053432	18715281.41
14S8416800	Integrated Circuit	U9	Bellcore Issue 6	Level I	5.00	0.055808	1.00	.7646	0.055808	17918645.01

