

PFM-800P

Reliability Prediction Report

(MTBF)

Report NO : 08E070018

06-23-2008

Issue Date

Wenyuan Yang

Manager

Jessica Chou

Test Engineer

Reliability Prediction (MTBF)

I . **Model Name:** PFM-800P

II . **Prediction Date:** Jun. 23, 2008

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

IV . **Predicted by:** Jessica Chou

V . **Simulation Environment:**

- Temperature: 25.5 degree C
- Standard: Telcordia (Bellcore) Standard

VI . **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.

VII . **Prediction Result:**

PFM-800P :

Failure Rate: 12.886768 ppm

MTBF: 77,599 Hours

AAEON Reliability Prediction Report

Part Number 9697800P07-DIP
Reference Des
Date 06. 23, 2008
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.50



Description Top-level assembly
File Name PFM-800P.RPJ
Time 4:40 下午
Failure Rate 12.886768
MTBF 77,599

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
PFM-800P	9697800P07-DIP	Bellcore	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	12.886768	77,599

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Temp. (°C) 25.50



Description Top-level assembly
File Name PFM-800P.RPJ
Time 4:40 下午
Failure Rate 12.886768
MTBF 77,599

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1653003101	Connection	JP1,JP3	Bellcore Issue 6	Level I		0.001752	2.00	.0272	0.003504	570770102.67
1653130424	Connection	CN2	Bellcore Issue 6	Level I		0.070081	1.00	.5438	0.070081	14269252.57
1655902030	Connection	BT1,CN6	Bellcore Issue 6	Level I		0.001168	1.00	.0091	0.001168	856155154.00
175011901C	Miscellaneous	BT1	Bellcore Issue 6	Level I		0.900000	1.00	6.9839	0.900000	1111111.11
14S6200404	Integrated Circuit	BIOS1	Bellcore Issue 6	Level I		0.167978	1.00	1.3035	0.167978	5953151.94
1655306024	Connection	CN3	Bellcore Issue 6	Level I		0.003504	1.00	.0272	0.003504	285385051.33
1655004124	Connection	CN5	Bellcore Issue 6	Level I		0.002336	1.00	.0181	0.002336	428077577.00
105A512103	Resistor	R175	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A700003	Resistor	R107,R348,R369,R80	Bellcore Issue 6	Level I		0.002290	4.00	.0711	0.009160	436681847.68
105A710053	Resistor	R297,R305,R74	Bellcore Issue 6	Level I		0.013740	3.00	.3199	0.041220	72780307.95
105A500133	Resistor	R145	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A501223	Resistor	R218,R351	Bellcore Issue 6	Level I		0.002290	2.00	.0355	0.004580	436681847.68
105A501523	Resistor	R16,R217	Bellcore Issue 6	Level I		0.002290	2.00	.0355	0.004580	436681847.68
105A502033	Resistor	R187,R220,R323	Bellcore Issue 6	Level I		0.002290	3.00	.0533	0.006870	436681847.68
105A502423	Resistor	R337	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A503033	Resistor	R83	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A503323	Resistor	R335	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A554903	Resistor	R176	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A561903	Resistor	R17	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A502233	Resistor	R326	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
1231332721	Miscellaneous	Y3	Bellcore Issue 6	Level I		0.150000	1.00	1.1640	0.150000	6666666.67
1124422080	Capacitor	C212,C238	Bellcore Issue 6	Level I		0.004580	2.00	.0711	0.009160	218340923.84
1124405080	Capacitor	C236,C251	Bellcore Issue 6	Level I		0.004580	2.00	.0711	0.009160	218340923.84
1124510280	Capacitor	C89	Bellcore Issue 6	Level I		0.004580	1.00	.0355	0.004580	218340923.84
1124522180	Capacitor	C370	Bellcore Issue 6	Level I		0.004580	1.00	.0355	0.004580	218340923.84
1124522280	Capacitor	C101,C97,C98	Bellcore Issue 6	Level I		0.004580	3.00	.1066	0.013740	218340923.84
1124547280	Capacitor	C357,C363	Bellcore Issue 6	Level I		0.004580	2.00	.0711	0.009160	218340923.84
1301005440	Semiconductor	D7	Bellcore Issue 6	Level I		0.024226	1.00	.1880	0.024226	41277895.16
1301005441	Semiconductor	D10	Bellcore Issue 6	Level I		0.024226	1.00	.1880	0.024226	41277895.16
1310390410	Semiconductor	Q6-Q8	Bellcore Issue 6	Level I		0.024226	3.00	.5640	0.072678	41277895.16
14S4070610	Integrated Circuit	U18	Bellcore Issue 6	Level I	28.20	0.402964	1.00	3.1270	0.402964	2481610.52

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File Name PFM-800P.RPJ
Time 4:40 下午
Failure Rate 12.886768
MTBF 77,599

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1651203291	Connection	U11	Bellcore Issue 6	Level I		0.018688	1.00	.1450	0.018688	53509697.12
1653003202	Connection	JP2	Bellcore Issue 6	Level I		0.003504	1.00	.0272	0.003504	285385051.33
1653925210	Connection	CFD1	Bellcore Issue 6	Level I		0.029200	1.00	.2266	0.029200	34246206.16
14S6334610	Integrated Circuit	U1	Bellcore Issue 6	Level I		0.120944	1.00	.9385	0.120944	8268302.19
1540733082	Resistor	RN30,RN31,RN33,RN34	Bellcore Issue 6	Level I		0.006390	4.00	.1983	0.025561	156490149.87
1301005442	Semiconductor	D12,D2,D6	Bellcore Issue 6	Level I		0.024226	3.00	.5640	0.072678	41277895.16
14S4021310	Integrated Circuit	U23,U24	Bellcore Issue 6	Level I		0.061574	2.00	.9556	0.123148	16240641.01
1129610260	Capacitor	HC1	Bellcore Issue 6	Level I		0.004580	1.00	.0355	0.004580	218340923.84
14S5A01400	Integrated Circuit	U26,U27	Bellcore Issue 6	Level I		0.039017	2.00	.6055	0.078035	25629657.70
14S5A0700	Integrated Circuit	U17	Bellcore Issue 6	Level I		0.039017	1.00	.3028	0.039017	25629657.70
14S4256200	Integrated Circuit	U14	Bellcore Issue 6	Level I	28.40	0.184903	1.00	1.4348	0.184903	5408229.44
105A560463	Resistor	R1,R118,R156,R170	Bellcore Issue 6	Level I		0.002290	4.00	.0711	0.009160	436681847.68
105A524303	Resistor	R172	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
1121647780	Capacitor	C352	Bellcore Issue 6	Level I		0.004580	1.00	.0355	0.004580	218340923.84
105A540263	Resistor	R255,R6	Bellcore Issue 6	Level I		0.002290	2.00	.0355	0.004580	436681847.68
105A530103	Resistor	R191,R229	Bellcore Issue 6	Level I		0.002290	2.00	.0355	0.004580	436681847.68
1124418080	Capacitor	C325,C329	Bellcore Issue 6	Level I		0.004580	2.00	.0711	0.009160	218340923.84
1540710084	Resistor	RN1,RN10-RN16,RN18,RN2,RN3,-RN37,RN4,RN41,RN5-RN9	Bellcore Issue 6	Level I		0.006390	19.00	.9422	0.121413	156490149.87
1540747285	Resistor	RN36,RN47,RN58,RN61,RN64	Bellcore Issue 6	Level I		0.006390	5.00	.2479	0.031951	156490149.87
105A500333	Resistor	R349	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A513003	Resistor	R178,R71	Bellcore Issue 6	Level I		0.002290	2.00	.0355	0.004580	436681847.68
105A506823	Resistor	R352,R87	Bellcore Issue 6	Level I		0.002290	2.00	.0355	0.004580	436681847.68
105A708229	Resistor	R101,R152,R246,R273,R287,R303-R325,R330,R339,R370,R371	Bellcore Issue 6	Level I		0.002290	11.00	.1955	0.025190	436681847.68
105A704729	Resistor	R129,R138,R252,R263,R327,R350-R389,R390,R73	Bellcore Issue 6	Level I		0.002290	9.00	.1599	0.020610	436681847.68
105A700009	Resistor	RR11,R120,R136,R14,R147,R15,R-197,R198,R216,R222,R232,R233,R-234,R239,R242,R265,R27,R309,R3-10,R313,R315,R324,R34	Bellcore Issue 6	Level I		0.002290	23.00	.4087	0.052670	436681847.68
105A700009	Resistor	R342-R346,R353,R354,R363,R364-R367,R368,R387	Bellcore Issue 6	Level I		0.002290	12.00	.2132	0.027480	436681847.68

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File Name PFM-800P.RPJ
Time 4:40 下午
Failure Rate 12.886768
MTBF 77,599

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A701009	Resistor	R10,R109,R134,R18,R185,R20,R23-,R276,R280,R42,R44,R50,R52,R69-,R70,R75,R77,R82,R84,R9,R91,R93	Bellcore Issue 6	Level I		0.002290	22.00	.3909	0.050380	436681847.68
105A702229	Resistor	R144,R148-R151,R153,R21,R24	Bellcore Issue 6	Level I		0.002290	8.00	.1422	0.018320	436681847.68
105A733009	Resistor	R154,R177,R272,R290,R291,R308-,R333,R356,R360-R362,R365,R366	Bellcore Issue 6	Level I		0.002290	13.00	.2310	0.029770	436681847.68
1540782282	Resistor	RN17,RN19-RN21,RN43,RN45,RN-48-RN51,RN54-RN57,RN59	Bellcore Issue 6	Level I		0.006390	15.00	.7438	0.095853	156490149.87
1129710090	Capacitor	C104,C110	Bellcore Issue 6	Level I		0.004580	2.00	.0711	0.009160	218340923.84
1129701790	Capacitor	C129,C156,C182,C184,C205,C256-,C289,C307,C36,C362,C377,C387,-C40,C50,C75	Bellcore Issue 6	Level I		0.004580	15.00	.5331	0.068700	218340923.84
1129747090	Capacitor	C103,C105-C107,C111,C113,C116-,C117,C120,C122,C155	Bellcore Issue 6	Level I		0.004580	11.00	.3909	0.050380	218340923.84
105A551113	Resistor	R336	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
14S5A00401	Integrated Circuit	U16	Bellcore Issue 6	Level I		0.039017	1.00	.3028	0.039017	25629657.70
1301053040	Semiconductor	D1,D3	Bellcore Issue 6	Level I		0.024226	2.00	.3760	0.048452	41277895.16
1301053040	Semiconductor	D8	Bellcore Issue 6	Level I	27.90	0.050313	1.00	.3904	0.050313	19875391.17
105A702263	Resistor	R311,R312,R316,R318	Bellcore Issue 6	Level I		0.002290	4.00	.0711	0.009160	436681847.68
1315970110	Semiconductor	F2	Bellcore Issue 6	Level I		0.048452	1.00	.3760	0.048452	20638947.58
105A560403	Resistor	R199,R211	Bellcore Issue 6	Level I		0.002290	2.00	.0355	0.004580	436681847.68
105A545323	Resistor	R103	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A547503	Resistor	R57	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
1121610060	Capacitor	C190,C225,C386,C80	Bellcore Issue 6	Level I		0.004580	4.00	.1422	0.018320	218340923.84
106B501031	Resistor	RT1	Bellcore Issue 6	Level I		0.011680	1.00	.0906	0.011680	85615515.40
1214309000	Inductor	CH1,CH2	Bellcore Issue 6	Level I		0.018320	2.00	.2843	0.036640	54585230.96
105A522663	Resistor	R264	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
1304001340	Semiconductor	HDD1	Bellcore Issue 6	Level I		0.005104	1.00	.0396	0.005104	195913336.05
1304101340	Semiconductor	PWR1	Bellcore Issue 6	Level I		0.005104	1.00	.0396	0.005104	195913336.05
105A710039	Resistor	R110,R119,R12,R127,R133,R140--R142,R165,R166,R193,R123,R224-,R226,R248,R253,R259,R29,R295,-R230,R99	Bellcore Issue 6	Level I		0.002290	21.00	.3732	0.048090	436681847.68
105A507509	Resistor	R113-R115,R122,R130,R139,R157-,R158,R164,R174	Bellcore Issue 6	Level I		0.002290	10.00	.1777	0.022900	436681847.68

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Time 4:40 下午
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MTBF 77,599

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A549969	Resistor	R161,R182,R207,R245,R47-R49,R-51,R53,R54	Bellcore Issue 6	Level I		0.002290	10.00	.1777	0.022900	436681847.68
105A500139	Resistor	R168,R169,R181,R192,R2,R204,R-212,R214,R223,R225,R228,R230,R-231,R238,R241,R243,R250,R267,R-28,R299,R30,R317,R321,R322	Bellcore Issue 6	Level I		0.002290	24.00	.4265	0.054960	436681847.68
105A500139	Resistor	R331,R338,R374-R376,R391,R392-R4,R43,R46,R65,R95,R98	Bellcore Issue 6	Level I		0.002290	13.00	.2310	0.029770	436681847.68
105A501039	Resistor	R100,R106,R111,R128,R13,R143,-R173,R192,R221,R26,R266,R274,-R279,R285,R286,R300,R377,R5,R7-R76,R81,R85,R86,R88-R90,R92	Bellcore Issue 6	Level I		0.002290	27.00	.4798	0.061830	436681847.68
105A501039	Resistor	R97	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A500239	Resistor	R146,R205,R210,R314,R96	Bellcore Issue 6	Level I		0.002290	5.00	.0889	0.011450	436681847.68
105A705609	Resistor	R160,R171,R186,R189,R208,R209-R227,R235,R247,R257,R268,R269-R271,R275,R277,R278,R284,R288-R292,R294,R304,R306,R319	Bellcore Issue 6	Level I		0.002290	23.00	.4087	0.052670	436681847.68
105A705609	Resistor	R94	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68
105A503309	Resistor	R121,R126,R244,R249,R31-R33,R-35,R355,R357-R359,R36-R41,R55,-R56,R58-R64,R66	Bellcore Issue 6	Level I		0.002290	28.00	.4976	0.064120	436681847.68
105A515009	Resistor	R190,R202,R215,R236,R256,R270-R67,R72	Bellcore Issue 6	Level I		0.002290	8.00	.1422	0.018320	436681847.68
105A510009	Resistor	R116,R117,R124,R125,R131,R132-R137,R155,R162,R183,R203,R22,-R251,R380,R8	Bellcore Issue 6	Level I		0.002290	15.00	.2666	0.034350	436681847.68
105A527469	Resistor	R123,R237,R254,R302,R45,R78	Bellcore Issue 6	Level I		0.002290	6.00	.1066	0.013740	436681847.68
105A700109	Resistor	R135,R167,R179,R180,R184,R188-R196,R200,R201,R206,R289,R9	Bellcore Issue 6	Level I		0.002290	12.00	.2132	0.027480	436681847.68
1540756081	Resistor	RN22-RN29,RN32,RN35,RN38-RN40,RN42,RN44,RN46,RN52,RN53,-RN60,RN62,RN63	Bellcore Issue 6	Level I		0.012780	21.00	2.0827	0.268387	78245074.93
14S3033800	Semiconductor	U15	Bellcore Issue 6	Level I		0.080753	1.00	.6266	0.080753	12383368.55
1124568280	Capacitor	C369	Bellcore Issue 6	Level I		0.004580	1.00	.0355	0.004580	218340923.84
105A554963	Resistor	R261,R281,R301,R79	Bellcore Issue 6	Level I		0.002290	4.00	.0711	0.009160	436681847.68
14S9020100	Integrated Circuit	U4	Bellcore Issue 6	Level I	30.90	0.474301	1.00	3.6805	0.474301	2108366.85
105A701233	Resistor	R163	Bellcore Issue 6	Level I		0.002290	1.00	.0178	0.002290	436681847.68

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Failure Rate 12.886768
MTBF 77,599

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1129610080	Capacitor	C263,C266,C270,C273,C274,C285-,C3,C300,C311,C312,C321,C324,C-335-C338,C342,C346-C348,C351,-C353,C354,C358,C359,C371	Bellcore Issue 6	Level I		0.004580	26.00	.9240	0.119080	218340923.84
1129610080	Capacitor	C383,C384,C94	Bellcore Issue 6	Level I		0.004580	3.00	.1066	0.013740	218340923.84
14S4100015	Integrated Circuit	U5	Bellcore Issue 6	Level I	33.30	0.234082	1.00	1.8164	0.234082	4272016.29
1211000180	Inductor	L2	Bellcore Issue 6	Level I		0.087020	1.00	.6753	0.087020	11491627.57
14S3110200	Inductor	TF1	Bellcore Issue 6	Level I		0.137400	1.00	1.0662	0.137400	7278030.79
1315662210	Semiconductor	Q19	Bellcore Issue 6	Level I		0.080753	1.00	.6266	0.080753	12383368.55
1315662810	Semiconductor	Q18	Bellcore Issue 6	Level I		0.080753	1.00	.6266	0.080753	12383368.55
123132505A	Miscellaneous	Y1	Bellcore Issue 6	Level I		0.150000	1.00	1.1640	0.150000	6666666.67
123131435E	Miscellaneous	Y2	Bellcore Issue 6	Level I		0.150000	1.00	1.1640	0.150000	6666666.67
1189615161	Capacitor	C171,C355,C356,C96	Bellcore Issue 6	Level I		0.043800	4.00	1.3595	0.175202	22830804.11
165320520G	Connection	LAN1,USB1	Bellcore Issue 6	Level I		0.005840	2.00	.0906	0.011680	171231030.80
165320820F	Connection	VGA1	Bellcore Issue 6	Level I		0.009344	1.00	.0725	0.009344	107019394.25
14S3711600	Integrated Circuit	U8	Bellcore Issue 6	Level I	34.90	0.600920	1.00	4.6631	0.600920	1664115.22
1752001601	Miscellaneous	FS1	Bellcore Issue 6	Level I		0.030000	1.00	.2328	0.030000	33333333.33
1305104040	Semiconductor	D13-D16	Bellcore Issue 6	Level I		0.045800	4.00	1.4216	0.183200	21834092.38
1189622151	Capacitor	C136,C189,C198,C28,C322	Bellcore Issue 6	Level I		0.043800	5.00	1.6994	0.219002	22830804.11
1300001440	Semiconductor	D11,D19,D9	Bellcore Issue 6	Level I		0.024226	3.00	.5640	0.072678	41277895.16
1315700216	Semiconductor	Q24,Q25	Bellcore Issue 6	Level I		0.080753	2.00	1.2533	0.161507	12383368.55
1310390413	Semiconductor	Q20,Q21,Q26	Bellcore Issue 6	Level I		0.024226	3.00	.5640	0.072678	41277895.16
1311390612	Semiconductor	Q23	Bellcore Issue 6	Level I		0.024226	1.00	.1880	0.024226	41277895.16
1315997510	Semiconductor	Q10,Q16,Q9	Bellcore Issue 6	Level I		0.080753	3.00	1.8799	0.242260	12383368.55
1315997510	Semiconductor	Q11	Bellcore Issue 6	Level I	32.10	0.185227	1.00	1.4373	0.185227	5398777.06
1315997510	Semiconductor	Q15	Bellcore Issue 6	Level I	31.30	0.181791	1.00	1.4107	0.181791	5500828.61
14S2632100	Integrated Circuit	U12	Bellcore Issue 6	Level I	28.20	0.402964	1.00	3.1270	0.402964	2481610.52
14S2632100	Integrated Circuit	U13	Bellcore Issue 6	Level I	29.00	0.423021	2.00	6.5652	0.846042	2363947.95
1211101066	Inductor	L1	Bellcore Issue 6	Level I	30.50	0.149392	1.00	1.1593	0.149392	6693812.34
121110336P	Inductor	L14	Bellcore Issue 6	Level I		0.087020	1.00	.6753	0.087020	11491627.57
1122522890	Capacitor	C91	Bellcore Issue 6	Level I		0.004580	1.00	.0355	0.004580	218340923.84
1653022110	Connection	CN4	Bellcore Issue 6	Level I		0.012848	1.00	.0997	0.012848	77832286.73