

PFM-620S

Reliability Prediction Report

(MTBF)

Report NO : 05E070010

04-08-2005

Issue Date

Wenyuan Yang

Manager

Jessica Chou

Test Engineer

Reliability Prediction (MTBF)

I . Model Name: PFM-620S (PC/104.UV ICP 400.LCD,SDM.LAN.2COM,USB.CF.PC/104.AT)

II . Prediction Date: Apr. 8, 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: 25.3 degrees C
- Standard: Telcordia (Bellcore) Standard

VII. Term and Definition:

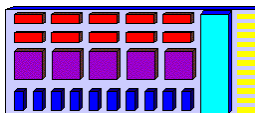
- Unit : An assembly of device.
- Duty Cycle : Used to specify the percentage of time that the element is in an on state, and it is equal to the percentage of total time the item is in the active environment.
- Quantity : The quantity of the selected item.
- Failure Rate : Used to specify that the failure 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: 12.850230 ppm
- MTBF: 77,820 Hours

Standard Reliability Prediction Report

Part Number 9697620S04
Reference Des
Date 四月 8, 2005
Environment GF, GU - Ground Fixed,
Temperature 25.30

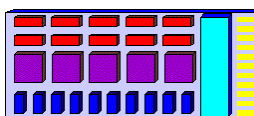


Description Top-level assembly
File Name 9697620S04.RPJ
Time 4:26 下午
Failure Rate 12.850230
MTBF 77,820

Assembly Name	Part Number	Ref Des	Qty	Failure Rate	MTBF
PFM-620S	9697620S04		1.00	12.850230	77,820

Standard Reliability Prediction Report

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Date 四月 8, 2005
Environment GF, GU - Ground Fixed,
Temperature 25.30

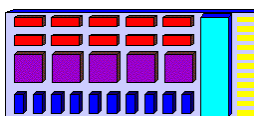


Description Top-level assembly
File Name 9697620S04.RPJ
Time 4:26 下午
Failure Rate 12.850230
MTBF 77,820

Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
1653120221	Connection	CN7	0.023118	1.00	0.023118
1750119014	Miscellaneous	BAT1	0.900000	1.00	0.900000
1653003100	Connection	CN1	0.001734	1.00	0.001734
1653132225	Connection	CN7	0.036989	1.00	0.036989
1653003201	Connection	JP12	0.003468	1.00	0.003468
1653003101	Connection	JP1,JP11,JP7-JP9	0.001734	5.00	0.008669
1653002202	Connection	JP10	0.002312	1.00	0.002312
1653130424	Connection	PC11	0.370340	1.00	0.370340
1653005100	Connection	CN5	0.002890	1.00	0.002890
1653002101	Connection	JP2-JP6	0.001156	5.00	0.005780
1655006110	Connection	CN2	0.003468	1.00	0.003468
1655003023	Connection	FAN1	0.001734	1.00	0.001734
14S6202008	Integrated Circuit	U34	0.139957	1.00	0.139957
1653003200	Connection	CN3	0.003468	1.00	0.003468
1315992601	Semiconductor	U10	0.442602	1.00	0.442602
14S3831600	Integrated Circuit	U12	0.039994	1.00	0.039994
14S5A01430	Integrated Circuit	U13	0.547027	1.00	0.547027
14S4040001	Integrated Circuit	U14	0.208729	1.00	0.208729
14S4268601	Integrated Circuit	U16	0.208729	1.00	0.208729
14S3128420	Integrated Circuit	U20	0.060682	1.00	0.060682
14S5500401	Integrated Circuit	U21	0.066111	1.00	0.066111
14S6334610	Integrated Circuit	U23	0.031276	1.00	0.031276
14S824A302	Integrated Circuit	U27	0.111710	1.00	0.111710
14S4021310	Integrated Circuit	U29	0.243055	1.00	0.243055
14S4021310	Integrated Circuit	U30	0.235389	1.00	0.235389
14S4048500	Integrated Circuit	U32	0.060682	1.00	0.060682
14S4048500	Integrated Circuit	U33	0.200229	1.00	0.200229
1315970110	Semiconductor	U19,U35	0.160584	2.00	0.321167
1231332721	Miscellaneous	Y2	0.150000	1.00	0.150000
1231325050	Miscellaneous	Y3	0.150000	1.00	0.150000
14S4070610	Integrated Circuit	U1	0.060682	1.00	0.060682
1174518180	Capacitor	NC1	0.001062	1.00	0.001062
1174547080	Capacitor	NC2,NC3	0.001062	2.00	0.002125
1314108515	Integrated Circuit	Q2	1.176139	1.00	1.176139
1310390411	Semiconductor	Q4,Q5,Q9	0.024088	3.00	0.072263
1311119710	Semiconductor	Q6	0.024088	1.00	0.024088
1540710380	Resistor	RP1,RP7,RP8	0.006332	3.00	0.018996
1540701380	Resistor	RP14,RP4	0.006332	2.00	0.012664
15407222A0	Resistor	RP5,RP6	0.007915	2.00	0.015830
1540715380	Resistor	RP13,RP34	0.006332	2.00	0.012664
1540775080	Resistor	RP22	0.006332	1.00	0.006332
1540727080	Resistor	RP33	0.006332	1.00	0.006332
105A733009	Resistor	R140-R142,R216- ,R217,R219,R4,R- 5,R68	0.002281	9.00	0.020530
105A519103	Resistor	R7	0.002281	1.00	0.002281
105A700139	Resistor	R112,R124,R133- ,R145,R167,R170- ,R176,R215,R71,- R8,R80,R87,R88	0.002281	13.00	0.029654
105A704739	Resistor	R10	0.002281	1.00	0.002281

Standard Reliability Prediction Report

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Date 四月 8, 2005
Environment GF, GU - Ground Fixed,
Temperature 25.30

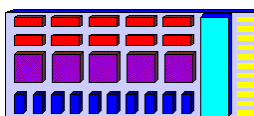


Description Top-level assembly
File Name 9697620S04.RPJ
Time 4:26 下午
Failure Rate 12.850230
MTBF 77,820

Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
105A701009	Resistor	R13,R149	0.002281	2.00	0.004562
105A700009	Resistor	R125,R127,R129- ,R147,R150,R161- ,R17,R201,R203,- R220,R40,R82	0.002281	12.00	0.027373
105A512103	Resistor	R21,R22	0.002281	2.00	0.004562
105A702209	Resistor	R103,R104,R113- ,R118,R24-R39,R- 47,R48,R51,R52,- R95	0.002281	25.00	0.057027
105A507509	Resistor	R156-R159,R56,- R77,R83	0.002281	7.00	0.015967
1653022202	Connection	CN8	0.025430	1.00	0.025430
1653008202	Connection	CN11	0.009247	1.00	0.009247
1654040000	Connection	CN12	0.023118	1.00	0.023118
1653005202	Connection	CN14-CN17,CN6	0.005780	5.00	0.028898
1129610051	Capacitor	C106-C109,C112- ,C116,C119,C13,- C131,C135,C139- ,C14,C178,C180,- C182,C184	0.002728	16.00	0.043642
1129610051	Capacitor	C199,C20,C21,C- 23,C24,C27,C300- ,C32,C39,C5,C86- -C95	0.002728	20.00	0.054553
1121610060	Capacitor	C229,C4,C6	0.002544	3.00	0.007632
1121701080	Capacitor	C100-C105,C111- ,C115,C118,C127- ,C128,C133,C136- ,C15,C159,C161,- C164,C166	0.002544	18.00	0.045792
1121701080	Capacitor	C168,C170,C173- ,C181,C187-C194- ,C230,C26,C33,C- 38,C9,C96-C99	0.002544	21.00	0.053424
1124522880	Capacitor	C11	0.001062	1.00	0.001062
1189922180	Capacitor	C16	0.006298	1.00	0.006298
1189922180	Capacitor	C18	0.006287	1.00	0.006287
1189922180	Capacitor	C17	0.006323	1.00	0.006323
1189922180	Capacitor	C19	0.006344	1.00	0.006344
1129747650	Capacitor	C25,C54	0.002728	2.00	0.005455
1124412090	Capacitor	C176,C177	0.001062	2.00	0.002125
1121722780	Capacitor	C62-C85	0.002544	24.00	0.061056
1129710390	Capacitor	C110,C114,C117- ,C129,C130,C132- ,C286	0.001062	7.00	0.007436
1129710090	Capacitor	C137,C138	0.001062	2.00	0.002125
1129722060	Capacitor	C186,C204,C282	0.002728	3.00	0.008183
1124427090	Capacitor	C217,C218	0.001062	2.00	0.002125
1651572990	Connection	DIMM1	0.083225	1.00	0.083225
1301005440	Semiconductor	D3,Q1	0.024088	2.00	0.048175
1301005440	Semiconductor	D2	0.057141	1.00	0.057141

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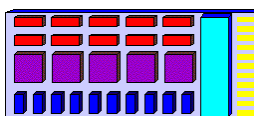


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File Name 9697620S04.RPJ
Time 4:26 下午
Failure Rate 12.850230
MTBF 77,820

Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
1212306030	Inductor	FB1,FB10-FB21,- FB2,FB25,FB27-- FB34,FB3,FB4,F- B53,FB55-FB57,- FB6-FB9	0.002281	33.00	0.075275
1752001600	Miscellaneous	F1	0.030000	1.00	0.030000
1211103366	Inductor	L2	0.004857	1.00	0.004857
105A700003	Resistor	FB5,FB52	0.002281	2.00	0.004562
1759100006	Miscellaneous	SP1	0.150000	1.00	0.150000
14S5A00702	Integrated Circuit	U2	0.225347	1.00	0.225347
14S5A00702	Integrated Circuit	U3	0.237432	1.00	0.237432
1315488010	Semiconductor	U5	0.158659	1.00	0.158659
1315488010	Semiconductor	U6	0.135727	1.00	0.135727
1314880510	Integrated Circuit	U7	0.060682	1.00	0.060682
14S3115000	Integrated Circuit	U9	0.441303	1.00	0.441303
1124568280	Capacitor	C12	0.001062	1.00	0.001062
1189633081	Capacitor	C53	0.004921	1.00	0.004921
1189647080	Capacitor	C134	0.004962	1.00	0.004962
1129701790	Capacitor	C140-C144,C152- -C155	0.001601	9.00	0.014406
1129610260	Capacitor	C220	0.000714	1.00	0.000714
1301005442	Semiconductor	D1	0.024088	1.00	0.024088
1212306032	Inductor	FB22-FB24,FB26,- FB47-FB51	0.002281	9.00	0.020530
1211101564	Inductor	L1	0.140438	1.00	0.140438
105A756033	Resistor	R210	0.002281	1.00	0.002281
14S3000201	Inductor	TF1	0.136864	1.00	0.136864
14S2652000	Integrated Circuit	U4	0.281305	1.00	0.281305
14S2303700	Integrated Circuit	U8	1.107505	1.00	1.107505
14S4860600	Integrated Circuit	U15	0.256019	1.00	0.256019
14S5824500	Integrated Circuit	U17	0.158635	1.00	0.158635
14S5824500	Integrated Circuit	U18	0.153206	1.00	0.153206
14S4810000	Integrated Circuit	U22	0.168422	1.00	0.168422
14S3006000	Integrated Circuit	U25	0.060682	1.00	0.060682
14S5A01400	Integrated Circuit	U28	0.482889	1.00	0.482889
14S5A01400	Integrated Circuit	U31	0.060682	1.00	0.060682
1651203291	Connection	U34	0.018494	1.00	0.018494
1231314350	Miscellaneous	Y1	0.150000	1.00	0.150000
1211104760	Inductor	L3	0.086680	1.00	0.086680
1174510180	Capacitor	NC4-NC8	0.001062	5.00	0.005311
1301005441	Semiconductor	Q3	0.024088	1.00	0.024088
1540733180	Resistor	RP2,RP3	0.006332	2.00	0.012664
1540747282	Resistor	RP9-RP12	0.006332	4.00	0.025329
1540733085	Resistor	RP15-RP21,RP23- -RP32,RP35-RP38	0.006332	21.00	0.132975
15407472A0	Resistor	RP39-RP47	0.007915	9.00	0.071237
105A704729	Resistor	R1,R101,R102,R- 116,R131,R175,R- 177,R178,R196,R- 198,R2,R200,R20- 4-R207	0.002281	16.00	0.036497

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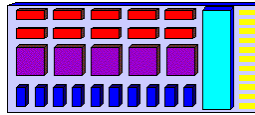


Description Top-level assembly
File Name 9697620S04.RPJ
Time 4:26 下午
Failure Rate 12.850230
MTBF 77,820

Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
105A704729	Resistor	R212-R214,R218- ,R76,R89-R91,R9- 6,R96	0.002281	10.00	0.022811
105A701823	Resistor	R6	0.002281	1.00	0.002281
105A549969	Resistor	R15,R152-R155,- R9	0.002281	6.00	0.013686
105A701039	Resistor	R105-R109,R11,- R110,R111,R119- ,R135,R137,R18,- R222,R223,R41,- R42,R44-R46	0.002281	19.00	0.043340
105A701039	Resistor	R53,R54,R81,R94	0.002281	4.00	0.009124
105A516513	Resistor	R16	0.002281	1.00	0.002281
105A500133	Resistor	R19	0.002281	1.00	0.002281
105A730009	Resistor	R55,R63	0.002281	2.00	0.004562
1653013202	Connection	CN4	0.015027	1.00	0.015027
1653925210	Connection	CN9	0.028898	1.00	0.028898
1654020000	Connection	CN13	0.011559	1.00	0.011559
1129701690	Capacitor	C113,C120-C126- ,C145-C151,C156- -C158,C160,C162- ,C163,C165,C167- ,C169	0.002544	24.00	0.061056
1129701690	Capacitor	C171,C172,C174- ,C175,C179,C183- ,C185,C197,C198- ,C200-C203,C205- -C216,C8	0.002544	26.00	0.066144
1129701690	Capacitor	C219,C22,C221,- C222,C225-C228- ,C231,C233,C236- ,C237,C239,C242- ,C245,C275	0.002544	16.00	0.040704
1129701690	Capacitor	C28,C280,C281,- C283,C288,C29,- C293,C3,C30,C36- ,C40-C49,C52,C5- 6-C61,C7	0.002544	28.00	0.071232
1124547190	Capacitor	C10	0.001062	1.00	0.001062
105A515009	Resistor	R151,R57,R58,R- 61,R62,R65,R66,- R72,R75,R78,R84	0.002281	11.00	0.025092
105A549903	Resistor	R59	0.002281	1.00	0.002281
1050556269	Resistor	R60,R70,R73	0.002281	3.00	0.006843
105A703909	Resistor	R64,R67	0.002281	2.00	0.004562
105A501403	Resistor	R69	0.002281	1.00	0.002281
105A511103	Resistor	R74	0.002281	1.00	0.002281
105A514703	Resistor	R79	0.002281	1.00	0.002281
105A702729	Resistor	R100,R97,R98	0.002281	3.00	0.006843
105A702229	Resistor	R114,R202	0.002281	2.00	0.004562
105A501633	Resistor	R120	0.002281	1.00	0.002281
105A501039	Resistor	R121-R123	0.002281	3.00	0.006843
105A703309	Resistor	R132,R162-R165- ,R168,R169	0.002281	7.00	0.015967

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MTBF 77,820

Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
105A701533	Resistor	R144	0.002281	1.00	0.002281
105A5505629	Resistor	R146,R418,R171- -R174	0.002281	6.00	0.013686
105A747003	Resistor	R166	0.002281	1.00	0.002281
105A747039	Resistor	R209	0.002281	1.00	0.002281
1189615190	Capacitor	C34,C35	0.004962	2.00	0.009924
11E9622050	Capacitor	C1,C2,C232,C234- ,C238,C240,C31,- C37	0.006043	8.00	0.048341
1189622183	Capacitor	C298	0.004962	1.00	0.004962
1315993311	Semiconductor	Q8	0.291178	1.00	0.291178
1059702261	Resistor	R12,R14,R20,R23	0.002281	4.00	0.009124
11E9501090	Capacitor	C289-C292,C294- -C297	0.006043	8.00	0.048341
106B501031	Resistor	RT1,RT2	0.011559	2.00	0.023118