

9697865008

Reliability Prediction Report (MTBF)

Report NO : 05I070003

01-19-2005

Issue Date

Wenyuan Yang

Manager

Jessica Chou

Test Engineer

Reliability Prediction (MTBF)

I . **Model Name:** 9697865008 (ASS'Y FSB-865G-E2.Rev. A0.3)

II . **Prediction Date:** Jan. 19, 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 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.

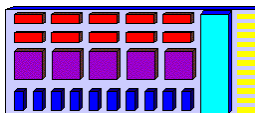
VIII. Prediction Result:

- Failure Rate: 15.145227 ppm
- MTBF: 66,027 Hours

IX. Prediction Table

Standard Reliability Prediction Report

Part Number 9697865008
Reference Des
Date 一月 19, 2005
Environment GF, GU - Ground Fixed,
Temperature 25.00

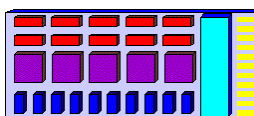


Description Top-level assembly
File Name FSB-865G-E2-A03.RPJ
Time 9:45 上午
Failure Rate 15.145227
MTBF 66,027

Assembly Name	Part Number	Ref Des	Qty	Failure Rate	MTBF
FSB-865G-E2 Rev. A0.3	9697865008		1.00	15.145227	66,027

Standard Reliability Prediction Report

Part Number 9697865008
Reference Des
Date 一月 19, 2005
Environment GF, GU - Ground Fixed,
Temperature 25.00

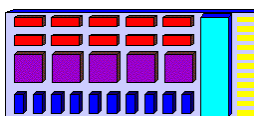


Description Top-level assembly
File Name FSB-865G-E2-A03.RPJ
Time 9:45 上午
Failure Rate 15.145227
MTBF 66,027

Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
1654907000	Connection	SATA1,SATA2	0.099570	2.00	0.199140
1653005201	Connection	USB1,USB2,SUB3	0.005690	3.00	0.017069
1651592490	Connection	DIM1,DIM3	0.104691	2.00	0.209381
1655003010	Connection	FAN1	0.001707	1.00	0.001707
1653017200	Connection	FDD1	0.019345	1.00	0.019345
1653220208	Connection	IDE1,IDE2	0.022759	2.00	0.045518
1653213203	Connection	LPT1	0.014793	1.00	0.014793
121110010E	Inductor	L1	0.086173	1.00	0.086173
1189682191	Capacitor	C17,C47,C59	0.014146	3.00	0.042437
1119612291	Capacitor	C163,C28,C34,C-48,C49	0.075338	5.00	0.376691
1655404020	Connection	ATX2	0.002276	1.00	0.002276
1750119013	Miscellaneous	BT1	0.900000	1.00	0.900000
1655003022	Connection	CN7	0.001707	1.00	0.001707
1653005205	Connection	CN27	0.142243	1.00	0.142243
1653205203	Connection	COM1,COM2	0.005690	2.00	0.011379
1111622101	Capacitor	C4,C5,C6	0.027242	3.00	0.081726
1119647191	Capacitor	C164,C7,C8,C9	0.047294	4.00	0.189177
1653002100	Connection	J1,J2	0.028449	2.00	0.056897
14S6200400	Integrated Circuit	U10	0.160483	1.00	0.160483
1653900091	Connection	CFD1	0.013655	1.00	0.013655
1654515308	Connection	VGA1	0.008535	1.00	0.008535
1231232720	Miscellaneous	Y1	0.150000	1.00	0.150000
1654804100	Connection	USB4	0.002276	1.00	0.002276
1651592491	Connection	DIM2,DIM4	0.104691	2.00	0.209381
1653004200	Connection	FP1,FP2	0.004552	2.00	0.009104
1653006101	Connection	IR1	0.085346	1.00	0.085346
1211101161	Inductor	L11	0.001798	1.00	0.001798
1211101161	Inductor	L4	0.001844	1.00	0.001844
1211101161	Inductor	L7	0.001712	1.00	0.001712
1119633210	Capacitor	C26,C31,C79	0.075338	3.00	0.226015
1655420020	Connection	ATX1	0.011379	1.00	0.011379
1759100002	Miscellaneous	BZ1	0.150000	1.00	0.150000
1653002101	Connection	CN17	0.028449	1.00	0.028449
1655005021	Connection	CN32	0.071121	1.00	0.071121
1119633191	Capacitor	C1,C15,C176,C2,-C29,C3,C96	0.045203	7.00	0.316420
1652508212	Connection	LAN1,LAN2	0.004552	2.00	0.009104
1654606200	Connection	CN28	0.085346	1.00	0.085346
1111610292	Capacitor	C10,C125,C132	0.045403	3.00	0.136210
105A756033	Resistor	R393,R395,R397-,R42	0.002268	4.00	0.009071
105A538323	Resistor	R57	0.002268	1.00	0.002268
105A707509	Resistor	R123,R124,R125-,R63,R64	0.002268	5.00	0.011339
1314331011	Integrated Circuit	U46	0.059366	1.00	0.059366
14S4021310	Integrated Circuit	U49	0.121313	1.00	0.121313
14S5A12503	Integrated Circuit	U50	0.039296	1.00	0.039296
14S5A12505	Integrated Circuit	U51	0.039296	1.00	0.039296
11C2510190	Capacitor	C174,C175	0.020771	2.00	0.041542
1653925219	Connection	CFD1	0.028449	1.00	0.028449
105A554903	Resistor	R239,R382	0.002268	2.00	0.004535

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Date 一月 19, 2005
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Temperature 25.00

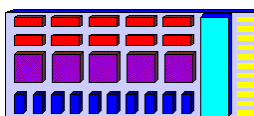


Description Top-level assembly
File Name FSB-865G-E2-A03.RPJ
Time 9:45 上午
Failure Rate 15.145227
MTBF 66,027

Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
14S6334605	Integrated Circuit	U38,U44	0.030598	2.00	0.061196
1231325050	Miscellaneous	Y5,Y6	0.150000	2.00	0.300000
14S4256201	Inductor	U19	0.100278	1.00	0.100278
105A700139	Resistor	R10,R100,R110,- R142,R151,R152- ,R181,R184,R2,R- 22,R267,R287,R3	0.002268	13.00	0.029480
105A700139	Resistor	R319,R362-R364- ,R399,R424,R431- ,R45,R6,R62,R7,- R8,R95	0.002268	13.00	0.029480
105A733009	Resistor	R104,R120,R147- ,R159,R164,R249- ,R334,R5,R56	0.002268	9.00	0.020409
105A702209	Resistor	R158,R211-R214- ,R270-R281,R283- ,R284,R9	0.002268	20.00	0.045354
105A501039	Resistor	R102,R111,R128- ,R130,R136,R137- ,R165,R17,R170,- R175,R176,R178	0.002268	12.00	0.027212
105A501039	Resistor	R18,R182,R186-- R188,R196-R198- ,R201,R205,R237- ,R260,R262,R268	0.002268	14.00	0.031748
105A501039	Resistor	R282,R286,R288- -R291,R317,R318- ,R320,R321,R40,- R428,R46,R54	0.002268	14.00	0.031748
105A501039	Resistor	R55,R58,R60,R65- ,R68,R80-R82,R9- 1,R93,R94	0.002268	11.00	0.024945
105A700009	Resistor	R101,R21,R224,- R228,R324,R34,- R39,R400,R420,- R429,R430,R70	0.002268	12.00	0.027212
105A500133	Resistor	R23,R24,R406	0.002268	3.00	0.006803
105A730033	Resistor	R35	0.002268	1.00	0.002268
105A561963	Resistor	R252,R41	0.002268	2.00	0.004535
14S4362702	Integrated Circuit	U9	0.039296	1.00	0.039296
105A706209	Resistor	R105,R106,R108- ,R126,R127,R144- ,R145,R148,R149- ,R172,R246,R247	0.002268	12.00	0.027212
105A706209	Resistor	R257,R66,R85,R- 96,R97,R99	0.002268	6.00	0.013606
105A523233	Resistor	R75	0.002268	1.00	0.002268
105A512033	Resistor	R77	0.002268	1.00	0.002268
105A515009	Resistor	R150,R161.R162- ,R86	0.002268	4.00	0.009071
105A505103	Resistor	R107,R251,R303	0.002268	3.00	0.006803
105A542263	Resistor	R132,R133,R248- ,R256	0.002268	4.00	0.009071
105A768003	Resistor	R140	0.002268	1.00	0.002268

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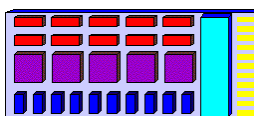


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Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
105S524903	Resistor	R141,R153	0.002268	2.00	0.004535
105A702229	Resistor	R157,R185,R227	0.002268	3.00	0.006803
105A516903	Resistor	R169	0.002268	1.00	0.002268
105A502003	Resistor	R174	0.002268	1.00	0.002268
105A547503	Resistor	R206	0.002268	1.00	0.002268
105A524913	Resistor	R234,R235	0.002268	2.00	0.004535
105A552363	Resistor	R236,R307	0.002268	2.00	0.004535
105A510203	Resistor	R254	0.002268	1.00	0.002268
1129747650	Capacitor	CA1,CA10-CA16,- CA18-CA23,CA2,- CA25-CA37,CA3,- CA4-CA9	0.002722	35.00	0.095281
1651608990	Connection	CPU1	0.028449	1.00	0.028449
1174518180	Capacitor	CP1-CP4	0.001060	4.00	0.004241
1124522281	Capacitor	C14,C166	0.001060	2.00	0.002120
1124556280	Capacitor	C25	0.001060	1.00	0.001060
1124433090	Capacitor	C122,C123,C126- ,C130,C131,C16,- C18	0.001060	7.00	0.007422
1129610051	Capacitor	C33,C51-C54,C57- ,C61,C65,C71,C89	0.002722	10.00	0.027223
1129710090	Capacitor	C100-C107,C41-- C46,C68,C69,C72- -C75,C97-C99	0.001060	23.00	0.024385
1124418090	Capacitor	C167-C169,C55,- C56,C83,C85,C94	0.001060	8.00	0.008482
1129710390	Capacitor	C24,C80,C88,C90- ,C95	0.001060	5.00	0.005301
1211104760	Inductor	L17,L18	0.086173	2.00	0.172346
121110010F	Inductor	L41	0.086173	1.00	0.086173
1654262300	Connection	MPCI1	0.070552	1.00	0.070552
1752311000	Miscellaneous	P1,P2	0.030000	2.00	0.060000
1310390411	Semiconductor	Q15,Q27,Q28,Q6	0.023881	4.00	0.095524
1315041410	Semiconductor	Q21	0.280483	1.00	0.280483
1315041410	Semiconductor	Q22	0.335423	1.00	0.335423
1315041410	Semiconductor	Q24	0.159207	1.00	0.159207
1315041410	Semiconductor	Q20	0.275594	1.00	0.275594
1315041410	Semiconductor	Q18	0.287580	1.00	0.287580
1315041410	Semiconductor	Q16	0.288297	1.00	0.288297
1315041410	Semiconductor	Q13	0.289015	1.00	0.289015
1315041410	Semiconductor	Q26	0.183885	1.00	0.183885
1540747083	Resistor	RN13,RN14,RN16- ,RN19,RN22,RN3- 5-RN37,RN41,RN- 42,RN44,RN47	0.006246	12.00	0.074952
1540747083	Resistor	RN50,RN7-RN9	0.006246	4.00	0.024984
1540782282	Resistor	RN72-RN74,RN79- -RN81,RN83-RN8- 7,RN89-RN91	0.006246	14.00	0.087444
105A704729	Resistor	R1,R11,R221,R31- -R33,R342,R343,- R356-R358,R366- -R368,R37,R38	0.002268	16.00	0.036283

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Temperature 25.00

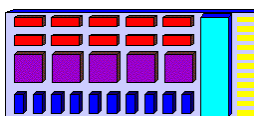


Description Top-level assembly
File Name FSB-865G-E2-A03.RPJ
Time 9:45 上午
Failure Rate 15.145227
MTBF 66,027

Part Number	Category	Ref Des	Failure Rate, Unit	Quantity	Failure Rate
105A704729	Resistor	R47,R53,R59,R67-,R72-R74,R92	0.002268	8.00	0.018142
105A703323	Resistor	R379,R381,R392	0.002268	3.00	0.006803
105A701033	Resistor	R422	0.002268	1.00	0.002268
14S5A23200	Integrated Circuit	U1	0.036482	1.00	0.036482
14S5A01400	Integrated Circuit	U17,U5	0.059366	2.00	0.118732
14S4655600	Integrated Circuit	U7	0.059366	1.00	0.059366
1651203291	Connection	U10	0.018207	1.00	0.018207
1314918110	Integrated Circuit	U14	0.059366	1.00	0.059366
14S2200900	Integrated Circuit	U20	0.059366	1.00	0.059366
14S4286500	Integrated Circuit	U22	0.068640	1.00	0.068640
14S3260700	Integrated Circuit	U28	0.257425	1.00	0.257425
105A523723	Resistor	R347	0.002268	1.00	0.002268
1189647080	Capacitor	C121,C142,C81,-C82	0.004933	4.00	0.019731
1129722060	Capacitor	C137,C91-C93	0.002722	4.00	0.010889
1122701680	Capacitor	C165,C171,C172	0.001598	3.00	0.004793
1301005440	Semiconductor	DD1,DD3	0.023881	2.00	0.047762
1304101340	Semiconductor	D5,D6	0.004877	2.00	0.009753
1300283540	Semiconductor	DD2,DD7	0.023881	2.00	0.047762
1212308054	Inductor	L16,L29,L3,L47-L-49	0.002268	6.00	0.013606
1212306030	Inductor	L19,L24,L43,L45,-L5,L6	0.002268	6.00	0.013606
121230603C	Inductor	L12,L13,L30,L31,-L33,L34	0.002268	6.00	0.013606
1211110080	Inductor	L23,L26	0.086173	2.00	0.172346
1211108270	Inductor	L28	0.086173	1.00	0.086173
1214309002	Inductor	L50-L56	0.002268	7.00	0.015874
1129701690	Capacitor	M1,M10,M100-M1-26,M12,M11,M128-,M129,M13,M132-M145,M14,M147	0.002539	50.00	0.126951
1129701690	Capacitor	M149,M15,M153--M178,M16,M17,M-18,M180,M182-M-187,M19,M192	0.002539	40.00	0.101561
1129701690	Capacitor	M198,M2,M20-M9-9,M3-M9	0.002539	89.00	0.225973
1129701790	Capacitor	N1,N10,N100-N1-02,N11-N43,N3,N-4,N46-N61,N5,N6-,N66-N87,N7-N9	0.001598	83.00	0.132598
1129701790	Capacitor	N90-N99	0.001598	10.00	0.015976
1315700211	Semiconductor	Q3-Q5	0.079603	3.00	0.238810
1314108513	Integrated Circuit	Q7	0.126388	1.00	0.126388
1315041210	Semiconductor	Q123	0.159207	1.00	0.159207
1315041210	Semiconductor	Q17	0.285437	1.00	0.285437
1315041210	Semiconductor	Q14	0.312717	1.00	0.312717
1315041210	Semiconductor	Q12	0.278380	1.00	0.278380
1315041210	Semiconductor	Q25	0.176343	1.00	0.176343

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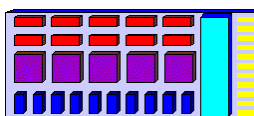


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1540756081	Resistor	RN1,RN10-RN12-,RN15,RN17,RN1-8,RN2,RN20,RN2-1,RN23-RN27,RN-29	0.006246	16.00	0.099936
1540756081	Resistor	RN3,RN30-RN34-,RN38-RN40,RN4-,RN43,RN45,RN4-6,RN48,RN49,RN5	0.006246	16.00	0.099936
1540756081	Resistor	RN51,RN52-RN55-,RN6	0.006246	6.00	0.037476
1540747285	Resistor	RN28,RN60,RN75-,RN78,RN88,RN9-2,RN93	0.006246	9.00	0.056214
1540700081	Resistor	RN57-RN59,RN62-,RN71	0.006246	13.00	0.081198
1540733181	Resistor	RN56,RN82	0.006246	2.00	0.012492
1059701001	Resistor	R378	0.002268	1.00	0.002268
105A524963	Resistor	R388	0.002268	1.00	0.002268
105A549913	Resistor	R401	0.002268	1.00	0.002268
105A747003	Resistor	R423	0.002268	1.00	0.002268
14S2303700	Integrated Circuit	U3	0.059366	1.00	0.059366
14S2303700	Integrated Circuit	U48	0.085673	1.00	0.085673
14S3128420	Integrated Circuit	U4	0.059366	1.00	0.059366
14S4048500	Integrated Circuit	U39,U6	0.059366	2.00	0.118732
1315970110	Semiconductor	U24-U26,U8	0.159207	4.00	0.636826
1314917311	Integrated Circuit	U11	0.072723	1.00	0.072723
14S3115000	Integrated Circuit	U16	0.128122	1.00	0.128122
14S5900700	Integrated Circuit	U18	0.109589	1.00	0.109589
14S9080900	Integrated Circuit	U21	0.039296	1.00	0.039296
14S4888800	Integrated Circuit	U23	0.064232	1.00	0.064232
14S4280107	Integrated Circuit	U27	0.067514	1.00	0.067514
14S9660100	Integrated Circuit	U45	0.059366	1.00	0.059366
14S9660100	Integrated Circuit	U41	0.491617	1.00	0.491617
14S9660100	Integrated Circuit	U40	0.423021	1.00	0.423021
105A530103	Resistor	R255	0.002268	1.00	0.002268
105A513703	Resistor	R298	0.002268	1.00	0.002268
105A510003	Resistor	R299	0.002268	1.00	0.002268
105A539263	Resistor	R300	0.002268	1.00	0.002268
105A564963	Resistor	R301	0.002268	1.00	0.002268
105A543263	Resistor	R302	0.002268	1.00	0.002268
105A522603	Resistor	R304,R308	0.002268	2.00	0.004535
105A514703	Resistor	R305,R309	0.002268	2.00	0.004535
105A511303	Resistor	R306,R310	0.002268	2.00	0.004535
105A522663	Resistor	R311	0.002268	1.00	0.002268
105A527463	Resistor	R346	0.002268	1.00	0.002268
1231314350	Miscellaneous	Y3	0.150000	1.00	0.150000
1121501680	Capacitor	C170,C173	0.002539	2.00	0.005078
105A561903	Resistor	R238,R380	0.002268	2.00	0.004535
105A560469	Resistor	R116,R117,R240-,R241,R331,R332-,R48,R49	0.002268	8.00	0.018142

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105A706233	Resistor	R220	0.002268	1.00	0.002268
14S4255100	Integrated Circuit	U29	0.039296	1.00	0.039296
105A720009	Resistor	R109,R146,R173- ,R226,R258,R292- ,R293,R4,R98	0.002268	9.00	0.020409
105A704709	Resistor	R12-R16,R26-R30	0.002268	10.00	0.022677
105A515033	Resistor	R19	0.002268	1.00	0.002268
105A702733	Resistor	R25,R405	0.002268	2.00	0.004535
105A500233	Resistor	R232,R233,R36,- R44	0.002268	4.00	0.009071
105A747033	Resistor	R394,R396,R398- ,R43	0.002268	4.00	0.009071
105A702703	Resistor	R61	0.002268	1.00	0.002268
105A710053	Resistor	R155,R156,R71	0.013606	3.00	0.040819
105A505633	Resistor	R76,R79	0.002268	2.00	0.004535
105A502833	Resistor	R78	0.002268	1.00	0.002268
105A530123	Resistor	R129,R131,R189- ,R265	0.002268	4.00	0.009071
105A703903	Resistor	R139	0.002268	1.00	0.002268
105A515003	Resistor	R154	0.002268	1.00	0.002268
105A708229	Resistor	R163,R166-R168- ,R177,R180,R183- ,R199,R219,R259- ,R322,R323,R350	0.002268	13.00	0.029480
105A708229	Resistor	R351-R355,R360- ,R361,R407-R409- ,R426,R427	0.002268	12.00	0.027212
105A549969	Resistor	R190-R195	0.002268	6.00	0.013606
105A701009	Resistor	R207-R210,R215- -R218	0.002268	8.00	0.018142
105A530003	Resistor	R250,R365	0.002268	2.00	0.004535
1121701081	Capacitor	C108,C11-C13,C- 134,C138,C139,C- 141,C146-C153,C- 155,C20-C22,C27	0.002539	21.00	0.053319
1121701081	Capacitor	C37,C40,C50,C60- ,C84	0.002539	5.00	0.012695
1124527190	Capacitor	C129,C19,C64,C- 66,C67	0.001060	5.00	0.005301
1189633181	Capacitor	C128,C136,C156- -C158,C32,C62,C- 63	0.004933	8.00	0.039463
1121722780	Capacitor	C145,C36,C70	0.002539	3.00	0.007617
1129710050	Capacitor	C76	0.002722	1.00	0.002722
1300414844	Semiconductor	D1	0.023881	1.00	0.023881
1301005445	Semiconductor	D7	0.023881	1.00	0.023881
1211103367	Inductor	L2	0.002268	1.00	0.002268
1211103367	Inductor	L57	0.001813	1.00	0.001813
121230603D	Inductor	L10,L14,L15,L8,L9	0.002268	5.00	0.011339
105A720003	Resistor	R404	0.002268	1.00	0.002268