

ECB-902M Reliability Prediction Report (MTBF)

Report NO : 09E070031

07-02-2009

Issue Date

Wenyuan Yang

Manager

Jessica Chou

Test Engineer

Reliability Prediction (MTBF)

I . Model Name: TF-ECB-902M-A10

II . Prediction Date: Jul. 2nd, 2009

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: 24.7 degrees C
- Standard: Telcordia (Bellcore) Standard

VII. Term and Definition:

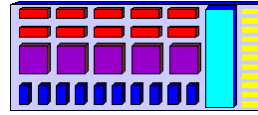
- Unit : An assembly of device.
- Duty Cycle : 100%
- Quantity : The quantity of the selected item.
- Failure Rate : Used to specify that the failure rate is to be calculated based the selected Calculation models. The multiplier is 1,000,000.
- MTBF : MTBF is always specified in hours.

VIII. Prediction Result:

- TF-ECB-902M-A10 :
Failure Rate: 7.546830 ppm
MTBF: 132,506 Hours

AAEON Reliability Prediction Report

Part Number 9697902M01-D
Reference Des
Date 07. 2, 2009
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 24.70



Description Top-level assembly
File Name ECB-902M.RPJ
Time 4:49 下午
Failure Rate 7.546830
MTBF 132,506

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
TF-ECB-902M-A10	9697902M01-D	Telcordia Issue 1	Method I Case 3	GF, GU - Ground Fixed, Uncontrolled	100.00	1.00	7.55	132505.96

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Failure Rate 7.546830
MTBF 132,506

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
1600020803	Connection	SW3	Telcordia Issue 1	Level I		1.00	0.001120	.0148	892678836.92
1214309000	Inductor	CH1,CH2,CH3,CH4	Telcordia Issue 1	Level I		4.00	0.002254	.1195	443576648.79
1654040002	Connection	CN10	Telcordia Issue 1	Level I		1.00	0.022404	.2969	44633941.85
1654030003	Connection	CN11	Telcordia Issue 1	Level I		1.00	0.016803	.2227	59511922.46
1654262300	Connection	CN29	Telcordia Issue 1	Level I		1.00	0.069454	.9203	14398045.76
11C9510050	Capacitor	C1,C15,C154,C158, C159,C19,C198,C2, C203,C209,C211, C213,C215,C217, C219,C221,C223, C225,C227,C231, C233,C235,C237, C239,C241,C243, C245,C247,C249,C3, C4,C40,C51,C9	Telcordia Issue 1	Level I		34.00	0.004509	2.0313	221788324.40
1121501680	Capacitor	C10,C100,C101,C102, C107,C108,C11,C117, C130,C151,C152, C155,C156,C157,C16, C160,C161,C162, C165,C167,C168,C17, C170,C172,C175, C176,C177,C178, C180,C181,C184, C187,C188,C191, C192,C193,C194, C196,C199,C20,C200, C201,C202,C204,	Telcordia Issue 1	Level I		98.00	0.004509	5.8549	221788324.40
11E1622060	Capacitor	C207,C208,C23,C25, C27,C29,C35	Telcordia Issue 1	Level I		7.00	0.004509	.4182	221788324.40
11C1501080	Capacitor	C103,C104,C105, C106,C118,C119, C120,C121,C131, C132,C133,C134, C149,C150,C260, C261,C262,C263,C36, C78,C79,C83,C84	Telcordia Issue 1	Level I		23.00	0.004509	1.3741	221788324.40
1124510080	Capacitor	C166,C37,C80,C81, C85	Telcordia Issue 1	Level I		5.00	0.004509	.2987	221788324.40
1124510180	Capacitor	C143,C144,C145, C146,C147,C45	Telcordia Issue 1	Level I		6.00	0.004509	.3585	221788324.40
1124515080	Capacitor	C197,C46	Telcordia Issue 1	Level I		2.00	0.004509	.1195	221788324.40
1124405080	Capacitor	C55,C56,C58,C59, C66,C67	Telcordia Issue 1	Level I		6.00	0.004509	.3585	221788324.40

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Time 4:49 下午
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MTBF 132,506

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
11A4422180	Capacitor	C109,C110,C111, C112,C113,C114, C115,C116,C122, C123,C124,C125, C126,C127,C128, C129,C135,C136, C137,C138,C139, C140,C141,C142,C60, C61,C62,C63,C90, C91,C92,C93,C94, C95,C96,C97	Telcordia Issue 1	Level I		36.00	0.004509	2.1508	221788324.40
1124527080	Capacitor	C88,C89	Telcordia Issue 1	Level I		2.00	0.004509	.1195	221788324.40
11C1522480	Capacitor	C264,C98,C99	Telcordia Issue 1	Level I		3.00	0.004509	.1792	221788324.40
1124522881	Capacitor	C163	Telcordia Issue 1	Level I		1.00	0.004509	.0597	221788324.40
1124568180	Capacitor	C164	Telcordia Issue 1	Level I		1.00	0.004509	.0597	221788324.40
1181647080	Capacitor	C169	Telcordia Issue 1	Level I		1.00	0.004509	.0597	221788324.40
1124501780	Capacitor	C171	Telcordia Issue 1	Level I		1.00	0.004509	.0597	221788324.40
11E9547680	Capacitor	C173	Telcordia Issue 1	Level I		1.00	0.004509	.0597	221788324.40
1189615150	Capacitor	C183	Telcordia Issue 1	Level I		1.00	0.004509	.0597	221788324.40
1129610080	Capacitor	C186	Telcordia Issue 1	Level I		1.00	0.004509	.0597	221788324.40
1124422080	Capacitor	C255,C256,C257	Telcordia Issue 1	Level I		3.00	0.004509	.1792	221788324.40
1300414840	Semiconductor	D1,D2,D20,D21,D22, D7	Telcordia Issue 1	Level I		6.00	0.023676	1.8823	42237291.76
1301005440	Semiconductor	D23,D24,D3,D6	Telcordia Issue 1	Level I		4.00	0.023676	1.2549	42237291.76
1300001440	Semiconductor	D4,D5	Telcordia Issue 1	Level I		2.00	0.023676	.6274	42237291.76
1304101340	Semiconductor	D10,D8,D9	Telcordia Issue 1	Level I		3.00	0.004744	.1886	210772446.23
1301053040	Semiconductor	D11,D25	Telcordia Issue 1	Level I		2.00	0.023676	.6274	42237291.76
1305000140	Semiconductor	D12,D13,D14,D15, D16,D17,D18,D19	Telcordia Issue 1	Level I		8.00	0.023676	2.5097	42237291.76
121230603Z	Inductor	FB1,FB11,FB6,FB8	Telcordia Issue 1	Level I		4.00	0.002254	.1195	443576648.79
105A700003	Resistor	FB10,FB2,FB3,FB4, FB5,FB7,FB9,R131, R155,R196,R41,R63, R80,R83,R84,R85, R90	Telcordia Issue 1	Level I		17.00	0.002254	.5078	443576648.79
121230603T	Inductor	FB12,FB13,FB14, FB15,FB16,FB18, FB20,FB21,FB22, FB23,FB24,FB26, FB32,FB33,FB34	Telcordia Issue 1	Level I		15.00	0.002254	.4481	443576648.79
1212306030	Inductor	FB27,FB28,FB29, FB30,FB31,L1	Telcordia Issue 1	Level I		6.00	0.002254	.1792	443576648.79
1752001601	Miscellaneous	FS1,FS2	Telcordia Issue 1	Level I		2.00	0.003000	.0795	33333333.33

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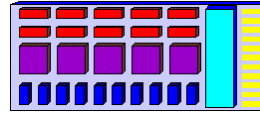


Description Top-level assembly
File Name ECB-902M.RPJ
Time 4:49 下午
Failure Rate 7.546830
MTBF 132,506

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
1752000501	Miscellaneous	FS3,FS4,FS5,FS6	Telcordia Issue 1	Level I		4.00	0.003000	.1590	333333333.33
1752015002	Miscellaneous	FS8	Telcordia Issue 1	Level I		1.00	0.003000	.0398	333333333.33
1653002206	Connection	JP30	Telcordia Issue 1	Level I		1.00	0.002240	.0297	446339418.46
121110336L	Inductor	L2	Telcordia Issue 1	Level I		1.00	0.085667	1.1351	11673069.71
1211000180	Inductor	L3	Telcordia Issue 1	Level I		1.00	0.002254	.0299	443576648.79
1233324050	Miscellaneous	OSC1	Telcordia Issue 1	Level I		1.00	0.360000	4.7702	2777777.78
1315700212	Semiconductor	Q1,Q10,Q11,Q12,Q13, Q15,Q18,Q7,Q8,Q9	Telcordia Issue 1	Level I		10.00	0.078919	10.4573	12671187.53
1301005441	Semiconductor	Q2,Q3,Q4	Telcordia Issue 1	Level I		3.00	0.027053	1.0754	36964720.73
1315230111	Semiconductor	Q16,Q17,Q20,Q21,Q5	Telcordia Issue 1	Level I		5.00	0.000000	.0000	.00
1310390411	Semiconductor	Q19,Q6	Telcordia Issue 1	Level I		2.00	0.023676	.6274	42237291.76
1315230300	Semiconductor	Q14	Telcordia Issue 1	Level I		1.00	0.078919	1.0457	12671187.53
1540733082	Resistor	RP1,RP10,RP11,RP12, RP13,RP2,RP5,RP6	Telcordia Issue 1	Level I		8.00	0.006161	.6531	162316221.55
1540710380	Resistor	RP3,RP4	Telcordia Issue 1	Level I		2.00	0.012322	.3265	81158110.78
1540701380	Resistor	RP7	Telcordia Issue 1	Level I		1.00	0.006161	.0816	162316221.55
1540715180	Resistor	RP14,RP15,RP16, RP17	Telcordia Issue 1	Level I		4.00	0.006161	.3265	162316221.55
105A704733	Resistor	R10,R11,R119,R12, R120,R122,R124,R2, R3,R4,R5,R9	Telcordia Issue 1	Level I		12.00	0.002254	.3585	443576648.79
105A704723	Resistor	R113,R116,R121, R138,R140,R19,R198, R20,R202,R206,R21, R22,R27,R34,R35, R44,R70,R92,R95	Telcordia Issue 1	Level I		19.00	0.002254	.5676	443576648.79
105A703303	Resistor	R144,R185,R186, R187,R188,R189, R190,R191,R192, R193,R207,R23,R24, R26,R33,R40	Telcordia Issue 1	Level I		16.00	0.002254	.4780	443576648.79
105A747003	Resistor	R25,R38	Telcordia Issue 1	Level I		2.00	0.002254	.0597	443576648.79
105A701033	Resistor	R106,R123,R157, R168,R178,R179, R180,R181,R183, R184,R199,R36,R37, R74,R75,R77,R78	Telcordia Issue 1	Level I		17.00	0.002254	.5078	443576648.79
105A705623	Resistor	R39,R43	Telcordia Issue 1	Level I		2.00	0.002254	.0597	443576648.79
105A710003	Resistor	R46	Telcordia Issue 1	Level I		1.00	0.002254	.0299	443576648.79
105A733003	Resistor	R164,R166,R47,R48, R64	Telcordia Issue 1	Level I		5.00	0.002254	.1494	443576648.79
105A707503	Resistor	R49	Telcordia Issue 1	Level I		1.00	0.002254	.0299	443576648.79

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Time 4:49 下午
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105A700133	Resistor	R107,R139,R152, R154,R200,R50,R60	Telcordia Issue 1	Level I		7.00	0.002254	.2091	443576648.79
105A702223	Resistor	R203,R67	Telcordia Issue 1	Level I		2.00	0.002254	.0597	443576648.79
105A701003	Resistor	R141,R72	Telcordia Issue 1	Level I		2.00	0.002254	.0597	443576648.79
105A507503	Resistor	R103,R104,R105,R73, R76,R79,R96,R97, R98	Telcordia Issue 1	Level I		9.00	0.002254	.2688	443576648.79
105A710033	Resistor	R101,R102,R143,R81, R82,R91,R93,R94	Telcordia Issue 1	Level I		8.00	0.002254	.2390	443576648.79
105A702203	Resistor	R86,R87,R88	Telcordia Issue 1	Level I		3.00	0.002254	.0896	443576648.79
105A703903	Resistor	R100,R99	Telcordia Issue 1	Level I		2.00	0.002254	.0597	443576648.79
1051512002	Resistor	R110,R114	Telcordia Issue 1	Level I		2.00	0.002254	.0597	443576648.79
105A702233	Resistor	R125,R127,R129, R130,R134,R148	Telcordia Issue 1	Level I		6.00	0.002254	.1792	443576648.79
105A516513	Resistor	R142	Telcordia Issue 1	Level I		1.00	0.002254	.0299	443576648.79
105A700103	Resistor	R145,R147	Telcordia Issue 1	Level I		2.00	0.002254	.0597	443576648.79
105A500133	Resistor	R146	Telcordia Issue 1	Level I		1.00	0.002254	.0299	443576648.79
105A530003	Resistor	R149,R150,R151	Telcordia Issue 1	Level I		3.00	0.002254	.0896	443576648.79
105A501413	Resistor	R153	Telcordia Issue 1	Level I		1.00	0.002254	.0299	443576648.79
105A703033	Resistor	R156,R167	Telcordia Issue 1	Level I		2.00	0.002254	.0597	443576648.79
105A515003	Resistor	R159	Telcordia Issue 1	Level I		1.00	0.002254	.0299	443576648.79
105A702033	Resistor	R208	Telcordia Issue 1	Level I		1.00	0.002254	.0299	443576648.79
1189633192	Capacitor	TC1	Telcordia Issue 1	Level I		1.00	0.004509	.0597	221788324.40
16540A0000	Connection	U1A,U1B,U1C,U1D	Telcordia Issue 1	Level I		4.00	0.056011	2.9687	17853576.74
14S4397704	Integrated Circuit	U4	Telcordia Issue 1	Level I	5.30	1.00	0.034959	.4632	28605033.27
14S5824401	Integrated Circuit	U5	Telcordia Issue 1	Level I		1.00	0.024900	.3299	40160395.14
14S5203200	Integrated Circuit	U6	Telcordia Issue 1	Level I		1.00	0.064051	.8487	15612457.87
14S5A01400	Integrated Circuit	U16,U7	Telcordia Issue 1	Level I		2.00	0.058076	1.5391	17218806.10
14S5837301	Integrated Circuit	U8	Telcordia Issue 1	Level I		1.00	0.025577	.3389	39097945.15
14S3524700	Integrated Circuit	U10	Telcordia Issue 1	Level I		1.00	0.058076	.7695	17218806.10
14S4021301	Integrated Circuit	U11,U15,U18,U19	Telcordia Issue 1	Level I		4.00	0.058076	3.0782	17218806.10
14S2200900	Integrated Circuit	U12	Telcordia Issue 1	Level I		1.00	0.058076	.7695	17218806.10
14S3128421	Integrated Circuit	U13	Telcordia Issue 1	Level I		1.00	0.058076	.7695	17218806.10
14S4048503	Integrated Circuit	U14,U17	Telcordia Issue 1	Level I		2.00	0.058076	1.5391	17218806.10
14S2303700	Integrated Circuit	U20	Telcordia Issue 1	Level I		1.00	0.058076	.7695	17218806.10
1315992601	Semiconductor	U21	Telcordia Issue 1	Level I		1.00	0.157838	2.0915	6335593.76
14S4195710	Integrated Circuit	U22	Telcordia Issue 1	Level I		1.00	0.058076	.7695	17218806.10
1315970211	Semiconductor	U23,U24	Telcordia Issue 1	Level I		2.00	0.157838	4.1829	6335593.76

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1314111711	Integrated Circuit	U25	Telcordia Issue 1	Level I		1.00	0.058076	.7695	17218806.10
14S8416831	Integrated Circuit	U26	Telcordia Issue 1	Level I	6.20	1.00	0.036789	.4875	27182098.50
14S8416803	Integrated Circuit		Telcordia Issue 1	Level I		1.00	0.025724	.3409	38873587.95
14S8303200	Integrated Circuit	U27	Telcordia Issue 1	Level I		1.00	0.025724	.3409	38873587.95
175011901H	Miscellaneous	BT1	Telcordia Issue 1	Level I		1.00	0.900000	11.9255	1111111.11
175910000B	Miscellaneous	BZ1	Telcordia Issue 1	Level I		1.00	0.150000	1.9876	6666666.67
1750220320	Connection	BT1	Telcordia Issue 1	Level I		1.00	0.001120	.0148	892678836.92
1654249207	Connection	CN3,CN4	Telcordia Issue 1	Level I		2.00	0.001120	.0297	892678836.92
1653005100	Connection	CN6	Telcordia Issue 1	Level I		1.00	0.070014	.9277	14282861.39
1653010202	Connection	CN7	Telcordia Issue 1	Level I		1.00	0.011202	.1484	89267883.69
1654612307	Connection	CN8	Telcordia Issue 1	Level I		1.00	0.001120	.0148	892678836.92
1653204201	Connection	CN9	Telcordia Issue 1	Level I		1.00	0.001120	.0148	892678836.92
1655305020	Connection	CN12	Telcordia Issue 1	Level I		1.00	0.002801	.0371	357071534.77
1654549502	Connection	CN13	Telcordia Issue 1	Level I		1.00	0.001120	.0148	892678836.92
1653217202	Connection	CN16	Telcordia Issue 1	Level I		1.00	0.019044	.2523	52510519.82
1653205203	Connection	CN17,CN18,CN19	Telcordia Issue 1	Level I		3.00	0.005601	.2227	178535767.38
1655417020	Connection	CN21	Telcordia Issue 1	Level I		1.00	0.011202	.1484	89267883.69
1655112012	Connection	CN22	Telcordia Issue 1	Level I		1.00	0.006721	.0891	148779806.15
1655003010	Connection	CN23,CN24	Telcordia Issue 1	Level I		2.00	0.001680	.0445	595119224.61
165251220C	Connection	CN26	Telcordia Issue 1	Level I		1.00	0.022404	.2969	44633941.85
1111610194	Capacitor	C179,C18,C185,C22	Telcordia Issue 1	Level I		4.00	0.042008	2.2265	23804768.98
1112610211	Capacitor	C148	Telcordia Issue 1	Level I		1.00	0.070014	.9277	14282861.39
111961029H	Capacitor	C153,C251,C252, C253,C254	Telcordia Issue 1	Level I		5.00	0.070014	4.6386	14282861.39
1119610190	Capacitor	C195	Telcordia Issue 1	Level I		1.00	0.042008	.5566	23804768.98
1653220208	Connection	IDE1,IDE2	Telcordia Issue 1	Level I		2.00	0.022404	.5937	44633941.85
1653003101	Connection	JP1,JP10,JP11,JP12, JP13,JP15,JP17,JP2, JP20,JP21,JP22, JP23,JP24,JP25,JP3, JP33,JP34,JP35, JP36,JP37,JP4,JP5, JP6,JP9	Telcordia Issue 1	Level I		24.00	0.001680	.5344	595119224.61
1653005200	Connection	JP8	Telcordia Issue 1	Level I		1.00	0.022404	.2969	44633941.85
1653003201	Connection	JP14,JP18,JP19, JP26,JP27	Telcordia Issue 1	Level I		5.00	0.001120	.0742	892678836.92
1653004302	Connection	J16	Telcordia Issue 1	Level I		1.00	0.006721	.0891	148779806.15
165300420J	Connection	JP28	Telcordia Issue 1	Level I		1.00	0.004481	.0594	223169709.23
1653002100	Connection	JP29,JP31,JP32	Telcordia Issue 1	Level I		3.00	0.001120	.0445	892678836.92
1654260207	Connection	PCI1,PCI2	Telcordia Issue 1	Level I		2.00	0.067213	1.7812	14877980.62

