

COM-945GSE Reliability Prediction Report (MTBF)

Report NO : 08E070035

11-25-2008

Issue Date

Wenyuan Yang

Manager

Jessica Chou

Test Engineer

Reliability Prediction (MTBF)

I . **Model Name:** COM-945GSE

II . **Prediction Date:** Nov. 25, 2008

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
- Component Quality Level: Level I
- Duty Cycle: 100%
- Mode: GF, GU - Ground Fixed, Uncontrolled

VII. Term and Definition:

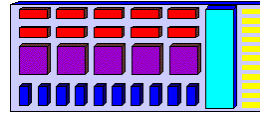
- Unit : An assembly of device.
- Duty Cycle : Used to specify the percentage of time that the element is in an on state, and it is equal to the percentage of total time the item is in the active environment.
- Quantity : The quantity of the selected item.
- Failure Rate : Used to specify that the failure 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: 8.643485 ppm
- MTBF: 115,694 Hours

AAEON Reliability Prediction Report

Part Number TF-COM-945GSE-A10
Reference Des
Date 11. 25, 2008
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00

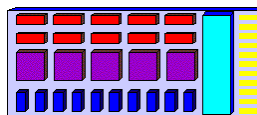


Description Top-level assembly
File Name COM-945GSE.RPJ
Time 3:03 下午
Failure Rate 8.643485
MTBF 115,694

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
COM-945GSE	TF-COM-945GSE-A10	Telcordia	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	8.643485	115,694

AAEON Reliability Prediction Report

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Reference Des
Date 11. 25, 2008
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00



Description Top-level assembly
File Name COM-945GSE.RPJ
Time 3:03 下午
Failure Rate 8.643485
MTBF 115,694

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
11E9647680	Capacitor	C104,C184,C231, C234,C263,C341, C342,C351,C375,C71, C79,C84,C85,C95, C99	Telcordia Issue 1	Level 0		0.009071	15.00	1.5742	0.136062	110243522.51
1189633160	Capacitor	C102,C112,C172,C83	Telcordia Issue 1	Level I		0.004535	4.00	.2099	0.018142	220487045.01
1129622050	Capacitor	C103,C113	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
11B9747490	Capacitor	C120,C121,C122, C123	Telcordia Issue 1	Level II		0.001512	4.00	.0700	0.006047	661461135.04
1124418090	Capacitor	C137,C138	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
11C2539290	Capacitor	C139,C140,C141, C142,C143,C144, C145,C146	Telcordia Issue 1	Level II		0.001512	8.00	.1399	0.012094	661461135.04
1124427080	Capacitor	C205,C206	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
1129610080	Capacitor	C216,C217,C224, C232,C235,C315, C316,C317	Telcordia Issue 1	Level I		0.004535	8.00	.4198	0.036283	220487045.01
1189610151	Capacitor	C274,C276,C325, C360	Telcordia Issue 1	Level I		0.004535	4.00	.2099	0.018142	220487045.01
1121647480	Capacitor	C337,C338	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
1122601680	Capacitor	C285,C364,C366, C399,C400,C401, C405,C406	Telcordia Issue 1	Level I		0.004535	8.00	.4198	0.036283	220487045.01
1142522080	Capacitor	C286,C365	Telcordia Issue 1	Level II		0.001512	2.00	.0350	0.003024	661461135.04
11B2710060	Capacitor	C321,C395,C404	Telcordia Issue 1	Level I		0.004535	3.00	.1574	0.013606	220487045.01
1189615161	Capacitor	C326	Telcordia Issue 1	Level I		0.042673	1.00	.4937	0.042673	23434140.55
1129710390	Capacitor	C347,C353	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
1124515880	Capacitor	C369	Telcordia Issue 1	Level I		0.004535	1.00	.0525	0.004535	220487045.01
11C4515380	Inductor	C370	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
1129701791	Capacitor	C117,C354,C371, C386,C390,C391	Telcordia Issue 1	Level I		0.004535	6.00	.3148	0.027212	220487045.01
1122722780	Capacitor	C372	Telcordia Issue 1	Level I		0.004535	1.00	.0525	0.004535	220487045.01
1129522790	Capacitor	C374,C385	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
1124447180	Capacitor	C379	Telcordia Issue 1	Level I		0.004535	1.00	.0525	0.004535	220487045.01
1121733380	Capacitor	C380,C381	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
1121533480	Capacitor	C382	Telcordia Issue 1	Level I		0.004535	1.00	.0525	0.004535	220487045.01
1124539180	Capacitor	C383	Telcordia Issue 1	Level I		0.004535	1.00	.0525	0.004535	220487045.01
1122747080	Capacitor	C384	Telcordia Issue 1	Level I		0.004535	1.00	.0525	0.004535	220487045.01
1124418190	Capacitor	C387	Telcordia Issue 1	Level I		0.001060	1.00	.0123	0.001060	943198589.05
11B2722650	Capacitor	C396,C397,C398, C402,C403	Telcordia Issue 1	Level I		0.004535	5.00	.2624	0.022677	220487045.01

AAEON Reliability Prediction Report

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Temp. (°C) 25.00

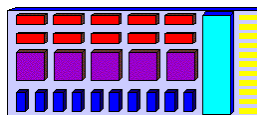


Description Top-level assembly
File Name COM-945GSE.RPJ
Time 3:03 下午
Failure Rate 8.643485
MTBF 115,694

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1189622189	Capacitor	C409	Telcordia Issue 1	Level I		0.004535	1.00	.0525	0.004535	220487045.01
1124427090	Capacitor	C424,C426	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
1121701080	Capacitor	C428,C429	Telcordia Issue 1	Level I		0.004535	2.00	.1049	0.009071	220487045.01
16515A0997	Connection	DIMM1	Telcordia Issue 1	Level I		0.113794	1.00	1.3165	0.113794	8787802.71
1301053040	Semiconductor	D1,D10,D11,D2,D21	Telcordia Issue 1	Level I		0.023881	5.00	1.3814	0.119405	41874327.58
1301005442	Semiconductor	D12,D13,D14,D5,D6	Telcordia Issue 1	Level I		0.023881	5.00	1.3814	0.119405	41874327.58
1300001440	Semiconductor	D7,D8,D9	Telcordia Issue 1	Level I		0.023881	3.00	.8289	0.071643	41874327.58
1301005440	Semiconductor	D15	Telcordia Issue 1	Level I		0.023881	1.00	.2763	0.023881	41874327.58
1300581940	Semiconductor	D16,D18	Telcordia Issue 1	Level I		0.079603	2.00	1.8419	0.159207	12562298.27
1305001540	Semiconductor	D22	Telcordia Issue 1	Level I		0.045354	1.00	.5247	0.045354	22048704.50
12123C0007	Inductor	FB1,FB2,FB5	Telcordia Issue 1	Level I		0.002268	3.00	.0787	0.006803	440974090.03
12123C0006	Inductor	FB3,FB4	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
121230603H	Inductor	FB6,FB7	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
1304101340	Semiconductor	LED1	Telcordia Issue 1	Level I		0.004877	1.00	.0564	0.004877	205063180.81
1212308054	Inductor	L1	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
1211100102	Inductor	L2,L6	Telcordia Issue 1	Level I		0.086173	2.00	1.9939	0.172346	11604581.32
12123B0006	Inductor	L5	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
121110336L	Inductor	L11,L7	Telcordia Issue 1	Level I		0.086173	2.00	1.9939	0.172346	11604581.32
1211101005	Inductor	L3,L4,L8	Telcordia Issue 1	Level I		0.002268	3.00	.0787	0.006803	440974090.03
121110156A	Inductor	L10	Telcordia Issue 1	Level I	14.10	0.112187	1.00	1.2979	0.112187	8913695.23
1315700216	Semiconductor	Q1,Q10,Q12,Q18,Q19, Q20,Q21,Q22,Q23, Q24,Q26,Q3,Q36,Q4, Q5,Q6	Telcordia Issue 1	Level I		0.079603	16.00	14.7354	1.273652	12562298.27
1311006910	Semiconductor	Q8	Telcordia Issue 1	Level I		0.023881	1.00	.2763	0.023881	41874327.58
1311006910	Semiconductor	Q7	Telcordia Issue 1	Level I	13.30	0.034432	1.00	.3984	0.034432	29042641.57
1315446310	Semiconductor	Q11	Telcordia Issue 1	Level I		0.079603	1.00	.9210	0.079603	12562298.27
1315446310	Semiconductor	Q9	Telcordia Issue 1	Level I	15.50	0.121571	1.00	1.4065	0.121571	8225661.68
1314108412	Integrated Circuit	Q15	Telcordia Issue 1	Level I	18.20	0.208204	1.00	2.4088	0.208204	4802971.35
1315441014	Semiconductor	Q25	Telcordia Issue 1	Level I		0.079603	1.00	.9210	0.079603	12562298.27
1315313800	Semiconductor	Q38	Telcordia Issue 1	Level I		0.079603	1.00	.9210	0.079603	12562298.27
1315313800	Semiconductor	Q37	Telcordia Issue 1	Level I	22.90	0.146676	1.00	1.6970	0.146676	6817726.28

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Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00



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File Name COM-945GSE.RPJ
Time 3:03 下午
Failure Rate 8.643485
MTBF 115,694

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A700009	Resistor	R102,R104,R108, R190,R191,R192, R193,R196,R199, R200,R201,R204, R374,R382,R390, R392,R395,R396, R397,R405,R406, R408,R419,R421, R426,R427,R431, R433,R434,R438, R465,R466,R467, R468,R47,R472,R476, R477,R478,R480,	Telcordia Issue 1	Level I		0.002268	55.00	1.4430	0.124724	440974090.03
105A715009	Resistor	R48,R49,R52,R76, R77,R78	Telcordia Issue 1	Level I		0.002268	6.00	.1574	0.013606	440974090.03
1050502224	Resistor	R211,R212,R391, R394,R531,R56,R86, R87	Telcordia Issue 1	Level I		0.002268	8.00	.2099	0.018142	440974090.03
105A703909	Resistor	R105,R106,R111, R112,R113,R117,R58, R60	Telcordia Issue 1	Level I		0.002268	8.00	.2099	0.018142	440974090.03
105A525503	Resistor	R485,R59	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
105A501523	Resistor	R63	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A549913	Resistor	R65	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A580663	Resistor	R68,R69	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
105A704729	Resistor	R107,R110,R118, R210,R214,R216, R422,R437,R460, R518,R70,R73	Telcordia Issue 1	Level I		0.002268	12.00	.3148	0.027212	440974090.03
1050510034	Resistor	R215,R292,R295, R370,R71,R72,R74	Telcordia Issue 1	Level I		0.002268	7.00	.1837	0.015874	440974090.03
105A501039	Resistor	R101,R120,R168, R178,R179,R180, R182,R183,R184, R197,R225,R227, R232,R233,R234, R235,R236,R237, R261,R262,R289, R290,R371,R388, R389,R411,R412, R413,R414,R415, R446,R470,R522, R523,R532,R534, R535,R536,R79,R	Telcordia Issue 1	Level I		0.002268	44.00	1.1544	0.099779	440974090.03

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MTBF 115,694

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A701009	Resistor	R90,R92	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
105A700103	Resistor	R222,R458,R459, R463,R91,R93,R94, R95	Telcordia Issue 1	Level I		0.002268	8.00	.2099	0.018142	440974090.03
105A502033	Resistor	R96	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A510053	Resistor	R529,R97	Telcordia Issue 1	Level I		0.013606	2.00	.3148	0.027212	73495681.67
105A701053	Resistor	R98	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A524963	Resistor	R119,R122,R125	Telcordia Issue 1	Level I		0.002268	3.00	.0787	0.006803	440974090.03
1050533034	Resistor	R123	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A522663	Resistor	R126	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A708229	Resistor	R127,R128,R129, R130,R132,R134, R135,R139,R140, R141,R143,R145, R146,R147,R148, R149,R151,R152, R153,R154,R155, R156,R157,R158, R159,R160,R161, R162,R163,R164, R165,R166,R167, R171,R189,R205, R206,R207,R208,	Telcordia Issue 1	Level I		0.002268	48.00	1.2593	0.108850	440974090.03
1050519114	Resistor	R172,R453	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
105A502233	Resistor	R209	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A510003	Resistor	R218,R219	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
105A549919	Resistor	R224	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A700133	Resistor	R226,R228,R238, R243,R244,R310, R311,R376,R409, R444,R479,R484	Telcordia Issue 1	Level I		0.002268	12.00	.3148	0.027212	440974090.03
1059700001	Resistor	R257,R457	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
105A503309	Resistor	R291,R294,R383, R384,R386,R430, R524,R526,R528, R530,R533	Telcordia Issue 1	Level I		0.002268	11.00	.2886	0.024945	440974090.03
105A514723	Resistor	R306	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
1050547004	Resistor	R308,R377	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
105A516513	Resistor	R309	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03

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105A512103	Resistor	R366	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
1050520004	Resistor	R367,R507,R509	Telcordia Issue 1	Level I		0.002268	3.00	.0787	0.006803	440974090.03
105A547033	Resistor	R368	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A501123	Resistor	R375,R495	Telcordia Issue 1	Level I		0.002268	2.00	.0525	0.004535	440974090.03
105A511503	Resistor	R378	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A518703	Resistor	R379	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A501413	Resistor	R407	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A702263	Resistor	R441,R442,R443, R474	Telcordia Issue 1	Level I		0.002268	4.00	.1049	0.009071	440974090.03
105A511313	Resistor	R445	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A500233	Resistor	R447	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A510213	Resistor	R448	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A501623	Resistor	R449	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A532413	Resistor	R450	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A501003	Resistor	R451,R452,R455	Telcordia Issue 1	Level I		0.002268	3.00	.0787	0.006803	440974090.03
105A514733	Resistor	R462	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A536513	Resistor	R469	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A540213	Resistor	R473	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A504733	Resistor	R475	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
1050549904	Resistor	R481	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A501139	Resistor	R488	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A526113	Resistor	R489	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A556213	Resistor	R496	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
105A549903	Resistor	R527	Telcordia Issue 1	Level I		0.002268	1.00	.0262	0.002268	440974090.03
14S4160020	Integrated Circuit	U1	Telcordia Issue 1	Level I	15.60	0.062586	1.00	.7241	0.062586	15978140.57
14S9781800	Integrated Circuit	U2	Telcordia Issue 1	Level I		0.059366	1.00	.6868	0.059366	16844654.92
14S4294503	Integrated Circuit	U3	Telcordia Issue 1	Level I	11.30	0.049655	1.00	.5745	0.049655	20138844.42
14S428010D	Integrated Circuit	U4	Telcordia Issue 1	Level I	11.70	0.050750	1.00	.5871	0.050750	19704579.03
14S5A00601	Integrated Circuit	U5	Telcordia Issue 1	Level I		0.026183	1.00	.3029	0.026183	38193355.79
14S4825740	Integrated Circuit	U6	Telcordia Issue 1	Level II		0.008728	1.00	.1010	0.008728	114580067.38
14S6308001	Integrated Circuit	U7	Telcordia Issue 1	Level I		0.035882	1.00	.4151	0.035882	27868824.73
14S2610200	Integrated Circuit	U9	Telcordia Issue 1	Level I	23.10	0.284874	1.00	3.2958	0.284874	3510323.17

