

ETX-700B Reliability Prediction Report (MTBF)

Report NO : 08E070001

1-14-2008

Issue Date

Wenyuan Yang

Manager

Jessica Chou

Test Engineer

Reliability Prediction (MTBF)

I . **Model Name:** ETX-700B

II . **Prediction Date:** Jan. 14, 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: 23.8 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: 6.979973 ppm
- MTBF: 143,267 Hours

AAEON Reliability Prediction Report

Part Number 969770000L-DIP
Reference Des
Date 01. 14, 2008
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 23.80



Description Top-level assembly
File Name ETX-700B.RPJ
Time 11:24 上午
Failure Rate 6.979973
MTBF 143,267

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
TF-ETX-700-A10	969770000L-DIP	Belcore	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	6.979973	143,267

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Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A512113	Resistor	R107	Bellcore Issue 6	Level II		0.000738	1.00	.0106	0.000738	1354527320.74
105A700003	Resistor	C239,C240,FB11-FB13,FB16,FB17-,R187,R238,R240,R250,R251,R266-,R267,R270	Bellcore Issue 6	Level I		0.002215	15.00	.4760	0.033222	451509106.91
105A700003	Resistor	R273,R285,R303,R314,R396,R437	Bellcore Issue 6	Level I		0.002215	6.00	.1904	0.013289	451509106.91
105A701053	Resistor	R400	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A703303	Resistor	R225	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A704723	Resistor	R286,R287,R288	Bellcore Issue 6	Level I		0.002215	3.00	.0952	0.006644	451509106.91
105A701033	Resistor	R103	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A747003	Resistor	R254	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A756003	Resistor	R239	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
1059700001	Resistor	R379	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A710053	Resistor	R121,R175	Bellcore Issue 6	Level I		0.013289	2.00	.3808	0.026578	75251517.82
105A505103	Resistor	R214-R217	Bellcore Issue 6	Level I		0.002215	4.00	.1269	0.008859	451509106.91
105A505623	Resistor	R218,R222	Bellcore Issue 6	Level I		0.002215	2.00	.0635	0.004430	451509106.91
105A554903	Resistor	R313	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A561903	Resistor	R315	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A704763	Resistor	R148	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A705123	Resistor	R211	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A710033	Resistor	R308,R309	Bellcore Issue 6	Level I		0.002215	2.00	.0635	0.004430	451509106.91
1212306030	Inductor	FB14,FB15,FB18,FB19,FB24	Bellcore Issue 6	Level I		0.002215	5.00	.1587	0.011074	451509106.91
1231332721	Miscellaneous	Y1	Bellcore Issue 6	Level I		0.150000	1.00	2.1490	0.150000	6666666.67
1122701680	Capacitor	C158,C256,C282,C285,C286,C289-,C293,C316	Bellcore Issue 6	Level I		0.004430	7.00	.4442	0.031007	225754553.46
1122701680	Capacitor	C317	Bellcore Issue 6	Level I		0.004430	1.00	.0635	0.004430	225754553.46
1124522080	Capacitor	C366	Bellcore Issue 6	Level I		0.004430	1.00	.0635	0.004430	225754553.46
1124427080	Capacitor	C280,C281	Bellcore Issue 6	Level I		0.004430	2.00	.1269	0.008859	225754553.46
1301005440	Semiconductor	D16	Bellcore Issue 6	Level I		0.023068	1.00	.3305	0.023068	43349713.08
1301005441	Semiconductor	D4,D8,D9	Bellcore Issue 6	Level I		0.023068	3.00	.9915	0.069205	43349713.08
1302001240	Semiconductor	D3,D7	Bellcore Issue 6	Level I		0.026578	2.00	.7615	0.053155	37625758.91
1314111711	Integrated Circuit	U27	Bellcore Issue 6	Level I		0.054357	1.00	.7788	0.054357	18396772.35
1651203291	Connection	U19	Bellcore Issue 6	Level I		0.017096	1.00	.2449	0.017096	58492855.97

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File Name ETX-700B.RPJ
Time 11:24 上午
Failure Rate 6.979973
MTBF 143,267

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1129701690	Capacitor	C314,C321,C322,C336-C338,C340-C343,C346,C349,C350,C354,C357-,C360-C365,C37,C387,C39,C390,C-391,C395	Bellcore Issue 6	Level I		0.004430	28.00	1.7769	0.124029	225754553.46
1129701690	Capacitor	C397,C41-C43,C52-C53,C68,C69C-75,C224,C324-C327	Bellcore Issue 6	Level I		0.004430	14.00	.8885	0.062014	225754553.46
1129710090	Capacitor	C262,C263	Bellcore Issue 6	Level I		0.004430	2.00	.1269	0.008859	225754553.46
1129722091	Capacitor	C253-C255	Bellcore Issue 6	Level I		0.004430	3.00	.1904	0.013289	225754553.46
1129710390	Capacitor	C100-C102,C151,C191,C198-C201-,C206-C208,C241-C244,C84-C87,-C99	Bellcore Issue 6	Level I		0.004430	21.00	1.3327	0.093021	225754553.46
1129701790	Capacitor	C110-C113,C120,C121,C125-C128-,C135,C136,C146,C147,C152,C177-,C181,C202-C205,C209-C212,C290-,C301-C304,C306-C309	Bellcore Issue 6	Level I		0.004430	37.00	2.3481	0.163895	225754553.46
1129701790	Capacitor	C54,C55,C60,C61,C65,C66,C80-C-83,C95-C98	Bellcore Issue 6	Level I		0.004430	14.00	.8885	0.062014	225754553.46
1129715090	Capacitor	C139,C139	Bellcore Issue 6	Level I		0.004430	2.00	.1269	0.008859	225754553.46
1301053040	Semiconductor	D13,D14	Bellcore Issue 6	Level I		0.023068	2.00	.6610	0.046136	43349713.08
121230805D	Inductor	FB20	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
1129710050	Capacitor	C107-C109,C122-C124,C141,C144-,C145,C150,C162,C163,C176,C185-,C186,C192,C193,C225,C228,C231-,C235,C251,C257,C258,C283	Bellcore Issue 6	Level I		0.004430	25.00	1.5865	0.110740	225754553.46
1129710050	Capacitor	C284,C300,C305,C313,C318,C320-,C330,C339,C344,C348,C356,C358-,C388,C394,C56	Bellcore Issue 6	Level I		0.004430	15.00	.9519	0.066444	225754553.46
1129710050	Capacitor	C62,C67,C74,C77,C79,C92-C94	Bellcore Issue 6	Level I		0.004430	8.00	.5077	0.035437	225754553.46
106B501031	Resistor	R252	Bellcore Issue 6	Level I		0.010685	1.00	.1531	0.010685	93588569.55
14S4813905	Integrated Circuit	U23	Bellcore Issue 6	Level I		0.036609	1.00	.5245	0.036609	27315834.02
1311119710	Semiconductor	Q2	Bellcore Issue 6	Level I		0.023068	1.00	.3305	0.023068	43349713.08
14S5801402	Integrated Circuit	U36	Bellcore Issue 6	Level I		0.036609	1.00	.5245	0.036609	27315834.02
14S4820900	Integrated Circuit	U16	Bellcore Issue 6	Level I	16.30	0.091467	1.00	1.3104	0.091467	10932959.32
1122539980	Capacitor	C319,C347,C352	Bellcore Issue 6	Level I		0.004430	3.00	.1904	0.013289	225754553.46
105A710039	Resistor	R38,R384,R386	Bellcore Issue 6	Level I		0.002215	3.00	.0952	0.006644	451509106.91
105A701539	Resistor	R212	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91

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105A705629	Resistor	R111,R376	Bellcore Issue 6	Level I		0.002215	2.00	.0635	0.004430	451509106.91
105A702209	Resistor	R104,R138,R139,R142,R143,R149-R153,R195-R208,R31,R33-R35,R58-R63	Bellcore Issue 6	Level I		0.002215	35.00	1.1106	0.077518	451509106.91
1124405090	Capacitor	C229,C265,C373,C70-C73	Bellcore Issue 6	Level I		0.004430	7.00	.4442	0.031007	225754553.46
105A501039	Resistor	R109,R112,R123-R130,R140,R144-R157,R160,R192,R223,R224,R243-R247,R272,R278,R289,R329-R331	Bellcore Issue 6	Level I		0.002215	25.00	.7933	0.055370	451509106.91
105A501039	Resistor	R374,R375,R377,R378,R392,R57,-R64,R84,R210,R219,R220,R226,R227,R244,R424	Bellcore Issue 6	Level I		0.002215	15.00	.4760	0.033222	451509106.91
1121701080	Capacitor	C148,C223,C226,C245,C246,C249-C250,C402,C76	Bellcore Issue 6	Level I		0.004430	9.00	.5712	0.039866	225754553.46
1124410190	Capacitor	C103-C106,C114-C119,C129-C134-C153,C170-C173,C182-C184,C187-C190,C194-C197,C315,C345,C351-C88-C91	Bellcore Issue 6	Level I		0.004430	39.00	2.4750	0.172754	225754553.46
105A501139	Resistor	R246,R281	Bellcore Issue 6	Level I		0.002215	2.00	.0635	0.004430	451509106.91
105A705139	Resistor	R228	Bellcore Issue 6	Level I		0.002215	1.00	.0317	0.002215	451509106.91
105A703329	Resistor	R282,R311,R316-R318	Bellcore Issue 6	Level I		0.002215	5.00	.1587	0.011074	451509106.91
14S9820800	Integrated Circuit	U18	Bellcore Issue 6	Level I		0.036609	1.00	.5245	0.036609	27315834.02
14S9820800	Integrated Circuit	U39	Bellcore Issue 6	Level I	16.70	0.093433	1.00	1.3386	0.093433	10702829.63
1124522190	Capacitor	C323,C353,C355,C57-C59	Bellcore Issue 6	Level I		0.004430	6.00	.3808	0.026578	225754553.46
14S2200900	Integrated Circuit	U13	Bellcore Issue 6	Level I		0.054357	1.00	.7788	0.054357	18396772.35
16515A0993	Connection	J1	Bellcore Issue 6	Level I		0.106851	1.00	1.5308	0.106851	9358856.95
14S4081110	Integrated Circuit	U7	Bellcore Issue 6	Level I		0.054357	1.00	.7788	0.054357	18396772.35
1653150221	Connection	J2-J5	Bellcore Issue 6	Level I		0.021370	4.00	1.2247	0.085481	46794284.77
14S5A03200	Integrated Circuit	U35	Bellcore Issue 6	Level I		0.036609	1.00	.5245	0.036609	27315834.02
14S4888801	Integrated Circuit	U25	Bellcore Issue 6	Level I	16.20	0.090981	1.00	1.3035	0.090981	10991353.05
1189622190	Capacitor	C175,C78	Bellcore Issue 6	Level I		0.004430	2.00	.1269	0.008859	225754553.46
14S3149103	Integrated Circuit	U22	Bellcore Issue 6	Level I	20.60	0.114647	1.00	1.6425	0.114647	8722437.87
123131435B	Miscellaneous	Y4	Bellcore Issue 6	Level I		0.150000	1.00	2.1490	0.150000	6666666.67
1231325058	Miscellaneous	Y5	Bellcore Issue 6	Level I		0.150000	1.00	2.1490	0.150000	6666666.67
1231324555	Miscellaneous	Y3	Bellcore Issue 6	Level I		0.150000	1.00	2.1490	0.150000	6666666.67
105A551119	Resistor	R242,R268,R274	Bellcore Issue 6	Level I		0.002215	3.00	.0952	0.006644	451509106.91

