

ETX-LN

Reliability Prediction Report (MTBF)

Summary	Failure Rate: 7.677216 ppm MTBF: 130,256 Hours
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Issue date	Approval	Test Engineer
2011/04/29	Jansin Lee	Jessica Chou

Reliability Prediction (MTBF)

I . Model Name: TF-ETX-LN-A10 (9697LUNA3A-D)

II . Prediction Date: Apr. 29, 2011

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: 22.5 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.

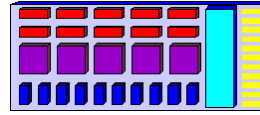
VIII. Prediction Result:

TF-ETX-LN-A10 (9697LUNA3A-D):

- Failure Rate: 7.677216 ppm
- MTBF: 130,256 Hours

AAEON Reliability Prediction Report

Part Number 9697LUN3A-D
Reference Des
Date 04. 29, 2011
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 22.50



Description Top-level assembly
File Name ETX-LN.RPJ
Time 14:35
Failure Rate 7.677216
MTBF 130,256

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
TF-ETX-LN-A10	9697LUN3A-D	Telcordia Issue 1	Method I Case 3	GF, GU - Ground Fixed, Uncontrolled	100.00	1.00	7.68	130255.55

AAEON Reliability Prediction Report

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Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 22.50



Description Top-level assembly
File Name ETX-LN.RPJ
Time 14:35
Failure Rate 7.677216
MTBF 130,256

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
1654907101	Connection	CN1,CN2	Telcordia Issue 1	Level I		2.00	0.019950	.5197	50126159.55
14S3112400	Integrated Circuit	U22	Telcordia Issue 1	Level I	11.50	1.00	0.112485	1.4652	8890058.82
11E9501091	Capacitor	C10,C119,C12,C120, C123,C124,C127, C128,C14,C15,C151, C161,C163,C19,C21, C212,C218,C223,C23, C231,C238,C24,C242, C245,C256,C268,C27, C303,C304,C31,C311, C32,C33,C332,C333, C34,C364,C365,C366, C367,C37,C371,C383, C384,C39,C40,C42, C45,C46,C47,C48	Telcordia Issue 1	Level I		60.00	0.004317	3.3737	231653238.34
1121501690	Capacitor	C100,C101,C102, C103,C104,C105, C106,C11,C125,C126, C129,C130,C132, C133,C134,C135, C136,C137,C138, C144,C147,C148, C154,C155,C158, C159,C160,C164, C168,C169,C171, C172,C173,C174, C175,C176,C179, C180,C181,C182,	Telcordia Issue 1	Level I		148.00	0.004317	8.3218	231653238.34
1129701790	Capacitor	C110,C111,C112, C113,C114,C115, C116,C117,C118,C13, C149,C152,C20,C314	Telcordia Issue 1	Level I		14.00	0.004317	.7872	231653238.34
11E9622050	Capacitor	C141,C142,C145,C16, C17,C170,C177,C178, C18,C243,C246,C247, C29,C30,C36,C360, C361,C387,C388,C43, C83,C89	Telcordia Issue 1	Level I		22.00	0.004317	1.2370	231653238.34
1189627150	Capacitor	C143,C25,C273,C274, C275,TC1	Telcordia Issue 1	Level I		6.00	0.004317	.3374	231653238.34
11E9647680	Capacitor	C131,C146,C263,C28, C385,C61	Telcordia Issue 1	Level I		6.00	0.004317	.3374	231653238.34
1129622690	Capacitor	C140,C156,C267,C54, C69,C70,C71,C72, C73,C80,C82	Telcordia Issue 1	Level I		11.00	0.004317	.6185	231653238.34
1189633162	Capacitor	C257	Telcordia Issue 1	Level I		1.00	0.004317	.0562	231653238.34

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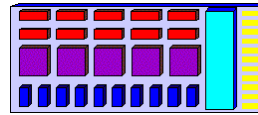


Description Top-level assembly
File Name ETX-LN.RPJ
Time 14:35
Failure Rate 7.677216
MTBF 130,256

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
1124427090	Capacitor	C301,C302,C95,C96	Telcordia Issue 1	Level I		4.00	0.004317	.2249	231653238.34
1129710090	Capacitor	C121,C122	Telcordia Issue 1	Level I		2.00	0.004317	.1125	231653238.34
1122522890	Capacitor	C139,C166	Telcordia Issue 1	Level I		2.00	0.004317	.1125	231653238.34
11C9510050	Capacitor	C150,C153,C157, C162,C186,C188, C190,C192,C194, C196,C207,C209, C213,C215,C221, C225,C227,C232, C234,C235,C236, C239,C248,C251, C272,C308,C309, C312,C331,C359, C372,C374	Telcordia Issue 1	Level I		32.00	0.004317	1.7993	231653238.34
11C1547890	Capacitor	C167	Telcordia Issue 1	Level I		1.00	0.004317	.0562	231653238.34
1189615150	Capacitor	C210,C214,C216, C266,C269	Telcordia Issue 1	Level I		5.00	0.004317	.2811	231653238.34
1129710390	Capacitor	C281,C283,C284, C286	Telcordia Issue 1	Level I		4.00	0.004317	.2249	231653238.34
1189633160	Capacitor	C244,TC2	Telcordia Issue 1	Level I		2.00	0.004317	.1125	231653238.34
1129522790	Capacitor	C270	Telcordia Issue 1	Level I		1.00	0.004317	.0562	231653238.34
1124522290	Capacitor	C276,C318	Telcordia Issue 1	Level I		2.00	0.004317	.1125	231653238.34
1124522190	Capacitor	C277,C379	Telcordia Issue 1	Level I		2.00	0.004317	.1125	231653238.34
1124547190	Capacitor	C279	Telcordia Issue 1	Level I		1.00	0.004317	.0562	231653238.34
1124522180	Capacitor	C285	Telcordia Issue 1	Level I		1.00	0.004317	.0562	231653238.34
1124410190	Capacitor	C362,C363,C368, C377,C378	Telcordia Issue 1	Level I		5.00	0.004317	.2811	231653238.34
11E9722090	Capacitor	C278,C376	Telcordia Issue 1	Level I		2.00	0.004317	.1125	231653238.34
16515A099S	Connection	DIMM1	Telcordia Issue 1	Level I		1.00	0.000997	.0130	1002523191.08
1301005440	Semiconductor	D11,D4	Telcordia Issue 1	Level I		2.00	0.022212	.5786	45021049.78
1301005442	Semiconductor	D10	Telcordia Issue 1	Level I		1.00	0.022212	.2893	45021049.78
1301053040	Semiconductor	D7,D8	Telcordia Issue 1	Level I		2.00	0.022212	.5786	45021049.78
1212306030	Inductor	FB1,FB10,FB11,FB12, FB14,FB18,FB3,FB4, FB7,FB8,FB9	Telcordia Issue 1	Level I		11.00	0.002158	.3093	463306476.67
1212306031	Inductor	FB15,FB16,FB17, FB19,FB2,FB20,FB21, FB22,FB23	Telcordia Issue 1	Level I		9.00	0.002158	.2530	463306476.67
12123C0003	Inductor	FB5,FB6	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
1304101340	Semiconductor	LED1	Telcordia Issue 1	Level I		1.00	0.003872	.0504	258233401.91
1211100160	Inductor	L1	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
121110106D	Inductor	L2,L3,L4,L5,L6	Telcordia Issue 1	Level I		5.00	0.002158	.1406	463306476.67
121110156D	Inductor	L10	Telcordia Issue 1	Level I	22.20	1.00	0.003257	.0424	307014793.29
1310390413	Semiconductor	Q1,Q2,Q3,Q4	Telcordia Issue 1	Level I		4.00	0.022212	1.1573	45021049.78

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Description Top-level assembly
File Name ETX-LN.RPJ
Time 14:35
Failure Rate 7.677216
MTBF 130,256

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
1315700216	Semiconductor	Q9	Telcordia Issue 1	Level I		1.00	0.074039	.9644	13506314.93
1315030110	Semiconductor	Q6,Q7	Telcordia Issue 1	Level I		2.00	0.000000	.0000	.00
1315443510	Semiconductor	Q8	Telcordia Issue 1	Level I		1.00	0.074039	.9644	13506314.93
1314880010	Integrated Circuit	Q10	Telcordia Issue 1	Level I		1.00	0.049367	.6430	20256383.00
1314880011	Integrated Circuit	Q12	Telcordia Issue 1	Level I		1.00	0.049367	.6430	20256383.00
1540782282	Resistor	RP1,RP14,RP15,RP16,RP17,RP18,RP19,RP2,RP20,RP21,RP22,RP23,RP24,RP25,RP26,RP27,RP3,RP4, RP5	Telcordia Issue 1	Level I		19.00	0.011132	2.7550	89832031.09
1540700081	Resistor	RP6,RP7,RP8,RP9	Telcordia Issue 1	Level I		4.00	0.000000	.0000	.00
1540775082	Resistor	RP28,RP29,RP30, RP31,RP32	Telcordia Issue 1	Level I		5.00	0.005566	.3625	179664062.18
106B510030	Resistor	RT1	Telcordia Issue 1	Level I		1.00	0.009975	.1299	100252319.11
106B501032	Resistor	RT2,RT3	Telcordia Issue 1	Level I		2.00	0.009975	.2599	100252319.11
105A702229	Resistor	R1,R2,R242,R243,R244,R245,R26,R32,R404,R405,R406,R408,R409,R410,R411,R504,R7,R73, R9	Telcordia Issue 1	Level I		19.00	0.002158	.5342	463306476.67
105A700139	Resistor	R158,R206,R292,R296,R299,R3,R303,R305,R309,R311,R312,R315,R334,R376,R398,R414,R46,R47,R473,R476,R478,R479,R48,R480,R482,R502,R503,R506,R51, R75,R85,R86	Telcordia Issue 1	Level I		32.00	0.002158	.8997	463306476.67
105A701039	Resistor	R100,R101,R102,R103,R104,R105,R106,R107,R117,R118,R121,R122,R123,R124,R125,R126,R127,R131,R135,R136,R138,R141,R143,R148,R155,R156,R159,R160,R161,R163,R167,R168,R169,R170,R174,R179,R181,R182,R184,	Telcordia Issue 1	Level I		89.00	0.002158	2.5022	463306476.67
105A523713	Resistor	R5	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67

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Time 14:35
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MTBF 130,256

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
105A549969	Resistor	R6	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A575009	Resistor	R11,R360	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A706209	Resistor	R12	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A700009	Resistor	R112,R13,R132,R133, R14,R140,R142,R154, R162,R183,R207, R208,R218,R219, R220,R221,R226, R227,R228,R229, R231,R232,R233, R234,R235,R236, R288,R297,R298, R300,R301,R302, R304,R316,R317, R333,R349,R352, R353,R355,R358,	Telcordia Issue 1	Level I		62.00	0.002158	1.7431	463306476.67
105A566503	Resistor	R15	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A510009	Resistor	R16,R36	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A505109	Resistor	R17,R20,R21,R22, R24,R25,R30,R31, R35,R37,R38,R39, R40	Telcordia Issue 1	Level I		13.00	0.002158	.3655	463306476.67
105A597604	Resistor	R18	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A500139	Resistor	R164,R165,R176, R180,R19,R387,R389, R425,R525,R58,R59, R60,R61	Telcordia Issue 1	Level I		13.00	0.002158	.3655	463306476.67
105A706809	Resistor	R27	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
1050533214	Resistor	R28,R351	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A500239	Resistor	R29	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A515009	Resistor	R41,R42,R43	Telcordia Issue 1	Level I		3.00	0.002158	.0843	463306476.67
105A710039	Resistor	R149,R171,R344, R346,R366,R367, R427,R44,R45	Telcordia Issue 1	Level I		9.00	0.002158	.2530	463306476.67
1050580664	Resistor	R52,R54	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A702209	Resistor	R62,R64,R65,R67, R69,R70,R72,R74, R77,R78	Telcordia Issue 1	Level I		10.00	0.002158	.2811	463306476.67
105A703309	Resistor	R295,R471,R515, R516,R517,R518, R519,R63,R66,R68	Telcordia Issue 1	Level I		10.00	0.002158	.2811	463306476.67
105A701059	Resistor	R166,R71	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A747009	Resistor	R80,R81,R82	Telcordia Issue 1	Level I		3.00	0.002158	.0843	463306476.67
1050524904	Resistor	R137,R93,R99	Telcordia Issue 1	Level I		3.00	0.002158	.0843	463306476.67

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File Name ETX-LN.RPJ
Time 14:35
Failure Rate 7.677216
MTBF 130,256

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
105A708229	Resistor	R115,R119,R139, R144,R145,R200, R483,R484,R485, R486,R487,R488, R489,R95	Telcordia Issue 1	Level I		14.00	0.002158	.3936	463306476.67
105A522669	Resistor	R97	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
1050532414	Resistor	R109	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A502133	Resistor	R110	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A542213	Resistor	R111	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A545303	Resistor	R113	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A704729	Resistor	R116,R120,R225, R263,R279,R281, R287,R294,R307, R308,R310,R313, R339,R481,R491, R492,R493,R513	Telcordia Issue 1	Level I		18.00	0.002158	.5061	463306476.67
1050556269	Resistor	R129,R134	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A710009	Resistor	R280,R282,R284, R286,R289	Telcordia Issue 1	Level I		5.00	0.002158	.1406	463306476.67
105A510053	Resistor	R152	Telcordia Issue 1	Level I		1.00	0.012950	.1687	77217746.11
1050701504	Resistor	R173,R175,R178, R212,R213,R331	Telcordia Issue 1	Level I		6.00	0.002158	.1687	463306476.67
105A502039	Resistor	R177,R505	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A701009	Resistor	R191,R194,R277, R400	Telcordia Issue 1	Level I		4.00	0.002158	.1125	463306476.67
105A700103	Resistor	R192,R193,R195, R196	Telcordia Issue 1	Level I		4.00	0.002158	.1125	463306476.67
1050533034	Resistor	R197,R198	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A733009	Resistor	R210,R472,R474, R475,R477	Telcordia Issue 1	Level I		5.00	0.002158	.1406	463306476.67
105A702039	Resistor	R241,R421,R511	Telcordia Issue 1	Level I		3.00	0.002158	.0843	463306476.67
105A707509	Resistor	R246,R247,R248, R249,R252,R256, R274,R498,R499	Telcordia Issue 1	Level I		9.00	0.002158	.2530	463306476.67
105A702053	Resistor	R318	Telcordia Issue 1	Level I		1.00	0.012950	.1687	77217746.11
105A701003	Resistor	R361,R362	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A501539	Resistor	R363,R415,R431	Telcordia Issue 1	Level I		3.00	0.002158	.0843	463306476.67
105A566519	Resistor	R364	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
1050501234	Resistor	R365	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A506829	Resistor	R368,R369	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A702263	Resistor	R377,R378,R382, R384	Telcordia Issue 1	Level I		4.00	0.002158	.1125	463306476.67
105A700003	Resistor	R379,R385,R393, R407	Telcordia Issue 1	Level I		4.00	0.002158	.1125	463306476.67
1050519634	Resistor	R380	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67

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105A528733	Resistor	R381	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A549933	Resistor	R386	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A580623	Resistor	R388	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A502839	Resistor	R391	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A501829	Resistor	R392	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
1050513034	Resistor	R395	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
1050584524	Resistor	R396	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A554923	Resistor	R397	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A524919	Resistor	R413	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
1059703623	Resistor	R417	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A501039	Resistor	R429,R430,R435, R436,R440,R441, R443	Telcordia Issue 1	Level I		7.00	0.002158	.1968	463306476.67
105A503039	Resistor	R442	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A705139	Resistor	R494,R495	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A705129	Resistor	R497,R508	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
1050539224	Resistor	R510	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A704739	Resistor	R514	Telcordia Issue 1	Level I		1.00	0.002158	.0281	463306476.67
105A702239	Resistor	R520,R521	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
105A703909	Resistor	R528,R529	Telcordia Issue 1	Level I		2.00	0.002158	.0562	463306476.67
14S4166013	Integrated Circuit	U1	Telcordia Issue 1	Level I	19.20	1.00	0.066335	.8641	15074952.08
14S3050100	Integrated Circuit	U2	Telcordia Issue 1	Level I	38.20	1.00	0.611539	7.9656	1635217.47
14S4280121	Integrated Circuit	U3	Telcordia Issue 1	Level I		1.00	0.022576	.2941	44294898.87
14S5A01402	Integrated Circuit	U4	Telcordia Issue 1	Level I		1.00	0.022576	.2941	44294898.87
14S5A12506	Integrated Circuit	U5	Telcordia Issue 1	Level I		1.00	0.022576	.2941	44294898.87
14S4010200	Integrated Circuit	U6	Telcordia Issue 1	Level I		1.00	0.022576	.2941	44294898.87
14S4010300	Integrated Circuit	U7	Telcordia Issue 1	Level I	22.50	1.00	0.078796	1.0264	12690951.29
14S4362707	Integrated Circuit	U8	Telcordia Issue 1	Level I		1.00	0.022576	.2941	44294898.87
1315970211	Semiconductor	U11,U14	Telcordia Issue 1	Level I		2.00	0.148079	3.8576	6753157.47
1314880511	Integrated Circuit	U12	Telcordia Issue 1	Level I		1.00	0.049367	.6430	20256383.00
1315050311	Integrated Circuit	U16,U17	Telcordia Issue 1	Level I		2.00	0.049367	1.2861	20256383.00
14S2591200	Integrated Circuit	U18,U19	Telcordia Issue 1	Level I		2.00	0.049367	1.2861	20256383.00
1315422410	Semiconductor	U20,U21	Telcordia Issue 1	Level I		2.00	0.074039	1.9288	13506314.93
14S2321100	Integrated Circuit	U23	Telcordia Issue 1	Level I	22.30	1.00	0.230894	3.0075	4330988.02
1315482110	Semiconductor	U24	Telcordia Issue 1	Level I		1.00	0.074039	.9644	13506314.93
1315482410	Semiconductor	U25	Telcordia Issue 1	Level I		1.00	0.074039	.9644	13506314.93
14S4810200	Integrated Circuit	U27	Telcordia Issue 1	Level I		1.00	0.049367	.6430	20256383.00

