

TF-OPD-215AT/ABT Reliability Prediction Report (MTBF)

Report NO : 06P070002

8-23-2006

Issue Date

Wenyuan Yang

Manager

Jessica Chou

Test Engineer

Reliability Prediction (MTBF)

I . **Model Name:** TF-OPD-215AT/ABT

II . **Prediction Date:** Aug. 23, 2006

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:

TF-OPD215AT/ABT : (Not include Power adapter, Membrane switch, Touch screen, 15" LCD, Inverter, Touch panel controller...)

Failure Rate: 2.666006 ppm

MTBF: 375,093 Hours

- 1757306001 : (Power Adapter 100/240V.12V.5A.DC With Lock. EA1050A)

MTBF : 30000 operating hours at 90% confidence level while operating under the following conditions.

- TS95409000 : (Touch Screen 15")
MTBF : 1,000,000 activation (typical) at a single point with a 5/8" diameter silicone finger with a 350g load at 2 touches per second, using a 3M Touch Systems SC4 controller.

- LM150XN070 : (TFT LCD 15")
MTBF : CCFL life time is 30,000hr at 8.0mA, it's defined as when the brightness is reduced by half. It's recommended not to exceed 8.0mA for CCFL life time concern and it's prohibited to exceed 8.5mA for safety concern.

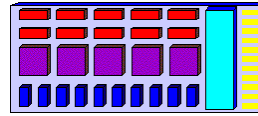
- 9765PD2A01 : (Membrane switch)
MTBF : 2,190,000 Hours (data from vendor supply)

- 9689666605 : (8-wire RS232 Touch Panel Controller)
MTBF : 1,144,997 Hours (data from vendor supply)

- 12541133V0 : (Inverter DC to AC. QF133V1.15I)
MTBF : 1,117,939.326 Hours (data from vendor supply)

AAEON Reliability Prediction Report

Part Number System
Reference Des
Date 08. 14, 2007
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00



Description Top-level assembly
File Name TF-OPD-215AT_AB.T.RPJ
Time 11:30 AM
Failure Rate 2.666006
MTBF 375,093

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
TF-OPD-215AT/ABT	System	Bellcore	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	2.666006	375,093
9691100A10	ADB-100A	Bellcore	Method I Case 3	GF, GU - Ground Fixed,		1.00	2.666006	375,093
9691100A11		Bellcore	Method I Case 3	GF, GU - Ground Fixed,		1.00	2.082985	480,080

AAEON Reliability Prediction Report

Part Number ADB-100A
Reference Des
Date 08. 14, 2007
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00

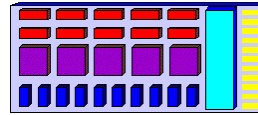


Description A/D Board
File Name TF-OPD-215AT_AB.T.RPJ
Time 11:30 AM
Failure Rate 2.666006
MTBF 375,093

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1231124550	Miscellaneous	X2	Bellcore Issue 6	Level I		0.150000	1.00	25.7281	0.150000	6666666.67
1231114350	Miscellaneous	X1	Bellcore Issue 6	Level I		0.150000	1.00	25.7281	0.150000	6666666.67
1112610190	Capacitor	C59	Bellcore Issue 6	Level I		0.042673	1.00	7.3193	0.042673	23434140.55
1653003101	Connection	J1	Bellcore Issue 6	Level I		0.001707	1.00	.2928	0.001707	585853513.81
1653003200	Connection	J2	Bellcore Issue 6	Level I		0.003414	1.00	.5855	0.003414	292926756.90
1653004101	Connection	JP1	Bellcore Issue 6	Level I		0.002276	1.00	.3904	0.002276	439390135.35
1654515303	Connection	J10	Bellcore Issue 6	Level I		0.008535	1.00	1.4639	0.008535	117170702.76
1654604300	Connection	J13	Bellcore Issue 6	Level I		0.002276	1.00	.3904	0.002276	439390135.35
1653008201	Connection	J8	Bellcore Issue 6	Level I		0.009104	1.00	1.5614	0.009104	109847533.84
1655306121	Connection	J16,J7	Bellcore Issue 6	Level I		0.003414	2.00	1.1711	0.006828	292926756.90
1300582200	Semiconductor	D1	Bellcore Issue 6	Level I		0.023881	1.00	4.0961	0.023881	41874327.58
1655103100	Connection	JR1	Bellcore Issue 6	Level I		0.001707	1.00	.2928	0.001707	585853513.81
1655312122	Connection	J5	Bellcore Issue 6	Level I		0.006828	1.00	1.1711	0.006828	146463378.45
1211103301	Inductor	L24	Bellcore Issue 6	Level I		0.086173	1.00	14.7804	0.086173	11604581.32
1652904200	Connection	J11	Bellcore Issue 6	Level I		0.002276	1.00	.3904	0.002276	439390135.35
1111647000	Capacitor	C62	Bellcore Issue 6	Level I		0.042673	1.00	7.3193	0.042673	23434140.55
1112633190	Capacitor	C119	Bellcore Issue 6	Level I		0.042673	1.00	7.3193	0.042673	23434140.55

AAEON Reliability Prediction Report

Part Number
Reference Des
Date 08. 14, 2007
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00

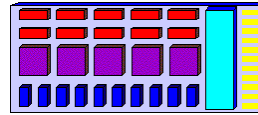


Description
File Name TF-OPD-215AT_AB.T.RPJ
Time 11:30 AM
Failure Rate 2.082985
MTBF 480,080

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
105A501033	Resistor	R10,R12-R14,R17,R35-R37,R53,R-63,R64,R66,R67,R80,R9	Bellcore Issue 6	Level I		0.002268	15.00	1.6330	0.034016	440974090.03
105A539003	Resistor	R33,R41,R56,R6,R74	Bellcore Issue 6	Level I		0.002268	5.00	.5443	0.011339	440974090.03
105A701003	Resistor	R19,R24,R44,R49	Bellcore Issue 6	Level I		0.002268	4.00	.4355	0.009071	440974090.03
105A701053	Resistor	R27	Bellcore Issue 6	Level I		0.002268	1.00	.1089	0.002268	440974090.03
105A704703	Resistor	R52,R65	Bellcore Issue 6	Level I		0.002268	2.00	.2177	0.004535	440974090.03
105A707503	Resistor	R45,R48,R58-R62	Bellcore Issue 6	Level I		0.002268	7.00	.7621	0.015874	440974090.03
1050700002	Resistor	F1	Bellcore Issue 6	Level I		0.002268	1.00	.1089	0.002268	440974090.03
105A503323	Resistor	R11,R42	Bellcore Issue 6	Level I		0.002268	2.00	.2177	0.004535	440974090.03
105A700333	Resistor	R51	Bellcore Issue 6	Level I		0.002268	1.00	.1089	0.002268	440974090.03
1122701680	Capacitor	C101-C104,C106,C108,C109,C11,-C112,C113,C115-C118,C12,C122,-C123,C125	Bellcore Issue 6	Level I		0.004535	18.00	3.9193	0.081637	220487045.01
1122701680	Capacitor	C128,C13,C131,C139,C14,C141,C-142,C147,C153-C156,C16-C19,C2,-C20-C25,C29	Bellcore Issue 6	Level I		0.004535	24.00	5.2257	0.108850	220487045.01
1122701680	Capacitor	C30-C35,C41,C43,C45,C46,C49-C-51,C54,C55,C57,C61,C65-C67,C69-,C7,C71-C81	Bellcore Issue 6	Level I		0.004535	33.00	7.1853	0.149669	220487045.01
1122701680	Capacitor	C84-C86,C88,C89,C9,C91-C95,C97-,C99	Bellcore Issue 6	Level I		0.004535	13.00	2.8306	0.058960	220487045.01
1124510280	Capacitor	C129,C132,C37,C48,C56	Bellcore Issue 6	Level I		0.004535	5.00	1.0887	0.022677	220487045.01
1124427080	Capacitor	C120,C121,C135-C137,C39,C40	Bellcore Issue 6	Level I		0.004535	7.00	1.5242	0.031748	220487045.01
1540700080	Resistor	RP2,RP3	Bellcore Issue 6	Level I		0.006246	2.00	.5997	0.012492	160102772.00
1540710380	Resistor	RP1	Bellcore Issue 6	Level I		0.006246	1.00	.2999	0.006246	160102772.00
1651204493	Connection	U3	Bellcore Issue 6	Level I		0.025035	1.00	1.2019	0.025035	39944557.76
14S5507400	Integrated Circuit	U14	Bellcore Issue 6	Level I		0.066009	1.00	3.1690	0.066009	15149398.55
14S5501400	Integrated Circuit	U13	Bellcore Issue 6	Level I		0.070411	1.00	3.3803	0.070411	14202225.56
1212308056	Inductor	L17,L22,L23,L26-L28,L35,L8	Bellcore Issue 6	Level I		0.002268	8.00	.8709	0.018142	440974090.03
1129722090	Capacitor	C100,C130,C26,C3,C36,C96	Bellcore Issue 6	Level I		0.004535	6.00	1.3064	0.027212	220487045.01
1212306036	Inductor	L10-L12,L15,L16,L18,L19,L21,L29,-L33,L4,L43,L6,L9	Bellcore Issue 6	Level I		0.002268	14.00	1.5242	0.031748	440974090.03
1121647780	Capacitor	C107,C110,C114,C124,C126,C127	Bellcore Issue 6	Level I		0.004535	6.00	1.3064	0.027212	220487045.01
105A505603	Resistor	R68,R71,R73	Bellcore Issue 6	Level I		0.002268	3.00	.3266	0.006803	440974090.03
1189610180	Capacitor	C87	Bellcore Issue 6	Level I		0.004535	1.00	.2177	0.004535	220487045.01

AAEON Reliability Prediction Report

Part Number
Reference Des
Date 08. 14, 2007
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00



Description
File Name TF-OPD-215AT_AB.T.RPJ
Time 11:30 AM
Failure Rate 2.082985
MTBF 480,080

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
1059710003	Resistor	R55,R89,R90	Bellcore Issue 6	Level I		0.002268	3.00	.3266	0.006803	440974090.03
1124410180	Capacitor	C134,C28	Bellcore Issue 6	Level I		0.004535	2.00	.4355	0.009071	220487045.01
1310390411	Semiconductor	Q3	Bellcore Issue 6	Level I		0.023881	1.00	1.1465	0.023881	41874327.58
105A503300	Resistor	R76,R86	Bellcore Issue 6	Level I		0.002268	2.00	.2177	0.004535	440974090.03
1654930330	Connection	J6	Bellcore Issue 6	Level I		0.017069	1.00	.8195	0.017069	58585351.38
105A502723	Resistor	R39	Bellcore Issue 6	Level I		0.002268	1.00	.1089	0.002268	440974090.03
1121610060	Capacitor	C1,C10,C105,C138,C140,C143,C1-44,C146,C157,C27,C5,C53,C60,C6-3,C68,C70	Bellcore Issue 6	Level I		0.004535	16.00	3.4838	0.072567	220487045.01
1121610060	Capacitor	C8,C82,C98	Bellcore Issue 6	Level I		0.004535	3.00	.6532	0.013606	220487045.01
1314108412	Integrated Circuit	U10	Bellcore Issue 6	Level I		0.059366	1.00	2.8500	0.059366	16844654.92
1314111716	Integrated Circuit	U15,U17,U2,U9	Bellcore Issue 6	Level I		0.059366	4.00	11.4002	0.237464	16844654.92
121231206B	Inductor	L20,L39,L42	Bellcore Issue 6	Level I		0.002268	3.00	.3266	0.006803	440974090.03
14S9711400	Integrated Circuit	U12	Bellcore Issue 6	Level I		0.039296	1.00	1.8865	0.039296	25448028.36
1540710180	Resistor	LT1,LT10-LT12,LT2-LT9,RNT1-RN-T6	Bellcore Issue 6	Level I		0.006246	18.00	5.3974	0.112428	160102772.00
14S8967400	Integrated Circuit	U5	Bellcore Issue 6	Level I		0.039296	1.00	1.8865	0.039296	25448028.36
14S3988300	Integrated Circuit	U11	Bellcore Issue 6	Level I		0.059366	1.00	2.8500	0.059366	16844654.92
1122501880	Capacitor	C111	Bellcore Issue 6	Level I		0.004535	1.00	.2177	0.004535	220487045.01
1314257610	Integrated Circuit	U16	Bellcore Issue 6	Level I		0.059366	1.00	2.8500	0.059366	16844654.92
105A518263	Resistor	R69,R70,R72	Bellcore Issue 6	Level I		0.002268	3.00	.3266	0.006803	440974090.03
14S6341602	Integrated Circuit	U1	Bellcore Issue 6	Level I		0.056195	1.00	2.6978	0.056195	17795162.56
105A524003	Resistor	R34,R40,R5,R57,R75	Bellcore Issue 6	Level I		0.002268	5.00	.5443	0.011339	440974090.03
1124582880	Capacitor	C83	Bellcore Issue 6	Level I		0.004535	1.00	.2177	0.004535	220487045.01
1124582980	Capacitor	C90	Bellcore Issue 6	Level I		0.004535	1.00	.2177	0.004535	220487045.01
14S4036300	Integrated Circuit	U20	Bellcore Issue 6	Level I		0.059366	1.00	2.8500	0.059366	16844654.92
1212308053	Inductor	L30-L32,L36-L38	Bellcore Issue 6	Level I		0.002268	6.00	.6532	0.013606	440974090.03
1124447080	Capacitor	C133	Bellcore Issue 6	Level I		0.004535	1.00	.2177	0.004535	220487045.01
1315993311	Semiconductor	U18	Bellcore Issue 6	Level I		0.159207	1.00	7.6432	0.159207	6281149.14
105A700003	Resistor	R15,R16,R26,R28,R29,R38,R43,R-46,R47,R78,R91	Bellcore Issue 6	Level I		0.002268	11.00	1.1975	0.024945	440974090.03
105A704723	Resistor	R21,R7,R8	Bellcore Issue 6	Level I		0.002268	3.00	.3266	0.006803	440974090.03

