

FWS-7520

Reliability Prediction Report (MTBF)

Summary	Failure Rate: 10398.423372 ppm MTBF: 96,168 Hours
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Issue date	QE Manager	Test Engineer
2016-06-30	KJ Wang	Louie Lee

Reliability Prediction (MTBF)

I . Model Name: FWS-7520

II . Prediction Date: June. 30th, 2016

III . Prediction Site: AAEON Q.E. Dept.

IV . Predicted by: Louie Lee

V . Equipment: Windchill Quality Solutions 10.1

VI. Simulation Environment:

- Temperature: 30 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 Failure rate multiplier is 1000000000.
- MTBF : MTBF is always specified in hours.

VIII. Prediction Result:

FWS-7520 (M/B: 9697752004-D ; PER-T362: 9697T36203-D):

- Failure Rate: 10398.423372 ppm
- MTBF: 96,168 Hours

**AAEON Reliability Prediction
Summary**

File Name: FWS-7520.rfp
Duty Cycle: 100
Calculation Model: Telcordia Issue 2
Method: Method I Case 3

Failure Rate: 10398.423372
MTBF (hrs): 96,168
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Assembly Name	Part Number	Ref Des	Quantity	Failure Rate	MTBF
FWS-7520	System		1	10398.423372	96,168
M/B	9697752004-D		1	7710.233818	129,698
PER-T362	9697T36203-D		1	2957.653966	338,106

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050500104	Resistor	R109		2.547039	1	282340674.079668
1050500334	Resistor	R336,R339,R374		2.547039	3	107020754.986850
1050501004	Resistor	R305,R310,R313,R321,R38,R503		2.547039	6	56573956.677649
1050501054	Resistor	R645		2.547039	1	282340674.079668
1050501234	Resistor	R140		2.547039	1	282340674.079668
1050501634	Resistor	R1316		2.547039	1	282340674.079668
1050502004	Resistor	R229,R232,R307,R722,R734,R749,R787,R799		2.547039	8	43225424.698300
1050502204	Resistor	R1404,R563,R571,R574,R599,R641,R642,R646,R657,R661		2.547039	10	35079934.879747
1050502224	Resistor	R174,R184,R346,R409,R410,R415,R416,R434,R5,R58,R595,R60,R763,R806		2.547039	14	25477245.255648
1050502724	Resistor	R25,R756		2.547039	2	154078778.388085
1050503324	Resistor	R37,R72,R92		2.547039	3	107020754.986850
1050503634	Resistor	R170		2.547039	1	282340674.079668

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1050504724	Resistor	R1,R12,R132 5,R1326, R2,R201,R23 0,R231, R268,R311,R 312, R343,R356,R 538, R581,R605,R 620, R622,R624,R 626, R631,R636,R 637, R639,R651,R 662, R665,R666,R 668, R684,R685,R 688, R701,R723,R 733, R754,R824,R 825, R826,R827		2.547039	40	9263254.152485
1050504764	Resistor	R118		2.547039	1	282340674.079668
1050505124	Resistor	R168,R214		2.547039	2	154078778.388085
1050505134	Resistor	R18,R26		2.547039	2	154078778.388085
1050505164	Resistor	R142,R292,R 298, R418,R62		2.547039	5	67008142.102588
1050505604	Resistor	R1044		2.547039	1	282340674.079668
1050505633	Resistor	R73		2.547039	1	282340674.079668
1050506224	Resistor	R45,R71,R90		2.547039	3	107020754.986850
1050507524	Resistor	R619,R621,R 633, R652		2.547039	4	82309758.689546
1050507530	Resistor	R24,R362,R3 67,R375, R671		2.547039	5	67008142.102588
1050508224	Resistor	R147,R159,R 171, R172,R208,R 209, R226,R237,R 239, R252,R474,R 495, R516,R542,R 577, R630		2.547039	16	22425139.809646
1050509124	Resistor	R121,R149		2.547039	2	154078778.388085

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1050510034	Resistor	R123,R15,R282,R285,R30,R327,R359,R46,R51,R519,R566,R570,R592,R667,R691,R88,R895,R911		2.547039	18	20032117.836120
1050512104	Resistor	R1042,R274,R484,R61,R616		2.547039	5	67008142.102588
1050513034	Resistor	R721		2.547039	1	282340674.079668
1050514034	Resistor	R110		2.547039	1	282340674.079668
1050515034	Resistor	R368,R378,R380		2.547039	3	107020754.986850
1050516924	Resistor	R81		2.547039	1	282340674.079668
1050520004	Resistor	R156,R290,R296,R430,R70		2.547039	5	67008142.102588
1050520034	Resistor	R1394,R1395		2.547039	2	154078778.388085
1050522124	Resistor	R11,R401,R670		2.547039	3	107020754.986850
1050523224	Resistor	R144		2.547039	1	282340674.079668
1050524004	Resistor	R148,R452,R458,R467,R493		2.547039	5	67008142.102588
1050524924	Resistor	R352,R377,R389,R919		2.547039	4	82309758.689546
1050530004	Resistor	R269,R281		2.547039	2	154078778.388085
1050535724	Resistor	R119,R42		2.547039	2	154078778.388085
1050540214	Resistor	R41		2.547039	1	282340674.079668
1050543234	Resistor	R49		2.547039	1	282340674.079668
1050547004	Resistor	R609,R818,R832		2.547039	3	107020754.986850
1050547564	Resistor	R40		2.547039	1	282340674.079668
1050549964	Resistor	R287,R370,R483,R502,R505,R578,R579,R759,R774,R917		2.547039	10	35079934.879747
1050551004	Resistor	R100		2.547039	1	282340674.079668
1050551034	Resistor	R181		2.547039	1	282340674.079668
1050564904	Resistor	R132		2.547039	1	282340674.079668
1050568004	Resistor	R169,R177		2.547039	2	154078778.388085
1050584524	Resistor	R120		2.547039	1	282340674.079668
1050586604	Resistor	R139		2.547039	1	282340674.079668
1050703334	Resistor	R814,R815		2.547039	2	154078778.388085

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050708234	Resistor	R50		2.547039	1	282340674.079668
1053510009	Resistor	R838	33.3	4.497849	1	159883669.280085
1059537421	Resistor	R33		2.547039	1	282340674.079668
1059700001	Resistor	R1319,R405, R850, R914,R918		2.547039	5	67008142.102588
1059702261	Resistor	R376,R379,R 454		2.547039	3	107020754.986850
105A500139	Resistor	R10,R115,R1 26,R136, R143,R17,R2 00,R202, R216,R223,R 259, R262,R279,R 286, R294,R301,R 303, R308,R319,R 320, R328,R335,R 344, R361,R373,R 381, R435,R443,R 525, R582,R588,R 602, R611,R613,R 638, R640,R674,R 7,R719, R727,R757,R 772, R807,R819,R 912		2.547039	45	8260575.675294
105A500239	Resistor	R116		2.547039	1	282340674.079668
105A501003	Resistor	R395,R397,R 400		2.547039	3	107020754.986850

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105A501039	Resistor	R103,R105,R114, R127,R133,R1390, R154,R163,R165, R187,R188,R189,R19, R190,R191,R192, R193,R199,R227, R240,R247,R280, R283,R288,R289,R29, R293,R295,R299, R331,R345,R348, R350,R402,R407, R414,R432,R442, R450,R451,R462, R465,R466,R480, R500,R508,R510, R523,R		2.547039	116	3270148.361528
105A501323	Resistor	R837		2.547039	1	282340674.079668
105A501529	Resistor	R124		2.547039	1	282340674.079668
105A501539	Resistor	R131,R36,R77,R91		2.547039	4	82309758.689546
105A502039	Resistor	R3,R741,R742		2.547039	3	107020754.986850
105A502233	Resistor	R816,R863		2.547039	2	154078778.388085
105A502263	Resistor	R228,R246,R256, R261,R264,R302, R358,R436,R76		2.547039	9	38754445.632391
105A503309	Resistor	R1408,R197,R221, R314,R340,R349, R456,R457,R543, R562,R569,R767, R789,R795		2.547039	14	25477245.255648

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105A505109	Resistor	R490,R509,R521, R522,R524,R526, R527,R547,R548, R549,R550,R551, R678,R679,R681, R683,R841		2.547039	17	21160422.299251
105A505163	Resistor	R211,R245		2.547039	2	154078778.388085
105A507509	Resistor	R659,R849,R851, R853,R856		2.547039	5	67008142.102588
105A510009	Resistor	R117,R122,R186, R284,R300,R304, R309,R326,R52,R54		2.547039	10	35079934.879747
105A510223	Resistor	R87		2.547039	1	282340674.079668
105A510733	Resistor	R146		2.547039	1	282340674.079668
105A512009	Resistor	R101		2.547039	1	282340674.079668
105A512433	Resistor	R212		2.547039	1	282340674.079668
105A513009	Resistor	R614		2.547039	1	282340674.079668
105A514023	Resistor	R372,R393,R404, R420		2.547039	4	82309758.689546
105A515009	Resistor	R504,R660,R845, R846		2.547039	4	82309758.689546
105A515823	Resistor	R365,R369		2.547039	2	154078778.388085
105A519633	Resistor	R178		2.547039	1	282340674.079668
105A520033	Resistor	R145,R738		2.547039	2	154078778.388085
105A522669	Resistor	R632		2.547039	1	282340674.079668
105A523723	Resistor	R263,R347,R353		2.547039	3	107020754.986850
105A525533	Resistor	R179		2.547039	1	282340674.079668
105A530123	Resistor	R403		2.547039	1	282340674.079668
105A534823	Resistor	R82		2.547039	1	282340674.079668
105A538303	Resistor	R68		2.547039	1	282340674.079668
105A540269	Resistor	R272,R615,R69		2.547039	3	107020754.986850
105A544229	Resistor	R390		2.547039	1	282340674.079668
105A547519	Resistor	R106		2.547039	1	282340674.079668
105A548723	Resistor	R425		2.547039	1	282340674.079668
105A554913	Resistor	R104		2.547039	1	282340674.079668
105A561924	Resistor	R360,R366		2.547039	2	154078778.388085
105A566519	Resistor	R96		2.547039	1	282340674.079668
105A584503	Resistor	R83		2.547039	1	282340674.079668

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A586623	Resistor	R20		2.547039	1	282340674.079668
105A595303	Resistor	R518		2.547039	1	282340674.079668
105A595323	Resistor	R128		2.547039	1	282340674.079668
105A700003	Resistor	R1315,R158, R166, R206,R207,R 21,R23, R306,R317,R 371, R384,R417,R 426,R44, R440,R441,R 514, R539,R65,R6 6,R669, R672,R8,R87 6,R877, R9,R908		2.547039	27	13557741.157915
105A700009	Resistor	R102,R107,R 112,R13, R1310,R1317 ,R1318, R1320,R1322 ,R134, R138,R1384, R1385, R1386,R1387 ,R1398, R1399,R152, R161, R162,R176,R 180, R198,R203,R 205, R220,R250,R 258, R260,R265,R 271, R275,R291,R 297, R318,R322,R 323, R329,R341,R 406, R411,R412,R 422, R455,R470,R 471,		2.547039	114	3326536.994609

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105A70000A	Resistor	R248,R334,R354, R382,R385,R394, R399,R423,R424		2.547039	9	38754445.632391
105A700103	Resistor	R164,R215,R391, R392,R428		2.547039	5	67008142.102588
105A700139	Resistor	R47		2.547039	1	282340674.079668
105A701039	Resistor	R27,R694		2.547039	2	154078778.388085
105A701069	Resistor	R643		2.547039	1	282340674.079668
105A702263	Resistor	R32,R4,R56		2.547039	3	107020754.986850
105A702269	Resistor	R610		2.547039	1	282340674.079668
105A704709	Resistor	R324,R325,R387		2.547039	3	107020754.986850
105A705129	Resistor	R1406,R1407,R150, R173,R445,R448, R453,R459,R461, R479,R485,R487, R488,R498,R511, R512,R531,R553, R557,R558,R560,R57, R59,R600,R604,R607, R64,R650,R664,R675, R680,R686,R687, R712,R726,R729, R731,R736,R748, R750,R752,R753, R768,R775,R777,R78, R783,R788,R79		2.547039	51	7312342.249386
105A707509	Resistor	R273		2.547039	1	282340674.079668
105A708209	Resistor	R537,R567,R585		2.547039	3	107020754.986850
105A710009	Resistor	R1391,R1392,R1393, R35,R39		2.547039	5	67008142.102588

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105A710033	Resistor	R383,R386,R396		2.547039	3	107020754.986850
105A710039	Resistor	R1313,R28		2.547039	2	154078778.388085
105A733009	Resistor	R596		2.547039	1	282340674.079668
106B510034	Resistor	RT1,RT10,RT2,RT3,RT4,RT5,RT6,RT7,RT8,RT9		7.724580	10	9972119.123386
106BA01033	Resistor	R784,R812		7.724580	2	38596617.434771
1121415090	Capacitor	C279		1.128806	1	704977644.692287
1121501680	Capacitor	C137,C151,C159,C160,C199,C53		1.128806	6	133979725.056342
1121501690	Capacitor	C116,C150,C30		1.128806	3	257514172.353070
1121501691	Capacitor	C27,C467,C808		1.128806	3	257514172.353070
1122501780	Capacitor	C545		1.128806	1	704977644.692287
1124418090	Capacitor	C413,C414		1.128806	2	375289731.076049
1124418190	Capacitor	C101,C112,C122,C244,C249,C265,C273,C395,C396,C397,C398,C399,C400,C401,C402,C83,C84,C85,C86,C87		1.128806	20	41950408.034165
1124427090	Capacitor	C411,C412		1.128806	2	375289731.076049
1124433190	Capacitor	C239,C243,C269		1.128806	3	257514172.353070
1124510280	Capacitor	C52		1.128806	1	704977644.692287
1124522290	Capacitor	C22,C37,C810,C811,C812,C813		1.128806	6	133979725.056342
1124533191	Capacitor	C523		1.128806	1	704977644.692287
1124533280	Capacitor	C109,C11,C163,C40,C72		1.128806	5	159367490.199266
1124533282	Capacitor	C13,C430		1.128806	2	375289731.076049
1124539180	Capacitor	C73		1.128806	1	704977644.692287
1124547190	Capacitor	C248,C250,C270		1.128806	3	257514172.353070

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1129610051	Capacitor	C153,C162,C2,C322,C330,C331,C334,C43		1.128806	8	101746760.035398
1129610080	Capacitor	C130,C131,C132,C133,C134,C135,C144,C157,C158,C380,C384,C385,C386,C387,C388,C389,C390,C417,C630,C645		1.128806	20	41950408.034165
1129701690	Capacitor	C251,C254,C280		1.128806	3	257514172.353070
1129710390	Capacitor	C12,C120,C141,C165,C191,C194,C207,C240,C242,C245,C247,C257,C302,C484		1.128806	14	59316298.011235
1129722091	Capacitor	C36		1.128806	1	704977644.692287
1129747091	Capacitor	C227,C228,C256		1.128806	3	257514172.353070
1174518180	Capacitor	CP1,CP2,CP3,CP4		4.744484	4	45505862.704531
1181610196	Capacitor	C108,C212,C98		4.744484	3	59399119.141203
1181627194	Capacitor	C126,C57		4.744484	2	86049450.747498
1181627197	Capacitor	C102,C24,C46,C556,C558		4.744484	5	36944177.000623
1189610153	Capacitor	C298,C525,C536		4.744484	3	59399119.141203
1189633151	Capacitor	C45		4.744484	1	159663026.715137
1189656198	Capacitor	C104,C113,C115,C210,C425,C560		4.744484	6	31179134.677521
1189682199	Capacitor	C19,C20,C274,C275,C276,C282,C286,C289,C290,C296,C8		4.744484	11	17521838.469916
11A2410240	Capacitor	C34,C35		1.128806	2	375289731.076049

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11A2422190	Capacitor	C223,C224,C255		1.128806	3	257514172.353070
11A4430090	Capacitor	C15,C433		1.128806	2	375289731.076049
11A4482090	Capacitor	C74		1.128806	1	704977644.692287
11C1410440	Capacitor	C527,C544		1.128806	2	375289731.076049
11C1501080	Capacitor	C190,C196,C264,C64, C89		1.128806	5	159367490.199266
11C1515440	Capacitor	C17		1.128806	1	704977644.692287
11C1522480	Capacitor	C195,C197,C294		1.128806	3	257514172.353070
11C1547480	Capacitor	C111		1.128806	1	704977644.692287
11C2410390	Capacitor	C1		1.128806	1	704977644.692287
11C2510480	Capacitor	C51,C65		1.128806	2	375289731.076049
11C2522480	Capacitor	C26		1.128806	1	704977644.692287
11C4501380	Capacitor	C6		1.128806	1	704977644.692287
11C4501790	Capacitor	C337,C340,C353, C356,C371,C373, C378,C381,C382, C488,C501,C502, C503,C504,C505, C506,C507,C508, C510,C511,C512, C513,C514,C516, C517,C518,C519, C520,C521,C522,C93		1.128806	31	27349602.091781
11C4512290	Capacitor	C21		1.128806	1	704977644.692287
11C4522290	Capacitor	C235,C236,C268		1.128806	3	257514172.353070
11C4533240	Capacitor	C220,C221,C267		1.128806	3	257514172.353070
11C4582190	Capacitor	C18		1.128806	1	704977644.692287
11C9510050	Capacitor	C182,C183,C468, C473,C75,C76		1.128806	6	133979725.056342

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11C9510490	Capacitor	C114,C118,C119, C128,C154,C155, C156,C161,C164, C173,C174,C185, C189,C204,C205, C246,C408,C420, C456,C464,C465, C471,C474,C479, C494,C69,C800,C805		1.128806	28	30212160.975569
11E1501080	Capacitor	C181,C198,C253		1.128806	3	257514172.353070
11E1510050	Capacitor	C127,C225,C38,C416, C453,C455,C47		1.128806	7	115633865.771428
11E1522680	Capacitor	C232,C372,C638, C814		1.128806	4	196873384.410843
11E1547650	Capacitor	C259,C260,C281		1.128806	3	257514172.353070
11E2501080	Capacitor	C206,C209,C299		1.128806	3	257514172.353070

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E2501690	Capacitor	C107,C121,C123, C124,C125,C129, C136,C143,C145, C146,C152,C166, C167,C168,C169, C170,C171,C172, C175,C176,C177, C178,C179,C187, C188,C192,C193, C203,C216,C277, C278,C31,C310,C316, C32,C323,C328,C329, C33,C332,C338,C344, C352,C355,C357, C361,C366,C369, C37		1.128806	122	7100753.343357
11E2510010	Capacitor	C60,C77,C78		1.128806	3	257514172.353070
11E2510060	Capacitor	C103,C213,C214, C218,C219,C229, C230,C233,C234,C29, C295,C312,C313, C314,C42,C48,C49, C7,C71,C88		1.128806	20	41950408.034165
11E2647650	Capacitor	C70		1.128806	1	704977644.692287
11E4433090	Capacitor	C370,C377,C806		1.128806	3	257514172.353070

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E9501091	Capacitor	C14,C201,C202,C217,C258,C325,C343,C345,C351,C364,C365,C409,C421,C422,C423,C426,C428,C429,C431,C432,C435,C437,C439,C440,C443,C444,C445,C446,C447,C449,C450,C457,C458,C459,C460,C462,C480,C485,C487,C623,C624,C626,C631,C643,C644,C646,C647,C648,C528,C530,C540, C542		1.128806	58	14788723.209389
11E9510050	Capacitor	C528,C530,C540, C542		1.128806	4	196873384.410843

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E9522490	Capacitor	C110,C117,C139, C148,C184,C186, C379,C383,C415, C418,C509,C515, C567,C568,C569, C570,C571,C572, C573,C574,C575, C576,C577,C578, C579,C580,C581, C582,C589,C590, C591,C592,C593, C594,C595,C596, C597,C598,C599, C600,C601,C602, C603,C604,C607, C608,C609,C610,		1.128806	62	13849042.265233
11E9547630	Capacitor	C532,C537		1.128806	2	375289731.076049
11E9547680	Capacitor	C25,C4,C67		1.128806	3	257514172.353070
11E9610080	Capacitor	C308,C451,C533, C541,C546,C807		1.128806	6	133979725.056342
11E9622050	Capacitor	C100,C106,C142, C180,C491,C492		1.128806	6	133979725.056342
11E9622060	Capacitor	C147,C475,C476, C477,C61,C62,C63, C66,C79		1.128806	9	90863428.080946

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E9622080	Capacitor	C252,C271,C272, C291,C292,C293, C301,C303,C304, C305,C306,C307, C315,C317,C318, C319,C320,C324, C333,C336,C339, C346,C354,C362, C367,C368,C374, C391,C392,C393, C394,C405,C406, C407,C410,C625, C627,C628,C629, C632,C633,C634, C635,C636,C637, C639,C640,C641,		1.128806	49	17456231.890224
11EA647010	Capacitor	C309,C321,C347, C348,C358,C359, C360		1.128806	7	115633865.771428
11EB501040	Capacitor	C534,C538		1.128806	2	375289731.076049
1211100113	Inductor	L15		4.944252	1	154760964.143460
121110106G	Inductor	L20		4.944252	1	154760964.143460
1211103671	Inductor	L10	35.2	8.988653	1	85127009.184136
1211103671	Inductor	L11		4.944252	1	154760964.143460
1211103671	Inductor	L2	23.9	7.524052	1	101697485.206141
1211104774	Inductor	L12,L13		4.944252	2	83201062.149749
1211104774	Inductor	L14	15.5	6.538540	1	117025687.677811
121111007E	Inductor	L4,L5		4.944252	2	83201062.149749
1211115076	Inductor	L22		4.944252	1	154760964.143460
1211122070	Inductor	L3		4.944252	1	154760964.143460
121114707H	Inductor	L1		4.944252	1	154760964.143460
1212306030	Inductor	FB4,FB5		4.944252	2	83201062.149749

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
12123A0009	Inductor	FB1,FB14,FB15,FB16,FB2,FB3,FB31,FB6		4.944252	8	22874049.098230
1214309006	Inductor	L24,L25		4.944252	2	83201062.149749
121430900A	Inductor	L6,L7,L8,L9		4.944252	4	43912872.424775
12310025A3	Miscellaneous	Y1,Y3		19.200000	2	8854051.752197
1231332726	Miscellaneous	Y2		19.200000	1	23844262.770939
1300581940	Semiconductor	D1		7.793411	1	92807310.010983
1301005444	Semiconductor	D30		7.793411	1	92807310.010983
1301005450	Semiconductor	D27		7.793411	1	92807310.010983
1301053040	Semiconductor	D12,D13,D14		7.793411	3	35106858.962001
1301400642	Semiconductor	D11		7.793411	1	92807310.010983
1305040241	Semiconductor	D10,D3,D4,D5,D6,D7,D8,D9		7.793411	8	14161142.003130
1305100541	Semiconductor	D28,D29,D31,D32		7.793411	4	26989084.126235
1310390413	Semiconductor	Q2,Q23,Q30,Q31,Q34,Q35		22.463360	6	6378891.324740
131411171J	Semiconductor	U63		22.463360	1	31642600.748419
1315013810	Semiconductor	Q19,Q3,Q6		22.463360	3	12043329.789539
1315060300	Semiconductor	Q17,Q18,Q24,Q26,Q32		22.463360	5	7551839.591592
1315060300	Semiconductor	Q33	24.6	42.283231	1	16810425.896441
1315070020	Semiconductor	Q1,Q12,Q13,Q20,Q22,Q28,Q29,Q36,Q39,Q4,Q40,Q41,Q42,Q43,Q44,Q45,Q47,Q48,Q49,Q5,Q50,Q51,Q8,Q9		22.463360	24	1717346.784324
1315070020	Semiconductor	Q46	25.1	42.788223	1	16612027.332981
1315667910	Semiconductor	Q15,Q16		22.463360	2	17315095.066101
13156K1N10	Semiconductor	Q7		22.463360	1	31642600.748419
1315703011	Semiconductor	Q10,Q21,Q27		22.463360	3	12043329.789539
1420096170	Integrated Circuit	U15		43.803003	1	11739202.588727
1430015420	Integrated Circuit	U1		43.803003	1	11739202.588727
1430021430	Integrated Circuit	U10,U41,U7		43.803003	3	4923240.069161
1430053690	Integrated Circuit	U3		43.803003	1	11739202.588727
1430061330	Integrated Circuit	U6		43.803003	1	11739202.588727
1430512000	Integrated Circuit	U5		43.803003	1	11739202.588727
1430545260	Integrated Circuit	U2,U40		43.803003	2	6834791.244197

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1430811090	Integrated Circuit	U22,U23,U26		43.803003	3	4923240.069161
14308884B0	Integrated Circuit	U8		43.803003	1	11739202.588727
14309624F0	Integrated Circuit	U12,U13		43.803003	2	6834791.244197
1440003680	Integrated Circuit	U34	15.2	121.984596	1	4215387.403076
1440015480	Integrated Circuit	U35	19.6	48.998228	1	10494508.651153
14594T2451	Integrated Circuit	U64,U65		26.018600	2	14194252.866846
1462K752A0	Integrated Circuit	U42BIOS		11.063278	1	58231413.220643
1469128350	Integrated Circuit	U42		11.063278	1	58231413.220643
1482640HC1	Integrated Circuit	U48		26.018600	1	25551442.237972
14909660T0	Integrated Circuit	U66		43.803003	1	11739202.588727
149SF02040	Integrated Circuit	U11,U49		43.803003	2	6834791.244197
149SF02040	Integrated Circuit	U28	12.1	99.786667	1	5153116.571787
14S3055300	Integrated Circuit	U37		43.803003	1	11739202.588727
14S3902500	Integrated Circuit	U52		43.803003	1	11739202.588727
14S4081102	Integrated Circuit	U14,U16,U30 ,U33, U47		43.803003	5	3214211.402100
14S4872800	Integrated Circuit	U20		43.803003	1	11739202.588727
14S5912300	Integrated Circuit	U19		26.018600	1	25551442.237972
14S5A00702	Integrated Circuit	U25,U31		26.018600	2	14194252.866846
14S5A00821	Integrated Circuit	U117,U17,U4 ,U50		26.018600	4	7696979.559193
14S5A01430	Integrated Circuit	U46		26.018600	1	25551442.237972
14S5A23200	Integrated Circuit	U36		26.018600	1	25551442.237972
14S5A23200	Integrated Circuit	U9	15.8	50.549220	1	13151790.544311
14S6203205	Integrated Circuit	U18		11.063278	1	58231413.220643
14S9080901	Integrated Circuit	U45		43.803003	1	11739202.588727
1540710280	Resistor	RP8,RP9		9.971436	2	30043399.401299
1540722085	Resistor	RP3,RP4,RP5 ,RP6, RP7		9.971436	5	14126297.426094
1540782080	Resistor	RP1		9.971436	1	51606907.671214
1540782280	Resistor	RP2		9.971436	1	51606907.671214
1651528812	Connection	DIMM2,DIM M4		16.184835	2	20390152.380746
1651528813	Connection	DIMM1,DIM M3		16.184835	2	20390152.380746
16515A2994	Connection	DDR3_IPMI1		16.184835	1	35685591.360212
1653002100	Connection	CN1,JP3		16.184835	2	20390152.380746
1653003100	Connection	CMOS1		16.184835	1	35685591.360212
1653003101	Connection	JP1,JP2		16.184835	2	20390152.380746
1653004200	Connection	FP1,FP2		16.184835	2	20390152.380746
165300420F	Connection	CN12		16.184835	1	35685591.360212
165300420Q	Connection	CN6		16.184835	1	35685591.360212
1653005201	Connection	DIO1		16.184835	1	35685591.360212
1653008100	Connection	CN8		16.184835	1	35685591.360212
1653205203	Connection	COM2		16.184835	1	35685591.360212
165321020D	Connection	USB1,USB2		16.184835	2	20390152.380746
1653212100	Connection	LPC1		16.184835	1	35685591.360212

File Name: FWS-7520.rfp
Assembly: 9697752004-D
Ref Des:
Description:

Failure Rate: 7710.233818
MTBF (hrs): 129,698
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1653300100	Connection	JP3(1-2)		16.184835	1	35685591.360212
1653300101	Connection	COMS1(1-2)		16.184835	1	35685591.360212
1653300102	Connection	JP2(1-2)		16.184835	1	35685591.360212
1653300107	Connection	JP1(1-2)		16.184835	1	35685591.360212
165392521H	Connection	CN3		16.184835	1	35685591.360212
1654209830	Connection	PCIE2,PCIE3, PCIE4		16.184835	3	14515880.849373
1654216430	Connection	PCIE1		16.184835	1	35685591.360212
1654226303	Connection	MPCIE1		16.184835	1	35685591.360212
1654232203	Connection	PCIE5		16.184835	1	35685591.360212
165490700G	Connection	SATA1,SATA 2,SATA3, SATA4,SATA 5		16.184835	5	9343344.843761
1655004011	Connection	CN15,CN16,C N17,CN2, CN4		16.184835	5	9343344.843761
1655004018	Connection	CPU_FAN1,C PU_FAN2, SYS_FAN1		16.184835	3	14515880.849373
1655408023	Connection	ATX_CPU1		16.184835	1	35685591.360212
1655424122	Connection	ATX1		16.184835	1	35685591.360212
175011901H	Miscellaneous	BAT1		306.000000	1	1681683.006787
1750220326	Connection	BAT1		16.184835	1	35685591.360212
1752002500	Miscellaneous	FS2,FS3		2.400000	2	143944727.196625
1752310000	Miscellaneous	FS1		2.400000	1	254626042.602335

File Name: FWS-7520.rfp
Assembly: 9697T36203-D
Ref Des:
Description:

Failure Rate: 2957.653966
MTBF (hrs): 338,106
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050503324	Resistor	R105,R126,R133, R140,R15,R38,R44, R45,R47		2.547039	9	38754445.632391
1050503334	Resistor	R59,R68		2.547039	2	154078778.388085
1050506234	Resistor	R5		2.547039	1	282340674.079668
1050510034	Resistor	R1,R102		2.547039	2	154078778.388085
1050520034	Resistor	R117,R3,R7		2.547039	3	107020754.986850
1050524004	Resistor	R127,R128,R129, R130		2.547039	4	82309758.689546
1050549964	Resistor	R107,R110		2.547039	2	154078778.388085
1059700001	Resistor	R4949,R5050		2.547039	2	154078778.388085
105A501529	Resistor	R139		2.547039	1	282340674.079668
105A503309	Resistor	R141,R142,R143		2.547039	3	107020754.986850
105A515009	Resistor	R152		2.547039	1	282340674.079668
105A549919	Resistor	R123		2.547039	1	282340674.079668
105A700003	Resistor	R178		2.547039	1	282340674.079668
105A700009	Resistor	R108,R131,R135, R136,R153,R154, R155,R158,R159, R160,R161,R162, R163,R179,R180, R185,R186,R2,R205, R206,R207,R208, R209,R210,R211,R23, R36,R46,R6,R66,R69, R74,R9,R95,R97,R98		2.547039	36	10261285.143207
105A70000A	Resistor	R100,R71,R75		2.547039	3	107020754.986850
105A700139	Resistor	R76		2.547039	1	282340674.079668
105A701039	Resistor	R103,R109,R120, R122,R14,R20,R4, R49,R51,R56,R62, R77,R78,R79,R8,R96, R99		2.547039	17	21160422.299251

File Name: FWS-7520.rfp
 Assembly: 9697T36203-D
 Ref Des:
 Description:

Failure Rate: 2957.653966
 MTBF (hrs): 338,106
 Temperature: 30
 Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A703309	Resistor	R119,R39,R52,R58, R64		2.547039	5	67008142.102588
105A703329	Resistor	R35		2.547039	1	282340674.079668
105A704729	Resistor	R11,R111,R115,R12,R13,R164,R165,R166,R167,R170,R172,R175,R177,R19,R191,R192,R193,R195,R197,R198,R199,R21,R25,R26,R27,R29,R31,R40,R41,R42,R43,R54,R61,R67,R73,R82,R84,R87,R89,R91,R92,R94		2.547039	42	8834121.532637
105A710009	Resistor	R144		2.547039	1	282340674.079668
105A733009	Resistor	R149,R150,R151,R156,R157		2.547039	5	67008142.102588
105A747009	Resistor	R171,R176		2.547039	2	154078778.388085
1121501690	Capacitor	C13,C147,C289,C290,C291,C292,C293,C294,C295,C296,C46,C57,C58,C59		1.128806	14	59316298.011235
1124427090	Capacitor	C45,C50		1.128806	2	375289731.076049
1129610080	Capacitor	C34,C66,C68		1.128806	3	257514172.353070
1129710390	Capacitor	C148		1.128806	1	704977644.692287
11B2710060	Capacitor	C151,C152,C153, C154		1.128806	4	196873384.410843
11C1410440	Capacitor	C125,C126,C127,C128,C139,C140,C141,C142,C143,C144,C145,C146		1.128806	12	68856937.301178
11C1539840	Capacitor	C32		1.128806	1	704977644.692287

File Name: FWS-7520.rfp
Assembly: 9697T36203-D
Ref Des:
Description:

Failure Rate: 2957.653966
MTBF (hrs): 338,106
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11C4401880	Capacitor	C81		1.128806	1	704977644.692287
11C4547190	Capacitor	C70,C71,C72 ,C73		1.128806	4	196873384.410843
11C9510050	Capacitor	C11,C12,C13 2,C133, C15,C16,C52 ,C55		1.128806	8	101746760.035398
11C9510490	Capacitor	C10,C14,C17 ,C23, C24,C25,C26 ,C27, C272,C275,C 286, C288,C35,C3 6,C4, C40,C43,C49 ,C51, C54,C56,C61 ,C62, C67,C9		1.128806	25	33748887.792763
11E2501690	Capacitor	C100,C101,C 102, C103,C104,C 105, C106,C107,C 109, C110,C111,C 112, C113,C114,C 115, C116,C117,C 118, C119,C120,C 121, C123,C124,C 69,C76, C77,C80,C85 ,C86, C88,C89,C91 ,C92, C93,C94,C95 ,C96, C97,C98,C99		1.128806	40	21305452.824644
11E9622050	Capacitor	C1,C129,C13 0,C131, C134,C135,C 136, C137,C138,C 2,C39, C44,C5,C6		1.128806	14	59316298.011235
11E9622052	Capacitor	C108,C90		1.128806	2	375289731.076049
11EA647010	Capacitor	C122,C149,C 63,C84		1.128806	4	196873384.410843

File Name: FWS-7520.rfp
Assembly: 9697T36203-D
Ref Des:
Description:

Failure Rate: 2957.653966
MTBF (hrs): 338,106
Temperature: 30
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11EB501040	Capacitor	C82,C83,C87		1.128806	3	257514172.353070
121113307M	Inductor	L1,L2		4.944252	2	83201062.149749
121113307M	Inductor	L4	26.5	7.846821	1	97514289.673154
1212306033	Inductor	FB11,FB12,F B13, FB14		4.944252	4	43912872.424775
121230805X	Inductor	FB10		4.944252	1	154760964.143460
12123A0009	Inductor	FB2,FB3,FB4, FB5		4.944252	4	43912872.424775
12123C0006	Inductor	FB8,FB9		4.944252	2	83201062.149749
12123C000A	Inductor	FB6		4.944252	1	154760964.143460
1214309006	Inductor	L5,L8		4.944252	2	83201062.149749
121430900A	Inductor	L3,L6,L7,L9		4.944252	4	43912872.424775
123132505M	Miscellaneous	Y3		19.200000	1	23844262.770939
12330156A0	Miscellaneous	Y1		19.200000	1	23844262.770939
1304300140	Optical Device	LED2,LED4		79.003355	2	3783722.582110
1304500240	Optical Device	LED1,LED3		79.003355	2	3783722.582110
1304L51460	Optical Device	LED5		79.003355	1	6497172.749112
1305040241	Semiconductor	D10,D12,D4, D5,D6, D7,D8,D9		7.793411	8	14161142.003130
1305100541	Semiconductor	D11,D13,D15 ,D16		7.793411	4	26989084.126235
1310222211	Semiconductor	Q1,Q2		22.463360	2	17315095.066101
1420096170	Integrated Circuit	U11,U12,U3		43.803003	3	4923240.069161
142TS3A240	Integrated Circuit	U20		43.803003	1	11739202.588727
1430021430	Integrated Circuit	U1,U10,U2		43.803003	3	4923240.069161
1440210AT0	Integrated Circuit	U8	20.4	169.385027	1	3035760.239529
1444422700	Integrated Circuit	U5	34.4	389.829368	1	1319070.270315
14594T2451	Integrated Circuit	U21,U24		43.803003	2	6834791.244197
1463CAT240	Integrated Circuit	U19		11.063278	1	58231413.220643
14S5A00401	Integrated Circuit	U22,U23		26.018600	2	14194252.866846
14S5A00702	Integrated Circuit	U6		26.018600	1	25551442.237972
14S6308002	Integrated Circuit	U4		11.063278	1	58231413.220643
1601110201	Connection	SW1		16.184835	1	35685591.360212
1652814204	Connection	LAN2		16.184835	1	35685591.360212
1652820201	Connection	LAN1		16.184835	1	35685591.360212
165300410A	Connection	CN6		16.184835	1	35685591.360212
165321020D	Connection	USB1		16.184835	1	35685591.360212
1653916121	Connection	CN3		16.184835	1	35685591.360212
1654801831	Connection	CN7		16.184835	1	35685591.360212
1654902037	Connection	CN4,CN5		16.184835	2	20390152.380746
1655312023	Connection	CN17		16.184835	1	35685591.360212
1812850290	Resistor	R138		69.019322	1	7485159.269379