

# VPC-5500

## Reliability Prediction Report (MTBF)

Summary	Failure Rate: 10778.934027 ppm MTBF: 92,774 Hours
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Issue date	Approval	Test Engineer
2015-10-21	KJ Wang	Louie Lee

# Reliability Prediction (MTBF)

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**I . Model Name:** VPC-5500

**II . Prediction Date:** OCT. 21th, 2015

**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:**

VPC-5500 (M/B: 9697550014-D):

- Failure Rate: 10778.934027 ppm

- MTBF: 92,774 Hours

**AAEON Reliability Prediction  
Summary**

**File Name:** VPC-5500.rfp  
**Duty Cycle:** 100  
**Calculation Model:** Telcordia Issue 2  
**Method:** Method I Case 3

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Assembly Name	Part Number	Ref Des	Quantity	Failure Rate	MTBF
VPC-5500	9697550014-D		1	10778.934027	92,774

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050500104	Resistor	R1075,R796, R797, R798		2.547039	4	82309758.689546
1050500334	Resistor	R441		2.547039	1	282340674.079668
1050501054	Resistor	R600,R992		2.547039	2	154078778.388085
1050501334	Resistor	R1083,R257		2.547039	2	154078778.388085
1050502204	Resistor	R1014,R380, R381, R382,R383,R 564, R570,R582,R 589, R601		2.547039	10	35079934.879747
1050502224	Resistor	R176,R178,R 224, R225,R226,R 227, R231,R233,R 367, R368,R369,R 370, R371,R372,R 374, R375,R577,R 584, R586,R587,R 617, R624		2.547039	22	16518584.576317
1050502234	Resistor	R619,R621		2.547039	2	154078778.388085
1050502734	Resistor	R435		2.547039	1	282340674.079668
1050503324	Resistor	R671,R679,R 683, R691,R694,R 695, R713,R718,R 721, R722,R724,R 726, R734,R736,R 739, R818,R819,R 822, R828,R829,R 832, R835,R836,R 839, R849,R856,R 857, R860		2.547039	28	13089488.559853
1050503334	Resistor	R688,R707,R 758, R761,R781,R 801, R806,R808		2.547039	8	43225424.698300
1050503914	Resistor	R902		2.547039	1	282340674.079668
1050503934	Resistor	R112		2.547039	1	282340674.079668

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1050504334	Resistor	R1017,R904		2.547039	2	154078778.388085
1050504724	Resistor	R1117,R532, R559, R560,R569,R 571, R588		2.547039	7	48991237.965885
1050504734	Resistor	R1091,R137, R498, R499,R509,R 510, R511,R512,R 513, R514,R515,R 529, R593,R627		2.547039	14	25477245.255648
1050505134-00	Resistor	R457		2.547039	1	282340674.079668
1050505604	Resistor	R203		2.547039	1	282340674.079668
1050507524	Resistor	R259,R287,R 292, R995,R997		2.547039	5	67008142.102588
1050507530	Resistor	R124,R133		2.547039	2	154078778.388085
1050508224	Resistor	R1042,R213, R232, R943,R993,R 994		2.547039	6	56573956.677649
1050510034	Resistor	R1077,R1078 ,R1079, R1081,R1084 ,R1090, R1093,R1094 ,R192, R208,R388,R 458, R465,R496,R 497, R595,R609,R 848		2.547039	18	20032117.836120
1050511814	Resistor	R110		2.547039	1	282340674.079668
1050515034	Resistor	R859		2.547039	1	282340674.079668
1050516004	Resistor	R12,R13,R14		2.547039	3	107020754.986850
1050520034	Resistor	R298,R905,R 914		2.547039	3	107020754.986850
1050521514	Resistor	R853,R854,R 855		2.547039	3	107020754.986850
1050522124	Resistor	R1082		2.547039	1	282340674.079668
1050524004	Resistor	R494		2.547039	1	282340674.079668
1050524904	Resistor	R1050,R1067 ,R329, R442,R484,R 978		2.547039	6	56573956.677649
1050526124	Resistor	R1021,R1035		2.547039	2	154078778.388085

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1050527034	Resistor	R348		2.547039	1	282340674.079668
1050528734	Resistor	R1020		2.547039	1	282340674.079668
1050533034	Resistor	R1034,R255, R956		2.547039	3	107020754.986850
1050533214	Resistor	R346		2.547039	1	282340674.079668
1050549924	Resistor	R120,R98		2.547039	2	154078778.388085
1050549934	Resistor	R281		2.547039	1	282340674.079668
1050549964	Resistor	R252,R258,R 278, R351,R356		2.547039	5	67008142.102588
1050551004	Resistor	R452		2.547039	1	282340674.079668
1050551034	Resistor	R495		2.547039	1	282340674.079668
1050564904	Resistor	R357		2.547039	1	282340674.079668
1050564924	Resistor	R862		2.547039	1	282340674.079668
1050568124	Resistor	R119		2.547039	1	282340674.079668
1050580614	Resistor	R97		2.547039	1	282340674.079668
1050582504	Resistor	R111		2.547039	1	282340674.079668
1050590914	Resistor	R846		2.547039	1	282340674.079668
1050590964	Resistor	R998		2.547039	1	282340674.079668
1050597604	Resistor	R344,R406		2.547039	2	154078778.388085
1050701504	Resistor	R218,R894,R 917		2.547039	3	107020754.986850
1050704304	Resistor	R200,R243		2.547039	2	154078778.388085
1050708234	Resistor	R193		2.547039	1	282340674.079668
1050747012	Resistor	R751,R752,R 753, R876,R877,R 878		2.547039	6	56573956.677649
1053500289	Resistor	R169,R297		2.547039	2	154078778.388085
1054500789	Resistor	R884		2.547039	1	282340674.079668
1054502599	Resistor	R991		2.547039	1	282340674.079668
1054600289	Resistor	R950		2.547039	1	282340674.079668
1054700289	Resistor	R467,R728,R 951		2.547039	3	107020754.986850
1054700389	Resistor	R1061,R1062		2.547039	2	154078778.388085
1059700001	Resistor	R1023,R1030 ,R1064, R398,R413,R 968, R980		2.547039	7	48991237.965885

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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A500103	Resistor	R106,R109,R114, R123,R131,R134, R141,R150,R152, R154,R159,R161, R248,R649,R650, R651,R652,R653, R654,R655,R656, R658,R659,R660, R661,R663,R664, R665,R666,R75,R82, R83,R84,R899,R94, R95		2.547039	36	10261285.143207
105A500113	Resistor	R403		2.547039	1	282340674.079668
105A500139	Resistor	R1068,R1069,R139, R171,R184,R272, R399,R431,R434, R446,R447,R478, R479,R538,R545, R546,R556,R558, R568,R711		2.547039	20	18104712.511396
105A500173	Resistor	R1015,R188,R262, R288,R953		2.547039	5	67008142.102588
105A500239	Resistor	R416		2.547039	1	282340674.079668
105A501003	Resistor	R847,R872		2.547039	2	154078778.388085
105A501013	Resistor	R349,R355		2.547039	2	154078778.388085



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105A501039	Resistor	R1080,R201, R334, R358,R385,R 414, R422,R432,R 437, R440,R488,R 492, R543,R544,R 547, R562,R574,R 594, R610,R613,R 637, R774,R788,R 800, R867,R896,R 928, R930,R931,R 933, R935,R936		2.547039	32	11502702.879433
105A501053	Resistor	R417		2.547039	1	282340674.079668
105A501139	Resistor	R345		2.547039	1	282340674.079668
105A501539	Resistor	R1071,R1086 ,R626		2.547039	3	107020754.986850
105A502039	Resistor	R10,R1041,R 194, R268,R269,R 354, R415,R42,R4 29,R575, R865		2.547039	11	32049696.385471
105A503039	Resistor	R209		2.547039	1	282340674.079668
105A503309	Resistor	R411,R44,R4 5,R48, R49,R50,R53 ,R533, R534,R535,R 536, R537		2.547039	12	29507083.749401
105A503423	Resistor	R579		2.547039	1	282340674.079668
105A505109	Resistor	R275,R276,R 290, R923		2.547039	4	82309758.689546
105A505163	Resistor	R952		2.547039	1	282340674.079668
105A505629	Resistor	R506,R518		2.547039	2	154078778.388085
105A506834	Resistor	R487		2.547039	1	282340674.079668
105A507509	Resistor	R1101,R1102 ,R1103, R244,R352,R 616, R620,R622,R 625		2.547039	9	38754445.632391

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105A510009	Resistor	R1019,R103, R1036, R196,R331,R 332, R359,R360,R 436, R767,R888,R 90,R91, R921,R922		2.547039	15	23852782.943395
105A512009	Resistor	R1072		2.547039	1	282340674.079668
105A512039	Resistor	R474		2.547039	1	282340674.079668
105A513009	Resistor	R251,R866		2.547039	2	154078778.388085
105A515009	Resistor	R202,R340,R 341, R342,R596,R 597, R598		2.547039	7	48991237.965885
105A515034	Resistor	R132		2.547039	1	282340674.079668
105A516213	Resistor	R813		2.547039	1	282340674.079668
105A518214	Resistor	R327		2.547039	1	282340674.079668
105A521003	Resistor	R885,R886,R 887		2.547039	3	107020754.986850
105A522669	Resistor	R309		2.547039	1	282340674.079668
105A525533	Resistor	R304		2.547039	1	282340674.079668
105A527403	Resistor	R330,R404		2.547039	2	154078778.388085
105A529413	Resistor	R873,R874,R 875		2.547039	3	107020754.986850
105A530113	Resistor	R638		2.547039	1	282340674.079668
105A533223	Resistor	R1076		2.547039	1	282340674.079668
105A536529	Resistor	R99		2.547039	1	282340674.079668
105A543233	Resistor	R1022		2.547039	1	282340674.079668
105A544214	Resistor	R473		2.547039	1	282340674.079668
105A549919	Resistor	R673,R698,R 699, R700		2.547039	4	82309758.689546
105A549923	Resistor	R151,R96		2.547039	2	154078778.388085
105A553629	Resistor	R486		2.547039	1	282340674.079668
105A554969	Resistor	R861		2.547039	1	282340674.079668
105A556003	Resistor	R1121		2.547039	1	282340674.079668
105A588713	Resistor	R500		2.547039	1	282340674.079668
105A590923	Resistor	R265		2.547039	1	282340674.079668
105A593123	Resistor	R402		2.547039	1	282340674.079668
105A700003	Resistor	R1018,R1065 ,R1066, R173,R186,R 261, R273,R530,R 647, R948,R949,R 960, R971		2.547039	13	27342571.921361

**Reliability Prediction  
Summary**

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**MTBF (hrs):** 92,774  
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Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
105A700009	Resistor	R100,R1000, R1001, R1002,R1003 ,R1004, R1005,R1006 ,R1007, R1008,R1009 ,R1010, R1011,R1012 ,R1016, R102,R1026, R1027, R1028,R1031 ,R1032, R1038,R1043 ,R1046, R1048,R1051 ,R1055, R1070,R11,R 1104, R1105,R1106 ,R1107, R1108,R1111 ,R1112, R1113,R1114 ,R1115, R1116,R1118 ,		2.547039	172	2218861.532061
105A70000A	Resistor	R1052,R108, R412, R471,R64,R6 5,R66, R67,R685,R6 87,R70, R71,R72,R72 5,R73, R746,R748,R 749, R756,R757,R 760, R844,R850,R 851, R900		2.547039	25	14603612.751152

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105A700139	Resistor	R122,R15,R206,R229,R239,R303,R312,R313,R322,R337,R407,R464,R466,R527,R528,R539,R541,R553,R554,R565,R567,R640,R74,R937		2.547039	24	15190138.820515
105A701009	Resistor	R138,R450,R490,R85		2.547039	4	82309758.689546
105A701039	Resistor	R1013,R1053,R1054,R1095,R1096,R1097,R1098,R1099,R1100,R113,R130,R142,R162,R183,R185,R189,R190,R205,R210,R211,R214,R228,R235,R236,R237,R270,R274,R277,R279,R283,R286,R296,R300,R301,R305,R308,R314,R320,R384,R40,R408,R41,R424,R460,R475,R476,R576		2.547039	113	3355470.219926
105A701053	Resistor	R961		2.547039	1	282340674.079668
105A701059	Resistor	R451		2.547039	1	282340674.079668
105A701069	Resistor	R181		2.547039	1	282340674.079668
105A701523	Resistor	R482		2.547039	1	282340674.079668
105A702039	Resistor	R557		2.547039	1	282340674.079668

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105A70220A	Resistor	R468,R472		2.547039	2	154078778.388085
105A702229	Resistor	R158		2.547039	1	282340674.079668
105A702239	Resistor	R1088,R1092, R453, R454,R461,R 469		2.547039	6	56573956.677649
105A702269	Resistor	R742,R743,R 744		2.547039	3	107020754.986850
105A703309	Resistor	R693,R702,R 708, R723,R776,R 780, R782,R785,R 793, R795,R802,R 807, R809,R811,R 815, R816		2.547039	16	22425139.809646
105A703329	Resistor	R1085,R716, R821, R830,R838		2.547039	5	67008142.102588
105A703363	Resistor	R92		2.547039	1	282340674.079668
105A704729	Resistor	R160,R318,R 410, R420,R421,R 423, R425,R426,R 427, R430,R433,R 438, R439,R501,R 502, R519,R520,R 521, R522,R523,R 524, R525,R526,R 549, R561,R572,R 573, R578,R590,R 591, R677		2.547039	31	11861900.957214
105A704763	Resistor	R1037,R989		2.547039	2	154078778.388085
105A705129	Resistor	R548		2.547039	1	282340674.079668
105A706209	Resistor	R291		2.547039	1	282340674.079668
105A708229	Resistor	R294,R311,R 321, R325,R505,R 507, R580,R583,R 966, R967,R973		2.547039	11	32049696.385471

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105A710039	Resistor	R174,R180,R207, R317,R336,R377, R418,R459,R463, R633,R892,R969		2.547039	12	29507083.749401
105A715009	Resistor	R9		2.547039	1	282340674.079668
105A733003	Resistor	R1,R2,R4,R6, R8		2.547039	5	67008142.102588
105A733009	Resistor	R54,R55,R56, R57, R58,R59,R60, R61, R62,R63,R68, R69		2.547039	12	29507083.749401
105A739039	Resistor	R1044		2.547039	1	282340674.079668
105A747009	Resistor	R1058,R1060, R1063, R1073,R1074, R443, R448,R449		2.547039	8	43225424.698300
106B500144	Resistor	RT4,RT5,RT6		7.724580	3	27814800.254496
106B510034	Resistor	RT3		7.724580	1	66247589.526685
106B701032	Resistor	RT1,RT2		7.724580	2	38596617.434771
1115610090	Capacitor	C36,C38		4.744484	2	86049450.747498
1121501050	Capacitor	C678		1.128806	1	704977644.692287

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1121501690	Capacitor	BC1,BC10,BC11,BC2,BC3,BC4,BC5,BC6,BC7,BC8,BC9,C1,C12,C14,C163,C167,C169,C170,C175,C185,C195,C197,C198,C219,C226,C251,C263,C268,C273,C276,C280,C281,C284,C300,C302,C304,C308,C317,C318,C323,C324,C332,C340,C344,C349,C350,C351,C352,C361,C362,C36		1.128806	158	5497611.511557
1121501691	Capacitor	C151,C159,C177,C183,C189,C212,C456,C471,C512,C513,C518,C519,C520,C521,C522,C567,C569,C647,C712,C713,C731,C732,C789,C822,C830,C833,C834,C843,C844,C845		1.128806	30	28241202.507613
1121533480	Capacitor	C140		1.128806	1	704977644.692287
1121622780	Capacitor	C723,C747		1.128806	2	375289731.076049
1121647480	Capacitor	C119		1.128806	1	704977644.692287

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**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1124410190	Capacitor	C125,C319		1.128806	2	375289731.076049
1124410191	Capacitor	C123,C303		1.128806	2	375289731.076049
1124418090	Capacitor	C173,C174,C721, C728		1.128806	4	196873384.410843
1124418190	Capacitor	C545,C546,C547, C548,C549,C550, C551,C552,C846, C847,C848,C849, C850,C851,C852, C853		1.128806	16	52112480.802928
1124427090	Capacitor	C568,C572,C581, C582,C583,C591, C592,C594		1.128806	8	101746760.035398
1124433190	Capacitor	C139,C146		1.128806	2	375289731.076049
1124522190	Capacitor	C326		1.128806	1	704977644.692287
1124522280	Capacitor	C612,C618,C619		1.128806	3	257514172.353070
1124522290	Capacitor	C813		1.128806	1	704977644.692287
1124522680	Capacitor	C305,C315,C335		1.128806	3	257514172.353070
1124522880	Capacitor	C145		1.128806	1	704977644.692287
1124533190	Capacitor	C200		1.128806	1	704977644.692287
1124533191	Capacitor	C181		1.128806	1	704977644.692287
1124547290	Capacitor	C143		1.128806	1	704977644.692287
1129522650	Capacitor	C771		1.128806	1	704977644.692287



**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1129522790	Capacitor	C416,C667,C668, C670,C672,C676, C681,C684,C689, C696,C699,C707, C709,C717,C719, C724,C726,C734, C736,C737,C743, C745,C750,C754, C757,C766,C768, C769,C770,C778, C779,C780,C782		1.128806	33	25726061.200507
1129610080	Capacitor	C128,C129,C130, C131,C369,C374, C375,C442,C445, C451,C573,C578, C584,C588,C600, C603,C608,C610, C611,C613,C620, C621,C622,C627, C628,C63,C631,C633, C635,C65,C66,C67, C71,C744,C746,C751		1.128806	36	23624151.295955
1129622690	Capacitor	C407		1.128806	1	704977644.692287
1129701690	Capacitor	C680		1.128806	1	704977644.692287
1129701790	Capacitor	C457		1.128806	1	704977644.692287

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1129710090	Capacitor	C34,C35,C48 9,C492, C498,C504,C 514, C515,C516,C 538, C539,C540		1.128806	12	68856937.301178
1129710390	Capacitor	C13,C450,C4 52		1.128806	3	257514172.353070
1129722091	Capacitor	C454,C455,C 530, C531,C532,C 562, C563		1.128806	7	115633865.771428
1129747090	Capacitor	C637		1.128806	1	704977644.692287
1169682192	Capacitor	C164,C165,C 166		4.744484	3	59399119.141203
1181610197	Capacitor	C153,C523,C 524		4.744484	3	59399119.141203
1181633190	Capacitor	C201,C238,C 239		4.744484	3	59399119.141203
1184610190	Capacitor	C394,C762,C 763, C765		4.744484	4	45505862.704531
1189615154	Capacitor	TC3,TC4,TC5 ,TC6		4.744484	4	45505862.704531
1189622090	Capacitor	C574,C575,C 576, C577		4.744484	4	45505862.704531
1189633151	Capacitor	TC8		4.744484	1	159663026.715137
1189647190	Capacitor	C525		4.744484	1	159663026.715137
1189933180	Capacitor	C345,C434,C 436		4.744484	3	59399119.141203
118A6221B0	Capacitor	C673,TC1		4.744484	2	86049450.747498
11A2422190	Capacitor	C725,C752		1.128806	2	375289731.076049
11A4410194	Capacitor	C554,C555,C 556, C557		1.128806	4	196873384.410843
11A5447080	Capacitor	C307		1.128806	1	704977644.692287
11C1501080	Capacitor	C144,C641		1.128806	2	375289731.076049
11C1510390	Capacitor	C437,C764,C 767, C835,C836,C 837, C838,C839,C 840		1.128806	9	90863428.080946
11C1515440	Capacitor	C605,C606,C 607		1.128806	3	257514172.353070
11C1522390	Capacitor	C316,C645,C 652		1.128806	3	257514172.353070
11C1539840	Capacitor	C115,C116,C 120,C51		1.128806	4	196873384.410843
11C1547480	Capacitor	C149		1.128806	1	704977644.692287

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11C1547890	Capacitor	C337		1.128806	1	704977644.692287
11C2510480	Capacitor	C122,C157,C599,C601,C602		1.128806	5	159367490.199266
11C2610030	Capacitor	C15,C16		1.128806	2	375289731.076049
11C4501380	Capacitor	C100,C105,C114,C405		1.128806	4	196873384.410843
11C4501650	Capacitor	C402,C785,C790,C792,C817,C819,C823,C854		1.128806	8	101746760.035398
11C4501790	Capacitor	C331,C458,C459,C460,C461,C463,C464,C465,C466,C481,C482,C483,C484,C485,C486,C487,C488		1.128806	17	49133303.073811
11C4510480	Capacitor	C342		1.128806	1	704977644.692287
11C4522290	Capacitor	C188,C665		1.128806	2	375289731.076049
11C4547690	Capacitor	C398,C781,C794		1.128806	3	257514172.353070
11C5501650	Capacitor	C148,C570		1.128806	2	375289731.076049
11C5510190	Capacitor	C126,C156		1.128806	2	375289731.076049
11C5522690	Capacitor	C571		1.128806	1	704977644.692287
11C5522760	Capacitor	C132,C147,C158,C558,C559,C560,C561,C76		1.128806	8	101746760.035398
11C5547420	Capacitor	C597,C609,C640,C643		1.128806	4	196873384.410843

**Reliability Prediction  
Summary**

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11C9510050	Capacitor	C171,C199,C228, C229,C264,C265, C266,C267,C286, C333,C334,C353, C354,C355,C356, C357,C358,C359, C419,C420,C421, C422,C423,C424, C425,C467,C469, C494,C553,C564,C6, C687,C688,C729, C799,C800,C801, C802,C803,C804, C805,C820,C827, C828,C831,C832		1.128806	46	18574133.926778
11C9510290	Capacitor	C795		1.128806	1	704977644.692287

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11C9510490	Capacitor	C10,C101,C109,C11,C110,C117,C118,C121,C133,C134,C135,C141,C152,C155,C160,C161,C18,C19,C20,C21,C23,C24,C25,C26,C27,C28,C288,C29,C30,C31,C314,C32,C322,C325,C33,C363,C364,C37,C39,C391,C393,C40,C426,C433,C438,C585,C586,C587,C589,C60,C623,C624,C6		1.128806	94	9187567.535390
11C9522060	Capacitor	C208,C209,C220,C221,C233,C234,C252,C253,C271,C272,C282,C283,C289,C290,C291,C292,C293,C294,C298,C299,C390,C396,C409,C441		1.128806	24	35120617.936543

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11CA501040	Capacitor	C17,C196,C2 ,C204, C205,C206,C 207, C210,C211,C 216, C217,C218,C 22,C224, C225,C227,C 231, C232,C235,C 236, C237,C246,C 247, C248,C249,C 250, C254,C255,C 257, C258,C259,C 260, C261,C262,C 269, C270,C274,C 275, C277,C278,C 279, C295,C296,C 301, C309,C310,C 328, C329,C330		1.128806	89	9696972.053957
11E1510050	Capacitor	C102,C103,C 104, C106,C107,C 108, C111,C112,C 113, C150,C368,C 392, C397,C408,C 444,C69		1.128806	16	52112480.802928
11E1522060	Capacitor	C240,C241,C 242, C243,C244,C 245		1.128806	6	133979725.056342
11E1522440	Capacitor	C327		1.128806	1	704977644.692287
11E1522680	Capacitor	C500,C501,C 505, C506,C507,C 508, C814,C815,C 818, C855,C856		1.128806	11	74892583.279796

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E1533780	Capacitor	C142		1.128806	1	704977644.692287
11E1622060	Capacitor	C306,C312,C439, C440,C447,C448, C542,C543,C653, C664		1.128806	10	82101057.548118
11E2501690	Capacitor	C124,C178,C182, C202,C287,C372, C373,C399,C400, C404,C685,C70,C786		1.128806	13	63728475.410842
11E2610030	Capacitor	C213,C214,C215, C648,C649,C650, C787,C788		1.128806	8	101746760.035398
11E2622020	Capacitor	C370,C371		1.128806	2	375289731.076049
11E4510090	Capacitor	C376,C377,C378, C379		1.128806	4	196873384.410843
11E9501090	Capacitor	C406,C42,C47,C54, C57,C718,C748		1.128806	7	115633865.771428
11E9501091	Capacitor	C136,C137,C138,C7, C8		1.128806	5	159367490.199266
11E9510050	Capacitor	C706,C710,C730, C738,C739,C742		1.128806	6	133979725.056342
11E9522490	Capacitor	C190		1.128806	1	704977644.692287
11E9522680	Capacitor	C413		1.128806	1	704977644.692287
11E9547060	Capacitor	C714,C715,C716, C720,C722,C727		1.128806	6	133979725.056342
11E9547680	Capacitor	C321,C527,C528		1.128806	3	257514172.353070
11E9610080	Capacitor	C184,C203,C256, C401,C403,C674, C793		1.128806	7	115633865.771428
11E9622050	Capacitor	C162,C191,C192, C193,C3,C537		1.128806	6	133979725.056342
11E9622051	Capacitor	C230		1.128806	1	704977644.692287

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
11E9622052	Capacitor	C651,C654,C682, C686		1.128806	4	196873384.410843
11EA647010	Capacitor	C127,C634,C636,C64,C666		1.128806	5	159367490.199266
11EB610050	Capacitor	C816		1.128806	1	704977644.692287
121110106G	Inductor	L12,L14		4.944252	2	83201062.149749
1211101202	Inductor	L7		4.944252	1	154760964.143460
121110156K	Inductor	L15		4.944252	1	154760964.143460
121110226E	Inductor	L11		4.944252	1	154760964.143460
1211102470	Inductor	L10,L8,L9		4.944252	3	57363284.375370
121110336Y	Inductor	L2		4.944252	1	154760964.143460
121110476P	Inductor	L1		4.944252	1	154760964.143460
1211110078	Inductor	L4		4.944252	1	154760964.143460
121113307R	Inductor	L5		4.944252	1	154760964.143460
1211210000	Inductor	L17		4.944252	1	154760964.143460
1212306030	Inductor	FB3		4.944252	1	154760964.143460
121231206B	Inductor	FB34,FB35,FB36, FB37		4.944252	4	43912872.424775
12123A0009	Inductor	FB39,FB41,FB42,FB43,FB44,FB8,FB9		4.944252	7	25970990.056682
12123C0005	Inductor	FB17,FB18,FB19,FB22,FB23,FB24		4.944252	6	30055900.223009
12123C0007	Inductor	FB11,FB29,FB30,FB31,FB32,FB38,FB4,FB40,FB5,FB6,FB7		4.944252	11	16872203.304846
12123C000A	Inductor	FB12,FB14,FB16,FB20,FB33,FB45, FB47		4.944252	7	25970990.056682
12123C001A	Inductor	FB1,FB2		4.944252	2	83201062.149749
12123C0031	Inductor	FB25,FB26,FB27, FB28		4.944252	4	43912872.424775
1214309000	Inductor	CH10,CH11,CH12,CH13,CH14,CH9		4.944252	6	30055900.223009
121430900A	Inductor	CH1,CH2,CH3,CH4,CH5,CH6,CH7,CH8		4.944252	8	22874049.098230
1214900880	Inductor	L6		4.944252	1	154760964.143460



**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
12310025A2	Miscellaneous	Y3,Y4,Y5,Y6, Y7,Y8		19.200000	6	3109492.345532
12313012A0	Miscellaneous	Y2		19.200000	1	23844262.770939
1231332721	Miscellaneous	Y1		19.200000	1	23844262.770939
1251005055	Inductor	U45,U61		14.982581	2	26078786.237273
1300010440	Semiconductor	D23,D24,D25 ,D26, D27,D28,D29 ,D30, D32,D33,D35 ,D36, D38,D39,D40 ,D41		7.793411	16	7341618.295818
1300041480	Semiconductor	D18,D45,D47 ,D49		7.793411	4	26989084.126235
1300054040	Semiconductor	D22		7.793411	1	92807310.010983
1300414843	Semiconductor	D13		7.793411	1	92807310.010983
1301000541	Semiconductor	D43		7.793411	1	92807310.010983
1301000560	Semiconductor	D44		7.793411	1	92807310.010983
1301001000	Semiconductor	D6		7.793411	1	92807310.010983
1301005440	Semiconductor	D34		7.793411	1	92807310.010983
1301005442	Semiconductor	D19,D42		7.793411	2	50578095.223398
1301010600	Semiconductor	D10,D11,D12 ,D46		7.793411	4	26989084.126235
1301053040	Semiconductor	D1,D17,D21, D3		7.793411	4	26989084.126235
1301400541	Semiconductor	D14,D15		7.793411	2	50578095.223398
1301400642	Semiconductor	D9		7.793411	1	92807310.010983
1302003942	Semiconductor	D5,D8		7.793411	2	50578095.223398
1302005641	Semiconductor	D4,D7		7.793411	2	50578095.223398
1302052320	Semiconductor	D48		7.793411	1	92807310.010983
1304000053	Optical Device	LED2,LED3,L ED4		79.003355	3	2725958.067754
1304400150	Optical Device	LED1		79.003355	1	6497172.749112
1305005840	Semiconductor	D31,D37		7.793411	2	50578095.223398
1305040241	Semiconductor	U1,U13,U14, U15,U16, U17,U18,U19 ,U2,U20, U3,U4,U5,U6 ,U7,U8		7.793411	16	7341618.295818
1305040CA0	Semiconductor	D16		7.793411	1	92807310.010983
1305050040	Semiconductor	U50		22.463360	1	31642600.748419
1305100541	Semiconductor	U10,U11,U12 ,U21, U22,U23,U24 ,U66, U67,U68,U69 ,U9		22.463360	12	3332353.664911

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1310390410	Semiconductor	Q55,Q56,Q65,Q75, Q78		22.463360	5	7551839.591592
1310390411	Semiconductor	Q42,Q43		22.463360	2	17315095.066101
1310390413	Semiconductor	Q35,Q36		22.463360	2	17315095.066101
1311095510	Semiconductor	Q2,Q4		22.463360	2	17315095.066101
1311390610	Semiconductor	Q33,Q34,Q38,Q39		22.463360	4	9270607.712006
1315009250	Semiconductor	Q16,Q66,Q76		22.463360	3	12043329.789539
1315012010	Semiconductor	Q1,Q3,Q5,Q61,Q62,Q63,Q64,Q8		22.463360	8	4877097.849338
1315034430	Semiconductor	Q10,Q20		22.463360	2	17315095.066101
1315070020	Semiconductor	Q37,Q40,Q41,Q46		22.463360	4	9270607.712006
1315088200	Semiconductor	Q67,Q68,Q69,Q70		22.463360	4	9270607.712006
1315443510	Semiconductor	Q12,Q28,Q29		22.463360	3	12043329.789539
1315700211	Semiconductor	Q15,Q17,Q26,Q27,Q32,Q49,Q54,Q77		22.463360	8	4877097.849338
1315700216	Semiconductor	Q31		22.463360	1	31642600.748419
1315700217	Semiconductor	Q11,Q13,Q14,Q18,Q79,Q80,Q81,Q9		22.463360	8	4877097.849338
1315861010	Semiconductor	Q6,Q7		22.463360	2	17315095.066101
1315865000	Semiconductor	Q71,Q72,Q73,Q74		22.463360	4	9270607.712006
1315865001	Semiconductor	Q25,Q30		22.463360	2	17315095.066101
1315971500	Semiconductor	U25,U26		22.463360	2	17315095.066101
1430021430	Integrated Circuit	U36		43.803003	1	11739202.588727
1430042660	Integrated Circuit	U27,U29		43.803003	2	6834791.244197
1430051220	Integrated Circuit	U28		43.803003	1	11739202.588727
1430051750	Integrated Circuit	U39		43.803003	1	11739202.588727
1430087620	Integrated Circuit	U88,U89		43.803003	2	6834791.244197
1430973740	Integrated Circuit	U77,U78,U79		43.803003	3	4923240.069161
14351631A0	Integrated Circuit	U80		43.803003	1	11739202.588727
143ALC8920	Integrated Circuit	U55		43.803003	1	11739202.588727
1440010500	Integrated Circuit	U93		43.803003	1	11739202.588727
1440038080	Integrated Circuit	U83		43.803003	1	11739202.588727
1440211AT0	Integrated Circuit	U71,U74,U75,U76		43.803003	4	3879156.910661
1440217LM0	Integrated Circuit	U70		43.803003	1	11739202.588727
1444700EQ0	Integrated Circuit	U86		21.706765	1	23689035.791249
1445F56301	Integrated Circuit	U42		26.018600	1	25551442.237972

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
14482QM870	Integrated Circuit	U87		43.803003	1	11739202.588727
1462V01210	Integrated Circuit	U31		11.063278	1	58231413.220643
1469128350	Integrated Circuit			11.063278	1	58231413.220643
1489VPC551	Integrated Circuit	U95		26.018600	1	25551442.237972
1490051030	Integrated Circuit	U101		43.803003	1	11739202.588727
149TB01040	Integrated Circuit	U30		43.803003	1	11739202.588727
14S2200900	Integrated Circuit	U59		43.803003	1	11739202.588727
14S3052400	Integrated Circuit	U98,U99		43.803003	2	6834791.244197
14S3112300	Integrated Circuit	U34		43.803003	1	11739202.588727
14S3121600	Integrated Circuit	U43		43.803003	1	11739202.588727
14S3435600	Integrated Circuit	U44		43.803003	1	11739202.588727
14S3528000	Integrated Circuit	U94		43.803003	1	11739202.588727
14S3917900	Integrated Circuit	U37,U40		43.803003	2	6834791.244197
14S3E00100	Integrated Circuit	U62		43.803003	1	11739202.588727
14S3S00900	Integrated Circuit	U100		43.803003	1	11739202.588727
14S4021301	Integrated Circuit	U63,U64,U65,U97		43.803003	4	3879156.910661
14S4048503	Integrated Circuit	U48,U49,U53,U54		43.803003	4	3879156.910661
14S4186600	Integrated Circuit	U41		43.803003	1	11739202.588727
14S4193600	Integrated Circuit			26.018600	1	25551442.237972
14S5812502	Integrated Circuit	U51,U52		26.018600	2	14194252.866846
14S5A00401	Integrated Circuit	U46,U47		26.018600	2	14194252.866846
14S5A00702	Integrated Circuit	U35		26.018600	1	25551442.237972
14S5A00704	Integrated Circuit	U38		26.018600	1	25551442.237972
14S5A00705	Integrated Circuit	U85		26.018600	1	25551442.237972
14S5A00821	Integrated Circuit	U33		26.018600	1	25551442.237972
14S5A12506	Integrated Circuit	U57,U58		26.018600	2	14194252.866846
14S7041000	Integrated Circuit	U91,U92		43.803003	2	6834791.244197
14S7140000	Integrated Circuit	U60,U96		43.803003	2	6834791.244197
14S9144200	Integrated Circuit	U56		43.803003	1	11739202.588727
1540722281	Resistor	RP1		9.971436	1	51606907.671214
1600001600	Connection	SW4		16.184835	1	35685591.360212
1601110201	Connection	SW3		16.184835	1	35685591.360212
1601615600	Connection	SW1		16.184835	1	35685591.360212
1651508010	Connection	CN4,CN5		16.184835	2	20390152.380746
1651520401	Connection	DIMM2		16.184835	1	35685591.360212
16515A2995	Connection	DIMM1		16.184835	1	35685591.360212
1652210200	Connection	CN35		16.184835	1	35685591.360212
165251420B	Connection	CN3		16.184835	1	35685591.360212
1652514210	Connection	AUDIO1		16.184835	1	35685591.360212
1652602107	Connection	CN39		16.184835	1	35685591.360212
165260220A	Connection	CN32		16.184835	1	35685591.360212
1652606202	Connection	CN34		16.184835	1	35685591.360212
1652822201	Connection	CN6,CN7,CN8,CN9		16.184835	4	11344857.509064

**File Name:** VPC-5500.rfp  
**Assembly:** 9697550014-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 10778.934027  
**MTBF (hrs):** 92,774  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Tem.Rise	Unit Failure Rate	Quantity	MTBF,Unit
1653002101	Connection	CN14,CN15,CN19, CN20		16.184835	4	11344857.509064
1653003101	Connection	CN11,CN13,CN29, CN38		16.184835	4	11344857.509064
165300310G	Connection	CN23		16.184835	1	35685591.360212
1653003201	Connection	CN10		16.184835	1	35685591.360212
165300320K	Connection	CN33		16.184835	1	35685591.360212
165300420L	Connection	CN16		16.184835	1	35685591.360212
1653005100	Connection	CN42		16.184835	1	35685591.360212
165300720E	Connection	CN30		16.184835	1	35685591.360212
1653212100	Connection	LPC1		16.184835	1	35685591.360212
1653300107	Connection	CN10(1-2), CN11(1-2), CN13(1-2), CN23(2-3), CN29(1-2), CN33(3-4), CN38(2-3)		16.184835	7	6941176.714407
16540F6300	Connection	CN18		16.184835	1	35685591.360212
1654226303	Connection	Slot1,Slot2,Slot3, mSATA1		16.184835	4	11344857.509064
1654401935	Connection	HDMI1		16.184835	1	35685591.360212
1654418103	Connection	COM1,COM2		16.184835	2	20390152.380746
1654501531	Connection	VGA1		16.184835	1	35685591.360212
1654808306	Connection	CN36		16.184835	1	35685591.360212
1654818301	Connection	CN1,CN2		16.184835	2	20390152.380746
1654903600	Connection	CN43		16.184835	1	35685591.360212
165490700G	Connection	SATA1,SATA2,SATA3, SATA4		16.184835	4	11344857.509064
1654910305	Connection	DP1		16.184835	1	35685591.360212
1655004011	Connection	CN22,CN24,CN26, CN27		16.184835	4	11344857.509064
1655302020	Connection	CN28		16.184835	1	35685591.360212
1655404121	Connection	CN37		16.184835	1	35685591.360212
175011901H	Miscellaneous	BT1		306.000000	1	1681683.006787
1750220323	Connection	BT1		16.184835	1	35685591.360212
1752000501	Miscellaneous	FS1		2.400000	1	254626042.602335
1752002700	Miscellaneous	FS2		2.400000	1	254626042.602335