

# ETX-A55E

## Reliability Prediction Report (MTBF)

|         |  |
|---------|--|
| Summary | Failure Rate: 11971.438789 ppm<br>MTBF: 83,532 Hours |
|---------|--|

Issue date

2015/07/30

Approval

KJ Wang

Test Engineer

Danny Chen

# Reliability Prediction (MTBF)

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**I . Model Name:** ETX-A55E

**II . Prediction Date:** July .30, 2015

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

**IV . Predicted by:** Danny

**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:**

ETX-A55E (9697A55E19-D):

- Failure Rate: 11971.438789 ppm

- MTBF: 83,532 Hours

**AAEON Reliability Prediction  
Summary**

**File Name:** ETX-A55E.rfp  
**Duty Cycle:** 100  
**Calculation Model:** Telcordia Issue 2  
**Method:** Method I Case 3

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Assembly Name | Part Number  | Ref Des | Quantity | Failure Rate | MTBF   |
|---------------|--------------|---------|----------|--------------|--------|
| ETX-A55E      | 9697A55E19-D |         | 1        | 11971.438789 | 83,532 |

**File Name:** ETX-A55E.rfp  
**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category | Ref Des   | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit        |
|-------------|----------|---|----------|-------------------|----------|------------------|
| 1050501004  | Resistor | R253  |          | 2.547039          | 1        | 282340674.079668 |
| 1050501234  | Resistor | R307,R333   |          | 2.547039          | 2        | 154078778.388085 |
| 1050501834  | Resistor | R605  |          | 2.547039          | 1        | 282340674.079668 |
| 1050502204  | Resistor | R107,R109,R111,<br>R113,R49,R54,R55,<br>R56,R57,R58,R67,<br>R68,R71,R75,R86 |          | 2.547039          | 15       | 23852782.943395  |
| 1050502224  | Resistor | R721  |          | 2.547039          | 1        | 282340674.079668 |
| 1050505124  | Resistor | R554  |          | 2.547039          | 1        | 282340674.079668 |
| 1050507530  | Resistor | R608,R609   |          | 2.547039          | 2        | 154078778.388085 |
| 1050508224  | Resistor | R69   |          | 2.547039          | 1        | 282340674.079668 |
| 1050510034  | Resistor | R185,R194,R195,R34,<br>R565,R574,R582,<br>R584,R590,R613, R619              |          | 2.547039          | 11       | 32049696.385471  |
| 1050511824  | Resistor | R76   |          | 2.547039          | 1        | 282340674.079668 |
| 1050512124  | Resistor | R604  |          | 2.547039          | 1        | 282340674.079668 |
| 1050512714  | Resistor | R2  |          | 2.547039          | 1        | 282340674.079668 |
| 1050520004  | Resistor | R576  |          | 2.547039          | 1        | 282340674.079668 |
| 1050524934  | Resistor | R577  |          | 2.547039          | 1        | 282340674.079668 |
| 1050530004  | Resistor | R11,R18,R9  |          | 2.547039          | 3        | 107020754.986850 |
| 1050531624  | Resistor | R644  |          | 2.547039          | 1        | 282340674.079668 |
| 1050533004  | Resistor | R357,R670,R671  |          | 2.547039          | 3        | 107020754.986850 |
| 1050536514  | Resistor | R718  |          | 2.547039          | 1        | 282340674.079668 |
| 1050539214  | Resistor | R630,R652   |          | 2.547039          | 2        | 154078778.388085 |
| 1050539264  | Resistor | R5  |          | 2.547039          | 1        | 282340674.079668 |
| 1050549904  | Resistor | R28   |          | 2.547039          | 1        | 282340674.079668 |
| 1050551004  | Resistor | R19,R26   |          | 2.547039          | 2        | 154078778.388085 |
| 1050559004  | Resistor | R52   |          | 2.547039          | 1        | 282340674.079668 |
| 1050701504  | Resistor | R508,R511   |          | 2.547039          | 2        | 154078778.388085 |
| 105A500139  | Resistor | R3,R4,R43,R44,R45,<br>R46,R6,R616   |          | 2.547039          | 8        | 43225424.698300  |
| 105A500239  | Resistor | R1,R53  |          | 2.547039          | 2        | 154078778.388085 |
| 105A501039  | Resistor | R286,R287,R288,<br>R289,R291,R292,<br>R294,R555,R618                        |          | 2.547039          | 9        | 38754445.632391  |
| 105A501233  | Resistor | R318,R572   |          | 2.547039          | 2        | 154078778.388085 |

**File Name:** ETX-A55E.rfp  
**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category | Ref Des   | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit        |
|-------------|----------|---|----------|-------------------|----------|------------------|
| 105A501533  | Resistor | R302,R316,R569, R571  |          | 2.547039          | 4        | 82309758.689546  |
| 105A501539  | Resistor | R290,R581   |          | 2.547039          | 2        | 154078778.388085 |
| 105A502039  | Resistor | R51,R553,R556,R580  |          | 2.547039          | 4        | 82309758.689546  |
| 105A503033  | Resistor | R596,R617   |          | 2.547039          | 2        | 154078778.388085 |
| 105A503039  | Resistor | R293  |          | 2.547039          | 1        | 282340674.079668 |
| 105A503933  | Resistor | R573  |          | 2.547039          | 1        | 282340674.079668 |
| 105A505109  | Resistor | R35,R36   |          | 2.547039          | 2        | 154078778.388085 |
| 105A506829  | Resistor | R198,R199,R210, R211,R212                                     |          | 2.547039          | 5        | 67008142.102588  |
| 105A507533  | Resistor | R620  |          | 2.547039          | 1        | 282340674.079668 |
| 105A510009  | Resistor | R628,R638,R653, R660,R668,R669                                |          | 2.547039          | 6        | 56573956.677649  |
| 105A515009  | Resistor | R38,R39,R40, R7   |          | 2.547039          | 4        | 82309758.689546  |
| 105A516223  | Resistor | R650  |          | 2.547039          | 1        | 282340674.079668 |
| 105A524919  | Resistor | R348  |          | 2.547039          | 1        | 282340674.079668 |
| 105A525513  | Resistor | R647  |          | 2.547039          | 1        | 282340674.079668 |
| 105A527423  | Resistor | R622  |          | 2.547039          | 1        | 282340674.079668 |
| 105A528723  | Resistor | R606  |          | 2.547039          | 1        | 282340674.079668 |
| 105A533269  | Resistor | R627,R637   |          | 2.547039          | 2        | 154078778.388085 |
| 105A534823  | Resistor | R607  |          | 2.547039          | 1        | 282340674.079668 |
| 105A547513  | Resistor | R304  |          | 2.547039          | 1        | 282340674.079668 |
| 105A549923  | Resistor | R645,R646,R649  |          | 2.547039          | 3        | 107020754.986850 |
| 105A552323  | Resistor | R579  |          | 2.547039          | 1        | 282340674.079668 |
| 105A556213  | Resistor | R632,R655   |          | 2.547039          | 2        | 154078778.388085 |
| 105A590903  | Resistor | R146,R147   |          | 2.547039          | 2        | 154078778.388085 |
| 105A595313  | Resistor | R597  |          | 2.547039          | 1        | 282340674.079668 |
| 105A700003  | Resistor | R347,R42,R551,R561, R575,R578,R600, R610,R621,R661, R711,R712 |          | 2.547039          | 12       | 29507083.749401  |

**Reliability Prediction  
Summary**

**File Name:** ETX-A55E.rfp  
**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category | Ref Des   | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit      |
|-------------|----------|---|----------|-------------------|----------|----------------|
| 105A700009  | Resistor | R101,R103,R115,R12,R13,R164,R165,R166,R192,R245,R248,R257,R284,R285,R295,R300,R301,R305,R314,R330,R331,R332,R360,R41,R517,R518,R520,R523,R524,R541,R543,R545,R547,R568,R570,R595,R602,R603,R614,R615,R625,R626,R629,R634,R635,R642,R643,R654, R65 |          | 2.547039          | 55       | 6793153.636065 |
| 105A700139  | Resistor | R10,R110,R112,R114,R14,R15,R16,R17,R20,R21,R215,R23,R232,R236,R237,R238,R239,R24,R240,R241,R242,R244,R25,R256,R266,R267,R272,R273,R29,R30,R31,R32,R33,R350,R352,R353,R37,R50,R564,R587,R589,R593,R665,R8  |          | 2.547039          | 44       | 8443240.413160 |

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**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category | Ref Des  | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit        |
|-------------|----------|--|----------|-------------------|----------|------------------|
| 105A701039  | Resistor | R100,R102,R104,<br>R105,R108,R143,<br>R144,R145,R148,<br>R149,R150,R151,<br>R152,R153,R154,<br>R156,R157,R158,<br>R159,R161,R162,<br>R168,R173,R174,<br>R176,R178,R179,<br>R180,R181,R187,<br>R189,R190,R200,<br>R201,R202,R203,<br>R204,R205,R206,<br>R207,R208,R209,<br>R246,R254,R259,<br>R260,R261,R262, |          | 2.547039          | 81       | 4652232.446588   |
| 105A701059  | Resistor | R155,R303,R329,<br>R591,R72  |          | 2.547039          | 5        | 67008142.102588  |
| 105A701069  | Resistor | R235,R70   |          | 2.547039          | 2        | 154078778.388085 |
| 105A701539  | Resistor | R351   |          | 2.547039          | 1        | 282340674.079668 |
| 105A702209  | Resistor | R319,R323,R324,<br>R325,R340,R344,<br>R345,R346,R623   |          | 2.547039          | 9        | 38754445.632391  |
| 105A702229  | Resistor | R131,R132,R184,R83,<br>R84,R88,R89,R90, R91  |          | 2.547039          | 9        | 38754445.632391  |
| 105A702269  | Resistor | R624,R640,R648, R658   |          | 2.547039          | 4        | 82309758.689546  |



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**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category | Ref Des  | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit        |
|-------------|----------|--|----------|-------------------|----------|------------------|
| 105A703309  | Resistor | R283,R299,R328,<br>R367,R559,R586,<br>R592,R664,R667   |          | 2.547039          | 9        | 38754445.632391  |
| 105A703363  | Resistor | R601   |          | 2.547039          | 1        | 282340674.079668 |
| 105A703909  | Resistor | R509,R510  |          | 2.547039          | 2        | 154078778.388085 |
| 105A704729  | Resistor | R193,R231,R249,<br>R250,R251,R252,<br>R274,R275,R276,<br>R279,R311,R336,<br>R362,R364,R365,<br>R366,R512,R513,<br>R519,R552,R557,<br>R562,R585,R588,<br>R713,R720,R73,R77, R82 |          | 2.547039          | 29       | 12652760.276502  |
| 105A704739  | Resistor | R308,R334,R558   |          | 2.547039          | 3        | 107020754.986850 |
| 105A705133  | Resistor | R281,R282  |          | 2.547039          | 2        | 154078778.388085 |
| 105A705629  | Resistor | R312,R337  |          | 2.547039          | 2        | 154078778.388085 |
| 105A706809  | Resistor | R651,R659  |          | 2.547039          | 2        | 154078778.388085 |
| 105A708209  | Resistor | R320,R321,R322,<br>R341,R342,R343  |          | 2.547039          | 6        | 56573956.677649  |
| 105A708229  | Resistor | R675,R676,R677,<br>R678,R679,R680,<br>R681,R682,R683,<br>R684,R685,R686,<br>R687,R688,R689,<br>R690,R691   |          | 2.547039          | 17       | 21160422.299251  |
| 105A710039  | Resistor | R298,R310,R566,<br>R567,R594   |          | 2.547039          | 5        | 67008142.102588  |
| 105A733009  | Resistor | R268,R269,R270, R271   |          | 2.547039          | 4        | 82309758.689546  |

**File Name:** ETX-A55E.rfp  
**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category  | Ref Des  | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit        |
|-------------|-----------|--|----------|-------------------|----------|------------------|
| 105A747039  | Resistor  | R563   |          | 2.547039          | 1        | 282340674.079668 |
| 105B700009  | Resistor  | R525,R526,R527,<br>R528,R529,R530,<br>R531,R532,R533,<br>R534,R535,R536,<br>R537,R538,R539, R540   |          | 2.547039          | 16       | 22425139.809646  |
| 106B501032  | Resistor  | RT1,RT2,RT3,RT4  |          | 7.724580          | 4        | 21923287.146155  |
| 1121501690  | Capacitor | C195   |          | 1.128806          | 1        | 704977644.692287 |
| 1121501691  | Capacitor | C1,C10,C11,C111,<br>C112,C114,C116,<br>C117,C118,C119,C12,<br>C120,C121,C122,<br>C124,C13,C136,C138,<br>C14,C144,C145,C147,<br>C15,C151,C152,C153,<br>C154,C158,C16,C162,<br>C163,C164,C167,<br>C173,C174,C176,<br>C177,C18,C181,C182,<br>C183,C184,C185,<br>C186,C187,C194,<br>C197,C198,C199,C2, C20 |          | 1.128806          | 170      | 5113127.073511   |
| 1124410191  | Capacitor | C339,C340,C350,<br>C351,C353   |          | 1.128806          | 5        | 159367490.199266 |
| 1124418090  | Capacitor | C126,C127,C192, C193   |          | 1.128806          | 4        | 196873384.410843 |

**File Name:** ETX-A55E.rfp  
**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category  | Ref Des   | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit        |
|-------------|-----------|---|----------|-------------------|----------|------------------|
| 1124418190  | Capacitor | C47,C48,C57<br>,C58,<br>C59,C60,C62<br>,C63,<br>C64,C65,C66<br>,C67,<br>C94,C95,C96<br>,C97   |          | 1.128806          | 16       | 52112480.802928  |
| 1124427091  | Capacitor | C128,C129,C<br>142,<br>C143,C290,C<br>291   |          | 1.128806          | 6        | 133979725.056342 |
| 1124433090  | Capacitor | C337,C338   |          | 1.128806          | 2        | 375289731.076049 |
| 1124522290  | Capacitor | C239  |          | 1.128806          | 1        | 704977644.692287 |
| 1129522790  | Capacitor | C458  |          | 1.128806          | 1        | 704977644.692287 |
| 1129622690  | Capacitor | C113,C115,C<br>165,<br>C166,C188  |          | 1.128806          | 5        | 159367490.199266 |
| 1129710091  | Capacitor | C492  |          | 1.128806          | 1        | 704977644.692287 |
| 1129710391  | Capacitor | C378,C429,C<br>436,<br>C450,C451  |          | 1.128806          | 5        | 159367490.199266 |
| 1129722091  | Capacitor | C248,C249,C<br>267, C268  |          | 1.128806          | 4        | 196873384.410843 |
| 1129747091  | Capacitor | C231,C232,C<br>233  |          | 1.128806          | 3        | 257514172.353070 |
| 1189610153  | Capacitor | C245,C257,C<br>368, C392  |          | 4.744484          | 4        | 45505862.704531  |
| 1189615154  | Capacitor | C387,TC1  |          | 4.744484          | 2        | 86049450.747498  |
| 1189633151  | Capacitor | C104,C407,C<br>408, C423  |          | 4.744484          | 4        | 45505862.704531  |
| 118C6331B0  | Capacitor | C437,C453,C<br>485, C486  |          | 4.744484          | 4        | 45505862.704531  |
| 11C1410440  | Capacitor | C354  |          | 1.128806          | 1        | 704977644.692287 |
| 11C1547890  | Capacitor | C444,C459   |          | 1.128806          | 2        | 375289731.076049 |
| 11C2501790  | Capacitor | C132,C133,C<br>134,<br>C135,C137,C<br>139,<br>C140,C141,C<br>422,<br>C461,C462,C<br>468,<br>C469,C470,C<br>471,<br>C472,C473,C<br>474, C475 |          | 1.128806          | 19       | 44097696.883526  |
| 11C2510480  | Capacitor | C430,C445,C<br>447,<br>C454,C460  |          | 1.128806          | 5        | 159367490.199266 |

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**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category  | Ref Des  | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit        |
|-------------|-----------|--|----------|-------------------|----------|------------------|
| 11C2522480  | Capacitor | C442,C446  |          | 1.128806          | 2        | 375289731.076049 |
| 11C4401880  | Capacitor | C17  |          | 1.128806          | 1        | 704977644.692287 |
| 11C4515190  | Capacitor | C464,C465  |          | 1.128806          | 2        | 375289731.076049 |
| 11C4522290  | Capacitor | C438,C455  |          | 1.128806          | 2        | 375289731.076049 |
| 11C4547190  | Capacitor | C191,C441,C457   |          | 1.128806          | 3        | 257514172.353070 |
| 11C9510050  | Capacitor | C357   |          | 1.128806          | 1        | 704977644.692287 |
| 11C9522060  | Capacitor | C341,C343  |          | 1.128806          | 2        | 375289731.076049 |
| 11E1510050  | Capacitor | C379,C381,C396,<br>C397,C398,C400,<br>C415,C416  |          | 1.128806          | 8        | 101746760.035398 |
| 11E2501690  | Capacitor | C490,C494  |          | 1.128806          | 2        | 375289731.076049 |
| 11E4433090  | Capacitor | C244,C255,C366,<br>C369,C390   |          | 1.128806          | 5        | 159367490.199266 |
| 11E9501091  | Capacitor | C108,C109,C110,<br>C123,C125,C148,<br>C149,C155,C156,<br>C160,C161,C168,<br>C169,C171,C172,<br>C178,C179,C238,<br>C252,C253,C260,<br>C270,C344,C345,<br>C346,C347,C348,<br>C349,C352,C376,<br>C377,C383,C386,<br>C395,C40,C41,C412,<br>C418,C42,C426,C433,<br>C439,C44,C477,C49,<br>C51,C52,C61,C69,<br>C70, |          | 1.128806          | 59       | 14541999.022292  |
| 11E9510050  | Capacitor | C222,C227,C427,<br>C428,C476,C484  |          | 1.128806          | 6        | 133979725.056342 |
| 11E9522790  | Capacitor | C425   |          | 1.128806          | 1        | 704977644.692287 |

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**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category  | Ref Des   | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit        |
|-------------|-----------|---|----------|-------------------|----------|------------------|
| 11E9547630  | Capacitor | C411  |          | 1.128806          | 1        | 704977644.692287 |
| 11E9547682  | Capacitor | C276,C284   |          | 1.128806          | 2        | 375289731.076049 |
| 11E9610080  | Capacitor | C100,C101,C102,<br>C103,C105,C106,<br>C107,C150,C159,<br>C170,C175,C180,<br>C196,C202,C251,<br>C259,C342,C356,<br>C359,C361,C373,<br>C375,C385,C39,<br>C394,C406,C409,C424,<br>C434,C452,C50,C87, C99 |          | 1.128806          | 33       | 25726061.200507  |
| 11E9622050  | Capacitor | C146,C157,C212  |          | 1.128806          | 3        | 257514172.353070 |
| 11E9622052  | Capacitor | C304,C305,C328,<br>C329,C330,C332,<br>C334,C431,C432,<br>C448,C449,C482,<br>C483,C487,C488  |          | 1.128806          | 15       | 55479656.844874  |
| 11E9722090  | Capacitor | C443,C456   |          | 1.128806          | 2        | 375289731.076049 |
| 11EB501040  | Capacitor | C355  |          | 1.128806          | 1        | 704977644.692287 |
| 11EB522640  | Capacitor | C364  |          | 1.128806          | 1        | 704977644.692287 |
| 121110226T  | Inductor  | L1  |          | 4.944252          | 1        | 154760964.143460 |
| 1211110079  | Inductor  | L6  | 43.1     | 10.108821         | 2        | 40693865.495686  |
| 1211110079  | Inductor  | L7  |          | 4.944252          | 2        | 83201062.149749  |
| 1211115077  | Inductor  | L2,L3,L4,L5   |          | 4.944252          | 4        | 43912872.424775  |
| 1212306030  | Inductor  | FB11,FB12,F B17,<br>FB18,FB25,F B26   |          | 4.944252          | 6        | 30055900.223009  |
| 1212306035  | Inductor  | FB19,FB20,F B21,<br>FB22,FB23,F B24   |          | 4.944252          | 6        | 30055900.223009  |

**File Name:** ETX-A55E.rfp  
**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category           | Ref Des                            | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit       |
|-------------|--------------------|------------------------------------|----------|-------------------|----------|-----------------|
| 1212306036  | Inductor           | FB10,FB2,FB4,FB6,FB7,FB8,FB9       |          | 4.944252          | 7        | 25970990.056682 |
| 12123C0010  | Inductor           | FB1,FB3,FB5                        |          | 4.944252          | 3        | 57363284.375370 |
| 12310025A3  | Miscellaneous      | Y2,Y3,Y5,Y6,Y7                     |          | 19.200000         | 5        | 3616053.141544  |
| 12310027A2  | Miscellaneous      | Y4                                 |          | 19.200000         | 1        | 23844262.770939 |
| 1231332726  | Miscellaneous      | Y1                                 |          | 19.200000         | 1        | 23844262.770939 |
| 1301005442  | Semiconductor      | D13,D5,D8,D9                       |          | 7.793411          | 4        | 26989084.126235 |
| 1301005444  | Semiconductor      | D1,D2,D7                           |          | 7.793411          | 3        | 35106858.962001 |
| 1301013041  | Semiconductor      | D6                                 |          | 7.793411          | 1        | 92807310.010983 |
| 1301075140  | Semiconductor      | D10,D11,D12                        |          | 7.793411          | 3        | 35106858.962001 |
| 1301793040  | Semiconductor      | D14                                |          | 7.793411          | 1        | 92807310.010983 |
| 1304001340  | Optical Device     | LED3                               |          | 79.003355         | 1        | 6497172.749112  |
| 1304101340  | Optical Device     | LED2                               |          | 79.003355         | 1        | 6497172.749112  |
| 1304300140  | Optical Device     | LED1                               |          | 79.003355         | 1        | 6497172.749112  |
| 1310390410  | Semiconductor      | Q7,Q8                              |          | 22.463360         | 2        | 17315095.066101 |
| 1310390413  | Semiconductor      | Q11                                |          | 22.463360         | 1        | 31642600.748419 |
| 1315036640  | Semiconductor      | Q24                                | 38.3     | 57.807047         | 2        | 6728508.573180  |
| 1315036640  | Semiconductor      | Q25                                |          | 22.463360         | 2        | 17315095.066101 |
| 1315081180  | Semiconductor      | Q14,Q17                            |          | 22.463360         | 2        | 17315095.066101 |
| 1315200312  | Semiconductor      | Q12,Q13,Q19,Q20,Q22                |          | 22.463360         | 5        | 7551839.591592  |
| 1315200312  | Semiconductor      | Q21                                | 23.9     | 41.583703         | 1        | 17093213.845737 |
| 1315700216  | Semiconductor      | Q1,Q15,Q16,Q18,Q2,Q26,Q27,Q3,Q4,Q5 |          | 22.463360         | 10       | 3960370.776745  |
| 1315762010  | Semiconductor      | Q23                                |          | 22.463360         | 1        | 31642600.748419 |
| 143ALC8920  | Integrated Circuit | U21                                | 56.9     | 1299.141934       | 1        | 395809.199765   |
| 1440003301  | Integrated Circuit | U14,U16                            |          | 43.803003         | 2        | 6834791.244197  |
| 1447511B00  | Integrated Circuit | U5                                 | 33.5     | 370.261976        | 1        | 1388779.737867  |
| 1462246401  | Integrated Circuit | U6                                 |          | 43.803003         | 1        | 11739202.588727 |
| 14S3111701  | Integrated Circuit | U26                                | 59.2     | 1456.925976       | 1        | 352943.346285   |
| 14S3112400  | Integrated Circuit | U29                                | 32       | 339.598944        | 1        | 1514175.287706  |
| 14S3121600  | Integrated Circuit | U30                                |          | 43.803003         | 1        | 11739202.588727 |
| 14S3838000  | Integrated Circuit | U31                                | 35       | 403.384008        | 1        | 1274746.444051  |
| 14S3902500  | Integrated Circuit | U24                                | 40.3     | 542.735543        | 1        | 947445.465680   |
| 14S3902500  | Integrated Circuit | U13,U15,U25,U28                    |          | 43.803003         | 4        | 3879156.910661  |
| 14S4362707  | Integrated Circuit | U11                                | 28.4     | 275.091417        | 1        | 1869241.631327  |
| 14S4810500  | Integrated Circuit | U17                                | 28.6     | 278.363247        | 1        | 1847270.911860  |
| 14S4888801  | Integrated Circuit | U12                                |          | 43.803003         | 1        | 11739202.588727 |
| 14S4A55E00  | Integrated Circuit | U2                                 | 33.8     | 376.684319        | 1        | 1365101.500298  |
| 14S4T56N00  | Integrated Circuit | U1                                 | 54.2     | 165.827011        | 1        | 3100896.079239  |
| 14S5912300  | Integrated Circuit | U23                                |          | 26.018600         | 1        | 25551442.237972 |

**File Name:** ETX-A55E.rfp  
**Assembly:** 9697A55E19-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 11971.438789  
**MTBF (hrs):** 83,532  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

| Part Number | Category           | Ref Des  | Tem.Rise | Unit Failure Rate | Quantity | MTBF,Unit       |
|-------------|--------------------|--|----------|-------------------|----------|-----------------|
| 14S5A00702  | Integrated Circuit | U33  |          | 26.018600         | 1        | 25551442.237972 |
| 14S5A00821  | Integrated Circuit | U27,U32  |          | 26.018600         | 2        | 14194252.866846 |
| 14S5A12506  | Integrated Circuit | U20  |          | 26.018600         | 1        | 25551442.237972 |
| 14S6203205  | Integrated Circuit | U3   |          | 11.063278         | 1        | 58231413.220643 |
| 14S6324640  | Integrated Circuit |  |          | 11.063278         | 1        | 58231413.220643 |
| 14S6334610  | Integrated Circuit | U18  | 27.6     | 33.864219         | 1        | 19023922.713558 |
| 14S9811500  | Integrated Circuit | U22  |          | 43.803003         | 1        | 11739202.588727 |
| 1540710382  | Resistor           | RP1,RP10,RP11,RP12,RP13,RP2,RP3,RP4,RP5,RP6,RP7,RP8, RP9 |          | 9.971436          | 13       | 6133850.826447  |
| 1540722085  | Resistor           | RP14,RP15,RP16,RP17,RP18,RP19,RP20,RP21,RP22, RP23       |          | 9.971436          | 10       | 7746494.690806  |
| 1600000403  | Connection         | SW1  |          | 16.184835         | 1        | 35685591.360212 |
| 1651520400  | Connection         | DIMM1  | 20.7     | 43.095744         | 1        | 13401912.494608 |
| 1653150221  | Connection         | X1A,X1B,X1C,X1D  |          | 16.184835         | 4        | 11344857.509064 |
| 1654907101  | Connection         | CN5,CN6  |          | 16.184835         | 2        | 20390152.380746 |
| 1655812130  | Connection         | CN7  |          | 16.184835         | 1        | 35685591.360212 |
| 1655902122  | Connection         | CN1  |          | 16.184835         | 1        | 35685591.360212 |
| 1655903122  | Connection         | CN4  |          | 16.184835         | 1        | 35685591.360212 |
| 1655907131  | Connection         | CN2  |          | 16.184835         | 1        | 35685591.360212 |
| 175011301C  | Miscellaneous      | BAT1B1   |          | 306.000000        | 1        | 1681683.006787  |