



MTBF PREDICTION REPORT

PA Department

DFI



MTBF PREDICTION REPORT

Model: AL051-TC-E3930

Revision: A00

Completed Date	2018/10/18
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Reviewed By	Johnson Chan
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1. Purpose:

This MTBF prediction report presents the product reliability by the Relex reliability analysis tools, which is developed by Relex Software Corporation. When performing a reliability prediction analysis, there are several calculated values that provide measures of reliability. These values include failure rate, MTBF, reliability and availability. This report should provide the reliable and worth result for MTBF and failure rate reference.

2. Prediction Models:

For motherboard product, this report is based on Telcordia (formerly Bellcore). The Telcordia reliability prediction model was originally developed by AT&T Bell Labs. Bell Labs modified the equations from MIL-HDBK-217 to better represent what their equipment was experiencing in the field.

3. Definition:

- Failure Rate: Failure rate is defined as the rate of occurrence of failure. It is basically the anticipated number of times that an item fails in a specified period of time.
- MTBF: MTBF stands for Mean Time between Failures. MTBF is the inverse of the failure rate for constant failure rate systems. MTBF can be described as the number of hours to pass before for a component, assembly, or system.
- Description: A description of the item on the Relex file.
- Environment: It is based on those outlined in the Telcordia (Bellcore) standards.
- Temperature: Present the operation temperature (in degrees Celsius) to meet the requirement.

4. MTBF Result and Relex Software Report:

Temperature (Celsius)	MTBF (hours)
25	497,851
45	319,154
60	213,896
70	160,439
85	102,387

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MTBF (hrs):	497,851
Failure Rate:	2008.63
Temperature:	25
Environment:	GB, GC - Ground Benign, Controlled

Assembly Name	Part Number	Quantity	Failure Rate (Fit)	MTBF (Hrs)
AL051-TC-E3930	770-AL0511-500G	1	2008.63	497,851
AL051-TC-E3930	774-AL0511-500G	1	2008.63	497,851

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 497,851

Failure Rate: 2008.6318

Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
113-500000-210G	IC TTL,Single 2-Input Positive-NAND Gate,SN74LVC1G00DCKR/SC70-5(TI)RoHS	10.3898	1	15.6282
113-500007-210S	IC TTL,Single Buffer/Driver,SN74LVC1G07DCKR/SC70-5(TI)	10.3898	1	15.6282
113-500008-210G	IC TTL,Single 2-Input Positive-AND Gate,SN74LVC1G08DCKR/SC70-5(TI)RoHS	10.3898	5	63.4630
113-833306-400G	IC TTL,Dual FET Bus Switch,SN74CB3Q3306ADCUR/VSSOP8(US8-DCU)(TI)RoHS	10.3898	2	28.1327
113-906408-400G	IC LOW-VOLTAGE 8-BIT I2C AND SMBus I/O EXPANDER,UQFN16, TCA6408ARSVR(TI)RoHS	10.3898	1	15.6282
121-000104-420G	IC 4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR,NTS0104GU12/XQFN12(NXP) RoHS	10.3898	7	86.3103
121-000204-400G	4-Bits Bidirectional Multi-Voltage Level Translator,LSF0204RUTR/UQFN12(TI)RoHS	10.3898	1	15.6282
121-009406-200G	IC DUAL BIDIRECTIONAL I ² C-bus and SMBus TRANSLATOR,TCA9406DCUR/micro SO8(TI)RoHS	10.3898	2	28.1327
121-081439-400G	IC RS232/RS422/RS485 Multiprotocol Transceivers,F81439N/TQFN40(FINTEK)RoHS	10.3898	1	15.6282
123-100341-200G	IC OP Amplifier,LMV341IDCK/SC70-6(TI)RoHS	10.3898	1	15.6282
135-300400-215G	SPI SERIAL FLASH 4Mbit W25X40CLSNIG/SOIC8 (WINBOND)RoHS/HF	4.4178	1	6.8575
135-301004-201G	EEPROM 8K(1024*8)M24C08-WMN6TP/SO-8(ST) RoHS	4.4178	1	6.8575
135-301282-210G	SPI SERIAL FLASH 128Mbit,W25Q128FWSIQ/SOIC-8 (WINBOND)RoHS	4.4178	1	6.8575
136-115090-400G	Flash 8-Bit Microcontroller PIC16F1509-I/ML/QFN-20 (MICROCHIP)RoHS	4.4178	1	6.8575
141-003460-403G	eDP to LVDS bridge PTN3460BS/F6,HVQFN56(NXP) RoHS	10.3898	1	15.6282
141-006850-401G	IC Synchronous Buck Converter,4.5-26Vin,12A,NB685AGQ/QFN16(MPS)RoHS	10.3898	1	15.6282
141-029390-403G	IC Controller,Multi-Rail PWM for Intel IMVP8,MP2939GQK-Z/QFN-48,D/C after 1650(MPS) RoHS	10.3898	1	15.6282
141-232120-400G	IC PCIE 3.0 Switch 2:1 Mux/DeMux,PI3PCIE3212ZBE/TQFN-20(PERICOM) RoHS	10.3898	1	15.6282
141-262001-200G	AUDIO CODEC ALC262-VC2-GR/LQFP48(REALTEK) RoHS	10.3898	1	15.6282
141-562150-400G	IC Synchronous Step-down Converter,TPS56C215RNN/VQFN-18(TI)RoHS	10.3898	3	40.1348
141-620850-200G	IC Synchronous Buck Converter,2.5-6,3A,TLV62085RLT/VSON-7(TI)RoHS	10.3898	3	40.1348
147-065160-200G	IC Converter,Single Chip DisplayPort to VGA with Embedded MCU,IT6516BFN/CX-0068(R)/QFN-32 (ITE)RoHS	10.3898	1	15.6282
147-818030-200G	IC CHIP,F81803U-I/TQFP64(FINTEK)RoHS	10.3898	1	15.6282

File Name: AL051-TC-E3930.rfp
Assembly: 774-AL0511-500G
Ref Des:
Calculation Model: Telcordia Issue 2



MTBF (hrs): 497,851
Failure Rate: 2008.6318
Temperature: 25
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
147-822100-410G	IC CHIP Giga LAN Ctrl,-40~105°C,WGI210IT SLJXT/QFN-64(INTEL)RoHS	10.3898	2	28.1327
171-205200-210S	DIODE SCHOTTKY BARRIER 30V,200mA,IR=1uA@VR=10V,SCS520S-T2G-WG/SOD-523(WILLAS)	1.1277	12	14.9756
171-215817-213G	DIODE Schottky,SMA,FM5817P-T-FM/DO214AC (FMS)RoHS	1.1277	1	1.5592
171-230502-200G	DIODE ESD Protection,VRWM=5.0V,IRM=100nA,VESD=10KV,SM T,SOT883,PESD5V0U2BM(NXP)RoHS	1.1277	1	1.5592
171-364212-200G	DIODE TVS VRWM:-12V~12V,AZ4212-01G.R7G/SOD -123(AMAZING)RoHS	1.1277	1	1.5592
171-404001-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4E001DBVR/SOT23-6(TI)	10.3898	2	28.1327
171-404010-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4S010DQAR/SON-DQA10(TI)	10.3898	5	63.4630
171-450150-200G	DIODE Zener,15V,UDZS 15B/SOD323(ROHM)RoHS	1.1277	1	1.5592
172-223904-400G	TRANSISTOR Dual NPN,MBT3904DW1T1G/SOT-363 (ON)RoHS	3.2505	3	12.0150
172-223906-207S	TRANSISTOR PNP,PMBS3906/SOT23(NXP)	3.2505	1	4.5730
172-300612-200G	MOSFET Dual N-Ch,VDS:30V,VGS:±20V,ID:100mA,@4V,RDS:8Ω,EM 6K1GT2R/SOT-563(ROHM)RoHS	7.2970	15	122.2954
172-301402-200G	MOSFET Dual N-Ch VDS:20V,ID:9.5A,VGS:±12V,@4.5V,RDS:14mΩ,EMZ F14R02W/8-DFN(3x3)(EXCELLIANCE)RoHS	7.2970	1	10.7463
172-304402-200G	MOSFET P-Ch,VDS:-20V,ID:-4A,VGS:±12V,@-4.5V,RDS:44mΩ,EMF44P02J/SOT-23(EXCELLIANCE) HF	7.2970	1	10.7463
172-304435-200G	MOSFET P-Ch,VDS:-30V,ID:-11A,VGS:±25V,@-4.5V,RDS:36mΩ,AP4435GYT-HF/PMPAK3x3 (APEC)/HF	7.2970	2	19.4351
172-304438-200G	MOSFET N-Ch,VDS:30V,ID:13.7A,VGS:±20V,@-4.5V,RDS:18mΩ,AP4438GYT-HF/PMPAK3x3(APEC) HF	7.2970	1	10.7463
172-385301-200G	MOSFET N-Ch,VDS:20V,ID:5A,VGS:±10V,at 4.5V RDS:23mΩ,CSD85301Q2/WSO8(TI)RoHS	7.2970	1	10.7463
172-886901-200G	DrMOS Power Stage MP86901-AGQT-Z/TQFN13 (MPS)RoHS	7.2970	1	10.7463
172-886901-210G	DrMOS Power Stage MP86901-CGLT-Z/TQFN21 (MPS)RoHS	7.2970	1	10.7463
174-210010-500S	LED,RED,SMD0805,17-21VRC/TR8(HT)(EVERLIGHT)	0.2411	1	0.3163
213-150330-200C	MLCC 3.3pF/50V,NPO,C(0.25pF),SMD,0402,(None JP)RoHS	0.1822	2	0.4301
213-151005-120C	MLCC 10pF/50V,NPO,J(5%),SMD 0201(None JP) RoHS	0.1822	3	0.6268
213-151505-200C	MLCC 15pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1822	2	0.4301

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Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-151805-200C	MLCC 18pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1822	2	0.4301
213-152205-110C	MLCC 22pF/25V,NPO,J(5%),SMD 0201(None JP) RoHS	0.1822	1	0.2289
213-152215-200C	MLCC 221P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1822	6	1.2046
213-152705-200C	MLCC 27pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1822	4	0.8198
213-152715-200C	MLCC 271P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1822	1	0.2289
213-153319-200C	MLCC 331P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1822	10	1.9659
213-155605-200C	MLCC 56pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1822	1	0.2289
213-156805-200C	MLCC 68pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1822	2	0.4301
213-158205-200C	MLCC 82pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.1822	1	0.2289
213-251028-200C	MLCC 102P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1822	4	0.8198
213-251038-200C	MLCC 103P/16V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1822	3	0.6268
213-251038-250C	MLCC 103P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1822	1	0.2289
213-251039-130C	MLCC 103P/10V,X7R,K(10%),SMD,0201,(None JP) RoHS	0.1822	10	1.9659
213-251049-130J	MLCC 104P/10V,X5R,K(10%),SMD,0201,(JP)RoHS	0.1822	135	25.1243
213-251049-200J	MLCC 104P/16V,X7R,K(10%),SMD,0402,(JP)RoHS	0.1822	34	6.4599
213-251049-270J	MLCC 104P/25V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1822	6	1.2046
213-251049-320J	MLCC 104P/50V,X7R,K(10%),SMD,0603,(JP)RoHS	0.1822	1	0.2289
213-251049-330J	MLCC 104P/25V,X7R,K(10%),SMD,0603,(JP)RoHS	0.1822	3	0.6268
213-251059-109G	MLCC 105P/6.3V,X5R,K(10%),SMD,0201,CC0201KRX5R5BB105(YAGEO) RoHS	0.1822	20	3.8474
213-251059-200J	MLCC 105P/6.3V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1822	13	2.5326
213-251059-220J	MLCC 105P/10V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1822	1	0.2289
213-251059-230J	MLCC 105P/16V,X5R,K(10%),SMD,0402,(JP)RoHS	0.1822	21	4.0346
213-251059-330J	MLCC 105P/25V,X5R,K(10%),SMD,0603,(JP)RoHS	0.1822	2	0.4301
213-251068-200J	MLCC 106P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1822	37	7.0179
213-251068-300J	MLCC 106P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.1822	4	0.8198
213-251069-320J	MLCC 106P/10V,X5R,K(10%),SMD,0603,(JP)RoHS	0.1822	8	1.5863
213-252239-200C	MLCC 223P/25V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.1822	1	0.2289
213-252249-310C	MLCC 224P/10V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.1822	1	0.2289
213-252249-330C	MLCC 224P/25V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.1822	1	0.2289
213-252259-200J	MLCC 225P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1822	10	1.9659

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 497,851

Failure Rate: 2008.6318

Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-252268-310J	MLCC 226P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.1822	53	9.9874
213-252269-510J	MLCC 226P/6.3V,X5R,M(20%),SMD,0805,(JP)RoHS	0.1822	4	0.8198
213-253938-200C	MLCC 393P/10V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.1822	2	0.4301
213-254715-200C	MLCC 471P/50V,NPO,J(5%),SMD,0402,(None JP)RoHS	0.1822	8	1.5863
213-254739-210C	MLCC 473P/16V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.1822	3	0.6268
213-254758-210J	MLCC 475P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.1822	5	1.0127
213-254759-320C	MLCC 475P/10V,X5R,K(10%),SMD,0603,(None JP)RoHS	0.1822	4	0.8198
213-254759-510J	MLCC 475P/25V,X5R,K(10%),SMD,0805,(JP)RoHS	0.1822	5	1.0127
213-351068-510J	MLCC 106P/25V,X7S,M(20%),SMD,0805,(JP)RoHS	0.1822	8	1.5863
217-301078-325G	POLYMER(TAN) CAP 100uF/6.3V,40mΩ,1.8A,SMD,B3528,105°C/2000H,M(20%),T520B107M006ATE040(KEMET)RoHS	0.7181	3	2.5481
217-302278-326G	POLYMER(TAN)CAP 220uF/6.3V,45mΩ,1700mA,105°C/2000H,M(20%),B3528(1.9),T520B227M006ATE045(KEMET)RoHS	0.7181	3	2.5481
217-304768-725G	POLYMER(TAN) CAP,47uF/16V,70mΩ,1600mA,SMD,V7343-20,105°C/2000H,M(20%),T520V476M016ATE070(KEMET)RoHS	0.7181	4	3.3261
223-015122-610G	CHOKE 0.15uH,M (20%),RDC≤0.9mΩ,Idc≤35A,Isat≤41A,SMD,(7.6*6.6*2.8),CMME063T-R15MS0R907(CYNTEC)RoHS	0.7483	1	0.9780
223-015222-610G	CHOKE 1.5uH,M (20%),RDC≤15mΩ,Irms=9A,Isat=16A,SMD,(7.3*6.6*3.0),MCS0630-1R5MN2(PDC)RoHS	0.7483	1	0.9780
223-015223-110G	CHOKE 1.5uH,M (20%),RDC≤4.2mΩ,Irms=16A,Isat=21A,SMD,(11.5*10.3*4),MCS1040-1R5MN1(PDC)RoHS	0.7483	1	0.9780
223-036121-700G	CHOKE 0.36uH,M (20%),DCR=12mΩ,Irms=9A,Isat=11A,SMD(4.5*4*1.8),GSTD4020PJ-R36M(GOTREND)RoHS	0.7483	1	0.9780
223-047120-820G	CHOKE 0.47uH,M (20%),RDC≤39mΩ,Irms=3.5A,SMD,(2.5x2x1.2),AWP252012AF-R47M(TAI TECH)RoHS	0.7483	3	2.6386
223-047122-620G	CHOKE 0.47uH,M (20%),RDC≤4mΩ,Idc=17.5A,Isat=26A,SMD,(7.3x6.6x3),PCMC063T-R47MN(CYNTEC)RoHS	0.7483	1	0.9780
223-368122-600S	CHOKE 0.68uH,M (20%),RDC=5mΩ,Idc=15.5A,Isat=25A,SMD(7.4*6.9*3.0),GSTD6030PE-R68M(GOTREND)	0.7483	1	0.9780
223-410040-501S	COMMON CHOKE Z≥90Ω,M (20%),RDC≤0.35Ω,Idc≤330mA,SMD,(2.05*1.25*1.2),CMM21T-900M-N(CHILISIN)	0.7483	2	1.8192

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Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
223-490090-500S	COMMON CHOKE 90Ω,60-100Ω,300mA (Max),RDC≤ 300mΩ,HDMI/USB3.0 6GHz,SMD0805 (2*1.2*1.2mm),GLECM2012B-900QT(GOTREND)	0.7483	4	3.4467
223-523000-410G	CM FILTER Cd=0.25pF,Rs=3Ω,SMD (1.57*1.17*0.57),PCMF2USB3S/WLCSP10(NXP) RoHS	0.7483	2	1.8192
231-107168-200G	REGULATOR 0.8A,GS7168TD-R/TDFN8(GSTEK)HF	15.2841	1	29.7233
231-111700-250G	REGULATOR 1A,Adjustable,SMD,LD1117AG-AD-AB3-A-R/SOT89(UTC)RoHS	15.2841	1	29.7233
241-219206-330G	X'TAL 19.2MHz,12pF,±30ppm,ESR:50Ω (Max),TOPR=-40°C ~+105°C,SMD3225 (4PAD),7M19200021(TXC)RoHS	3.2000	1	6.9898
241-225006-350G	X'TAL 25MHz,18pF,±30ppm,ESR:50Ω(Max),TOPR=-40°C ~+105°C,SMD3225(4PAD),7M25000175(TXC) RoHS	3.2000	2	18.8238
241-432773-300G	X'TAL 32.768kHz,12.5pf,*/-20ppm,TOPR=-40°C ~+125°C,SMD3215(2PAD),FC-13A,X1A000091000100(Seiko Epson)RoHS	3.2000	1	6.9898
242-248006-200G	OSC 48Mhz,3.3V,15pf,25ppm,TOPR=-40°C ~+85°C,SMD2520(4PAD),FCO-236A 48.000MAC (FUJICOM)RoHS	14.0000	1	42.3449
251-160808-083S	BEAD CORE 160808 80Ω,300mA,25%,SMT0603,SBK160808T-800Y-N (CHILISIN)	0.7483	2	1.8192
251-160808-615S	BEAD CORE 160808 600Ω,1A,25%,SMT0603,PBY160808T-601Y-N (CHILISIN)	0.7483	1	0.9780
251-647000-301S	BEAD CORE 160808 47Ω,400mA,25%,SMT0603,SBK160808T-470Y-N (CHILISIN)	0.7483	7	5.8279
251-915470-200G	FERRITE BEAD 47Ω,300mA,25%,BLM15BB470SN1D/0402(MURATA) RoHS	0.7483	3	2.6386
253-100115-501S	POLYSWITCH 1.1A,6V,SMT0805,0805L100 (LITTELFUSE)	0.4000	4	2.1022
253-100155-604S	POLYSWITCH 1.5A/8V,SMD1206 TYPE PTC,1206L150THWR(LITTELFUSE)	0.4000	2	1.1579
253-105000-610G	FUSE 5A/32V SMD3216(1206),0466005.NRHF (LITTELFUSE)RoHS	0.4000	1	0.6546
261-361515-200C	RES NET 150Ω 8P4R J(5%),0402*4,(None JP)RoHS	0.3855	2	0.9823
261-364725-200C	RES NET 4.7KΩ 8P4R J(5%),0402*4,(None JP)RoHS	0.3855	1	0.5361
263-180005-100C	RES 0Ω,J(5%),SMD,0201,(None JP)RoHS	0.3855	65	26.2297
263-180005-200C	RES 0Ω,J(5%),SMD,0402,(None JP)RoHS	0.3855	30	12.3612
263-180005-300C	RES 0Ω,J(5%),SMD,0603,(None JP)RoHS	0.3855	9	3.9055
263-180100-210C	RES 10Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	3	1.4143
263-180100-310C	RES 10Ω,F(1%),SMD,0603,(None JP)RoHS	0.3855	1	0.5361
263-180200-210C	RES 20Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-180220-110C	RES 22Ω,F(1%),SMD,0201,(None JP)RoHS	0.3855	8	3.5016
263-180220-210C	RES 22Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	3	1.4143

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Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-180470-210C	RES 47Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-180519-310C	RES 5.1Ω,F(1%),SMD,0603,(None JP)RoHS	0.3855	1	0.5361
263-180680-210C	RES 68Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-180750-110C	RES 75Ω,F(1%),SMD,0201,(None JP)RoHS	0.3855	5	2.2588
263-181000-110C	RES 100Ω,F(1%),SMD,0201,(None JP)RoHS	0.3855	3	1.4143
263-181000-210C	RES 100Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	6	2.6754
263-181000-310C	RES 100Ω,F(1%),SMD,0603,(None JP)RoHS	0.3855	1	0.5361
263-181001-110C	RES 1KΩ,F(1%),SMD,0201,(None JP)RoHS	0.3855	20	8.3600
263-181001-210C	RES 1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	7	3.0895
263-181001-310C	RES 1KΩ,F(1%),SMD,0603,(None JP)RoHS	0.3855	2	0.9823
263-181002-110C	RES 10KΩ,F(1%),SMD,0201,(None JP)RoHS	0.3855	67	27.0186
263-181002-210C	RES 10KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	17	7.1528
263-181003-110C	RES 100KΩ,F(1%),SMD,0201,(None JP)RoHS	0.3855	15	6.3454
263-181003-210C	RES 100KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	5	2.2588
263-181004-210C	RES 1MΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-181005-210C	RES 10MΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181022-210C	RES 10.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-181050-210C	RES 105Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-181053-210C	RES 105KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-181130-210C	RES 113Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181182-210C	RES 11.8KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181210-210C	RES 121Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181273-210C	RES 127KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181400-210C	RES 140Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181402-210C	RES 14KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181500-210C	RES 150Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	6	2.6754
263-181503-210C	RES 150KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181542-210C	RES 15.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181623-210C	RES 162KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	3	1.4143
263-181651-210C	RES 1.65KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181690-210C	RES 169Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-181691-210C	RES 1.69KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-181803-210C	RES 180KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	3	1.4143
263-182000-110C	RES 200Ω,F(1%),SMD,0201,(None JP)RoHS	0.3855	3	1.4143
263-182000-210C	RES 200Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-182001-210C	RES 2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	3	1.4143
263-182002-110C	RES 20KΩ,F(1%),SMD,0201,(None JP)RoHS	0.3855	3	1.4143
263-182002-210C	RES 20KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	8	3.5016
263-182003-210C	RES 200KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-182004-210C	RES 2MΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-182050-210C	RES 205Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-182053-210C	RES 205KΩ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-182200-210C	RES 220Ω,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-182201-110C	RES 2.2KΩ,F(1%),SMD,0201,(None JP)RoHS	0.3855	6	2.6754
263-182202-110C	RES 22KΩ,F(1%),SMD,0201,(None JP)RoHS	0.3855	4	1.8389
263-182208-310C	RES 2.2Ω,F(1%),SMD,0603,(None JP)RoHS	0.3855	1	0.5361

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 497,851

Failure Rate: 2008.6318

Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-182553-210C	RES 255K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-182612-210C	RES 26.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-182872-210C	RES 28.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-183000-310C	RES 300 Ω ,F(1%),SMD,0603,(None JP)RoHS	0.3855	1	0.5361
263-183092-210C	RES 30.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-183300-210C	RES 330 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	4	1.8389
263-183301-110C	RES 3.3K Ω ,F(1%),SMD,0201(None JP)RoHS	0.3855	12	5.1295
263-183301-210C	RES 3.3K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	4	1.8389
263-183302-110C	RES 33K Ω ,F(1%),SMD,0201(None JP)RoHS	0.3855	4	1.8389
263-183303-210C	RES 330K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-183305-100C	RES 33 Ω ,J(5%),SMD,0201(None JP)RoHS	0.3855	26	10.7642
263-183651-210C	RES 3.65K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	4	1.8389
263-183901-210C	RES 3.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-183922-210C	RES 39.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-184020-210C	RES 402 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	3	1.4143
263-184122-210C	RES 41.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-184532-210C	RES 45.3K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-184701-110C	RES 4.7K Ω ,F(1%),SMD,0201,(None JP)RoHS	0.3855	47	19.1152
263-184701-210C	RES 4.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	5	2.2588
263-184702-110C	RES 47K Ω ,F(1%),SMD,0201,(None JP)RoHS	0.3855	8	3.5016
263-184750-210C	RES 475 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-184872-210C	RES 48.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-184990-210C	RES 499 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-184991-210C	RES 4.99K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-184992-210C	RES 49.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-185102-210C	RES 51K Ω ,F(1%),SMD,0402(None JP)RoHS	0.3855	4	1.8389
263-185110-210C	RES 511 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-185112-210C	RES 51.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-185230-210C	RES 523 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-185600-210C	RES 560 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-185602-210C	RES 56K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-185621-210C	RES 5.62K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-186040-210C	RES 604 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-186049-210C	RES 60.4 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-186981-210C	RES 6.98K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-187502-210C	RES 75K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-187870-210C	RES 787 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-188062-210C	RES 80.6K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-188201-210C	RES 8.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-188459-210C	RES 84.5 Ω ,F(1%),SMD,0402 (None JP)RoHS	0.3855	1	0.5361
263-188661-210C	RES 8.66K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-189092-210C	RES 90.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-189312-210C	RES 93.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-189531-210C	RES 9.53K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	2	0.9823
263-189761-210C	RES 9.76K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361
263-189762-210C	RES 97.6K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.3855	1	0.5361

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Assembly: 774-AL0511-500G
Ref Des:
Calculation Model: Telcordia Issue 2



MTBF (hrs): 497,851
Failure Rate: 2008.6318
Temperature: 25
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
273-100402-301S	THERM RES 10KΩ,J(5%),SMD,0603, (B25/85=3435,3%),TSM1A103J34D3RZ(TKS)	0.9957	2	3.3397
342-112003-210G	MINI DISPLAYPORT,20pin,F,0.6mm,R/A,30u",WMDR -20FEL1PH4(WIN WIN)RoHS	2.0862	1	3.6121
342-310022-110G	Screw CONN. Terminal Block,Green,2Pos,300V,16A,PIT:5.0mm,MB612- 50002(DECA) RoHS	2.0862	1	3.6121
343-111514-110G	DSUB CONN 15SA,90D,FASTEN SCREW,G/F,Blue,,D4324-15F-422B(XIAN YI)RoHS	2.0862	1	3.6121
343-500642-111G	Giga LAN CONN RJ45 30μ,W/Transformer&LED,24- 000939N13-1(UDE)RoHS	2.0862	2	6.3217
343-503600-100S	USB 3.0*2 ,A Type,30u,UEA1112C-8FS6-4F (FOXCONN)	2.0862	1	3.6121
344-002003-610G	Mini JUMPER RED 2.0mm,200-72-PBGR0B(PINREX) RoHS	2.0862	1	3.6121
346-110320-100G	PIN PLUG 1*3,2.0mm,M,H=5.9mm,180D,DIP,W/BLACK JUMPER,22S-96-03GB01(PINREX)RoHS	2.0862	1	3.6121
346-120310-200G	PIN PLUG 2*3,1.27mm,H=5mm,V/T,SMD,JCL20161228019(V- STAR)RoHS	2.0862	2	6.3217
346-120320-800S	PIN PLUG 2*3,2.0mm,M,H=6.7mm,180D,SMT,W/CAP,222-97- 03GBE1(R)(PINREX)	2.0862	1	3.6121
346-120511-200G	PIN PLUG 2*5,1.27mm,H=5mm,V/T,SMD,JCL20161228017(V- STAR)RoHS	2.0862	4	11.3620
346-510223-102G	WAFER 1*2,2.0mm,M,H=6.1mm,180D,DIP,WHITE,721-81- 02TW00(PINREX)RoHS	2.0862	1	3.6121
346-522040-200G	BOX HEADER 2*20,1.00mm,V/T,SMD,W100V40TP2 (V-STAR)RoHS	2.0862	1	3.6121
346-600750-101S	SATA3 CONNECTOR 7Pin,15u",180D,DIP,DARK BLUE,W/LOCK,LE18077-Z54D-4H(FOXCONN)	2.0862	1	3.6121
347-150051-210G	WAFER 1*5,1.25mm,M,H=3.45mm,90D,SMT,WHITE,0110- 3221050(E-CALL)RoHS	2.0862	1	3.6121
348-220800-200S	SOCKET SPI 8Pin,GF,H=5.65mm,180D,SMT,ACA-SPI -004-K01(LOTES)	1.1379	1	1.8544
348-370750-240G	NGFF CONN 75P/0.5mm,H=8.5mm,B key,90D,BLACK,SMD,APCI0161-P002H(LOTES)HF	1.1379	1	1.8544
348-652047-210G	DDR-III SO DIMM 1*204P,10u,H=8.0mm 1.5V,SMD,RVS,AS0A626-H8RN-7H(FOXCONN) RoHS/HF	2.0862	1	3.6121
348-660522-200S	MINI PCI-EXPRESS 1*52,0.8mm,10u",F,H=9.9mm,90D,SMT,IVORY,GEN RAL TYPE,AS0B226-S99Q-7H(FOXCONN)HF	1.1379	1	1.8544

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 497,851

Failure Rate: 2008.6318

Temperature: 25

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
622-010140-000G	BATTERY CR2032 3V 220mAh W/CABLE (L=150mm&TAPE),BIN-CR2032-I-CT-SL-PV-01(RE- ENERGY)RoHS	25.0000	1	34.9638
143-101300-401G	CPU Intel Atom x5-E3930 1.3GHz C/2M LH8066803102701 SR33Q D0/FCBGA-1296(INTEL) RoHS	228.0000	1	228.0000
292-301000-500S	BUZZER 3V,100mA,12Ω,4Khz,85db,SMD (5*4.2mm),SMT-G5030A(KEPO)	600.0000	1	600.0000
314-AL0511-109G	PCB AL051 R.A (12L HDI 100x72x1.6mm, 2 panelization) OSP(CIRCUITECH)RoHS	3.0000	1	3.0000

MTBF (hrs): 319,154

Failure Rate: 3133.28

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled



Assembly Name	Part Number	Quantity	Failure Rate (Fit)	MTBF (Hrs)
AL051-TC-E3930	770-AL0511-500G	1	3133.28	319,154
AL051-TC-E3930	774-AL0511-500G	1	3133.28	319,154

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154

Failure Rate: 3133.2821

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
113-500000-210G	IC TTL,Single 2-Input Positive-NAND Gate,SN74LVC1G00DCKR/SC70-5(TI)RoHS	24.4776	1	36.8188
113-500007-210S	IC TTL,Single Buffer/Driver,SN74LVC1G07DCKR/SC70-5(TI)	24.4776	1	36.8188
113-500008-210G	IC TTL,Single 2-Input Positive-AND Gate,SN74LVC1G08DCKR/SC70-5(TI)RoHS	24.4776	5	149.5142
113-833306-400G	IC TTL,Dual FET Bus Switch,SN74CB3Q3306ADCUR/VSSOP8(US8-DCU)(TI)RoHS	24.4776	2	66.2785
113-906408-400G	IC LOW-VOLTAGE 8-BIT I2C AND SMBus I/O EXPANDER,UQFN16, TCA6408ARSVR(TI)RoHS	24.4776	1	36.8188
121-000104-420G	IC 4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR,NTS0104GU12/XQFN12(NXP) RoHS	24.4776	7	203.3406
121-000204-400G	4-Bits Bidirectional Multi-Voltage Level Translator,LSF0204RUTR/UQFN12(TI)RoHS	24.4776	1	36.8188
121-009406-200G	IC DUAL BIDIRECTIONAL I ² C-bus and SMBus TRANSLATOR,TCA9406DCUR/micro SO8(TI)RoHS	24.4776	2	66.2785
121-081439-400G	IC RS232/RS422/RS485 Multiprotocol Transceivers,F81439N/TQFN40(FINTEK)RoHS	24.4776	1	36.8188
123-100341-200G	IC OP Amplifier,LMV341IDCK/SC70-6(TI)RoHS	24.4776	1	36.8188
135-300400-215G	SPI SERIAL FLASH 4Mbit W25X40CLSNIG/SOIC8 (WINBOND)RoHS/HF	10.4080	1	16.1558
135-301004-201G	EEPROM 8K(1024*8)M24C08-WMN6TP/SO-8(ST) RoHS	10.4080	1	16.1558
135-301282-210G	SPI SERIAL FLASH 128Mbit,W25Q128FWSIQ/SOIC-8 (WINBOND)RoHS	10.4080	1	16.1558
136-115090-400G	Flash 8-Bit Microcontroller PIC16F1509-I/ML/QFN-20 (MICROCHIP)RoHS	10.4080	1	16.1558
141-003460-403G	eDP to LVDS bridge PTN3460BS/F6,HVQFN56(NXP) RoHS	24.4776	1	36.8188
141-006850-401G	IC Synchronous Buck Converter,4.5-26Vin,12A,NB685AGQ/QFN16(MPS)RoHS	24.4776	1	36.8188
141-029390-403G	IC Controller,Multi-Rail PWM for Intel IMVP8,MP2939GQK-Z/QFN-48,D/C after 1650(MPS) RoHS	24.4776	1	36.8188
141-232120-400G	IC PCIE 3.0 Switch 2:1 Mux/DeMux,PI3PCIE3212ZBE/TQFN-20(PERICOM) RoHS	24.4776	1	36.8188
141-262001-200G	AUDIO CODEC ALC262-VC2-GR/LQFP48(REALTEK) RoHS	24.4776	1	36.8188
141-562150-400G	IC Synchronous Step-down Converter,TPS56C215RNN/VQFN-18(TI)RoHS	24.4776	3	94.5547
141-620850-200G	IC Synchronous Buck Converter,2.5-6,3A,TLV62085RLT/VSON-7(TI)RoHS	24.4776	3	94.5547
147-065160-200G	IC Converter,Single Chip DisplayPort to VGA with Embedded MCU,IT6516BFN/CX-0068(R)/QFN-32 (ITE)RoHS	24.4776	1	36.8188
147-818030-200G	IC CHIP,F81803U-I/TQFP64(FINTEK)RoHS	24.4776	1	36.8188

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154

Failure Rate: 3133.2821

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
147-822100-410G	IC CHIP Giga LAN Ctrl,-40~105°C,WGI210IT SLJXT/QFN-64(INTEL)RoHS	24.4776	2	66.2785
171-205200-210S	DIODE SCHOTTKY BARRIER 30V,200mA,IR=1uA@VR=10V,SCS520S-T2G- WG/SOD-523(WILLAS)	1.9325	12	25.6634
171-215817-213G	DIODE Schottky,SMA,FM5817P-T-FM/DO214AC (FMS)RoHS	1.9325	1	2.6719
171-230502-200G	DIODE ESD Protection,VRWM=5.0V,IRM=100nA,VESD=10KV,SM T,SOT883,PESD5V0U2BM(NXP)RoHS	1.9325	1	2.6719
171-364212-200G	DIODE TVS VRWM:-12V~12V,AZ4212-01G.R7G/SOD -123(AMAZING)RoHS	1.9325	1	2.6719
171-404001-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4E001DBVR/SOT23-6(TI)	24.4776	2	66.2785
171-404010-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4S010DQAR/SON-DQA10(TI)	24.4776	5	149.5142
171-450150-200G	DIODE Zener,15V,UDZS 15B/SOD323(ROHM)RoHS	1.9325	1	2.6719
172-223904-400G	TRANSISTOR Dual NPN,MBT3904DW1T1G/SOT-363 (ON)RoHS	5.5703	3	20.5899
172-223906-207S	TRANSISTOR PNP,PMBS3906/SOT23(NXP)	5.5703	1	7.8366
172-300612-200G	MOSFET Dual N- Ch,VDS:30V,VGS:±20V,ID:100mA,@4V,RDS:8Ω,EM 6K1GT2R/SOT-563(ROHM)RoHS	12.5047	15	209.5754
172-301402-200G	MOSFET Dual N-Ch VDS:20V,ID:9.5A,VGS:±12V,@4.5V,RDS:14mΩ,EMZ F14R02W/8-DFN(3x3)(EXCELLIANCE)RoHS	12.5047	1	18.4158
172-304402-200G	MOSFET P-Ch,VDS:-20V,ID:-4A,VGS:±12V,@- 4.5V,RDS:44mΩ,EMF44P02J/SOT-23(EXCELLIANCE) HF	12.5047	1	18.4158
172-304435-200G	MOSFET P-Ch,VDS:-30V,ID:-11A,VGS:±25V,@- 4.5V,RDS:36mΩ,AP4435GYT-HF/PMPAK3x3 (APEC)/HF	12.5047	2	33.3055
172-304438-200G	MOSFET N-Ch,VDS:30V,ID:13.7A,VGS:±20V,@- 4.5V,RDS:18mΩ,AP4438GYT-HF/PMPAK3x3(APEC) HF	12.5047	1	18.4158
172-385301-200G	MOSFET N-Ch,VDS:20V,ID:5A,VGS:±10V,at 4.5V RDS:23mΩ,CSD85301Q2/WSO-8(TI)RoHS	12.5047	1	18.4158
172-886901-200G	DrMOS Power Stage MP86901-AGQT-Z/TQFN13 (MPS)RoHS	12.5047	1	18.4158
172-886901-210G	DrMOS Power Stage MP86901-CGLT-Z/TQFN21 (MPS)RoHS	12.5047	1	18.4158
174-210010-500S	LED,RED,SMD0805,17-21VRC/TR8(HT)(EVERLIGHT)	1.3383	1	1.7556
213-150330-200C	MLCC 3.3pF/50V,NPO,C(0.25pF),SMD,0402,(None JP)RoHS	0.2059	2	0.4861
213-151005-120C	MLCC 10pF/50V,NPO,J(5%),SMD 0201(None JP) RoHS	0.2059	3	0.7084
213-151505-200C	MLCC 15pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2059	2	0.4861

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154

Failure Rate: 3133.2821

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-151805-200C	MLCC 18pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2059	2	0.4861
213-152205-110C	MLCC 22pF/25V,NPO,J(5%),SMD 0201(None JP) RoHS	0.2059	1	0.2588
213-152215-200C	MLCC 221P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2059	6	1.3615
213-152705-200C	MLCC 27pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2059	4	0.9266
213-152715-200C	MLCC 271P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2059	1	0.2588
213-153319-200C	MLCC 331P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2059	10	2.2219
213-155605-200C	MLCC 56pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2059	1	0.2588
213-156805-200C	MLCC 68pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2059	2	0.4861
213-158205-200C	MLCC 82pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2059	1	0.2588
213-251028-200C	MLCC 102P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2059	4	0.9266
213-251038-200C	MLCC 103P/16V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2059	3	0.7084
213-251038-250C	MLCC 103P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2059	1	0.2588
213-251039-130C	MLCC 103P/10V,X7R,K(10%),SMD,0201,(None JP) RoHS	0.2059	10	2.2219
213-251049-130J	MLCC 104P/10V,X5R,K(10%),SMD,0201,(JP)RoHS	0.2059	135	28.3962
213-251049-200J	MLCC 104P/16V,X7R,K(10%),SMD,0402,(JP)RoHS	0.2059	34	7.3011
213-251049-270J	MLCC 104P/25V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2059	6	1.3615
213-251049-320J	MLCC 104P/50V,X7R,K(10%),SMD,0603,(JP)RoHS	0.2059	1	0.2588
213-251049-330J	MLCC 104P/25V,X7R,K(10%),SMD,0603,(JP)RoHS	0.2059	3	0.7084
213-251059-109G	MLCC 105P/6.3V,X5R,K(10%),SMD,0201,CC0201KRX5R5BB105(YAGEO) RoHS	0.2059	20	4.3484
213-251059-200J	MLCC 105P/6.3V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2059	13	2.8624
213-251059-220J	MLCC 105P/10V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2059	1	0.2588
213-251059-230J	MLCC 105P/16V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2059	21	4.5600
213-251059-330J	MLCC 105P/25V,X5R,K(10%),SMD,0603,(JP)RoHS	0.2059	2	0.4861
213-251068-200J	MLCC 106P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2059	37	7.9318
213-251068-300J	MLCC 106P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.2059	4	0.9266
213-251069-320J	MLCC 106P/10V,X5R,K(10%),SMD,0603,(JP)RoHS	0.2059	8	1.7929
213-252239-200C	MLCC 223P/25V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2059	1	0.2588
213-252249-310C	MLCC 224P/10V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.2059	1	0.2588
213-252249-330C	MLCC 224P/25V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.2059	1	0.2588
213-252259-200J	MLCC 225P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2059	10	2.2219

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154

Failure Rate: 3133.2821

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-252268-310J	MLCC 226P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.2059	53	11.2880
213-252269-510J	MLCC 226P/6.3V,X5R,M(20%),SMD,0805,(JP)RoHS	0.2059	4	0.9266
213-253938-200C	MLCC 393P/10V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.2059	2	0.4861
213-254715-200C	MLCC 471P/50V,NPO,J(5%),SMD,0402,(None JP)RoHS	0.2059	8	1.7929
213-254739-210C	MLCC 473P/16V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.2059	3	0.7084
213-254758-210J	MLCC 475P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2059	5	1.1446
213-254759-320C	MLCC 475P/10V,X5R,K(10%),SMD,0603,(None JP)RoHS	0.2059	4	0.9266
213-254759-510J	MLCC 475P/25V,X5R,K(10%),SMD,0805,(JP)RoHS	0.2059	5	1.1446
213-351068-510J	MLCC 106P/25V,X7S,M(20%),SMD,0805,(JP)RoHS	0.2059	8	1.7929
217-301078-325G	POLYMER(TAN) CAP 100uF/6.3V,40mΩ,1.8A,SMD,B3528,105°C/2000H,M(20%),T520B107M006ATE040(KEMET)RoHS	1.0368	3	3.6789
217-302278-326G	POLYMER(TAN)CAP 220uF/6.3V,45mΩ,1700mA,105°C/2000H,M(20%),B3528(1.9),T520B227M006ATE045(KEMET)RoHS	1.0368	3	3.6789
217-304768-725G	POLYMER(TAN) CAP,47uF/16V,70mΩ,1600mA,SMD,V7343-20,105°C/2000H,M(20%),T520V476M016ATE070(KEMET)RoHS	1.0368	4	4.8021
223-015122-610G	CHOKE 0.15uH,M (20%),RDC≤0.9mΩ,Idc≤35A,Isat≤41A,SMD,(7.6*6.6*2.8),CMME063T-R15MS0R907(CYNTEC)RoHS	1.0804	1	1.4120
223-015222-610G	CHOKE 1.5uH,M (20%),RDC≤15mΩ,Irms=9A,Isat=16A,SMD,(7.3*6.6*3.0),MCS0630-1R5MN2(PDC)RoHS	1.0804	1	1.4120
223-015223-110G	CHOKE 1.5uH,M (20%),RDC≤4.2mΩ,Irms=16A,Isat=21A,SMD,(11.5*10.3*4),MCS1040-1R5MN1(PDC)RoHS	1.0804	1	1.4120
223-036121-700G	CHOKE 0.36uH,M (20%),DCR=12mΩ,Irms=9A,Isat=11A,SMD(4.5*4*1.8),GSTD4020PJ-R36M(GOTREND)RoHS	1.0804	1	1.4120
223-047120-820G	CHOKE 0.47uH,M (20%),RDC≤39mΩ,Irms=3.5A,SMD,(2.5x2x1.2),AWP252012AF-R47M(TAI TECH)RoHS	1.0804	3	3.8095
223-047122-620G	CHOKE 0.47uH,M (20%),RDC≤4mΩ,Idc=17.5A,Isat=26A,SMD,(7.3x6.6x3),PCMC063T-R47MN(CYNTEC)RoHS	1.0804	1	1.4120
223-368122-600S	CHOKE 0.68uH,M (20%),RDC=5mΩ,Idc=15.5A,Isat=25A,SMD(7.4*6.9*3.0),GSTD6030PE-R68M(GOTREND)	1.0804	1	1.4120
223-410040-501S	COMMON CHOKE Z≥90Ω,M (20%),RDC≤0.35Ω,Idc≤330mA,SMD,(2.05*1.25*1.2),CMM21T-900M-N(CHILISIN)	1.0804	2	2.6265

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154

Failure Rate: 3133.2821

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
223-490090-500S	COMMON CHOKE 90Ω,60-100Ω,300mA (Max),RDC≤ 300mΩ,HDMI/USB3.0 6GHz,SMD0805 (2*1.2*1.2mm),GLECM2012B-900QT(GOTREND)	1.0804	4	4.9763
223-523000-410G	CM FILTER Cd=0.25pF,Rs=3Ω,SMD (1.57*1.17*0.57),PCMF2USB3S/WLCSP10(NXP) RoHS	1.0804	2	2.6265
231-107168-200G	REGULATOR 0.8A,GS7168TD-R/TDFN8(GSTEK)HF	60.2141	1	117.0997
231-111700-250G	REGULATOR 1A,Adjustable,SMD,LD1117AG-AD-AB3-A-R/SOT89(UTC)RoHS	60.2141	1	117.0997
241-219206-330G	X'TAL 19.2MHz,12pF,±30ppm,ESR:50Ω (Max),TOPR=-40°C ~+105°C,SMD3225 (4PAD),7M19200021(TXC)RoHS	3.2000	1	6.9898
241-225006-350G	X'TAL 25MHz,18pF,±30ppm,ESR:50Ω(Max),TOPR=-40°C ~+105°C,SMD3225(4PAD),7M25000175(TXC) RoHS	3.2000	2	18.8238
241-432773-300G	X'TAL 32.768kHz,12.5pf,*/-20ppm,TOPR=-40°C ~+125°C,SMD3215(2PAD),FC-13A,X1A000091000100(Seiko Epson)RoHS	3.2000	1	6.9898
242-248006-200G	OSC 48Mhz,3.3V,15pf,25ppm,TOPR=-40°C ~+85°C,SMD2520(4PAD),FCO-236A 48.000MAC (FUJICOM)RoHS	14.0000	1	42.3449
251-160808-083S	BEAD CORE 160808 80Ω,300mA,25%,SMT0603,SBK160808T-800Y-N (CHILISIN)	1.0804	2	2.6265
251-160808-615S	BEAD CORE 160808 600Ω,1A,25%,SMT0603,PBY160808T-601Y-N (CHILISIN)	1.0804	1	1.4120
251-647000-301S	BEAD CORE 160808 47Ω,400mA,25%,SMT0603,SBK160808T-470Y-N (CHILISIN)	1.0804	7	8.4141
251-915470-200G	FERRITE BEAD 47Ω,300mA,25%,BLM15BB470SN1D/0402(MURATA) RoHS	1.0804	3	3.8095
253-100115-501S	POLYSWITCH 1.1A,6V,SMT0805,0805L100 (LITTELFUSE)	0.4000	4	2.1022
253-100155-604S	POLYSWITCH 1.5A/8V,SMD1206 TYPE PTC,1206L150THWR(LITTELFUSE)	0.4000	2	1.1579
253-105000-610G	FUSE 5A/32V SMD3216(1206),0466005.NRHF (LITTELFUSE)RoHS	0.4000	1	0.6546
261-361515-200C	RES NET 150Ω 8P4R J(5%),0402*4,(None JP)RoHS	0.5566	2	1.4183
261-364725-200C	RES NET 4.7KΩ 8P4R J(5%),0402*4,(None JP)RoHS	0.5566	1	0.7740
263-180005-100C	RES 0Ω,J(5%),SMD,0201,(None JP)RoHS	0.5566	65	37.8696
263-180005-200C	RES 0Ω,J(5%),SMD,0402,(None JP)RoHS	0.5566	30	17.8467
263-180005-300C	RES 0Ω,J(5%),SMD,0603,(None JP)RoHS	0.5566	9	5.6387
263-180100-210C	RES 10Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	3	2.0419
263-180100-310C	RES 10Ω,F(1%),SMD,0603,(None JP)RoHS	0.5566	1	0.7740
263-180200-210C	RES 20Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-180220-110C	RES 22Ω,F(1%),SMD,0201,(None JP)RoHS	0.5566	8	5.0554
263-180220-210C	RES 22Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	3	2.0419

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154

Failure Rate: 3133.2821

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-180470-210C	RES 47Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-180519-310C	RES 5.1Ω,F(1%),SMD,0603,(None JP)RoHS	0.5566	1	0.7740
263-180680-210C	RES 68Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-180750-110C	RES 75Ω,F(1%),SMD,0201,(None JP)RoHS	0.5566	5	3.2611
263-181000-110C	RES 100Ω,F(1%),SMD,0201,(None JP)RoHS	0.5566	3	2.0419
263-181000-210C	RES 100Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	6	3.8626
263-181000-310C	RES 100Ω,F(1%),SMD,0603,(None JP)RoHS	0.5566	1	0.7740
263-181001-110C	RES 1KΩ,F(1%),SMD,0201,(None JP)RoHS	0.5566	20	12.0700
263-181001-210C	RES 1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	7	4.4605
263-181001-310C	RES 1KΩ,F(1%),SMD,0603,(None JP)RoHS	0.5566	2	1.4183
263-181002-110C	RES 10KΩ,F(1%),SMD,0201,(None JP)RoHS	0.5566	67	39.0086
263-181002-210C	RES 10KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	17	10.3270
263-181003-110C	RES 100KΩ,F(1%),SMD,0201,(None JP)RoHS	0.5566	15	9.1613
263-181003-210C	RES 100KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	5	3.2611
263-181004-210C	RES 1MΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-181005-210C	RES 10MΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181022-210C	RES 10.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-181050-210C	RES 105Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-181053-210C	RES 105KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-181130-210C	RES 113Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181182-210C	RES 11.8KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181210-210C	RES 121Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181273-210C	RES 127KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181400-210C	RES 140Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181402-210C	RES 14KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181500-210C	RES 150Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	6	3.8626
263-181503-210C	RES 150KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181542-210C	RES 15.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181623-210C	RES 162KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	3	2.0419
263-181651-210C	RES 1.65KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181690-210C	RES 169Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-181691-210C	RES 1.69KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-181803-210C	RES 180KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	3	2.0419
263-182000-110C	RES 200Ω,F(1%),SMD,0201,(None JP)RoHS	0.5566	3	2.0419
263-182000-210C	RES 200Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-182001-210C	RES 2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	3	2.0419
263-182002-110C	RES 20KΩ,F(1%),SMD,0201,(None JP)RoHS	0.5566	3	2.0419
263-182002-210C	RES 20KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	8	5.0554
263-182003-210C	RES 200KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-182004-210C	RES 2MΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-182050-210C	RES 205Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-182053-210C	RES 205KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-182200-210C	RES 220Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-182201-110C	RES 2.2KΩ,F(1%),SMD,0201,(None JP)RoHS	0.5566	6	3.8626
263-182202-110C	RES 22KΩ,F(1%),SMD,0201,(None JP)RoHS	0.5566	4	2.6549
263-182208-310C	RES 2.2Ω,F(1%),SMD,0603,(None JP)RoHS	0.5566	1	0.7740

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154

Failure Rate: 3133.2821

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-182553-210C	RES 255KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-182612-210C	RES 26.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-182872-210C	RES 28.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-183000-310C	RES 300Ω,F(1%),SMD,0603,(None JP)RoHS	0.5566	1	0.7740
263-183092-210C	RES 30.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-183300-210C	RES 330Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	4	2.6549
263-183301-110C	RES 3.3KΩ,F(1%),SMD,0201(None JP)RoHS	0.5566	12	7.4058
263-183301-210C	RES 3.3KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	4	2.6549
263-183302-110C	RES 33KΩ,F(1%),SMD,0201(None JP)RoHS	0.5566	4	2.6549
263-183303-210C	RES 330KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-183305-100C	RES 33Ω,J(5%),SMD,0201(None JP)RoHS	0.5566	26	15.5410
263-183651-210C	RES 3.65KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	4	2.6549
263-183901-210C	RES 3.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-183922-210C	RES 39.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-184020-210C	RES 402Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	3	2.0419
263-184122-210C	RES 41.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-184532-210C	RES 45.3KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-184701-110C	RES 4.7KΩ,F(1%),SMD,0201,(None JP)RoHS	0.5566	47	27.5979
263-184701-210C	RES 4.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	5	3.2611
263-184702-110C	RES 47KΩ,F(1%),SMD,0201,(None JP)RoHS	0.5566	8	5.0554
263-184750-210C	RES 475Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-184872-210C	RES 48.7KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-184990-210C	RES 499Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-184991-210C	RES 4.99KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-184992-210C	RES 49.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-185102-210C	RES 51KΩ,F(1%),SMD,0402(None JP)RoHS	0.5566	4	2.6549
263-185110-210C	RES 511Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-185112-210C	RES 51.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-185230-210C	RES 523Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-185600-210C	RES 560Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-185602-210C	RES 56KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-185621-210C	RES 5.62KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-186040-210C	RES 604Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-186049-210C	RES 60.4Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-186981-210C	RES 6.98KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-187502-210C	RES 75KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-187870-210C	RES 787Ω,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-188062-210C	RES 80.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-188201-210C	RES 8.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-188459-210C	RES 84.5Ω,F(1%),SMD,0402 (None JP)RoHS	0.5566	1	0.7740
263-188661-210C	RES 8.66KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-189092-210C	RES 90.9KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-189312-210C	RES 93.1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-189531-210C	RES 9.53KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	2	1.4183
263-189761-210C	RES 9.76KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740
263-189762-210C	RES 97.6KΩ,F(1%),SMD,0402,(None JP)RoHS	0.5566	1	0.7740

File Name: AL051-TC-E3930.rfp
Assembly: 774-AL0511-500G
Ref Des:
Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154
Failure Rate: 3133.2821
Temperature: 45
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
273-100402-301S	THERM RES 10K Ω ,J(5%),SMD,0603, (B25/85=3435,3%),TSM1A103J34D3RZ(TKS)	2.6513	2	8.8927
342-112003-210G	MINI DISPLAYPORT,20pin,F,0.6mm,R/A,30u",WMDR -20FEL1PH4(WIN WIN)RoHS	5.5551	1	9.6181
342-310022-110G	Screw CONN. Terminal Block,Green,2Pos,300V,16A,PIT:5.0mm,MB612- 50002(DECA) RoHS	5.5551	1	9.6181
343-111514-110G	DSUB CONN 15SA,90D,FASTEN SCREW,G/F,Blue,,D4324-15F-422B(XIAN YI)RoHS	5.5551	1	9.6181
343-500642-111G	Giga LAN CONN RJ45 30 μ ,W/Transformer&LED,24- 000939N13-1(UDE)RoHS	5.5551	2	16.8329
343-503600-100S	USB 3.0*2 ,A Type,30u,UEA1112C-8FS6-4F (FOXCONN)	5.5551	1	9.6181
344-002003-610G	Mini JUMPER RED 2.0mm,200-72-PBGR0B(PINREX) RoHS	5.5551	1	9.6181
346-110320-100G	PIN PLUG 1*3,2.0mm,M,H=5.9mm,180D,DIP,W/BLACK JUMPER,22S-96-03GB01(PINREX)RoHS	5.5551	1	9.6181
346-120310-200G	PIN PLUG 2*3,1.27mm,H=5mm,V/T,SMD,JCL20161228019(V- STAR)RoHS	5.5551	2	16.8329
346-120320-800S	PIN PLUG 2*3,2.0mm,M,H=6.7mm,180D,SMT,W/CAP,222-97- 03GBE1(R)(PINREX)	5.5551	1	9.6181
346-120511-200G	PIN PLUG 2*5,1.27mm,H=5mm,V/T,SMD,JCL20161228017(V- STAR)RoHS	5.5551	4	30.2539
346-510223-102G	WAFER 1*2,2.0mm,M,H=6.1mm,180D,DIP,WHITE,721-81- 02TW00(PINREX)RoHS	5.5551	1	9.6181
346-522040-200G	BOX HEADER 2*20,1.00mm,V/T,SMD,W100V40TP2 (V-STAR)RoHS	5.5551	1	9.6181
346-600750-101S	SATA3 CONNECTOR 7Pin,15u",180D,DIP,DARK BLUE,W/LOCK,LE18077-Z54D-4H(FOXCONN)	5.5551	1	9.6181
347-150051-210G	WAFER 1*5,1.25mm,M,H=3.45mm,90D,SMT,WHITE,0110- 3221050(E-CALL)RoHS	5.5551	1	9.6181
348-220800-200S	SOCKET SPI 8Pin,GF,H=5.65mm,180D,SMT,ACA-SPI -004-K01(LOTES)	3.0300	1	4.9378
348-370750-240G	NGFF CONN 75P/0.5mm,H=8.5mm,B key,90D,BLACK,SMD,APCI0161-P002H(LOTES)HF	3.0300	1	4.9378
348-652047-210G	DDR-III SO DIMM 1*204P,10u,H=8.0mm 1.5V,SMD,RVS,AS0A626-H8RN-7H(FOXCONN) RoHS/HF	5.5551	1	9.6181
348-660522-200S	MINI PCI-EXPRESS 1*52,0.8mm,10u",F,H=9.9mm,90D,SMT,IVORY,GEN RAL TYPE,AS0B226-S99Q-7H(FOXCONN)HF	3.0300	1	4.9378

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 319,154

Failure Rate: 3133.2821

Temperature: 45

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
622-010140-000G	BATTERY CR2032 3V 220mAh W/CABLE (L=150mm&TAPE),BIN-CR2032-I-CT-SL-PV-01(RE- ENERGY)RoHS	25.0000	1	34.9638
143-101300-401G	CPU Intel Atom x5-E3930 1.3GHz C/2M LH8066803102701 SR33Q D0/FCBGA-1296(INTEL) RoHS	228.0000	1	228.0000
292-301000-500S	BUZZER 3V,100mA,12Ω,4Khz,85db,SMD (5*4.2mm),SMT-G5030A(KEPO)	600.0000	1	600.0000
314-AL0511-109G	PCB AL051 R.A (12L HDI 100x72x1.6mm, 2 panelization) OSP(CIRCUITECH)RoHS	3.0000	1	3.0000

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MTBF (hrs):	213,896
Failure Rate:	4675.16
Temperature:	60
Environment:	GB, GC - Ground Benign, Controlled

Assembly Name	Part Number	Quantity	Failure Rate (Fit)	MTBF (Hrs)
AL051-TC-E3930	770-AL0511-500G	1	4675.16	213,896
AL051-TC-E3930	774-AL0511-500G	1	4675.16	213,896

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 213,896

Failure Rate: 4675.1594

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
113-500000-210G	IC TTL,Single 2-Input Positive-NAND Gate,SN74LVC1G00DCKR/SC70-5(TI)RoHS	43.5064	1	65.4416
113-500007-210S	IC TTL,Single Buffer/Driver,SN74LVC1G07DCKR/SC70-5(TI)	43.5064	1	65.4416
113-500008-210G	IC TTL,Single 2-Input Positive-AND Gate,SN74LVC1G08DCKR/SC70-5(TI)RoHS	43.5064	5	265.7459
113-833306-400G	IC TTL,Dual FET Bus Switch,SN74CB3Q3306ADCUR/VSSOP8(US8-DCU)(TI)RoHS	43.5064	2	117.8032
113-906408-400G	IC LOW-VOLTAGE 8-BIT I2C AND SMBus I/O EXPANDER,UQFN16, TCA6408ARSVR(TI)RoHS	43.5064	1	65.4416
121-000104-420G	IC 4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR,NTS0104GU12/XQFN12(NXP) RoHS	43.5064	7	361.4168
121-000204-400G	4-Bits Bidirectional Multi-Voltage Level Translator,LSF0204RUTR/UQFN12(TI)RoHS	43.5064	1	65.4416
121-009406-200G	IC DUAL BIDIRECTIONAL I ² C-bus and SMBus TRANSLATOR,TCA9406DCUR/micro SO8(TI)RoHS	43.5064	2	117.8032
121-081439-400G	IC RS232/RS422/RS485 Multiprotocol Transceivers,F81439N/TQFN40(FINTEK)RoHS	43.5064	1	65.4416
123-100341-200G	IC OP Amplifier,LMV341IDCK/SC70-6(TI)RoHS	43.5064	1	65.4416
135-300400-215G	SPI SERIAL FLASH 4Mbit W25X40CLSNIG/SOIC8 (WINBOND)RoHS/HF	18.4992	1	28.7152
135-301004-201G	EEPROM 8K(1024*8)M24C08-WMN6TP/SO-8(ST) RoHS	18.4992	1	28.7152
135-301282-210G	SPI SERIAL FLASH 128Mbit,W25Q128FWSIQ/SOIC-8 (WINBOND)RoHS	18.4992	1	28.7152
136-115090-400G	Flash 8-Bit Microcontroller PIC16F1509-I/ML/QFN-20 (MICROCHIP)RoHS	18.4992	1	28.7152
141-003460-403G	eDP to LVDS bridge PTN3460BS/F6,HVQFN56(NXP) RoHS	43.5064	1	65.4416
141-006850-401G	IC Synchronous Buck Converter,4.5-26Vin,12A,NB685AGQ/QFN16(MPS)RoHS	43.5064	1	65.4416
141-029390-403G	IC Controller,Multi-Rail PWM for Intel IMVP8,MP2939GQK-Z/QFN-48,D/C after 1650(MPS) RoHS	43.5064	1	65.4416
141-232120-400G	IC PCIE 3.0 Switch 2:1 Mux/DeMux,PI3PCIE3212ZBE/TQFN-20(PERICOM) RoHS	43.5064	1	65.4416
141-262001-200G	AUDIO CODEC ALC262-VC2-GR/LQFP48(REALTEK) RoHS	43.5064	1	65.4416
141-562150-400G	IC Synchronous Step-down Converter,TPS56C215RNN/VQFN-18(TI)RoHS	43.5064	3	168.0611
141-620850-200G	IC Synchronous Buck Converter,2.5-6,3A,TLV62085RLT/VSON-7(TI)RoHS	43.5064	3	168.0611
147-065160-200G	IC Converter,Single Chip DisplayPort to VGA with Embedded MCU,IT6516BFN/CX-0068(R)/QFN-32 (ITE)RoHS	43.5064	1	65.4416
147-818030-200G	IC CHIP,F81803U-I/TQFP64(FINTEK)RoHS	43.5064	1	65.4416

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 213,896

Failure Rate: 4675.1594

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
147-822100-410G	IC CHIP Giga LAN Ctrl,-40~105°C,WGI210IT SLJXT/QFN-64(INTEL)RoHS	43.5064	2	117.8032
171-205200-210S	DIODE SCHOTTKY BARRIER 30V,200mA,IR=1uA@VR=10V,SCS520S-T2G-WG/SOD-523(WILLAS)	2.7742	12	36.8401
171-215817-213G	DIODE Schottky,SMA,FM5817P-T-FM/DO214AC (FMS)RoHS	2.7742	1	3.8355
171-230502-200G	DIODE ESD Protection,VRWM=5.0V,IRM=100nA,VESD=10KV,SM T,SOT883,PESD5V0U2BM(NXP)RoHS	2.7742	1	3.8355
171-364212-200G	DIODE TVS VRWM:-12V~12V,AZ4212-01G.R7G/SOD -123(AMAZING)RoHS	2.7742	1	3.8355
171-404001-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4E001DBVR/SOT23-6(TI)	43.5064	2	117.8032
171-404010-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4S010DQAR/SON-DQA10(TI)	43.5064	5	265.7459
171-450150-200G	DIODE Zener,15V,UDZS 15B/SOD323(ROHM)RoHS	2.7742	1	3.8355
172-223904-400G	TRANSISTOR Dual NPN,MBT3904DW1T1G/SOT-363 (ON)RoHS	7.9962	3	29.5571
172-223906-207S	TRANSISTOR PNP,PMBS3906/SOT23(NXP)	7.9962	1	11.2496
172-300612-200G	MOSFET Dual N-Ch,VDS:30V,VGS:±20V,ID:100mA,@4V,RDS:8Ω,EM 6K1GT2R/SOT-563(ROHM)RoHS	17.9506	15	300.8483
172-301402-200G	MOSFET Dual N-Ch VDS:20V,ID:9.5A,VGS:±12V,@4.5V,RDS:14mΩ,EMZ F14R02W/8-DFN(3x3)(EXCELLIANCE)RoHS	17.9506	1	26.4362
172-304402-200G	MOSFET P-Ch,VDS:-20V,ID:-4A,VGS:±12V,@-4.5V,RDS:44mΩ,EMF44P02J/SOT-23(EXCELLIANCE) HF	17.9506	1	26.4362
172-304435-200G	MOSFET P-Ch,VDS:-30V,ID:-11A,VGS:±25V,@-4.5V,RDS:36mΩ,AP4435GYT-HF/PMPAK3x3 (APEC)/HF	17.9506	2	47.8105
172-304438-200G	MOSFET N-Ch,VDS:30V,ID:13.7A,VGS:±20V,@-4.5V,RDS:18mΩ,AP4438GYT-HF/PMPAK3x3(APEC) HF	17.9506	1	26.4362
172-385301-200G	MOSFET N-Ch,VDS:20V,ID:5A,VGS:±10V,at 4.5V RDS:23mΩ,CSD85301Q2/WSO-8(TI)RoHS	17.9506	1	26.4362
172-886901-200G	DrMOS Power Stage MP86901-AGQT-Z/TQFN13 (MPS)RoHS	17.9506	1	26.4362
172-886901-210G	DrMOS Power Stage MP86901-CGLT-Z/TQFN21 (MPS)RoHS	17.9506	1	26.4362
174-210010-500S	LED,RED,SMD0805,17-21VRC/TR8(HT)(EVERLIGHT)	4.2279	1	5.5461
213-150330-200C	MLCC 3.3pF/50V,NPO,C(0.25pF),SMD,0402,(None JP)RoHS	0.2235	2	0.5277
213-151005-120C	MLCC 10pF/50V,NPO,J(5%),SMD 0201(None JP) RoHS	0.2235	3	0.7690
213-151505-200C	MLCC 15pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2235	2	0.5277

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 213,896

Failure Rate: 4675.1594

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-151805-200C	MLCC 18pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2235	2	0.5277
213-152205-110C	MLCC 22pF/25V,NPO,J(5%),SMD 0201(None JP) RoHS	0.2235	1	0.2809
213-152215-200C	MLCC 221P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2235	6	1.4781
213-152705-200C	MLCC 27pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2235	4	1.0059
213-152715-200C	MLCC 271P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2235	1	0.2809
213-153319-200C	MLCC 331P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2235	10	2.4121
213-155605-200C	MLCC 56pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2235	1	0.2809
213-156805-200C	MLCC 68pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2235	2	0.5277
213-158205-200C	MLCC 82pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2235	1	0.2809
213-251028-200C	MLCC 102P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2235	4	1.0059
213-251038-200C	MLCC 103P/16V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2235	3	0.7690
213-251038-250C	MLCC 103P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2235	1	0.2809
213-251039-130C	MLCC 103P/10V,X7R,K(10%),SMD,0201,(None JP) RoHS	0.2235	10	2.4121
213-251049-130J	MLCC 104P/10V,X5R,K(10%),SMD,0201,(JP)RoHS	0.2235	135	30.8279
213-251049-200J	MLCC 104P/16V,X7R,K(10%),SMD,0402,(JP)RoHS	0.2235	34	7.9263
213-251049-270J	MLCC 104P/25V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2235	6	1.4781
213-251049-320J	MLCC 104P/50V,X7R,K(10%),SMD,0603,(JP)RoHS	0.2235	1	0.2809
213-251049-330J	MLCC 104P/25V,X7R,K(10%),SMD,0603,(JP)RoHS	0.2235	3	0.7690
213-251059-109G	MLCC 105P/6.3V,X5R,K(10%),SMD,0201,CC0201KRX5R5BB105(YAGEO) RoHS	0.2235	20	4.7208
213-251059-200J	MLCC 105P/6.3V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2235	13	3.1075
213-251059-220J	MLCC 105P/10V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2235	1	0.2809
213-251059-230J	MLCC 105P/16V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2235	21	4.9505
213-251059-330J	MLCC 105P/25V,X5R,K(10%),SMD,0603,(JP)RoHS	0.2235	2	0.5277
213-251068-200J	MLCC 106P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2235	37	8.6110
213-251068-300J	MLCC 106P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.2235	4	1.0059
213-251069-320J	MLCC 106P/10V,X5R,K(10%),SMD,0603,(JP)RoHS	0.2235	8	1.9464
213-252239-200C	MLCC 223P/25V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2235	1	0.2809
213-252249-310C	MLCC 224P/10V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.2235	1	0.2809
213-252249-330C	MLCC 224P/25V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.2235	1	0.2809
213-252259-200J	MLCC 225P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2235	10	2.4121

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 213,896

Failure Rate: 4675.1594

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-252268-310J	MLCC 226P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.2235	53	12.2547
213-252269-510J	MLCC 226P/6.3V,X5R,M(20%),SMD,0805,(JP)RoHS	0.2235	4	1.0059
213-253938-200C	MLCC 393P/10V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.2235	2	0.5277
213-254715-200C	MLCC 471P/50V,NPO,J(5%),SMD,0402,(None JP)RoHS	0.2235	8	1.9464
213-254739-210C	MLCC 473P/16V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.2235	3	0.7690
213-254758-210J	MLCC 475P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2235	5	1.2427
213-254759-320C	MLCC 475P/10V,X5R,K(10%),SMD,0603,(None JP)RoHS	0.2235	4	1.0059
213-254759-510J	MLCC 475P/25V,X5R,K(10%),SMD,0805,(JP)RoHS	0.2235	5	1.2427
213-351068-510J	MLCC 106P/25V,X7S,M(20%),SMD,0805,(JP)RoHS	0.2235	8	1.9464
217-301078-325G	POLYMER(TAN) CAP 100uF/6.3V,40mΩ,1.8A,SMD,B3528,105°C/2000H,M(20%),T520B107M006ATE040(KEMET)RoHS	1.3266	3	4.7073
217-302278-326G	POLYMER(TAN)CAP 220uF/6.3V,45mΩ,1700mA,105°C/2000H,M(20%),B3528(1.9),T520B227M006ATE045(KEMET)RoHS	1.3266	3	4.7073
217-304768-725G	POLYMER(TAN) CAP,47uF/16V,70mΩ,1600mA,SMD,V7343-20,105°C/2000H,M(20%),T520V476M016ATE070(KEMET)RoHS	1.3266	4	6.1444
223-015122-610G	CHOKE 0.15uH,M (20%),RDC≤0.9mΩ,Idc≤35A,Isat≤41A,SMD,(7.6*6.6*2.8),CMME063T-R15MS0R907(CYNTEC)RoHS	1.3824	1	1.8067
223-015222-610G	CHOKE 1.5uH,M (20%),RDC≤15mΩ,Irms=9A,Isat=16A,SMD,(7.3*6.6*3.0),MCS0630-1R5MN2(PDC)RoHS	1.3824	1	1.8067
223-015223-110G	CHOKE 1.5uH,M (20%),RDC≤4.2mΩ,Irms=16A,Isat=21A,SMD,(11.5*10.3*4),MCS1040-1R5MN1(PDC)RoHS	1.3824	1	1.8067
223-036121-700G	CHOKE 0.36uH,M (20%),DCR=12mΩ,Irms=9A,Isat=11A,SMD(4.5*4*1.8),GSTD4020PJ-R36M(GOTREND)RoHS	1.3824	1	1.8067
223-047120-820G	CHOKE 0.47uH,M (20%),RDC≤39mΩ,Irms=3.5A,SMD,(2.5x2x1.2),AWP252012AF-R47M(TAI TECH)RoHS	1.3824	3	4.8743
223-047122-620G	CHOKE 0.47uH,M (20%),RDC≤4mΩ,Idc=17.5A,Isat=26A,SMD,(7.3x6.6x3),PCMC063T-R47MN(CYNTEC)RoHS	1.3824	1	1.8067
223-368122-600S	CHOKE 0.68uH,M (20%),RDC=5mΩ,Idc=15.5A,Isat=25A,SMD(7.4*6.9*3.0),GSTD6030PE-R68M(GOTREND)	1.3824	1	1.8067
223-410040-501S	COMMON CHOKE Z≥90Ω,M (20%),RDC≤0.35Ω,Idc≤330mA,SMD,(2.05*1.25*1.2),CMM21T-900M-N(CHILISIN)	1.3824	2	3.3606

File Name: AL051-TC-E3930.rfp
Assembly: 774-AL0511-500G
Ref Des:
Calculation Model: Telcordia Issue 2



MTBF (hrs): 213,896
Failure Rate: 4675.1594
Temperature: 60
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
223-490090-500S	COMMON CHOKE 90Ω,60-100Ω,300mA (Max),RDC≤ 300mΩ,HDMI/USB3.0 6GHz,SMD0805 (2*1.2*1.2mm),GLECM2012B-900QT(GOTREND)	1.3824	4	6.3673
223-523000-410G	CM FILTER Cd=0.25pF,Rs=3Ω,SMD (1.57*1.17*0.57),PCMF2USB3S/WLCSP10(NXP) RoHS	1.3824	2	3.3606
231-107168-200G	REGULATOR 0.8A,GS7168TD-R/TDFN8(GSTEK)HF	151.1309	1	293.9075
231-111700-250G	REGULATOR 1A,Adjustable,SMD,LD1117AG-AD-AB3-A-R/SOT89(UTC)RoHS	151.1309	1	293.9075
241-219206-330G	X'TAL 19.2MHz,12pF,±30ppm,ESR:50Ω (Max),TOPR=-40°C ~+105°C,SMD3225 (4PAD),7M19200021(TXC)RoHS	3.2000	1	6.9898
241-225006-350G	X'TAL 25MHz,18pF,±30ppm,ESR:50Ω(Max),TOPR=-40°C ~+105°C,SMD3225(4PAD),7M25000175(TXC) RoHS	3.2000	2	18.8238
241-432773-300G	X'TAL 32.768kHz,12.5pf,*/-20ppm,TOPR=-40°C ~+125°C,SMD3215(2PAD),FC-13A,X1A000091000100(Seiko Epson)RoHS	3.2000	1	6.9898
242-248006-200G	OSC 48Mhz,3.3V,15pf,25ppm,TOPR=-40°C ~+85°C,SMD2520(4PAD),FCO-236A 48.000MAC (FUJICOM)RoHS	14.0000	1	42.3449
251-160808-083S	BEAD CORE 160808 80Ω,300mA,25%,SMT0603,SBK160808T-800Y-N (CHILISIN)	1.3824	2	3.3606
251-160808-615S	BEAD CORE 160808 600Ω,1A,25%,SMT0603,PBY160808T-601Y-N (CHILISIN)	1.3824	1	1.8067
251-647000-301S	BEAD CORE 160808 47Ω,400mA,25%,SMT0603,SBK160808T-470Y-N (CHILISIN)	1.3824	7	10.7661
251-915470-200G	FERRITE BEAD 47Ω,300mA,25%,BLM15BB470SN1D/0402(MURATA) RoHS	1.3824	3	4.8743
253-100115-501S	POLYSWITCH 1.1A,6V,SMT0805,0805L100 (LITTELFUSE)	0.4000	4	2.1022
253-100155-604S	POLYSWITCH 1.5A/8V,SMD1206 TYPE PTC,1206L150THWR(LITTELFUSE)	0.4000	2	1.1579
253-105000-610G	FUSE 5A/32V SMD3216(1206),0466005.NRHF (LITTELFUSE)RoHS	0.4000	1	0.6546
261-361515-200C	RES NET 150Ω 8P4R J(5%),0402*4,(None JP)RoHS	0.7122	2	1.8147
261-364725-200C	RES NET 4.7KΩ 8P4R J(5%),0402*4,(None JP)RoHS	0.7122	1	0.9903
263-180005-100C	RES 0Ω,J(5%),SMD,0201,(None JP)RoHS	0.7122	65	48.4553
263-180005-200C	RES 0Ω,J(5%),SMD,0402,(None JP)RoHS	0.7122	30	22.8354
263-180005-300C	RES 0Ω,J(5%),SMD,0603,(None JP)RoHS	0.7122	9	7.2148
263-180100-210C	RES 10Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	3	2.6126
263-180100-310C	RES 10Ω,F(1%),SMD,0603,(None JP)RoHS	0.7122	1	0.9903
263-180200-210C	RES 20Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-180220-110C	RES 22Ω,F(1%),SMD,0201,(None JP)RoHS	0.7122	8	6.4686
263-180220-210C	RES 22Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	3	2.6126

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 213,896

Failure Rate: 4675.1594

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-180470-210C	RES 47Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-180519-310C	RES 5.1Ω,F(1%),SMD,0603,(None JP)RoHS	0.7122	1	0.9903
263-180680-210C	RES 68Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-180750-110C	RES 75Ω,F(1%),SMD,0201,(None JP)RoHS	0.7122	5	4.1727
263-181000-110C	RES 100Ω,F(1%),SMD,0201,(None JP)RoHS	0.7122	3	2.6126
263-181000-210C	RES 100Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	6	4.9423
263-181000-310C	RES 100Ω,F(1%),SMD,0603,(None JP)RoHS	0.7122	1	0.9903
263-181001-110C	RES 1KΩ,F(1%),SMD,0201,(None JP)RoHS	0.7122	20	15.4439
263-181001-210C	RES 1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	7	5.7073
263-181001-310C	RES 1KΩ,F(1%),SMD,0603,(None JP)RoHS	0.7122	2	1.8147
263-181002-110C	RES 10KΩ,F(1%),SMD,0201,(None JP)RoHS	0.7122	67	49.9127
263-181002-210C	RES 10KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	17	13.2137
263-181003-110C	RES 100KΩ,F(1%),SMD,0201,(None JP)RoHS	0.7122	15	11.7222
263-181003-210C	RES 100KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	5	4.1727
263-181004-210C	RES 1MΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-181005-210C	RES 10MΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181022-210C	RES 10.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-181050-210C	RES 105Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-181053-210C	RES 105KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-181130-210C	RES 113Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181182-210C	RES 11.8KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181210-210C	RES 121Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181273-210C	RES 127KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181400-210C	RES 140Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181402-210C	RES 14KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181500-210C	RES 150Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	6	4.9423
263-181503-210C	RES 150KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181542-210C	RES 15.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181623-210C	RES 162KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	3	2.6126
263-181651-210C	RES 1.65KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181690-210C	RES 169Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-181691-210C	RES 1.69KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-181803-210C	RES 180KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	3	2.6126
263-182000-110C	RES 200Ω,F(1%),SMD,0201,(None JP)RoHS	0.7122	3	2.6126
263-182000-210C	RES 200Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-182001-210C	RES 2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	3	2.6126
263-182002-110C	RES 20KΩ,F(1%),SMD,0201,(None JP)RoHS	0.7122	3	2.6126
263-182002-210C	RES 20KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	8	6.4686
263-182003-210C	RES 200KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-182004-210C	RES 2MΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-182050-210C	RES 205Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-182053-210C	RES 205KΩ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-182200-210C	RES 220Ω,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-182201-110C	RES 2.2KΩ,F(1%),SMD,0201,(None JP)RoHS	0.7122	6	4.9423
263-182202-110C	RES 22KΩ,F(1%),SMD,0201,(None JP)RoHS	0.7122	4	3.3970
263-182208-310C	RES 2.2Ω,F(1%),SMD,0603,(None JP)RoHS	0.7122	1	0.9903

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 213,896

Failure Rate: 4675.1594

Temperature: 60

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-182553-210C	RES 255K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-182612-210C	RES 26.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-182872-210C	RES 28.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-183000-310C	RES 300 Ω ,F(1%),SMD,0603,(None JP)RoHS	0.7122	1	0.9903
263-183092-210C	RES 30.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-183300-210C	RES 330 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	4	3.3970
263-183301-110C	RES 3.3K Ω ,F(1%),SMD,0201(None JP)RoHS	0.7122	12	9.4759
263-183301-210C	RES 3.3K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	4	3.3970
263-183302-110C	RES 33K Ω ,F(1%),SMD,0201(None JP)RoHS	0.7122	4	3.3970
263-183303-210C	RES 330K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-183305-100C	RES 33 Ω ,J(5%),SMD,0201(None JP)RoHS	0.7122	26	19.8852
263-183651-210C	RES 3.65K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	4	3.3970
263-183901-210C	RES 3.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-183922-210C	RES 39.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-184020-210C	RES 402 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	3	2.6126
263-184122-210C	RES 41.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-184532-210C	RES 45.3K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-184701-110C	RES 4.7K Ω ,F(1%),SMD,0201,(None JP)RoHS	0.7122	47	35.3123
263-184701-210C	RES 4.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	5	4.1727
263-184702-110C	RES 47K Ω ,F(1%),SMD,0201,(None JP)RoHS	0.7122	8	6.4686
263-184750-210C	RES 475 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-184872-210C	RES 48.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-184990-210C	RES 499 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-184991-210C	RES 4.99K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-184992-210C	RES 49.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-185102-210C	RES 51K Ω ,F(1%),SMD,0402(None JP)RoHS	0.7122	4	3.3970
263-185110-210C	RES 511 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-185112-210C	RES 51.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-185230-210C	RES 523 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-185600-210C	RES 560 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-185602-210C	RES 56K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-185621-210C	RES 5.62K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-186040-210C	RES 604 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-186049-210C	RES 60.4 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-186981-210C	RES 6.98K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-187502-210C	RES 75K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-187870-210C	RES 787 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-188062-210C	RES 80.6K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-188201-210C	RES 8.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-188459-210C	RES 84.5 Ω ,F(1%),SMD,0402 (None JP)RoHS	0.7122	1	0.9903
263-188661-210C	RES 8.66K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-189092-210C	RES 90.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-189312-210C	RES 93.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-189531-210C	RES 9.53K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	2	1.8147
263-189761-210C	RES 9.76K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903
263-189762-210C	RES 97.6K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.7122	1	0.9903

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MTBF (hrs): 213,896
Failure Rate: 4675.1594
Temperature: 60
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
273-100402-301S	THERM RES 10KΩ,J(5%),SMD,0603, (B25/85=3435,3%),TSM1A103J34D3RZ(TKS)	5.1159	2	17.1593
342-112003-210G	MINI DISPLAYPORT,20pin,F,0.6mm,R/A,30u",WMDR -20FEL1PH4(WIN WIN)RoHS	10.7191	1	18.5590
342-310022-110G	Screw CONN. Terminal Block,Green,2Pos,300V,16A,PIT:5.0mm,MB612- 50002(DECA) RoHS	10.7191	1	18.5590
343-111514-110G	DSUB CONN 15SA,90D,FASTEN SCREW,G/F,Blue,,D4324-15F-422B(XIAN YI)RoHS	10.7191	1	18.5590
343-500642-111G	Giga LAN CONN RJ45 30μ,W/Transformer&LED,24- 000939N13-1(UDE)RoHS	10.7191	2	32.4809
343-503600-100S	USB 3.0*2 ,A Type,30u,UEA1112C-8FS6-4F (FOXCONN)	10.7191	1	18.5590
344-002003-610G	Mini JUMPER RED 2.0mm,200-72-PBGR0B(PINREX) RoHS	10.7191	1	18.5590
346-110320-100G	PIN PLUG 1*3,2.0mm,M,H=5.9mm,180D,DIP,W/BLACK JUMPER,22S-96-03GB01(PINREX)RoHS	10.7191	1	18.5590
346-120310-200G	PIN PLUG 2*3,1.27mm,H=5mm,V/T,SMD,JCL20161228019(V- STAR)RoHS	10.7191	2	32.4809
346-120320-800S	PIN PLUG 2*3,2.0mm,M,H=6.7mm,180D,SMT,W/CAP,222-97- 03GBE1(R)(PINREX)	10.7191	1	18.5590
346-120511-200G	PIN PLUG 2*5,1.27mm,H=5mm,V/T,SMD,JCL20161228017(V- STAR)RoHS	10.7191	4	58.3780
346-510223-102G	WAFER 1*2,2.0mm,M,H=6.1mm,180D,DIP,WHITE,721-81- 02TW00(PINREX)RoHS	10.7191	1	18.5590
346-522040-200G	BOX HEADER 2*20,1.00mm,V/T,SMD,W100V40TP2 (V-STAR)RoHS	10.7191	1	18.5590
346-600750-101S	SATA3 CONNECTOR 7Pin,15u",180D,DIP,DARK BLUE,W/LOCK,LE18077-Z54D-4H(FOXCONN)	10.7191	1	18.5590
347-150051-210G	WAFER 1*5,1.25mm,M,H=3.45mm,90D,SMT,WHITE,0110- 3221050(E-CALL)RoHS	10.7191	1	18.5590
348-220800-200S	SOCKET SPI 8Pin,GF,H=5.65mm,180D,SMT,ACA-SPI -004-K01(LOTES)	5.8468	1	9.5280
348-370750-240G	NGFF CONN 75P/0.5mm,H=8.5mm,B key,90D,BLACK,SMD,APCI0161-P002H(LOTES)HF	5.8468	1	9.5280
348-652047-210G	DDR-III SO DIMM 1*204P,10u,H=8.0mm 1.5V,SMD,RVS,AS0A626-H8RN-7H(FOXCONN) RoHS/HF	10.7191	1	18.5590
348-660522-200S	MINI PCI-EXPRESS 1*52,0.8mm,10u",F,H=9.9mm,90D,SMT,IVORY,GEN RAL TYPE,AS0B226-S99Q-7H(FOXCONN)HF	5.8468	1	9.5280

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Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
622-010140-000G	BATTERY CR2032 3V 220mAh W/CABLE (L=150mm&TAPE),BIN-CR2032-I-CT-SL-PV-01(RE- ENERGY)RoHS	25.0000	1	34.9638
143-101300-401G	CPU Intel Atom x5-E3930 1.3GHz C/2M LH8066803102701 SR33Q D0/FCBGA-1296(INTEL) RoHS	228.0000	1	228.0000
292-301000-500S	BUZZER 3V,100mA,12Ω,4Khz,85db,SMD (5*4.2mm),SMT-G5030A(KEPO)	600.0000	1	600.0000
314-AL0511-109G	PCB AL051 R.A (12L HDI 100x72x1.6mm, 2 panelization) OSP(CIRCUITECH)RoHS	3.0000	1	3.0000

MTBF (hrs): 160,439

Failure Rate: 6232.89

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled



Assembly Name	Part Number	Quantity	Failure Rate (Fit)	MTBF (Hrs)
AL051-TC-E3930	770-AL0511-500G	1	6232.89	160,439
AL051-TC-E3930	774-AL0511-500G	1	6232.89	160,439

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439

Failure Rate: 6232.8889

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
113-500000-210G	IC TTL,Single 2-Input Positive-NAND Gate,SN74LVC1G00DCKR/SC70-5(TI)RoHS	62.0782	1	93.3770
113-500007-210S	IC TTL,Single Buffer/Driver,SN74LVC1G07DCKR/SC70-5(TI)	62.0782	1	93.3770
113-500008-210G	IC TTL,Single 2-Input Positive-AND Gate,SN74LVC1G08DCKR/SC70-5(TI)RoHS	62.0782	5	379.1859
113-833306-400G	IC TTL,Dual FET Bus Switch,SN74CB3Q3306ADCUR/VSSOP8(US8-DCU)(TI)RoHS	62.0782	2	168.0903
113-906408-400G	IC LOW-VOLTAGE 8-BIT I2C AND SMBus I/O EXPANDER,UQFN16, TCA6408ARSVR(TI)RoHS	62.0782	1	93.3770
121-000104-420G	IC 4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR,NTS0104GU12/XQFN12(NXP) RoHS	62.0782	7	515.6962
121-000204-400G	4-Bits Bidirectional Multi-Voltage Level Translator,LSF0204RUTR/UQFN12(TI)RoHS	62.0782	1	93.3770
121-009406-200G	IC DUAL BIDIRECTIONAL I ² C-bus and SMBus TRANSLATOR,TCA9406DCUR/micro SO8(TI)RoHS	62.0782	2	168.0903
121-081439-400G	IC RS232/RS422/RS485 Multiprotocol Transceivers,F81439N/TQFN40(FINTEK)RoHS	62.0782	1	93.3770
123-100341-200G	IC OP Amplifier,LMV341IDCK/SC70-6(TI)RoHS	62.0782	1	93.3770
135-300400-215G	SPI SERIAL FLASH 4Mbit W25X40CLSNIG/SOIC8 (WINBOND)RoHS/HF	26.3960	1	40.9730
135-301004-201G	EEPROM 8K(1024*8)M24C08-WMN6TP/SO-8(ST) RoHS	26.3960	1	40.9730
135-301282-210G	SPI SERIAL FLASH 128Mbit,W25Q128FWSIQ/SOIC-8 (WINBOND)RoHS	26.3960	1	40.9730
136-115090-400G	Flash 8-Bit Microcontroller PIC16F1509-I/ML/QFN-20 (MICROCHIP)RoHS	26.3960	1	40.9730
141-003460-403G	eDP to LVDS bridge PTN3460BS/F6,HVQFN56(NXP) RoHS	62.0782	1	93.3770
141-006850-401G	IC Synchronous Buck Converter,4.5-26Vin,12A,NB685AGQ/QFN16(MPS)RoHS	62.0782	1	93.3770
141-029390-403G	IC Controller,Multi-Rail PWM for Intel IMVP8,MP2939GQK-Z/QFN-48,D/C after 1650(MPS) RoHS	62.0782	1	93.3770
141-232120-400G	IC PCIE 3.0 Switch 2:1 Mux/DeMux,PI3PCIE3212ZBE/TQFN-20(PERICOM) RoHS	62.0782	1	93.3770
141-262001-200G	AUDIO CODEC ALC262-VC2-GR/LQFP48(REALTEK) RoHS	62.0782	1	93.3770
141-562150-400G	IC Synchronous Step-down Converter,TPS56C215RNN/VQFN-18(TI)RoHS	62.0782	3	239.8020
141-620850-200G	IC Synchronous Buck Converter,2.5-6,3A,TLV62085RLT/VSON-7(TI)RoHS	62.0782	3	239.8020
147-065160-200G	IC Converter,Single Chip DisplayPort to VGA with Embedded MCU,IT6516BFN/CX-0068(R)/QFN-32 (ITE)RoHS	62.0782	1	93.3770
147-818030-200G	IC CHIP,F81803U-I/TQFP64(FINTEK)RoHS	62.0782	1	93.3770

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439

Failure Rate: 6232.8889

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
147-822100-410G	IC CHIP Giga LAN Ctrl,-40~105°C,WGI210IT SLJXT/QFN-64(INTEL)RoHS	62.0782	2	168.0903
171-205200-210S	DIODE SCHOTTKY BARRIER 30V,200mA,IR=1uA@VR=10V,SCS520S-T2G-WG/SOD-523(WILLAS)	3.4688	12	46.0642
171-215817-213G	DIODE Schottky,SMA,FM5817P-T-FM/DO214AC (FMS)RoHS	3.4688	1	4.7959
171-230502-200G	DIODE ESD Protection,VRWM=5.0V,IRM=100nA,VESD=10KV,SM T,SOT883,PESD5V0U2BM(NXP)RoHS	3.4688	1	4.7959
171-364212-200G	DIODE TVS VRWM:-12V~12V,AZ4212-01G.R7G/SOD -123(AMAZING)RoHS	3.4688	1	4.7959
171-404001-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4E001DBVR/SOT23-6(TI)	62.0782	2	168.0903
171-404010-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4S010DQAR/SON-DQA10(TI)	62.0782	5	379.1859
171-450150-200G	DIODE Zener,15V,UDZS 15B/SOD323(ROHM)RoHS	3.4688	1	4.7959
172-223904-400G	TRANSISTOR Dual NPN,MBT3904DW1T1G/SOT-363 (ON)RoHS	9.9983	3	36.9576
172-223906-207S	TRANSISTOR PNP,PMBS3906/SOT23(NXP)	9.9983	1	14.0663
172-300612-200G	MOSFET Dual N-Ch,VDS:30V,VGS:±20V,ID:100mA,@4V,RDS:8Ω,EM 6K1GT2R/SOT-563(ROHM)RoHS	22.4451	15	376.1750
172-301402-200G	MOSFET Dual N-Ch VDS:20V,ID:9.5A,VGS:±12V,@4.5V,RDS:14mΩ,EMZ F14R02W/8-DFN(3x3)(EXCELLIANCE)RoHS	22.4451	1	33.0553
172-304402-200G	MOSFET P-Ch,VDS:-20V,ID:-4A,VGS:±12V,@-4.5V,RDS:44mΩ,EMF44P02J/SOT-23(EXCELLIANCE) HF	22.4451	1	33.0553
172-304435-200G	MOSFET P-Ch,VDS:-30V,ID:-11A,VGS:±25V,@-4.5V,RDS:36mΩ,AP4435GYT-HF/PMPAK3x3 (APEC)/HF	22.4451	2	59.7814
172-304438-200G	MOSFET N-Ch,VDS:30V,ID:13.7A,VGS:±20V,@-4.5V,RDS:18mΩ,AP4438GYT-HF/PMPAK3x3(APEC) HF	22.4451	1	33.0553
172-385301-200G	MOSFET N-Ch,VDS:20V,ID:5A,VGS:±10V,at 4.5V RDS:23mΩ,CSD85301Q2/WSO8(TI)RoHS	22.4451	1	33.0553
172-886901-200G	DrMOS Power Stage MP86901-AGQT-Z/TQFN13 (MPS)RoHS	22.4451	1	33.0553
172-886901-210G	DrMOS Power Stage MP86901-CGLT-Z/TQFN21 (MPS)RoHS	22.4451	1	33.0553
174-210010-500S	LED,RED,SMD0805,17-21VRC/TR8(HT)(EVERLIGHT)	8.6078	1	11.2916
213-150330-200C	MLCC 3.3pF/50V,NPO,C(0.25pF),SMD,0402,(None JP)RoHS	0.2352	2	0.5552
213-151005-120C	MLCC 10pF/50V,NPO,J(5%),SMD 0201(None JP) RoHS	0.2352	3	0.8091
213-151505-200C	MLCC 15pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2352	2	0.5552

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439

Failure Rate: 6232.8889

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-151805-200C	MLCC 18pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2352	2	0.5552
213-152205-110C	MLCC 22pF/25V,NPO,J(5%),SMD 0201,(None JP) RoHS	0.2352	1	0.2955
213-152215-200C	MLCC 221P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2352	6	1.5551
213-152705-200C	MLCC 27pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2352	4	1.0583
213-152715-200C	MLCC 271P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2352	1	0.2955
213-153319-200C	MLCC 331P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2352	10	2.5378
213-155605-200C	MLCC 56pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2352	1	0.2955
213-156805-200C	MLCC 68pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2352	2	0.5552
213-158205-200C	MLCC 82pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2352	1	0.2955
213-251028-200C	MLCC 102P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2352	4	1.0583
213-251038-200C	MLCC 103P/16V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2352	3	0.8091
213-251038-250C	MLCC 103P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2352	1	0.2955
213-251039-130C	MLCC 103P/10V,X7R,K(10%),SMD,0201,(None JP) RoHS	0.2352	10	2.5378
213-251049-130J	MLCC 104P/10V,X5R,K(10%),SMD,0201,(JP)RoHS	0.2352	135	32.4339
213-251049-200J	MLCC 104P/16V,X7R,K(10%),SMD,0402,(JP)RoHS	0.2352	34	8.3393
213-251049-270J	MLCC 104P/25V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2352	6	1.5551
213-251049-320J	MLCC 104P/50V,X7R,K(10%),SMD,0603,(JP)RoHS	0.2352	1	0.2955
213-251049-330J	MLCC 104P/25V,X7R,K(10%),SMD,0603,(JP)RoHS	0.2352	3	0.8091
213-251059-109G	MLCC 105P/6.3V,X5R,K(10%),SMD,0201,CC0201KRX5R5BB105(YAGEO) RoHS	0.2352	20	4.9667
213-251059-200J	MLCC 105P/6.3V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2352	13	3.2694
213-251059-220J	MLCC 105P/10V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2352	1	0.2955
213-251059-230J	MLCC 105P/16V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2352	21	5.2084
213-251059-330J	MLCC 105P/25V,X5R,K(10%),SMD,0603,(JP)RoHS	0.2352	2	0.5552
213-251068-200J	MLCC 106P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2352	37	9.0596
213-251068-300J	MLCC 106P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.2352	4	1.0583
213-251069-320J	MLCC 106P/10V,X5R,K(10%),SMD,0603,(JP)RoHS	0.2352	8	2.0478
213-252239-200C	MLCC 223P/25V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2352	1	0.2955
213-252249-310C	MLCC 224P/10V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.2352	1	0.2955
213-252249-330C	MLCC 224P/25V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.2352	1	0.2955
213-252259-200J	MLCC 225P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2352	10	2.5378

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439

Failure Rate: 6232.8889

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-252268-310J	MLCC 226P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.2352	53	12.8931
213-252269-510J	MLCC 226P/6.3V,X5R,M(20%),SMD,0805,(JP)RoHS	0.2352	4	1.0583
213-253938-200C	MLCC 393P/10V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.2352	2	0.5552
213-254715-200C	MLCC 471P/50V,NPO,J(5%),SMD,0402,(None JP)RoHS	0.2352	8	2.0478
213-254739-210C	MLCC 473P/16V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.2352	3	0.8091
213-254758-210J	MLCC 475P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2352	5	1.3074
213-254759-320C	MLCC 475P/10V,X5R,K(10%),SMD,0603,(None JP)RoHS	0.2352	4	1.0583
213-254759-510J	MLCC 475P/25V,X5R,K(10%),SMD,0805,(JP)RoHS	0.2352	5	1.3074
213-351068-510J	MLCC 106P/25V,X7S,M(20%),SMD,0805,(JP)RoHS	0.2352	8	2.0478
217-301078-325G	POLYMER(TAN) CAP 100uF/6.3V,40mΩ,1.8A,SMD,B3528,105°C/2000H,M(20%),T520B107M006ATE040(KEMET)RoHS	1.5449	3	5.4819
217-302278-326G	POLYMER(TAN)CAP 220uF/6.3V,45mΩ,1700mA,105°C/2000H,M(20%),B3528(1.9),T520B227M006ATE045(KEMET)RoHS	1.5449	3	5.4819
217-304768-725G	POLYMER(TAN) CAP,47uF/16V,70mΩ,1600mA,SMD,V7343-20,105°C/2000H,M(20%),T520V476M016ATE070(KEMET)RoHS	1.5449	4	7.1556
223-015122-610G	CHOKE 0.15uH,M (20%),RDC≤0.9mΩ,Idc≤35A,Isat≤41A,SMD,(7.6*6.6*2.8),CMME063T-R15MS0R907(CYNTEC)RoHS	1.6100	1	2.1040
223-015222-610G	CHOKE 1.5uH,M (20%),RDC≤15mΩ,Irms=9A,Isat=16A,SMD,(7.3*6.6*3.0),MCS0630-1R5MN2(PDC)RoHS	1.6100	1	2.1040
223-015223-110G	CHOKE 1.5uH,M (20%),RDC≤4.2mΩ,Irms=16A,Isat=21A,SMD,(11.5*10.3*4),MCS1040-1R5MN1(PDC)RoHS	1.6100	1	2.1040
223-036121-700G	CHOKE 0.36uH,M (20%),DCR=12mΩ,Irms=9A,Isat=11A,SMD(4.5*4*1.8),GSTD4020PJ-R36M(GOTREND)RoHS	1.6100	1	2.1040
223-047120-820G	CHOKE 0.47uH,M (20%),RDC≤39mΩ,Irms=3.5A,SMD,(2.5x2x1.2),AWP252012AF-R47M(TAI TECH)RoHS	1.6100	3	5.6765
223-047122-620G	CHOKE 0.47uH,M (20%),RDC≤4mΩ,Idc=17.5A,Isat=26A,SMD,(7.3x6.6x3),PCMC063T-R47MN(CYNTEC)RoHS	1.6100	1	2.1040
223-368122-600S	CHOKE 0.68uH,M (20%),RDC=5mΩ,Idc=15.5A,Isat=25A,SMD(7.4*6.9*3.0),GSTD6030PE-R68M(GOTREND)	1.6100	1	2.1040
223-410040-501S	COMMON CHOKE Z≥90Ω,M (20%),RDC≤0.35Ω,Idc≤330mA,SMD,(2.05*1.25*1.2),CMM21T-900M-N(CHILISIN)	1.6100	2	3.9137

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439

Failure Rate: 6232.8889

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
223-490090-500S	COMMON CHOKE 90Ω,60-100Ω,300mA (Max),RDC≤300mΩ,HDMI/USB3.0 6GHz,SMD0805 (2*1.2*1.2mm),GLECM2012B-900QT(GOTREND)	1.6100	4	7.4152
223-523000-410G	CM FILTER Cd=0.25pF,Rs=3Ω,SMD (1.57*1.17*0.57),PCMF2USB3S/WLCSP10(NXP) RoHS	1.6100	2	3.9137
231-107168-200G	REGULATOR 0.8A,GS7168TD-R/TDFN8(GSTEK)HF	266.9132	1	519.0720
231-111700-250G	REGULATOR 1A,Adjustable,SMD,LD1117AG-AD-AB3- A-R/SOT89(UTC)RoHS	266.9132	1	519.0720
241-219206-330G	X'TAL 19.2MHz,12pF,±30ppm,ESR:50Ω (Max),TOPR=-40°C~+105°C,SMD3225 (4PAD),7M19200021(TXC)RoHS	3.2000	1	6.9898
241-225006-350G	X'TAL 25MHz,18pF,±30ppm,ESR:50Ω(Max),TOPR=- 40°C~+105°C,SMD3225(4PAD),7M25000175(TXC) RoHS	3.2000	2	18.8238
241-432773-300G	X'TAL 32.768kHz,12.5pf,*/-20ppm,TOPR=-40°C ~+125°C,SMD3215(2PAD),FC- 13A,X1A000091000100(Seiko Epson)RoHS	3.2000	1	6.9898
242-248006-200G	OSC 48Mhz,3.3V,15pf,25ppm,TOPR=-40°C ~+85°C,SMD2520(4PAD),FCO-236A 48.000MAC (FUJICOM)RoHS	14.0000	1	42.3449
251-160808-083S	BEAD CORE 160808 80Ω,300mA,25%,SMT0603,SBK160808T-800Y-N (CHILISIN)	1.6100	2	3.9137
251-160808-615S	BEAD CORE 160808 600Ω,1A,25%,SMT0603,PBY160808T-601Y-N (CHILISIN)	1.6100	1	2.1040
251-647000-301S	BEAD CORE 160808 47Ω,400mA,25%,SMT0603,SBK160808T-470Y-N (CHILISIN)	1.6100	7	12.5379
251-915470-200G	FERRITE BEAD 47Ω,300mA,25%,BLM15BB470SN1D/0402(MURATA) RoHS	1.6100	3	5.6765
253-100115-501S	POLYSWITCH 1.1A,6V,SMT0805,0805L100 (LITTELFUSE)	0.4000	4	2.1022
253-100155-604S	POLYSWITCH 1.5A/8V,SMD1206 TYPE PTC,1206L150THWR(LITTELFUSE)	0.4000	2	1.1579
253-105000-610G	FUSE 5A/32V SMD3216(1206),0466005.NRHF (LITTELFUSE)RoHS	0.4000	1	0.6546
261-361515-200C	RES NET 150Ω 8P4R J(5%),0402*4,(None JP)RoHS	0.8294	2	2.1133
261-364725-200C	RES NET 4.7KΩ 8P4R J(5%),0402*4,(None JP)RoHS	0.8294	1	1.1533
263-180005-100C	RES 0Ω,J(5%),SMD,0201,(None JP)RoHS	0.8294	65	56.4295
263-180005-200C	RES 0Ω,J(5%),SMD,0402,(None JP)RoHS	0.8294	30	26.5934
263-180005-300C	RES 0Ω,J(5%),SMD,0603,(None JP)RoHS	0.8294	9	8.4022
263-180100-210C	RES 10Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	3	3.0426
263-180100-310C	RES 10Ω,F(1%),SMD,0603,(None JP)RoHS	0.8294	1	1.1533
263-180200-210C	RES 20Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-180220-110C	RES 22Ω,F(1%),SMD,0201,(None JP)RoHS	0.8294	8	7.5331
263-180220-210C	RES 22Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	3	3.0426

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439

Failure Rate: 6232.8889

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-180470-210C	RES 47Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-180519-310C	RES 5.1Ω,F(1%),SMD,0603,(None JP)RoHS	0.8294	1	1.1533
263-180680-210C	RES 68Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-180750-110C	RES 75Ω,F(1%),SMD,0201,(None JP)RoHS	0.8294	5	4.8594
263-181000-110C	RES 100Ω,F(1%),SMD,0201,(None JP)RoHS	0.8294	3	3.0426
263-181000-210C	RES 100Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	6	5.7557
263-181000-310C	RES 100Ω,F(1%),SMD,0603,(None JP)RoHS	0.8294	1	1.1533
263-181001-110C	RES 1KΩ,F(1%),SMD,0201,(None JP)RoHS	0.8294	20	17.9855
263-181001-210C	RES 1KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	7	6.6465
263-181001-310C	RES 1KΩ,F(1%),SMD,0603,(None JP)RoHS	0.8294	2	2.1133
263-181002-110C	RES 10KΩ,F(1%),SMD,0201,(None JP)RoHS	0.8294	67	58.1268
263-181002-210C	RES 10KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	17	15.3883
263-181003-110C	RES 100KΩ,F(1%),SMD,0201,(None JP)RoHS	0.8294	15	13.6513
263-181003-210C	RES 100KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	5	4.8594
263-181004-210C	RES 1MΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-181005-210C	RES 10MΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181022-210C	RES 10.2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-181050-210C	RES 105Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-181053-210C	RES 105KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-181130-210C	RES 113Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181182-210C	RES 11.8KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181210-210C	RES 121Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181273-210C	RES 127KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181400-210C	RES 140Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181402-210C	RES 14KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181500-210C	RES 150Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	6	5.7557
263-181503-210C	RES 150KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181542-210C	RES 15.4KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181623-210C	RES 162KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	3	3.0426
263-181651-210C	RES 1.65KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181690-210C	RES 169Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-181691-210C	RES 1.69KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-181803-210C	RES 180KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	3	3.0426
263-182000-110C	RES 200Ω,F(1%),SMD,0201,(None JP)RoHS	0.8294	3	3.0426
263-182000-210C	RES 200Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-182001-210C	RES 2KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	3	3.0426
263-182002-110C	RES 20KΩ,F(1%),SMD,0201,(None JP)RoHS	0.8294	3	3.0426
263-182002-210C	RES 20KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	8	7.5331
263-182003-210C	RES 200KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-182004-210C	RES 2MΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-182050-210C	RES 205Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-182053-210C	RES 205KΩ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-182200-210C	RES 220Ω,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-182201-110C	RES 2.2KΩ,F(1%),SMD,0201,(None JP)RoHS	0.8294	6	5.7557
263-182202-110C	RES 22KΩ,F(1%),SMD,0201,(None JP)RoHS	0.8294	4	3.9561
263-182208-310C	RES 2.2Ω,F(1%),SMD,0603,(None JP)RoHS	0.8294	1	1.1533

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439

Failure Rate: 6232.8889

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-182553-210C	RES 255K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-182612-210C	RES 26.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-182872-210C	RES 28.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-183000-310C	RES 300 Ω ,F(1%),SMD,0603,(None JP)RoHS	0.8294	1	1.1533
263-183092-210C	RES 30.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-183300-210C	RES 330 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	4	3.9561
263-183301-110C	RES 3.3K Ω ,F(1%),SMD,0201(None JP)RoHS	0.8294	12	11.0354
263-183301-210C	RES 3.3K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	4	3.9561
263-183302-110C	RES 33K Ω ,F(1%),SMD,0201(None JP)RoHS	0.8294	4	3.9561
263-183303-210C	RES 330K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-183305-100C	RES 33 Ω ,J(5%),SMD,0201(None JP)RoHS	0.8294	26	23.1577
263-183651-210C	RES 3.65K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	4	3.9561
263-183901-210C	RES 3.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-183922-210C	RES 39.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-184020-210C	RES 402 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	3	3.0426
263-184122-210C	RES 41.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-184532-210C	RES 45.3K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-184701-110C	RES 4.7K Ω ,F(1%),SMD,0201,(None JP)RoHS	0.8294	47	41.1236
263-184701-210C	RES 4.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	5	4.8594
263-184702-110C	RES 47K Ω ,F(1%),SMD,0201,(None JP)RoHS	0.8294	8	7.5331
263-184750-210C	RES 475 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-184872-210C	RES 48.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-184990-210C	RES 499 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-184991-210C	RES 4.99K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-184992-210C	RES 49.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-185102-210C	RES 51K Ω ,F(1%),SMD,0402(None JP)RoHS	0.8294	4	3.9561
263-185110-210C	RES 511 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-185112-210C	RES 51.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-185230-210C	RES 523 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-185600-210C	RES 560 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-185602-210C	RES 56K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-185621-210C	RES 5.62K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-186040-210C	RES 604 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-186049-210C	RES 60.4 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-186981-210C	RES 6.98K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-187502-210C	RES 75K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-187870-210C	RES 787 Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-188062-210C	RES 80.6K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-188201-210C	RES 8.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-188459-210C	RES 84.5 Ω ,F(1%),SMD,0402 (None JP)RoHS	0.8294	1	1.1533
263-188661-210C	RES 8.66K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-189092-210C	RES 90.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-189312-210C	RES 93.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-189531-210C	RES 9.53K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	2	2.1133
263-189761-210C	RES 9.76K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533
263-189762-210C	RES 97.6K Ω ,F(1%),SMD,0402,(None JP)RoHS	0.8294	1	1.1533

File Name: AL051-TC-E3930.rfp
Assembly: 774-AL0511-500G
Ref Des:
Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439
Failure Rate: 6232.8889
Temperature: 70
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
273-100402-301S	THERM RES 10K Ω ,J(5%),SMD,0603, (B25/85=3435,3%),TSM1A103J34D3RZ(TKS)	7.6800	2	25.7596
342-112003-210G	MINI DISPLAYPORT,20pin,F,0.6mm,R/A,30u",WMDR -20FEL1PH4(WIN WIN)RoHS	16.0915	1	27.8610
342-310022-110G	Screw CONN. Terminal Block,Green,2Pos,300V,16A,PIT:5.0mm,MB612- 50002(DECA) RoHS	16.0915	1	27.8610
343-111514-110G	DSUB CONN 15SA,90D,FASTEN SCREW,G/F,Blue,,D4324-15F-422B(XIAN YI)RoHS	16.0915	1	27.8610
343-500642-111G	Giga LAN CONN RJ45 30 μ ,W/Transformer&LED,24- 000939N13-1(UDE)RoHS	16.0915	2	48.7605
343-503600-100S	USB 3.0*2 ,A Type,30u,UEA1112C-8FS6-4F (FOXCONN)	16.0915	1	27.8610
344-002003-610G	Mini JUMPER RED 2.0mm,200-72-PBGR0B(PINREX) RoHS	16.0915	1	27.8610
346-110320-100G	PIN PLUG 1*3,2.0mm,M,H=5.9mm,180D,DIP,W/BLACK JUMPER,22S-96-03GB01(PINREX)RoHS	16.0915	1	27.8610
346-120310-200G	PIN PLUG 2*3,1.27mm,H=5mm,V/T,SMD,JCL20161228019(V- STAR)RoHS	16.0915	2	48.7605
346-120320-800S	PIN PLUG 2*3,2.0mm,M,H=6.7mm,180D,SMT,W/CAP,222-97- 03GBE1(R)(PINREX)	16.0915	1	27.8610
346-120511-200G	PIN PLUG 2*5,1.27mm,H=5mm,V/T,SMD,JCL20161228017(V- STAR)RoHS	16.0915	4	87.6375
346-510223-102G	WAFER 1*2,2.0mm,M,H=6.1mm,180D,DIP,WHITE,721-81- 02TW00(PINREX)RoHS	16.0915	1	27.8610
346-522040-200G	BOX HEADER 2*20,1.00mm,V/T,SMD,W100V40TP2 (V-STAR)RoHS	16.0915	1	27.8610
346-600750-101S	SATA3 CONNECTOR 7Pin,15u",180D,DIP,DARK BLUE,W/LOCK,LE18077-Z54D-4H(FOXCONN)	16.0915	1	27.8610
347-150051-210G	WAFER 1*5,1.25mm,M,H=3.45mm,90D,SMT,WHITE,0110- 3221050(E-CALL)RoHS	16.0915	1	27.8610
348-220800-200S	SOCKET SPI 8Pin,GF,H=5.65mm,180D,SMT,ACA-SPI -004-K01(LOTES)	8.7772	1	14.3034
348-370750-240G	NGFF CONN 75P/0.5mm,H=8.5mm,B key,90D,BLACK,SMD,APCI0161-P002H(LOTES)HF	8.7772	1	14.3034
348-652047-210G	DDR-III SO DIMM 1*204P,10u,H=8.0mm 1.5V,SMD,RVS,AS0A626-H8RN-7H(FOXCONN) RoHS/HF	16.0915	1	27.8610
348-660522-200S	MINI PCI-EXPRESS 1*52,0.8mm,10u",F,H=9.9mm,90D,SMT,IVORY,GEN RAL TYPE,AS0B226-S99Q-7H(FOXCONN)HF	8.7772	1	14.3034

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 160,439

Failure Rate: 6232.8889

Temperature: 70

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
622-010140-000G	BATTERY CR2032 3V 220mAh W/CABLE (L=150mm&TAPE),BIN-CR2032-I-CT-SL-PV-01(RE- ENERGY)RoHS	25.0000	1	34.9638
143-101300-401G	CPU Intel Atom x5-E3930 1.3GHz C/2M LH8066803102701 SR33Q D0/FCBGA-1296(INTEL) RoHS	228.0000	1	228.0000
292-301000-500S	BUZZER 3V,100mA,12Ω,4Khz,85db,SMD (5*4.2mm),SMT-G5030A(KEPO)	600.0000	1	600.0000
314-AL0511-109G	PCB AL051 R.A (12L HDI 100x72x1.6mm, 2 panelization) OSP(CIRCUITECH)RoHS	3.0000	1	3.0000

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MTBF (hrs):	102,387
Failure Rate:	9766.90
Temperature:	85
Environment:	GB, GC - Ground Benign, Controlled

Assembly Name	Part Number	Quantity	Failure Rate (Fit)	MTBF (Hrs)
AL051-TC-E3930	770-AL0511-500G	1	9766.90	102,387
AL051-TC-E3930	774-AL0511-500G	1	9766.90	102,387

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387

Failure Rate: 9766.9007

Temperature: 85

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
113-500000-210G	IC TTL,Single 2-Input Positive-NAND Gate,SN74LVC1G00DCKR/SC70-5(TI)RoHS	101.9403	1	153.3368
113-500007-210S	IC TTL,Single Buffer/Driver,SN74LVC1G07DCKR/SC70-5(TI)	101.9403	1	153.3368
113-500008-210G	IC TTL,Single 2-Input Positive-AND Gate,SN74LVC1G08DCKR/SC70-5(TI)RoHS	101.9403	5	622.6713
113-833306-400G	IC TTL,Dual FET Bus Switch,SN74CB3Q3306ADCUR/VSSOP8(US8-DCU)(TI)RoHS	101.9403	2	276.0256
113-906408-400G	IC LOW-VOLTAGE 8-BIT I2C AND SMBus I/O EXPANDER,UQFN16, TCA6408ARSVR(TI)RoHS	101.9403	1	153.3368
121-000104-420G	IC 4-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR,NTS0104GU12/XQFN12(NXP) RoHS	101.9403	7	846.8385
121-000204-400G	4-Bits Bidirectional Multi-Voltage Level Translator,LSF0204RUTR/UQFN12(TI)RoHS	101.9403	1	153.3368
121-009406-200G	IC DUAL BIDIRECTIONAL I ² C-bus and SMBus TRANSLATOR,TCA9406DCUR/micro SO8(TI)RoHS	101.9403	2	276.0256
121-081439-400G	IC RS232/RS422/RS485 Multiprotocol Transceivers,F81439N/TQFN40(FINTEK)RoHS	101.9403	1	153.3368
123-100341-200G	IC OP Amplifier,LMV341IDCK/SC70-6(TI)RoHS	101.9403	1	153.3368
135-300400-215G	SPI SERIAL FLASH 4Mbit W25X40CLSNIG/SOIC8 (WINBOND)RoHS/HF	43.3457	1	67.2829
135-301004-201G	EEPROM 8K(1024*8)M24C08-WMN6TP/SO-8(ST) RoHS	43.3457	1	67.2829
135-301282-210G	SPI SERIAL FLASH 128Mbit,W25Q128FWSIQ/SOIC-8 (WINBOND)RoHS	43.3457	1	67.2829
136-115090-400G	Flash 8-Bit Microcontroller PIC16F1509-I/ML/QFN-20 (MICROCHIP)RoHS	43.3457	1	67.2829
141-003460-403G	eDP to LVDS bridge PTN3460BS/F6,HVQFN56(NXP) RoHS	101.9403	1	153.3368
141-006850-401G	IC Synchronous Buck Converter,4.5-26Vin,12A,NB685AGQ/QFN16(MPS)RoHS	101.9403	1	153.3368
141-029390-403G	IC Controller,Multi-Rail PWM for Intel IMVP8,MP2939GQK-Z/QFN-48,D/C after 1650(MPS) RoHS	101.9403	1	153.3368
141-232120-400G	IC PCIE 3.0 Switch 2:1 Mux/DeMux,PI3PCIE3212ZBE/TQFN-20(PERICOM) RoHS	101.9403	1	153.3368
141-262001-200G	AUDIO CODEC ALC262-VC2-GR/LQFP48(REALTEK) RoHS	101.9403	1	153.3368
141-562150-400G	IC Synchronous Step-down Converter,TPS56C215RNN/VQFN-18(TI)RoHS	101.9403	3	393.7852
141-620850-200G	IC Synchronous Buck Converter,2.5-6,3A,TLV62085RLT/VSON-7(TI)RoHS	101.9403	3	393.7852
147-065160-200G	IC Converter,Single Chip DisplayPort to VGA with Embedded MCU,IT6516BFN/CX-0068(R)/QFN-32 (ITE)RoHS	101.9403	1	153.3368
147-818030-200G	IC CHIP,F81803U-I/TQFP64(FINTEK)RoHS	101.9403	1	153.3368

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387

Failure Rate: 9766.9007

Temperature: 85

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
147-822100-410G	IC CHIP Giga LAN Ctrl,-40~105°C,WGI210IT SLJXT/QFN-64(INTEL)RoHS	101.9403	2	276.0256
171-205200-210S	DIODE SCHOTTKY BARRIER 30V,200mA,IR=1uA@VR=10V,SCS520S-T2G-WG/SOD-523(WILLAS)	4.7378	12	62.9161
171-215817-213G	DIODE Schottky,SMA,FM5817P-T-FM/DO214AC (FMS)RoHS	4.7378	1	6.5504
171-230502-200G	DIODE ESD Protection,VRWM=5.0V,IRM=100nA,VESD=10KV,SM T,SOT883,PESD5V0U2BM(NXP)RoHS	4.7378	1	6.5504
171-364212-200G	DIODE TVS VRWM:-12V~12V,AZ4212-01G.R7G/SOD -123(AMAZING)RoHS	4.7378	1	6.5504
171-404001-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4E001DBVR/SOT23-6(TI)	101.9403	2	276.0256
171-404010-200S	DIODE 4-CHANNEL ESD PROTECTION,TPD4S010DQAR/SON-DQA10(TI)	101.9403	5	622.6713
171-450150-200G	DIODE Zener,15V,UDZS 15B/SOD323(ROHM)RoHS	4.7378	1	6.5504
172-223904-400G	TRANSISTOR Dual NPN,MBT3904DW1T1G/SOT-363 (ON)RoHS	13.6560	3	50.4781
172-223906-207S	TRANSISTOR PNP,PMBS3906/SOT23(NXP)	13.6560	1	19.2122
172-300612-200G	MOSFET Dual N-Ch,VDS:30V,VGS:±20V,ID:100mA,@4V,RDS:8Ω,EM 6K1GT2R/SOT-563(ROHM)RoHS	30.6564	15	513.7933
172-301402-200G	MOSFET Dual N-Ch VDS:20V,ID:9.5A,VGS:±12V,@4.5V,RDS:14mΩ,EMZ F14R02W/8-DFN(3x3)(EXCELLIANCE)RoHS	30.6564	1	45.1481
172-304402-200G	MOSFET P-Ch,VDS:-20V,ID:-4A,VGS:±12V,@-4.5V,RDS:44mΩ,EMF44P02J/SOT-23(EXCELLIANCE) HF	30.6564	1	45.1481
172-304435-200G	MOSFET P-Ch,VDS:-30V,ID:-11A,VGS:±25V,@-4.5V,RDS:36mΩ,AP4435GYT-HF/PMPAK3x3 (APEC)/HF	30.6564	2	81.6515
172-304438-200G	MOSFET N-Ch,VDS:30V,ID:13.7A,VGS:±20V,@-4.5V,RDS:18mΩ,AP4438GYT-HF/PMPAK3x3(APEC) HF	30.6564	1	45.1481
172-385301-200G	MOSFET N-Ch,VDS:20V,ID:5A,VGS:±10V,at 4.5V RDS:23mΩ,CSD85301Q2/WSO-8(TI)RoHS	30.6564	1	45.1481
172-886901-200G	DrMOS Power Stage MP86901-AGQT-Z/TQFN13 (MPS)RoHS	30.6564	1	45.1481
172-886901-210G	DrMOS Power Stage MP86901-CGLT-Z/TQFN21 (MPS)RoHS	30.6564	1	45.1481
174-210010-500S	LED,RED,SMD0805,17-21VRC/TR8(HT)(EVERLIGHT)	23.2117	1	30.4488
213-150330-200C	MLCC 3.3pF/50V,NPO,C(0.25pF),SMD,0402,(None JP)RoHS	0.2525	2	0.5959
213-151005-120C	MLCC 10pF/50V,NPO,J(5%),SMD 0201(None JP) RoHS	0.2525	3	0.8685
213-151505-200C	MLCC 15pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2525	2	0.5959

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387

Failure Rate: 9766.9007

Temperature: 85

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-151805-200C	MLCC 18pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2525	2	0.5959
213-152205-110C	MLCC 22pF/25V,NPO,J(5%),SMD 0201,(None JP) RoHS	0.2525	1	0.3172
213-152215-200C	MLCC 221P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2525	6	1.6693
213-152705-200C	MLCC 27pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2525	4	1.1360
213-152715-200C	MLCC 271P/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2525	1	0.3172
213-153319-200C	MLCC 331P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2525	10	2.7241
213-155605-200C	MLCC 56pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2525	1	0.3172
213-156805-200C	MLCC 68pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2525	2	0.5959
213-158205-200C	MLCC 82pF/50V,NPO,J(5%),SMD,0402,(None JP) RoHS	0.2525	1	0.3172
213-251028-200C	MLCC 102P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2525	4	1.1360
213-251038-200C	MLCC 103P/16V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2525	3	0.8685
213-251038-250C	MLCC 103P/50V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2525	1	0.3172
213-251039-130C	MLCC 103P/10V,X7R,K(10%),SMD,0201,(None JP) RoHS	0.2525	10	2.7241
213-251049-130J	MLCC 104P/10V,X5R,K(10%),SMD,0201,(JP)RoHS	0.2525	135	34.8154
213-251049-200J	MLCC 104P/16V,X7R,K(10%),SMD,0402,(JP)RoHS	0.2525	34	8.9516
213-251049-270J	MLCC 104P/25V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2525	6	1.6693
213-251049-320J	MLCC 104P/50V,X7R,K(10%),SMD,0603,(JP)RoHS	0.2525	1	0.3172
213-251049-330J	MLCC 104P/25V,X7R,K(10%),SMD,0603,(JP)RoHS	0.2525	3	0.8685
213-251059-109G	MLCC 105P/6.3V,X5R,K(10%),SMD,0201,CC0201KRX5R5BB105(YAGEO) RoHS	0.2525	20	5.3314
213-251059-200J	MLCC 105P/6.3V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2525	13	3.5095
213-251059-220J	MLCC 105P/10V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2525	1	0.3172
213-251059-230J	MLCC 105P/16V,X5R,K(10%),SMD,0402,(JP)RoHS	0.2525	21	5.5908
213-251059-330J	MLCC 105P/25V,X5R,K(10%),SMD,0603,(JP)RoHS	0.2525	2	0.5959
213-251068-200J	MLCC 106P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2525	37	9.7248
213-251068-300J	MLCC 106P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.2525	4	1.1360
213-251069-320J	MLCC 106P/10V,X5R,K(10%),SMD,0603,(JP)RoHS	0.2525	8	2.1981
213-252239-200C	MLCC 223P/25V,X7R,K(10%),SMD,0402,(None JP) RoHS	0.2525	1	0.3172
213-252249-310C	MLCC 224P/10V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.2525	1	0.3172
213-252249-330C	MLCC 224P/25V,X7R,K(10%),SMD,0603,(None JP) RoHS	0.2525	1	0.3172
213-252259-200J	MLCC 225P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2525	10	2.7241

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387

Failure Rate: 9766.9007

Temperature: 85

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
213-252268-310J	MLCC 226P/6.3V,X5R,M(20%),SMD,0603,(JP)RoHS	0.2525	53	13.8398
213-252269-510J	MLCC 226P/6.3V,X5R,M(20%),SMD,0805,(JP)RoHS	0.2525	4	1.1360
213-253938-200C	MLCC 393P/10V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.2525	2	0.5959
213-254715-200C	MLCC 471P/50V,NPO,J(5%),SMD,0402,(None JP)RoHS	0.2525	8	2.1981
213-254739-210C	MLCC 473P/16V,X7R,K(10%),SMD,0402,(None JP)RoHS	0.2525	3	0.8685
213-254758-210J	MLCC 475P/6.3V,X5R,M(20%),SMD,0402,(JP)RoHS	0.2525	5	1.4034
213-254759-320C	MLCC 475P/10V,X5R,K(10%),SMD,0603,(None JP)RoHS	0.2525	4	1.1360
213-254759-510J	MLCC 475P/25V,X5R,K(10%),SMD,0805,(JP)RoHS	0.2525	5	1.4034
213-351068-510J	MLCC 106P/25V,X7S,M(20%),SMD,0805,(JP)RoHS	0.2525	8	2.1981
217-301078-325G	POLYMER(TAN) CAP 100uF/6.3V,40mΩ,1.8A,SMD,B3528,105°C/2000H,M(20%),T520B107M006ATE040(KEMET)RoHS	1.9108	3	6.7803
217-302278-326G	POLYMER(TAN)CAP 220uF/6.3V,45mΩ,1700mA,105°C/2000H,M(20%),B3528(1.9),T520B227M006ATE045(KEMET)RoHS	1.9108	3	6.7803
217-304768-725G	POLYMER(TAN) CAP,47uF/16V,70mΩ,1600mA,SMD,V7343-20,105°C/2000H,M(20%),T520V476M016ATE070(KEMET)RoHS	1.9108	4	8.8504
223-015122-610G	CHOKE 0.15uH,M (20%),RDC≤0.9mΩ,Idc≤35A,Isat≤41A,SMD,(7.6*6.6*2.8),CMME063T-R15MS0R907(CYNTEC)RoHS	1.9913	1	2.6024
223-015222-610G	CHOKE 1.5uH,M (20%),RDC≤15mΩ,Irms=9A,Isat=16A,SMD,(7.3*6.6*3.0),MCS0630-1R5MN2(PDC)RoHS	1.9913	1	2.6024
223-015223-110G	CHOKE 1.5uH,M (20%),RDC≤4.2mΩ,Irms=16A,Isat=21A,SMD,(11.5*10.3*4),MCS1040-1R5MN1(PDC)RoHS	1.9913	1	2.6024
223-036121-700G	CHOKE 0.36uH,M (20%),DCR=12mΩ,Irms=9A,Isat:11A,SMD(4.5*4*1.8),GSTD4020PJ-R36M(GOTREND)RoHS	1.9913	1	2.6024
223-047120-820G	CHOKE 0.47uH,M (20%),RDC≤39mΩ,Irms=3.5A,SMD,(2.5x2x1.2),AWP252012AF-R47M(TAI TECH)RoHS	1.9913	3	7.0210
223-047122-620G	CHOKE 0.47uH,M (20%),RDC≤4mΩ,Idc=17.5A,Isat=26A,SMD,(7.3x6.6x3),PCMC063T-R47MN(CYNTEC)RoHS	1.9913	1	2.6024
223-368122-600S	CHOKE 0.68uH,M (20%),RDC=5mΩ,Idc=15.5A,Isat=25A,SMD(7.4*6.9*3.0),GSTD6030PE-R68M(GOTREND)	1.9913	1	2.6024
223-410040-501S	COMMON CHOKE Z≥90Ω,M (20%),RDC≤0.35Ω,Idc≤330mA,SMD,(2.05*1.25*1.2),CMM21T-900M-N(CHILISIN)	1.9913	2	4.8406

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Assembly: 774-AL0511-500G
Ref Des:
Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387
Failure Rate: 9766.9007
Temperature: 85
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
223-490090-500S	COMMON CHOKE 90Ω,60-100Ω,300mA (Max),RDC≤ 300mΩ,HDMI/USB3.0 6GHz,SMD0805 (2*1.2*1.2mm),GLECM2012B-900QT(GOTREND)	1.9913	4	9.1715
223-523000-410G	CM FILTER Cd=0.25pF,Rs=3Ω,SMD (1.57*1.17*0.57),PCMF2USB3S/WLCSP10(NXP) RoHS	1.9913	2	4.8406
231-107168-200G	REGULATOR 0.8A,GS7168TD-R/TDFN8(GSTEK)HF	590.2294	1	1147.8320
231-111700-250G	REGULATOR 1A,Adjustable,SMD,LD1117AG-AD-AB3-A-R/SOT89(UTC)RoHS	590.2294	1	1147.8320
241-219206-330G	X'TAL 19.2MHz,12pF,±30ppm,ESR:50Ω (Max),TOPR=-40°C ~+105°C,SMD3225 (4PAD),7M19200021(TXC)RoHS	3.2000	1	6.9898
241-225006-350G	X'TAL 25MHz,18pF,±30ppm,ESR:50Ω(Max),TOPR=-40°C ~+105°C,SMD3225(4PAD),7M25000175(TXC) RoHS	3.2000	2	18.8238
241-432773-300G	X'TAL 32.768kHz,12.5pf,*/-20ppm,TOPR=-40°C ~+125°C,SMD3215(2PAD),FC-13A,X1A000091000100(Seiko Epson)RoHS	3.2000	1	6.9898
242-248006-200G	OSC 48Mhz,3.3V,15pf,25ppm,TOPR=-40°C ~+85°C,SMD2520(4PAD),FCO-236A 48.000MAC (FUJICOM)RoHS	14.0000	1	42.3449
251-160808-083S	BEAD CORE 160808 80Ω,300mA,25%,SMT0603,SBK160808T-800Y-N (CHILISIN)	1.9913	2	4.8406
251-160808-615S	BEAD CORE 160808 600Ω,1A,25%,SMT0603,PBY160808T-601Y-N (CHILISIN)	1.9913	1	2.6024
251-647000-301S	BEAD CORE 160808 47Ω,400mA,25%,SMT0603,SBK160808T-470Y-N (CHILISIN)	1.9913	7	15.5075
251-915470-200G	FERRITE BEAD 47Ω,300mA,25%,BLM15BB470SN1D/0402(MURATA) RoHS	1.9913	3	7.0210
253-100115-501S	POLYSWITCH 1.1A,6V,SMT0805,0805L100 (LITTELFUSE)	0.4000	4	2.1022
253-100155-604S	POLYSWITCH 1.5A/8V,SMD1206 TYPE PTC,1206L150THWR(LITTELFUSE)	0.4000	2	1.1579
253-105000-610G	FUSE 5A/32V SMD3216(1206),0466005.NRHF (LITTELFUSE)RoHS	0.4000	1	0.6546
261-361515-200C	RES NET 150Ω 8P4R J(5%),0402*4,(None JP)RoHS	1.0258	2	2.6139
261-364725-200C	RES NET 4.7KΩ 8P4R J(5%),0402*4,(None JP)RoHS	1.0258	1	1.4265
263-180005-100C	RES 0Ω,J(5%),SMD,0201,(None JP)RoHS	1.0258	65	69.7949
263-180005-200C	RES 0Ω,J(5%),SMD,0402,(None JP)RoHS	1.0258	30	32.8921
263-180005-300C	RES 0Ω,J(5%),SMD,0603,(None JP)RoHS	1.0258	9	10.3922
263-180100-210C	RES 10Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	3	3.7632
263-180100-310C	RES 10Ω,F(1%),SMD,0603,(None JP)RoHS	1.0258	1	1.4265
263-180200-210C	RES 20Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-180220-110C	RES 22Ω,F(1%),SMD,0201,(None JP)RoHS	1.0258	8	9.3173
263-180220-210C	RES 22Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	3	3.7632

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387

Failure Rate: 9766.9007

Temperature: 85

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-180470-210C	RES 47Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-180519-310C	RES 5.1Ω,F(1%),SMD,0603,(None JP)RoHS	1.0258	1	1.4265
263-180680-210C	RES 68Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-180750-110C	RES 75Ω,F(1%),SMD,0201,(None JP)RoHS	1.0258	5	6.0104
263-181000-110C	RES 100Ω,F(1%),SMD,0201,(None JP)RoHS	1.0258	3	3.7632
263-181000-210C	RES 100Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	6	7.1189
263-181000-310C	RES 100Ω,F(1%),SMD,0603,(None JP)RoHS	1.0258	1	1.4265
263-181001-110C	RES 1KΩ,F(1%),SMD,0201,(None JP)RoHS	1.0258	20	22.2454
263-181001-210C	RES 1KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	7	8.2208
263-181001-310C	RES 1KΩ,F(1%),SMD,0603,(None JP)RoHS	1.0258	2	2.6139
263-181002-110C	RES 10KΩ,F(1%),SMD,0201,(None JP)RoHS	1.0258	67	71.8941
263-181002-210C	RES 10KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	17	19.0330
263-181003-110C	RES 100KΩ,F(1%),SMD,0201,(None JP)RoHS	1.0258	15	16.8846
263-181003-210C	RES 100KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	5	6.0104
263-181004-210C	RES 1MΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-181005-210C	RES 10MΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181022-210C	RES 10.2KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-181050-210C	RES 105Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-181053-210C	RES 105KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-181130-210C	RES 113Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181182-210C	RES 11.8KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181210-210C	RES 121Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181273-210C	RES 127KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181400-210C	RES 140Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181402-210C	RES 14KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181500-210C	RES 150Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	6	7.1189
263-181503-210C	RES 150KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181542-210C	RES 15.4KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181623-210C	RES 162KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	3	3.7632
263-181651-210C	RES 1.65KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181690-210C	RES 169Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-181691-210C	RES 1.69KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-181803-210C	RES 180KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	3	3.7632
263-182000-110C	RES 200Ω,F(1%),SMD,0201,(None JP)RoHS	1.0258	3	3.7632
263-182000-210C	RES 200Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-182001-210C	RES 2KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	3	3.7632
263-182002-110C	RES 20KΩ,F(1%),SMD,0201,(None JP)RoHS	1.0258	3	3.7632
263-182002-210C	RES 20KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	8	9.3173
263-182003-210C	RES 200KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-182004-210C	RES 2MΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-182050-210C	RES 205Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-182053-210C	RES 205KΩ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-182200-210C	RES 220Ω,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-182201-110C	RES 2.2KΩ,F(1%),SMD,0201,(None JP)RoHS	1.0258	6	7.1189
263-182202-110C	RES 22KΩ,F(1%),SMD,0201,(None JP)RoHS	1.0258	4	4.8930
263-182208-310C	RES 2.2Ω,F(1%),SMD,0603,(None JP)RoHS	1.0258	1	1.4265

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Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387

Failure Rate: 9766.9007

Temperature: 85

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
263-182553-210C	RES 255K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-182612-210C	RES 26.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-182872-210C	RES 28.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-183000-310C	RES 300 Ω ,F(1%),SMD,0603,(None JP)RoHS	1.0258	1	1.4265
263-183092-210C	RES 30.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-183300-210C	RES 330 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	4	4.8930
263-183301-110C	RES 3.3K Ω ,F(1%),SMD,0201(None JP)RoHS	1.0258	12	13.6491
263-183301-210C	RES 3.3K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	4	4.8930
263-183302-110C	RES 33K Ω ,F(1%),SMD,0201(None JP)RoHS	1.0258	4	4.8930
263-183303-210C	RES 330K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-183305-100C	RES 33 Ω ,J(5%),SMD,0201(None JP)RoHS	1.0258	26	28.6426
263-183651-210C	RES 3.65K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	4	4.8930
263-183901-210C	RES 3.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-183922-210C	RES 39.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-184020-210C	RES 402 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	3	3.7632
263-184122-210C	RES 41.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-184532-210C	RES 45.3K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-184701-110C	RES 4.7K Ω ,F(1%),SMD,0201,(None JP)RoHS	1.0258	47	50.8638
263-184701-210C	RES 4.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	5	6.0104
263-184702-110C	RES 47K Ω ,F(1%),SMD,0201,(None JP)RoHS	1.0258	8	9.3173
263-184750-210C	RES 475 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-184872-210C	RES 48.7K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-184990-210C	RES 499 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-184991-210C	RES 4.99K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-184992-210C	RES 49.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-185102-210C	RES 51K Ω ,F(1%),SMD,0402(None JP)RoHS	1.0258	4	4.8930
263-185110-210C	RES 511 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-185112-210C	RES 51.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-185230-210C	RES 523 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-185600-210C	RES 560 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-185602-210C	RES 56K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-185621-210C	RES 5.62K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-186040-210C	RES 604 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-186049-210C	RES 60.4 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-186981-210C	RES 6.98K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-187502-210C	RES 75K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-187870-210C	RES 787 Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-188062-210C	RES 80.6K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-188201-210C	RES 8.2K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-188459-210C	RES 84.5 Ω ,F(1%),SMD,0402 (None JP)RoHS	1.0258	1	1.4265
263-188661-210C	RES 8.66K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-189092-210C	RES 90.9K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-189312-210C	RES 93.1K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-189531-210C	RES 9.53K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	2	2.6139
263-189761-210C	RES 9.76K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265
263-189762-210C	RES 97.6K Ω ,F(1%),SMD,0402,(None JP)RoHS	1.0258	1	1.4265

File Name: AL051-TC-E3930.rfp
Assembly: 774-AL0511-500G
Ref Des:
Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387
Failure Rate: 9766.9007
Temperature: 85
Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
273-100402-301S	THERM RES 10K Ω ,J(5%),SMD,0603, (B25/85=3435,3%),TSM1A103J34D3RZ(TKS)	13.5376	2	45.4066
342-112003-210G	MINI DISPLAYPORT,20pin,F,0.6mm,R/A,30u",WMDR -20FEL1PH4(WIN WIN)RoHS	28.3646	1	49.1106
342-310022-110G	Screw CONN. Terminal Block,Green,2Pos,300V,16A,PIT:5.0mm,MB612- 50002(DECA) RoHS	28.3646	1	49.1106
343-111514-110G	DSUB CONN 15SA,90D,FASTEN SCREW,G/F,Blue,,D4324-15F-422B(XIAN YI)RoHS	28.3646	1	49.1106
343-500642-111G	Giga LAN CONN RJ45 30 μ ,W/Transformer&LED,24- 000939N13-1(UDE)RoHS	28.3646	2	85.9503
343-503600-100S	USB 3.0*2 ,A Type,30u,UEA1112C-8FS6-4F (FOXCONN)	28.3646	1	49.1106
344-002003-610G	Mini JUMPER RED 2.0mm,200-72-PBGR0B(PINREX) RoHS	28.3646	1	49.1106
346-110320-100G	PIN PLUG 1*3,2.0mm,M,H=5.9mm,180D,DIP,W/BLACK JUMPER,22S-96-03GB01(PINREX)RoHS	28.3646	1	49.1106
346-120310-200G	PIN PLUG 2*3,1.27mm,H=5mm,V/T,SMD,JCL20161228019(V- STAR)RoHS	28.3646	2	85.9503
346-120320-800S	PIN PLUG 2*3,2.0mm,M,H=6.7mm,180D,SMT,W/CAP,222-97- 03GBE1(R)(PINREX)	28.3646	1	49.1106
346-120511-200G	PIN PLUG 2*5,1.27mm,H=5mm,V/T,SMD,JCL20161228017(V- STAR)RoHS	28.3646	4	154.4788
346-510223-102G	WAFER 1*2,2.0mm,M,H=6.1mm,180D,DIP,WHITE,721-81- 02TW00(PINREX)RoHS	28.3646	1	49.1106
346-522040-200G	BOX HEADER 2*20,1.00mm,V/T,SMD,W100V40TP2 (V-STAR)RoHS	28.3646	1	49.1106
346-600750-101S	SATA3 CONNECTOR 7Pin,15u",180D,DIP,DARK BLUE,W/LOCK,LE18077-Z54D-4H(FOXCONN)	28.3646	1	49.1106
347-150051-210G	WAFER 1*5,1.25mm,M,H=3.45mm,90D,SMT,WHITE,0110- 3221050(E-CALL)RoHS	28.3646	1	49.1106
348-220800-200S	SOCKET SPI 8Pin,GF,H=5.65mm,180D,SMT,ACA-SPI -004-K01(LOTES)	15.4716	1	25.2127
348-370750-240G	NGFF CONN 75P/0.5mm,H=8.5mm,B key,90D,BLACK,SMD,APCI0161-P002H(LOTES)HF	15.4716	1	25.2127
348-652047-210G	DDR-III SO DIMM 1*204P,10u,H=8.0mm 1.5V,SMD,RVS,AS0A626-H8RN-7H(FOXCONN) RoHS/HF	28.3646	1	49.1106
348-660522-200S	MINI PCI-EXPRESS 1*52,0.8mm,10u",F,H=9.9mm,90D,SMT,IVORY,GEN RAL TYPE,AS0B226-S99Q-7H(FOXCONN)HF	15.4716	1	25.2127

File Name: AL051-TC-E3930.rfp

Assembly: 774-AL0511-500G

Ref Des:

Calculation Model: Telcordia Issue 2



MTBF (hrs): 102,387

Failure Rate: 9766.9007

Temperature: 85

Environment: GB, GC - Ground Benign, Controlled

Part Number	Description	Unit Failure Rate	Quantity	Total Failure Rate
622-010140-000G	BATTERY CR2032 3V 220mAh W/CABLE (L=150mm&TAPE),BIN-CR2032-I-CT-SL-PV-01(RE- ENERGY)RoHS	25.0000	1	34.9638
143-101300-401G	CPU Intel Atom x5-E3930 1.3GHz C/2M LH8066803102701 SR33Q D0/FCBGA-1296(INTEL) RoHS	228.0000	1	228.0000
292-301000-500S	BUZZER 3V,100mA,12Ω,4Khz,85db,SMD (5*4.2mm),SMT-G5030A(KEPO)	600.0000	1	600.0000
314-AL0511-109G	PCB AL051 R.A (12L HDI 100x72x1.6mm, 2 panelization) OSP(CIRCUITECH)RoHS	3.0000	1	3.0000