

NanoCOM-CV Rev.B

Reliability Prediction Report

(MTBF)

Summary	Failure Rate: 8.450085 ppm MTBF: 118,342 Hours
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Issue date	Approval	Test Engineer
2012/11/26	Tom Lin	Jack Huang

Reliability Prediction (MTBF)

I . Model Name: NanoCOM-CV Rev.B (9697NUCV19-D)

II . Prediction Date: Dec, 03, 2012

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

IV . Predicted by: Danny . Chen

V . Equipment: Relx Ver.7.3 Visual Reliability Software

VI. Simulation Environment:

- Temperature: 25 degrees C
- Standard: Telcordia (Bellcore) Standard

VII. Term and Definition:

- Unit : An assembly of device.
- Duty Cycle : Used to specify the percentage of time that the element is in an on state, and it is equal to the percentage of total time the item is in the active environment.
- Quantity : The quantity of the selected item.
- Failure Rate : Used to specify that the failure rate is to be calculated based the selected Calculation models. The multiplier is 1,000,000.
- MTBF : MTBF is always specified in hours.

VIII. Prediction Result:

NanoCOM-CV Rev.B(9697NUCV19-D):

- Failure Rate: 8.450085ppm
- MTBF: 118,342 (hour)

AAEON Reliability Prediction Report

Part Number 9697NUCV19-D
Reference Des
Date 11. 19, 2012
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00



Description Top-level assembly
File Name 9697NUCV19-D.RPJ
Time 15:08
Failure Rate 8.450085
MTBF 118,342

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
NanoCOM-CV Rev.B	9697NUCV19-D	Telcordia Issue 1	Method I Case 3	GF, GU - Ground Fixed, Uncontrolled	100.00	1.00	8.45	118342.01

AAEON Reliability Prediction Report

Part Number 9697NUCV19-D
Reference Des
Date 11. 19, 2012
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00

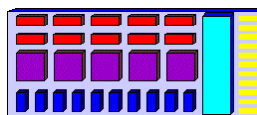


Description Top-level assembly
File Name 9697NUCV19-D.RPJ
Time 15:08
Failure Rate 8.450085
MTBF 118,342

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
105A501039	Resistor	R291,R419,R438, R475,R480,R487, R488,R495,R502, R505,R506,R507, R508,R510,R518, R519	Telcordia Issue 1	Level I		16.00	0.002268	.4294	440974090.03
105A501529	Resistor	R469	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A502039	Resistor	R208,R413	Telcordia Issue 1	Level I		2.00	0.002268	.0537	440974090.03
105A503309	Resistor	R148,R149,R150, R151,R32	Telcordia Issue 1	Level I		5.00	0.002268	.1342	440974090.03
105A503333	Resistor	R441	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A503633	Resistor	R458	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A505109	Resistor	R57,R58,R59,R60, R61,R64	Telcordia Issue 1	Level I		6.00	0.002268	.1610	440974090.03
105A505629	Resistor	R464,R465,R504	Telcordia Issue 1	Level I		3.00	0.002268	.0805	440974090.03
105A507509	Resistor	R494,R601	Telcordia Issue 1	Level I		2.00	0.002268	.0537	440974090.03
105A507533	Resistor	R437	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A510009	Resistor	R232,R323,R324,R45, R472,R473,R474, R478,R479,R481,R53	Telcordia Issue 1	Level I		11.00	0.002268	.2952	440974090.03
105A510033	Resistor	R423,R457	Telcordia Issue 1	Level I		2.00	0.002268	.0537	440974090.03
105A510523	Resistor	R455	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A513009	Resistor	R493	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A518033	Resistor	R425	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A518229	Resistor	R440	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A522669	Resistor	R132,R46	Telcordia Issue 1	Level I		2.00	0.002268	.0537	440974090.03
105A523713	Resistor	R19	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A527403	Resistor	R47	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A529423	Resistor	R439	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A533269	Resistor	R48	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A549919	Resistor	R236,R238,R241	Telcordia Issue 1	Level I		3.00	0.002268	.0805	440974090.03
105A549969	Resistor	R54,R55	Telcordia Issue 1	Level I		2.00	0.002268	.0537	440974090.03
105A551119	Resistor	R527	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A553629	Resistor	R421	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A554923	Resistor	R456	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A560469	Resistor	R223,R231	Telcordia Issue 1	Level I		2.00	0.002268	.0537	440974090.03
105A561909	Resistor	R466	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A561924	Resistor	R490	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
105A700003	Resistor	L15,L16,L17,L18, R417,R426,R460, R529,R67,R70,R71	Telcordia Issue 1	Level I		11.00	0.002268	.2952	440974090.03

AAEON Reliability Prediction Report

Part Number 9697NUCV19-D
Reference Des
Date 11. 19, 2012
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00



Description Top-level assembly
File Name 9697NUCV19-D.RPJ
Time 15:08
Failure Rate 8.450085
MTBF 118,342

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
105B700009	Resistor	R1341,R168,R169, R196,R200,R234, R263,R272,R273, R282,R298,R310, R314,R333,R336, R337,R380,R381, R384,R386,R388, R389,R391,R393, R394,R395,R397, R407,R408,R56,R85, R86,R87,R88,R89, R91,R92,R96	Telcordia Issue 1	Level I		38.00	0.002268	1.0198	440974090.03
106B501032	Resistor	RT1,RT3,RT4	Telcordia Issue 1	Level I		3.00	0.011379	.4040	87878027.07
1121501690	Capacitor	C1,C11,C14,C144, C145,C146,C147, C148,C15,C150,C152, C153,C16,C168,C169, C17,C170,C171,C172, C173,C174,C175, C176,C177,C18,C180, C189,C19,C191,C193, C194,C195,C2,C20, C21,C210,C213,C217, C22,C224,C23,C230, C231,C232,C235, C243,C252,C253,	Telcordia Issue 1	Level I		98.00	0.004535	5.2600	220487045.01
1121501691	Capacitor	C600	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01
1124418090	Capacitor	C178,C179,C24,C25	Telcordia Issue 1	Level I		4.00	0.004535	.2147	220487045.01
1124427090	Capacitor	C221,C222	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
1124427091	Capacitor	C106,C107,C308	Telcordia Issue 1	Level I		3.00	0.004535	.1610	220487045.01
1124433090	Capacitor	C333	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01
1124468090	Capacitor	C346,C347	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
1124522190	Capacitor	C345,C348	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
1124533190	Capacitor	C317	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01
1129610080	Capacitor	C192,C200,C202, C216,C220,C223, C229,C245,C329, C330,C331,C361, C362,C363,C365, C374,C377,C383, C386,C391,C81,C83, C85	Telcordia Issue 1	Level I		23.00	0.004535	1.2345	220487045.01

AAEON Reliability Prediction Report

Part Number 9697NUCV19-D
Reference Des
Date 11. 19, 2012
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00



Description Top-level assembly
File Name 9697NUCV19-D.RPJ
Time 15:08
Failure Rate 8.450085
MTBF 118,342

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
1129622690	Capacitor	C142,C143,C214, C294,C332,C53,C54, C60,C61,C72,C77, C78	Telcordia Issue 1	Level I		12.00	0.004535	.6441	220487045.01
1129701791	Capacitor	C183,C184,C185, C186,C190,C197, C219,C239,C283, C284,C285,C286, C318,C366,C367, C368,C369,C370, C371	Telcordia Issue 1	Level I		19.00	0.004535	1.0198	220487045.01
1129710091	Capacitor	C257	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01
1129710390	Capacitor	C320,C321	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
1129710391	Capacitor	C266,C343,C344	Telcordia Issue 1	Level I		3.00	0.004535	.1610	220487045.01
1129715090	Capacitor	C392,C393	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
1189610192	Capacitor	TC11,TC12,TC5,TC7	Telcordia Issue 1			4.00	0.001822	.0862	548885106.58
1189622154	Capacitor	TC1,TC2	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
1189622194	Capacitor	TC3,TC4	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
1189633151	Capacitor	TC10,TC8,TC9	Telcordia Issue 1	Level I		3.00	0.004535	.1610	220487045.01
11A4433180	Capacitor	C34	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01
11B2701080	Capacitor	C328	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01
11C2510480	Capacitor	C291,C313,C315, C316,C338,C339	Telcordia Issue 1	Level I		6.00	0.004535	.3220	220487045.01
11C4522290	Capacitor	C300	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01
11E1510050	Capacitor	C334,C335,C336, C337	Telcordia Issue 1	Level I		4.00	0.004535	.2147	220487045.01
11E1522680	Capacitor	C359,C360	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
11E2501080	Capacitor	C295,C314	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
11E2510060	Capacitor	C292,C293,C311, C312	Telcordia Issue 1	Level I		4.00	0.004535	.2147	220487045.01
11E4433690	Capacitor	C109	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01
11E9501091	Capacitor	C13,C181,C182,C188, C198,C199,C201, C203,C206,C207, C208,C211,C212, C264,C277,C28,C29, C298,C299,C309, C322,C323,C327,C36, C37,C40,C42,C43, C44,C46,C47,C48, C51,C52,C56,C63, C66,C70,C71,C74, C76,C79,C80,C82, C84,C86,C88	Telcordia Issue 1	Level I		47.00	0.004535	2.5226	220487045.01
11E9510050	Capacitor	C306	Telcordia Issue 1	Level I		1.00	0.004535	.0537	220487045.01

AAEON Reliability Prediction Report

Part Number 9697NUCV19-D
Reference Des
Date 11. 19, 2012
Environment GF, GU - Ground Fixed, Uncontrolled
Temp. (°C) 25.00



Description Top-level assembly
File Name 9697NUCV19-D.RPJ
Time 15:08
Failure Rate 8.450085
MTBF 118,342

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Quantity	Failure Rate, Unit	Failure Rate, %	MTBF, Unit
11E9510490	Capacitor	C100,C101,C110, C111,C112,C113, C114,C115,C116, C117,C118,C119, C120,C121,C122, C123,C124,C125, C126,C127,C128, C129,C130,C131, C132,C133,C134, C135,C136,C137, C138,C139,C140, C141,C160,C161, C162,C163,C164,	Telcordia Issue 1	Level I		60.00	0.004535	3.2204	220487045.01
11E9610080	Capacitor	C209,C297,C301, C302,C324,C396,C90, C96,C98	Telcordia Issue 1	Level I		9.00	0.004535	.4831	220487045.01
11E9622050	Capacitor	C225,C234,C244,C38, C49,C55,C57,C62, C64,C65	Telcordia Issue 1	Level I		10.00	0.004535	.5367	220487045.01
11E9622080	Capacitor	C304,C305,C310	Telcordia Issue 1	Level I		3.00	0.004535	.1610	220487045.01
11E9647680	Capacitor	C196,C89	Telcordia Issue 1	Level I		2.00	0.004535	.1073	220487045.01
1211100113	Inductor	L4,L5,L6	Telcordia Issue 1	Level I		3.00	0.002268	.0805	440974090.03
1211100160	Inductor	L7	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
121110156M	Inductor	L9	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
121110226S	Inductor	L12,L13	Telcordia Issue 1	Level I		2.00	0.002268	.0537	440974090.03
121110226W	Inductor	L11	Telcordia Issue 1	Level I		1.00	0.002268	.0268	440974090.03
1211110062	Inductor	L10	Telcordia Issue 1	Level I		1.00	0.086173	1.0198	11604581.32
1212306030	Resistor	FB1,FB10,FB11,FB3, FB4,FB5,FB8,FB9	Telcordia Issue 1	Level I		8.00	0.011379	1.0773	87878027.07
12123C0003	Inductor	FB6,FB7,L8	Telcordia Issue 1	Level I		3.00	0.002268	.0805	440974090.03
123132505D	Miscellaneous	Y2,Y4,Y6	Telcordia Issue 1	Level I		3.00	0.150000	5.3254	6666666.67
1231327053	Miscellaneous	Y5	Telcordia Issue 1	Level I		1.00	0.150000	1.7751	6666666.67
1231332722	Miscellaneous	Y3	Telcordia Issue 1	Level I		1.00	0.150000	1.7751	6666666.67
1301003440	Semiconductor	D25	Telcordia Issue 1	Level I	36.40	1.00	0.060663	.7179	16484472.46
1301003440	Semiconductor	D26	Telcordia Issue 1	Level I		1.00	0.023881	.2826	41874327.58
1301005444	Semiconductor	D1,D14,D15,D16,D17, D18,D19,D21,D23, D24,D29,D4,D5,D6, D7,D8,D9	Telcordia Issue 1	Level I		17.00	0.023881	4.8044	41874327.58
1301005447	Semiconductor	D11,D28	Telcordia Issue 1	Level I		2.00	0.023881	.5652	41874327.58
1301005450	Semiconductor	D2,D30	Telcordia Issue 1	Level I		2.00	0.023881	.5652	41874327.58
1304001340	Semiconductor	D20	Telcordia Issue 1	Level I		1.00	0.004877	.0577	205063180.81

