

# NIM-S13D

## Reliability Prediction Report (MTBF)

Summary	Failure Rate: 2042.305465 MTBF: 489.643 Hours
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Issue date	QE Manager	Test Engineer
2017-04-14	KJ Wang	Max Chang

# Reliability Prediction (MTBF)

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**I . Model Name:** NIM-S13D

**II . Prediction Date:** April, 14, 2017

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

**IV . Predicted by:** Max Chang

**V . Equipment:** Windchill Quality Solutions 10.1

## **VI. Simulation Environment:**

- Temperature: 30 degrees C
- Standard: Telcordia (Bellcore) Standard

## **VII. Term and Definition:**

- Unit : An assembly of device.
- Duty Cycle : Used to specify the percentage of time that the element is in an on state, and it is equal to the percentage of total time the item is in the active environment.
- Quantity : The quantity of the selected item.
- Failure Rate : Used to specify that the failure rate is to be calculated based the selected Calculation models. The Failure rate multiplier is 1000000000.
- MTBF : MTBF is always specified in hours.

**VIII. Prediction Result:**

NIM-S13D (9697S13D00-D):

- Failure Rate: 2042.305465

- MTBF: 489,643 Hours

**Reliability Prediction  
Summary**

**File Name:** NIM-S13D.rfp  
**System:** 9697S13D00-D  
**Ref Des:**  
**Description:**

**Failure Rate:** 2042.305465  
**MTBF (hrs):** 489,643  
**Temperature:** 30  
**Environment:** GF, GU - Ground Fixed, Uncontrolled

Assembly Name	Part Number	Ref Des	Quantity	Failure Rate	MTBF
NIM-S13D	9697S13D00-D		1	2042.305465	489,643

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**Assembly:** 9697S13D00-D  
**Ref Des:**  
**Description:**

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**Temperature:** 30  
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Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
1050501054	Resistor	R458	2.547039	1	3.541821
1050503324	Resistor	R457	2.547039	1	3.541821
1050504724	Resistor	R431	2.547039	1	3.541821
1050504764	Resistor	R456	2.547039	1	3.541821
1050506224	Resistor	R97	2.547039	1	3.541821
1050510034	Resistor	R242,R45 5	2.547039	2	6.490186
1050516004	Resistor	R376,R37 7,R384, R385,R38 6,R387, R388,R38 9,R400, R401,R40 2,R403, R410,R41 1,R412, R413	2.547039	16	44.592810
1050549934	Resistor	R1116	2.547039	1	3.541821
1050700002	Resistor	R130,R27	2.547039	2	6.490186
105A501139	Resistor	R76	2.547039	1	3.541821
105A501529	Resistor	R38	2.547039	1	3.541821
105A501539	Resistor	R240	2.547039	1	3.541821
105A502039	Resistor	R1120	2.547039	1	3.541821
105A514723	Resistor	R71	2.547039	1	3.541821
105A523713	Resistor	R330	2.547039	1	3.541821
105A530113	Resistor	R170	2.547039	1	3.541821
105A533223	Resistor	R81,R92	2.547039	2	6.490186
105A546423	Resistor	R99	2.547039	1	3.541821
105A593123	Resistor	R1121	2.547039	1	3.541821
105A700003	Resistor	R104,R10 9,R512,R5 4	2.547039	4	12.149228

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105A700009	Resistor	R10,R100, R102,R10 6, R108,R11, R111, R1125,R1 13,R115, R117,R11 9,R12,R12 1, R123,R12 5,R127, R129,R13 4,R136, R138,R15 5,R156, R165,R18 4,R191,R2 4, R254,R26 5,R29,R29 2, R299,R30, R303,R30 5, R359,R36 5,R372, R373,R40 5,R427, R428,R48, R5,R6,R7, R73,R78,R 8,R82,R85 , R89,	2.547039	57	152.429409
105A700139	Resistor	R1,R14,R1 41,R4	2.547039	4	12.149228

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105A701039	Resistor	R103,R159,R161,R162,R163,R164,R193,R201,R203,R209,R226,R255,R263,R275,R297,R311,R320,R329,R351,R356,R361,R53,R56,R58,R59,R75,R80	2.547039	27	73.758599
105A703309	Resistor	R65	2.547039	1	3.541821
105A703329	Resistor	R194,R202,R261,R262,R270,R290,R301,R308,R309,R315,R323,R352,R353,R354,R357,R360,R362,R37,R50	2.547039	20	55.234238
105A703363	Resistor	R426,R83	2.547039	2	6.490186
105A708229	Resistor	R205,R210,R224,R350	2.547039	4	12.149228
105A747009	Resistor	R186,R218,R223,R355	2.547039	4	12.149228
111161019C	Capacitor	C1,C2	1.128806	2	2.664608
1124427090	Capacitor	C34,C38	1.128806	2	2.664608
1129601080	Capacitor	C152,C167,C184,C187,C201,C217,C226,C234,C249,C327	1.128806	10	12.180111

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1129610080	Capacitor	C107,C25 4,C255, C318,C31 9,C321, C337,C34 2,C81,C86 , C91,C92	1.128806	12	14.522865
1129710090	Capacitor	C36	1.128806	1	1.418485
1129710390	Capacitor	C166,C16 8,C176, C183,C19 5,C196, C200,C20 2,C209, C210,C22 3,C224, C235,C23 7,C250, C252,C25 6,C261	1.128806	18	21.515320
1189633151	Capacitor	C142,C23 2	1.128806	2	2.664608
1189656196	Capacitor	C334	1.128806	1	1.418485
11C2510480	Capacitor	C125,C12 6	1.128806	2	2.664608
11C2522480	Capacitor	C873	1.128806	1	1.418485
11C2610030	Capacitor	C3,C32	1.128806	2	2.664608
11C4501790	Capacitor	C162,C17 3,C185, C192,C19 8,C218, C225,C23 6,C260	1.128806	9	11.005528
11C4522191	Capacitor	C329	1.128806	1	1.418485
11C9510490	Capacitor	C104,C10 9,C15,C16  C17,C18,C 19,C20, C21,C22,C 25,C257, C258,C31 7,C320, C322,C32 6,C328, C340,C34 1,C40,C87 , C88,C99	1.128806	24	28.473303
11E1510050	Capacitor	C332,C33 3,C335	1.128806	3	3.883281



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11E2501690	Capacitor	C108,C23, C30,C31	1.128806	4	5.079407
11E2510060	Capacitor	C241,C24 2,C243, C244,C24 5,C246, C247,C24 8	1.128806	8	9.828323
11E2522090	Capacitor	C911	1.128806	1	1.418485
11E9501091	Capacitor	C28	1.128806	1	1.418485
11E9547681	Capacitor	C27	1.128806	1	1.418485
11E9610080	Capacitor	C164,C17 9,C180, C207,C20 8,C24,C25 1, C259,C39	1.128806	9	11.005528
11E9622080	Capacitor	C325,C33 0,C331	1.128806	3	3.883281
11EA647010	Capacitor	C143,C17 5,C193, C214,C22 7,C228, C253	1.128806	7	8.647986
121110226X	Inductor	L3	4.944252	1	6.461578
1211110062	Inductor	L1	4.944252	1	6.461578
1211133075	Inductor	L2	4.944252	1	6.461578
1212306030	Inductor	FB27,FB3 0,FB31, FB35,FB3 6,FB37, FB38	4.944252	7	38.504501
12123A0009	Inductor	FB2,FB33, FB45,FB4 6	4.944252	4	22.772366
12123C000A	Inductor	FB10,FB1 1,FB12, FB17,FB1 8,FB42, FB43,FB9	4.944252	8	43.717664
123132505D	Miscellaneous	Y2	19.200000	1	41.938810
1304200043	Optical Device	LED10,LE D11,LED1 2, LED13,LE D17,LED1 8, LED19,LE D20	79.003355	8	841.861418
1315070020	Semiconductor	Q15	22.463360	1	31.602965

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1315200312	Semiconductor	Q1,Q13,Q14,Q2,Q3,Q4	22.463360	6	156.767054
1430006710	Integrated Circuit	U100	43.803003	1	85.184662
1440038080	Integrated Circuit	U6,U7	43.803003	2	146.310248
1440580EB0	Integrated Circuit	U5	43.803003	1	85.184662
14S3112400	Integrated Circuit	U3	43.803003	1	85.184662
14S6325600	Integrated Circuit	U9	43.803003	1	85.184662
1654902037	Connection	CN6,CN7,CN8,CN9	16.184835	4	88.145664