

BAB V

KESIMPULAN

1. Target antenna yang beroperasi pada frekuensi S-band satelit mikro LAPAN TUBSAT terlihat dari hasil simulasi dan pengukuran terhadap parameter S_{11} . Untuk target resonansi di daerah frekuensi center 2,25 GHz dari hasil simulasi dan pengukuran diperoleh penyimpangan atau pergeseran frekuensi resonansi sebesar 0,12%. Untuk pergeseran bandwidth Return Loss hasil pengukuran dengan batas minimum 13,03 dB dan maksimum 42,42. Dan untuk pergeseran VSWR dari hasil simulasi 1,105 – 1,566 sedangkan dengan metode pengukuran didapat 1,0015 – 1,575. Impedansi masukan dari hasil proses simulasi 54,9 Ω dan hasil pengukurannya 54,5 + j6,5131 Ω . Penggunaan *Stub line* memberikan kondisi *matching* sehingga dapat untuk meng-eliminasi refleksi akibat perbedaan impedansi beban dengan impedansi gelombang.
2. Dengan parameter bandwidth axial ratio ≤ 3 dB dari hasil simulasi diperoleh 48,3 MHz dengan sudut beamwidth sebesar 118,77°. Nilai maksimum total power radiasi adalah 6,09 dB dan minimumnya -0,564 dB. Dari hasil rancang bangun antenna dengan pemotongan 45° untuk dua sudutnya (kanan atas dan kiri bawah) menghasilkan polarisasi melingkar ke kanan (RHCP).
3. Hasil dari prototype antenna diperoleh hasil antenna mikrostrip yang minimalis dengan dimensi 60 mm x 80 mm dengan penguatan dB dan maksimum *directivity* (Antena ini memiliki sifat *monopole*).

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LAMPIRAN

Hasil Pengujian

- **SWR**
- **Smith Chart**
- **Return Loss**

CSV A.01.01

Agilent Te N5230C MY490006 A.08.50.10

Agilent N5230C: A.08.50.10

Date: Friday April 08 2011 15:35:14

BEGIN CH1_DATA

Freq(Hz)	S11(REAL)	S11(IMG)	S12(REAL)	S12(IMG)	S21(REAL)	S21(IMG)	S22(REAL)	S22(IMG)
1E+09	-0.48551	0.85005	3.81E-05	0.000144	5.87E-05	-1.57E-05	0.99858	-0.01892
1.01E+09	-0.45455	0.866872	-0.00016	-6.02E-05	-1.40E-05	2.12E-05	0.998341	-0.01878
1.02E+09	-0.42288	0.882281	8.00E-05	-0.00016	-7.19E-06	-3.74E-05	0.998956	-0.01841
1.03E+09	-0.39086	0.897095	-0.00018	-2.67E-05	2.87E-06	-4.77E-05	0.999081	-0.01849
1.04E+09	-0.35818	0.910493	-2.00E-05	1.14E-05	-3.38E-06	-3.45E-05	0.999091	-0.01788
1.05E+09	-0.32604	0.923711	-8.00E-05	0.000183	-0.00011	1.15E-05	0.999234	-0.01743
1.06E+09	-0.29427	0.934415	-4.97E-05	4.87E-05	-2.45E-05	-7.51E-05	1.000157	-0.01721
1.07E+09	-0.26202	0.944847	0.000132	3.11E-05	-5.00E-05	-5.52E-05	1.00041	-0.01695
1.08E+09	-0.22991	0.954631	1.68E-05	0.000102	4.50E-05	7.40E-05	1.000636	-0.01615
1.09E+09	-0.19761	0.961166	2.50E-05	-8.67E-05	8.32E-06	-2.43E-05	1.000396	-0.01582
1.1E+09	-0.16523	0.968053	-9.80E-05	7.30E-06	-1.83E-05	6.24E-05	1.000382	-0.01584
1.11E+09	-0.13324	0.972573	-3.16E-05	-0.00011	8.39E-05	9.42E-06	1.001058	-0.01591
1.12E+09	-0.10153	0.975929	-3.22E-05	6.16E-05	0.0001	-0.00013	1.001265	-0.01504
1.13E+09	-0.06855	0.978805	9.40E-05	-3.56E-06	-4.40E-05	-2.58E-05	1.001307	-0.01566
1.14E+09	-0.0353	0.979208	8.66E-05	-7.77E-07	-6.23E-06	-3.99E-05	1.001369	-0.01557
1.15E+09	-0.00093	0.979238	5.96E-05	-5.69E-05	0.00012	3.09E-05	1.000899	-0.01615
1.16E+09	0.034235	0.977419	1.42E-05	-5.14E-05	-6.81E-06	7.89E-05	1.00063	-0.01651
1.17E+09	0.069862	0.974838	-0.00012	2.67E-05	6.06E-06	-2.08E-05	1.000489	-0.01724
1.18E+09	0.105267	0.971681	-5.90E-05	1.82E-06	9.32E-05	-2.49E-05	1.00088	-0.01843
1.19E+09	0.141821	0.965833	2.08E-06	1.74E-05	-3.63E-05	0.000134	1.000483	-0.01914
1.2E+09	0.178344	0.960454	3.18E-06	7.12E-05	-3.84E-05	-1.93E-05	1.000321	-0.02048
1.21E+09	0.214483	0.952711	-2.13E-05	5.40E-06	-5.42E-05	1.54E-05	1.000598	-0.021
1.22E+09	0.250711	0.944152	-2.93E-06	-3.75E-05	3.08E-05	0.0001	1.00021	-0.02145
1.23E+09	0.2859	0.935099	-9.79E-06	-4.76E-05	9.87E-05	0.00011	0.999668	-0.02226
1.24E+09	0.32125	0.923178	5.11E-05	9.83E-05	-1.36E-05	-1.40E-05	0.999961	-0.02253
1.25E+09	0.355545	0.911256	4.56E-05	-5.41E-05	-4.44E-06	1.88E-05	0.999926	-0.02241
1.26E+09	0.38909	0.898229	1.18E-05	1.14E-05	7.23E-05	6.07E-05	0.999539	-0.02308
1.27E+09	0.421795	0.883683	3.69E-05	3.77E-07	-7.21E-05	-6.95E-05	0.999787	-0.02296
1.28E+09	0.453713	0.867109	2.99E-05	-7.36E-05	-1.39E-05	-0.00011	1.000036	-0.02269
1.29E+09	0.485305	0.849862	3.32E-05	-7.11E-05	-3.76E-05	-3.08E-05	0.999904	-0.0225
1.3E+09	0.515879	0.831805	1.43E-05	1.93E-05	-6.43E-05	-0.00012	1.000594	-0.02227
1.31E+09	0.545538	0.810902	-0.00013	-0.00011	-6.71E-06	-6.39E-05	1.000799	-0.02172
1.32E+09	0.5752	0.78929	5.65E-06	-7.91E-06	2.60E-05	-0.00014	1.000694	-0.02192
1.33E+09	0.604415	0.765913	9.77E-05	-1.83E-06	-4.10E-05	3.28E-05	1.000767	-0.02162
1.34E+09	0.632716	0.741022	-7.98E-05	-0.00012	-7.24E-06	9.71E-05	1.000319	-0.02108
1.35E+09	0.661133	0.714863	-2.11E-05	3.87E-07	-0.0001	9.53E-05	1.000302	-0.02133
1.36E+09	0.689197	0.68734	-2.79E-05	-2.67E-05	-2.24E-05	5.37E-05	1.000058	-0.02218
1.37E+09	0.716565	0.657569	-8.33E-05	-2.68E-05	-3.84E-05	9.59E-05	0.99966	-0.02185
1.38E+09	0.743292	0.626597	5.10E-05	8.41E-05	-0.00012	1.66E-05	0.999525	-0.02227
1.39E+09	0.768687	0.59443	-2.26E-05	2.37E-06	2.13E-05	2.33E-05	0.999765	-0.02278
1.4E+09	0.793455	0.560928	5.63E-05	0.000115	-3.95E-05	-7.97E-05	0.999262	-0.0231
1.41E+09	0.816644	0.525996	6.14E-05	8.33E-05	2.06E-05	-1.64E-06	0.999212	-0.02338
1.42E+09	0.838785	0.490519	-4.93E-05	5.41E-06	-4.14E-05	1.57E-05	0.998991	-0.02438

1.43E+09	0.858756	0.453802	9.90E-06	0.000102	-2.41E-05	2.43E-05	0.998919	-0.02521
1.44E+09	0.877069	0.415905	3.09E-05	-3.16E-05	-0.00016	4.92E-05	0.999015	-0.02578
1.45E+09	0.895024	0.377413	-1.87E-05	3.24E-05	1.20E-05	2.38E-06	0.999895	-0.02652
1.46E+09	0.909635	0.337809	3.45E-06	2.82E-05	-1.84E-05	0.000106	0.999491	-0.02669
1.47E+09	0.921615	0.296802	-6.27E-05	-5.44E-05	1.17E-05	-1.04E-05	0.999217	-0.02704
1.48E+09	0.934128	0.255877	-0.00012	0.000149	3.75E-05	2.29E-05	1.000181	-0.02703
1.49E+09	0.94326	0.213741	-1.29E-05	-1.03E-05	3.15E-05	-9.25E-05	1.000122	-0.02637
1.5E+09	0.95117	0.16997	7.93E-06	-1.41E-05	6.53E-05	8.54E-06	0.999657	-0.02644
1.51E+09	0.956842	0.12528	0.00018	-4.85E-05	6.80E-05	-3.91E-05	0.999971	-0.02597
1.52E+09	0.959501	0.08138	-7.23E-05	-6.22E-05	-5.03E-05	-5.19E-05	0.999875	-0.02517
1.53E+09	0.959367	0.035392	-9.11E-05	-6.69E-05	-6.44E-05	-9.89E-05	1.000535	-0.02432
1.54E+09	0.960004	-0.01186	8.62E-05	-2.60E-05	5.18E-05	-0.00011	0.999246	-0.0235
1.55E+09	0.957617	-0.06017	5.85E-05	9.61E-05	-0.00012	6.96E-05	0.999395	-0.02296
1.56E+09	0.950636	-0.10867	5.06E-05	8.56E-05	-3.52E-05	-8.01E-05	0.999103	-0.02243
1.57E+09	0.942255	-0.15841	3.37E-05	3.35E-05	-8.11E-05	2.06E-05	0.999113	-0.02187
1.58E+09	0.932285	-0.20858	-5.20E-05	3.63E-05	-2.53E-05	-6.43E-06	0.998821	-0.02234
1.59E+09	0.917553	-0.25918	2.75E-05	1.01E-05	5.08E-05	-5.01E-05	0.998982	-0.02253
1.6E+09	0.901515	-0.30936	-1.36E-05	-3.69E-05	-5.65E-05	-3.62E-05	0.999877	-0.02327
1.61E+09	0.880531	-0.35981	1.60E-05	0.000107	-2.45E-05	-2.87E-05	0.998936	-0.02352
1.62E+09	0.856832	-0.4096	2.74E-05	3.02E-05	-2.76E-05	7.62E-05	0.999309	-0.02488
1.63E+09	0.829497	-0.45847	-6.23E-05	-5.93E-05	4.43E-05	-3.12E-05	0.998684	-0.02508
1.64E+09	0.798216	-0.50582	4.82E-05	6.71E-05	-1.57E-05	0.000123	0.999794	-0.02589
1.65E+09	0.764276	-0.55355	-1.20E-05	-1.70E-06	3.67E-05	-4.85E-05	0.999531	-0.02683
1.66E+09	0.724939	-0.59762	5.84E-05	-3.72E-05	-2.93E-07	7.08E-05	0.999194	-0.02766
1.67E+09	0.683673	-0.64099	5.98E-05	8.47E-06	-1.80E-05	9.31E-06	0.999129	-0.02841
1.68E+09	0.638652	-0.6829	1.77E-05	-1.22E-05	-6.46E-05	-4.01E-05	0.998681	-0.02934
1.69E+09	0.590539	-0.72145	-3.69E-05	-3.42E-05	0.000187	-0.00013	1.000369	-0.02978
1.7E+09	0.538959	-0.7579	6.86E-05	6.50E-05	2.52E-05	-4.57E-05	1.000511	-0.03035
1.71E+09	0.4835	-0.78958	-5.68E-05	0.000103	4.26E-06	-5.28E-07	1.000309	-0.02992
1.72E+09	0.424551	-0.81927	-1.97E-05	-3.20E-05	-0.00012	4.75E-05	0.99973	-0.03018
1.73E+09	0.363014	-0.84547	-7.51E-05	1.33E-05	-9.06E-05	-4.78E-05	0.999777	-0.02975
1.74E+09	0.297739	-0.86585	-3.64E-05	-0.00011	-2.49E-05	3.29E-05	0.999204	-0.02948
1.75E+09	0.230076	-0.88438	7.55E-05	-3.99E-05	1.25E-05	3.17E-05	0.999449	-0.02874
1.76E+09	0.15917	-0.89559	-2.14E-06	2.03E-05	-1.66E-05	-1.53E-05	0.998832	-0.02806
1.77E+09	0.085816	-0.90131	5.91E-05	-1.28E-05	0.000127	-3.04E-06	0.999469	-0.02719
1.78E+09	0.011164	-0.90143	-4.64E-07	-7.23E-05	-0.00012	0.000105	0.999283	-0.02667
1.79E+09	-0.06574	-0.89355	-1.34E-05	1.41E-05	-0.00011	-0.00013	0.999947	-0.02622
1.8E+09	-0.14255	-0.88077	2.07E-05	-2.75E-05	-6.01E-05	-1.12E-05	0.999174	-0.02631
1.81E+09	-0.21899	-0.85842	-2.53E-05	3.95E-05	-5.63E-05	-3.72E-05	0.999413	-0.02649
1.82E+09	-0.29454	-0.83005	-0.00011	-2.04E-05	0.000137	2.33E-06	0.999023	-0.02712
1.83E+09	-0.36786	-0.79415	1.20E-05	4.23E-05	1.63E-05	-2.63E-05	0.999313	-0.02784
1.84E+09	-0.43883	-0.75074	-5.87E-05	7.75E-05	-9.62E-06	-3.49E-05	0.998636	-0.02897
1.85E+09	-0.50439	-0.69895	2.25E-05	-4.72E-05	-3.59E-05	-3.07E-05	0.999312	-0.02991
1.86E+09	-0.5673	-0.64317	-7.36E-05	-1.60E-05	1.46E-05	-0.00015	0.999468	-0.031
1.87E+09	-0.62306	-0.57988	4.70E-05	-2.28E-05	1.84E-05	-3.30E-05	0.999126	-0.03181
1.88E+09	-0.67364	-0.51057	1.30E-05	-6.55E-05	6.79E-05	-1.72E-05	0.99969	-0.03245
1.89E+09	-0.71644	-0.43604	0.000119	0.000124	6.09E-05	2.88E-05	0.998406	-0.03306
1.9E+09	-0.75145	-0.35633	0.000121	-7.50E-05	-8.01E-05	4.49E-05	0.998952	-0.03354
1.91E+09	-0.77857	-0.27186	-3.52E-05	2.73E-05	5.68E-05	4.10E-05	0.998505	-0.03405
1.92E+09	-0.7965	-0.18494	-9.57E-05	7.43E-05	2.73E-05	-5.56E-05	0.998942	-0.03406

1.93E+09	-0.80526	-0.09537	-0.00014	2.90E-05	-7.70E-05	-9.12E-05	0.998937	-0.03378
1.94E+09	-0.8021	-0.00517	2.38E-05	9.75E-06	1.60E-05	1.87E-05	0.998454	-0.03312
1.95E+09	-0.78909	0.084726	-5.61E-05	6.83E-05	9.44E-05	4.54E-06	0.999489	-0.03269
1.96E+09	-0.76627	0.173365	6.81E-06	8.58E-05	-2.71E-05	-1.11E-05	0.999229	-0.03228
1.97E+09	-0.73313	0.258762	1.00E-04	5.37E-05	3.98E-05	6.48E-05	1.000002	-0.03141
1.98E+09	-0.69026	0.338945	5.06E-05	5.82E-05	3.26E-05	-5.29E-05	1.000272	-0.03087
1.99E+09	-0.63805	0.412677	5.24E-05	-0.00013	5.25E-05	-1.05E-06	0.998867	-0.03041
2E+09	-0.57899	0.479622	-6.35E-05	5.33E-05	5.44E-06	4.18E-05	0.999085	-0.02983
2.01E+09	-0.51345	0.538502	1.50E-05	-4.52E-05	9.42E-06	6.79E-06	0.999326	-0.02867
2.02E+09	-0.44093	0.587352	6.29E-05	-4.27E-05	-7.30E-05	-3.23E-05	0.998963	-0.02864
2.03E+09	-0.3642	0.627184	2.97E-06	7.27E-05	2.07E-05	9.08E-05	0.999212	-0.02813
2.04E+09	-0.28351	0.655393	-3.34E-05	3.88E-05	-4.65E-05	-6.76E-05	0.999232	-0.02792
2.05E+09	-0.19998	0.673725	5.71E-05	4.79E-06	-8.70E-06	-0.00015	0.999213	-0.0282
2.06E+09	-0.11499	0.678948	4.93E-05	-5.73E-05	4.50E-05	-4.60E-05	0.99927	-0.02981
2.07E+09	-0.03006	0.672862	8.89E-05	-8.85E-05	-1.29E-05	-0.00011	0.998716	-0.03064
2.08E+09	0.053741	0.654577	6.33E-05	9.72E-06	3.29E-05	-6.57E-05	0.998956	-0.03181
2.09E+09	0.134771	0.623498	0.000101	-5.97E-05	-8.09E-05	-2.18E-05	0.999551	-0.03337
2.1E+09	0.209467	0.579606	1.15E-05	6.73E-06	1.02E-05	0.000102	0.999149	-0.03495
2.11E+09	0.278057	0.525151	-7.14E-05	-6.61E-05	6.91E-05	-0.00011	0.999235	-0.03615
2.12E+09	0.335345	0.460196	-2.77E-06	1.55E-05	5.83E-05	7.00E-06	0.999475	-0.03687
2.13E+09	0.379903	0.385047	2.51E-05	7.00E-05	6.24E-05	1.47E-05	0.99961	-0.03806
2.14E+09	0.410025	0.303838	-2.82E-05	9.47E-06	-8.51E-05	-9.71E-05	0.999263	-0.03839
2.15E+09	0.421447	0.218507	-4.43E-05	-1.87E-05	-1.46E-05	2.36E-05	0.999072	-0.03828
2.16E+09	0.413673	0.133852	7.46E-06	5.93E-07	1.51E-05	-4.31E-06	0.999524	-0.03762
2.17E+09	0.386141	0.055199	2.88E-05	-6.86E-05	-4.90E-05	-5.60E-05	0.998832	-0.03791
2.18E+09	0.338425	-0.01205	2.35E-05	0.000124	-6.55E-05	-3.70E-05	0.99857	-0.03658
2.19E+09	0.275816	-0.06149	3.93E-05	9.79E-05	-3.07E-05	0.000164	0.999043	-0.03634
2.2E+09	0.20432	-0.08859	-1.27E-05	-9.42E-05	-3.34E-06	3.23E-05	0.998946	-0.03539
2.21E+09	0.131762	-0.0915	-3.82E-05	1.13E-05	-2.69E-05	-1.46E-05	0.999522	-0.03437
2.22E+09	0.068614	-0.07144	6.64E-05	7.54E-05	-5.95E-06	6.49E-05	0.999831	-0.03429
2.23E+09	0.023193	-0.03452	4.41E-05	5.11E-05	-6.07E-05	9.09E-06	0.999384	-0.03384
2.24E+09	0.000468	0.007979	-3.09E-05	1.65E-05	-8.14E-05	-5.96E-05	1.000301	-0.03194
2.25E+09	-0.00016	0.045377	6.95E-05	8.30E-05	-0.00011	-4.64E-05	1.000393	-0.03152
2.26E+09	0.013907	0.06783	-2.15E-06	2.02E-05	-3.92E-05	2.87E-05	0.999038	-0.03194
2.27E+09	0.033692	0.071117	5.25E-05	-2.82E-05	-1.22E-05	0.000122	0.999302	-0.0326
2.28E+09	0.048611	0.055003	4.86E-05	5.82E-05	1.78E-05	2.98E-05	0.99921	-0.032
2.29E+09	0.050062	0.025579	-6.54E-05	-4.33E-05	5.82E-05	6.30E-05	0.999448	-0.03297
2.3E+09	0.032125	-0.01008	5.26E-05	-1.08E-05	1.70E-06	-7.08E-05	0.998924	-0.03322
2.31E+09	-0.00771	-0.0417	-3.56E-05	4.72E-05	0.000136	0.000201	0.998409	-0.03439
2.32E+09	-0.06617	-0.05959	-1.62E-05	7.60E-06	-1.06E-07	2.80E-05	0.998629	-0.03615
2.33E+09	-0.1376	-0.05511	4.90E-05	-3.12E-05	4.09E-06	4.28E-05	0.998362	-0.03733
2.34E+09	-0.21218	-0.02397	1.49E-05	5.75E-05	-0.00012	-2.33E-05	0.998422	-0.03869
2.35E+09	-0.27972	0.033193	1.56E-05	4.37E-05	-2.72E-05	7.90E-05	0.998264	-0.03995
2.36E+09	-0.3323	0.113019	3.46E-05	-1.43E-05	2.26E-05	2.75E-05	0.998732	-0.04141
2.37E+09	-0.3622	0.208963	-4.94E-05	-5.74E-05	-4.54E-05	-4.05E-05	0.998726	-0.04163
2.38E+09	-0.36794	0.311536	-3.27E-05	0.000125	-5.32E-05	-4.69E-05	0.998315	-0.04176
2.39E+09	-0.35042	0.414836	-3.78E-05	-1.40E-05	-5.88E-05	4.23E-05	0.997986	-0.04204
2.4E+09	-0.30964	0.508907	3.44E-05	6.71E-05	0.000134	-2.84E-05	0.998527	-0.04076
2.41E+09	-0.25304	0.59135	-5.27E-05	0.000122	1.50E-05	3.31E-05	0.998047	-0.0403
2.42E+09	-0.18416	0.659448	-5.22E-05	-2.23E-05	9.45E-05	9.39E-05	0.999632	-0.03867

2.43E+09	-0.10781	0.712037	3.02E-05	1.32E-05	-6.77E-05	8.62E-05	0.999646	-0.03745
2.44E+09	-0.02795	0.749696	-1.69E-08	-2.00E-05	-2.37E-05	-3.07E-05	0.999446	-0.0367
2.45E+09	0.053001	0.773931	-4.88E-05	-0.00011	4.57E-05	4.52E-05	0.999124	-0.03531
2.46E+09	0.133156	0.786644	-1.23E-05	6.30E-05	5.32E-05	0.000169	0.999065	-0.03511
2.47E+09	0.211047	0.788143	-4.26E-05	-7.28E-05	-0.00013	-7.97E-05	1.00006	-0.03494
2.48E+09	0.285713	0.781122	-3.63E-05	4.22E-05	1.41E-05	9.88E-05	0.999633	-0.03512
2.49E+09	0.356596	0.765558	5.59E-05	-8.52E-05	2.97E-05	-1.13E-05	0.999948	-0.03468
2.5E+09	0.423824	0.744747	2.17E-05	-5.08E-05	-6.93E-05	7.14E-06	0.998522	-0.03602
2.51E+09	0.486144	0.717178	6.61E-05	-6.65E-05	-2.97E-05	7.70E-05	0.998834	-0.03629
2.52E+09	0.544979	0.685705	3.59E-05	9.54E-05	1.01E-05	4.86E-05	0.998829	-0.03801
2.53E+09	0.599743	0.650707	-3.21E-05	-8.57E-05	-5.96E-05	-2.02E-05	0.998015	-0.0393
2.54E+09	0.648728	0.612638	4.23E-05	-3.49E-05	-9.52E-05	-9.52E-06	0.998334	-0.03947
2.55E+09	0.694088	0.57202	-4.18E-05	-4.69E-05	-2.87E-05	4.76E-05	0.998513	-0.04114
2.56E+09	0.733522	0.52961	-0.00011	0.000121	-8.44E-06	-5.50E-05	0.997257	-0.04239
2.57E+09	0.76842	0.485883	-2.47E-05	3.63E-05	5.67E-05	-8.07E-05	0.99789	-0.04332
2.58E+09	0.799551	0.441959	-5.01E-05	3.00E-05	-4.29E-05	1.01E-05	0.997881	-0.04481
2.59E+09	0.82686	0.397678	0.000138	-4.00E-05	-5.85E-05	-2.84E-05	0.998711	-0.04591
2.6E+09	0.850853	0.353626	-5.99E-05	0.000132	-2.91E-05	8.49E-05	0.998683	-0.04637
2.61E+09	0.871032	0.309555	4.28E-05	3.64E-05	1.68E-05	1.40E-05	0.998721	-0.04661
2.62E+09	0.887711	0.266052	-1.53E-05	1.77E-06	-5.26E-05	1.11E-05	0.999594	-0.0457
2.63E+09	0.90206	0.221917	-2.48E-05	-6.16E-05	-9.81E-05	-0.0001	0.999289	-0.04571
2.64E+09	0.913672	0.178233	-1.72E-05	-0.0001	4.27E-05	-6.58E-06	0.999188	-0.04455
2.65E+09	0.922845	0.134782	-1.20E-05	5.51E-05	-6.77E-05	-5.46E-05	0.99952	-0.04284
2.66E+09	0.929863	0.09106	4.15E-05	5.33E-05	-2.30E-05	7.00E-05	0.999328	-0.04161
2.67E+09	0.933515	0.047399	2.17E-05	-2.67E-05	4.26E-05	-6.66E-05	1.000122	-0.04052
2.68E+09	0.937212	0.00342	-5.81E-05	-4.22E-05	-2.88E-05	-5.08E-05	0.999651	-0.0392
2.69E+09	0.936781	-0.03997	2.64E-05	-3.50E-05	7.70E-05	2.80E-05	0.998724	-0.03802
2.7E+09	0.934344	-0.084	3.91E-05	-2.28E-06	6.07E-05	-1.26E-05	0.999296	-0.03712
2.71E+09	0.932118	-0.12726	4.35E-05	7.31E-05	5.64E-05	-3.60E-05	0.999122	-0.03738
2.72E+09	0.926931	-0.16933	-0.00011	-9.84E-05	-5.27E-05	0.000173	0.999071	-0.03774
2.73E+09	0.919541	-0.21188	-9.20E-05	8.41E-05	-4.85E-05	0.000118	0.998622	-0.03797
2.74E+09	0.910933	-0.25234	-0.0001	-9.84E-05	0.000141	7.72E-05	0.998017	-0.03945
2.75E+09	0.899992	-0.29248	-3.49E-05	1.44E-05	5.98E-05	-1.11E-06	0.998594	-0.04024
2.76E+09	0.887351	-0.3306	6.87E-05	-4.33E-05	8.09E-05	2.73E-05	0.997921	-0.0414
2.77E+09	0.873346	-0.36759	-0.00018	5.47E-05	2.27E-05	-5.47E-05	0.997521	-0.04256
2.78E+09	0.858616	-0.40302	-6.72E-06	-2.37E-05	5.23E-06	5.00E-05	0.997762	-0.04342
2.79E+09	0.842602	-0.43683	-4.93E-05	0.000117	8.34E-05	1.60E-05	0.997015	-0.04487
2.8E+09	0.825374	-0.46851	-7.64E-05	-0.0001	2.57E-05	7.67E-06	0.998475	-0.04519
2.81E+09	0.807027	-0.49921	3.34E-05	3.88E-05	1.45E-05	-0.00015	0.998355	-0.0466
2.82E+09	0.788502	-0.52814	-5.09E-05	1.34E-05	9.95E-05	2.42E-05	0.998913	-0.04658
2.83E+09	0.768809	-0.55682	0.000122	0.000102	-0.00013	-5.68E-05	0.999067	-0.04688
2.84E+09	0.749175	-0.58405	-8.55E-06	-3.37E-05	0.000168	6.12E-05	0.999047	-0.04753
2.85E+09	0.728694	-0.61123	7.40E-05	-8.54E-05	-2.06E-07	1.02E-05	0.999316	-0.04742
2.86E+09	0.707109	-0.63608	7.36E-05	-4.49E-05	0.000111	5.75E-05	0.998654	-0.04685
2.87E+09	0.684135	-0.66029	2.77E-05	-3.37E-05	-5.24E-05	3.27E-05	0.999666	-0.04683
2.88E+09	0.662151	-0.6851	-3.55E-05	8.64E-05	-6.93E-05	-3.70E-05	0.998242	-0.04584
2.89E+09	0.638896	-0.70864	-2.68E-05	-5.68E-05	-5.36E-05	-9.84E-07	0.999364	-0.04479
2.9E+09	0.614377	-0.73102	8.64E-05	8.81E-05	8.40E-06	-0.00015	0.999893	-0.04437
2.91E+09	0.589069	-0.75329	-8.51E-05	-3.96E-05	3.44E-05	-0.00012	0.999132	-0.04353
2.92E+09	0.561704	-0.77222	5.63E-06	3.92E-07	2.54E-05	6.66E-05	0.99869	-0.04242

2.93E+09	0.533238	-0.79018	6.40E-05	-9.90E-06	4.49E-05	2.49E-06	0.996068	-0.04147
2.94E+09	0.504883	-0.80847	1.04E-05	1.67E-05	-9.57E-05	-4.61E-05	0.997037	-0.04111
2.95E+09	0.477737	-0.8271	8.28E-05	2.35E-05	4.34E-05	-6.16E-05	0.99886	-0.04081
2.96E+09	0.448825	-0.84363	-7.71E-05	5.73E-05	-7.13E-06	3.28E-05	0.998622	-0.04198
2.97E+09	0.419586	-0.85859	-0.00014	2.43E-05	7.63E-07	0.0002	0.99911	-0.04258
2.98E+09	0.390538	-0.87171	1.38E-05	-0.0001	-7.95E-06	-5.08E-05	0.999268	-0.04388
2.99E+09	0.361678	-0.88257	5.04E-05	2.73E-05	0.000162	4.66E-05	0.998324	-0.0457
3E+09	0.333807	-0.89478	-7.00E-05	5.56E-07	1.02E-05	-2.82E-05	0.999581	-0.04709

END



CSV A.01.01

Agilent Te N5230C MY490006 A.08.50.10

Agilent N5230C: A.08.50.10

Date: Fri: April 08 201115:36:49

BEGIN CH1_DATA

Freq(Hz)	S11(REAL)	S11(IMG)	S12(REAL)	S12(IMG)	S21(REAL)	S21(IMG)	S22(REAL)	S22(IMG)
1E+09	-0.48627	0.850121	-4.21E-05	-1.84E-05	1.28E-05	-2.26E-05	0.998585	-0.01879
1.01E+09	-0.45548	0.866527	3.15E-06	8.11E-05	0.000145	6.52E-05	0.998284	-0.01871
1.02E+09	-0.42364	0.882032	7.10E-05	0.000133	-7.96E-05	2.08E-05	0.999181	-0.01825
1.03E+09	-0.39162	0.896692	-6.80E-05	5.47E-05	6.57E-05	-6.74E-05	0.998761	-0.01851
1.04E+09	-0.35888	0.910407	3.31E-05	-1.19E-05	-3.86E-05	-6.94E-05	0.999282	-0.0183
1.05E+09	-0.32704	0.923667	-3.56E-05	4.44E-05	7.83E-05	-0.00013	0.999163	-0.01759
1.06E+09	-0.2951	0.934812	0.000111	-4.07E-05	4.87E-05	1.00E-05	0.999838	-0.01736
1.07E+09	-0.26299	0.944356	4.60E-05	3.12E-05	-9.78E-05	3.74E-05	1.000545	-0.01702
1.08E+09	-0.23075	0.954628	2.71E-05	6.13E-05	-9.12E-05	0.000159	1.000553	-0.01654
1.09E+09	-0.19909	0.961478	8.56E-05	1.79E-05	-4.89E-05	3.51E-05	1.000313	-0.01579
1.1E+09	-0.16644	0.968338	-0.00011	-2.44E-05	2.02E-05	-3.47E-05	1.000659	-0.01618
1.11E+09	-0.13461	0.972686	6.42E-06	4.43E-05	-4.91E-07	5.07E-05	1.001097	-0.01599
1.12E+09	-0.10261	0.976073	-7.46E-05	6.28E-05	2.93E-05	3.32E-05	1.001205	-0.01503
1.13E+09	-0.0698	0.978388	-6.80E-06	1.23E-05	-2.00E-05	-4.86E-05	1.001238	-0.01564
1.14E+09	-0.03645	0.979643	3.18E-05	-8.16E-05	-0.00011	4.92E-06	1.00121	-0.01541
1.15E+09	-0.00193	0.979054	-7.28E-06	2.67E-05	6.93E-06	4.59E-05	1.000632	-0.01629
1.16E+09	0.032953	0.978122	3.19E-05	-5.10E-05	-0.00014	2.72E-05	1.000501	-0.01692
1.17E+09	0.068759	0.974993	8.56E-05	-3.56E-05	-3.05E-05	-1.50E-05	1.000209	-0.01745
1.18E+09	0.103907	0.971651	-5.55E-05	-6.02E-05	-4.59E-05	5.01E-05	1.00116	-0.0185
1.19E+09	0.140254	0.966227	-9.02E-05	0.000101	0.000103	-8.56E-06	1.000782	-0.01958
1.2E+09	0.176853	0.960456	7.44E-06	-3.75E-05	4.74E-05	-1.12E-05	1.000173	-0.02036
1.21E+09	0.213213	0.953267	0.000102	4.02E-05	-9.65E-06	2.05E-05	1.00048	-0.02104
1.22E+09	0.249327	0.944932	-4.25E-05	3.69E-05	-0.00026	-5.10E-06	0.999645	-0.02154
1.23E+09	0.284596	0.935145	5.03E-05	2.99E-05	-8.06E-05	3.85E-06	0.999844	-0.02248
1.24E+09	0.319831	0.924039	2.72E-05	-2.79E-05	-6.33E-05	-1.81E-05	0.999989	-0.02283
1.25E+09	0.354561	0.912208	-8.08E-05	1.79E-05	4.15E-05	6.32E-05	0.999787	-0.02253
1.26E+09	0.388002	0.898774	5.81E-05	-4.90E-05	-1.76E-05	5.99E-05	0.99952	-0.02345
1.27E+09	0.420405	0.884415	6.24E-05	1.14E-06	-9.51E-05	-5.20E-06	1.000019	-0.02318
1.28E+09	0.452367	0.868084	2.90E-05	1.86E-05	1.40E-05	-2.27E-06	1.000263	-0.02315
1.29E+09	0.4838	0.850708	7.61E-05	1.72E-06	-1.52E-05	-9.23E-06	1.000155	-0.02243
1.3E+09	0.51459	0.832548	-4.89E-05	4.67E-05	2.66E-05	-0.0001	1.000522	-0.02243
1.31E+09	0.544038	0.811957	-9.48E-05	3.87E-05	-7.15E-06	-2.48E-05	1.000865	-0.02235
1.32E+09	0.573852	0.790403	-0.00012	-4.64E-05	0.000154	9.67E-06	1.001015	-0.022
1.33E+09	0.602843	0.76728	8.02E-06	5.22E-05	4.05E-05	-6.13E-05	1.000758	-0.02184
1.34E+09	0.631309	0.742372	-0.00012	-8.08E-05	6.10E-05	-0.00012	1.00062	-0.02157
1.35E+09	0.659918	0.715651	-4.52E-05	6.83E-05	6.97E-05	-6.88E-05	1.000275	-0.02155
1.36E+09	0.688404	0.688546	-2.38E-06	3.78E-06	-5.41E-05	-8.49E-05	1.000087	-0.02211
1.37E+09	0.715014	0.658602	7.81E-05	2.32E-05	-3.34E-06	5.46E-06	0.999574	-0.02178
1.38E+09	0.74195	0.628306	5.46E-05	6.52E-05	-5.26E-05	-0.0001	0.999681	-0.02246
1.39E+09	0.767624	0.596186	4.59E-05	7.50E-05	2.65E-05	-3.97E-05	0.999549	-0.02265
1.4E+09	0.792752	0.563096	1.26E-05	-8.04E-05	-2.65E-05	-3.79E-08	0.999558	-0.02354
1.41E+09	0.815868	0.527864	8.88E-05	-2.50E-05	-2.77E-05	-3.62E-06	0.999234	-0.02378
1.42E+09	0.837712	0.492442	-4.55E-05	-3.44E-05	9.57E-06	-3.44E-05	0.999122	-0.0247

1.43E+09	0.858031	0.455398	-4.61E-05	5.03E-05	7.74E-05	-2.43E-05	0.999149	-0.02545
1.44E+09	0.876082	0.417877	1.98E-05	-8.78E-05	-1.36E-05	-1.69E-05	0.999034	-0.0261
1.45E+09	0.894258	0.379727	1.36E-06	1.70E-05	0.0001	-7.90E-05	1.000154	-0.02655
1.46E+09	0.908529	0.339982	-6.46E-05	-2.32E-05	-1.41E-06	-8.88E-06	0.999109	-0.02683
1.47E+09	0.921331	0.298985	7.25E-05	-3.12E-05	0.000148	-6.49E-05	0.999103	-0.02694
1.48E+09	0.933429	0.258055	-3.77E-05	-4.50E-05	-5.61E-05	4.57E-05	1.000143	-0.02728
1.49E+09	0.942855	0.215985	-5.44E-06	-6.06E-06	-2.99E-05	-9.20E-05	0.999859	-0.02677
1.5E+09	0.950366	0.172282	9.25E-05	-4.31E-05	-7.05E-05	2.90E-05	0.999914	-0.02644
1.51E+09	0.956835	0.127948	5.90E-05	-4.80E-05	0.000113	2.33E-05	0.999431	-0.02563
1.52E+09	0.959576	0.083701	-5.54E-05	5.23E-05	7.14E-07	8.42E-05	0.999617	-0.02524
1.53E+09	0.96048	0.038068	-9.57E-05	0.000135	-1.42E-05	-4.61E-05	1.000503	-0.02424
1.54E+09	0.960284	-0.00911	4.16E-05	-3.25E-05	4.69E-05	7.66E-05	0.999253	-0.02352
1.55E+09	0.956382	-0.05708	-1.68E-05	-5.37E-05	-1.98E-05	4.49E-05	0.999492	-0.02302
1.56E+09	0.951165	-0.1058	-4.28E-05	-2.18E-05	7.17E-05	-1.32E-05	0.998562	-0.02254
1.57E+09	0.943395	-0.15613	7.43E-06	4.00E-05	9.71E-05	9.27E-05	0.999408	-0.02252
1.58E+09	0.933618	-0.20578	3.20E-05	-6.34E-06	5.93E-05	-7.14E-05	0.99979	-0.02274
1.59E+09	0.918802	-0.2559	0.000108	4.09E-06	-5.35E-05	5.58E-05	0.998912	-0.0225
1.6E+09	0.902581	-0.30663	-2.82E-05	4.30E-05	-5.16E-05	-2.86E-05	0.999609	-0.02319
1.61E+09	0.882077	-0.35722	-1.64E-05	0.000113	-3.85E-05	-1.73E-05	0.999274	-0.02379
1.62E+09	0.858336	-0.40674	3.63E-05	-3.90E-05	1.64E-05	-4.15E-05	0.999167	-0.02502
1.63E+09	0.831182	-0.45562	-0.00013	-3.23E-06	2.30E-05	4.07E-05	0.998346	-0.02566
1.64E+09	0.800524	-0.50359	1.40E-05	2.78E-05	6.16E-05	3.93E-06	1.000025	-0.02605
1.65E+09	0.765719	-0.55056	-3.88E-05	-4.77E-05	2.59E-05	-7.20E-05	0.999155	-0.02732
1.66E+09	0.727334	-0.59526	-2.34E-05	-2.44E-05	5.80E-05	-5.50E-05	0.999252	-0.02811
1.67E+09	0.68632	-0.6385	0.000151	-8.51E-05	8.60E-05	9.22E-05	0.999121	-0.02849
1.68E+09	0.641349	-0.6803	6.03E-05	-2.22E-06	-7.98E-05	-8.63E-05	0.998916	-0.02928
1.69E+09	0.593793	-0.71928	1.73E-06	-3.24E-05	9.72E-05	2.85E-05	0.999103	-0.02979
1.7E+09	0.541633	-0.75472	-4.24E-05	4.86E-05	0.0001	-4.44E-05	1.000453	-0.03046
1.71E+09	0.486279	-0.78727	-2.68E-05	-2.82E-05	-5.38E-05	1.29E-05	1.000085	-0.03027
1.72E+09	0.428419	-0.81793	7.15E-05	4.59E-05	-2.10E-05	-1.66E-05	0.999886	-0.0303
1.73E+09	0.367009	-0.84404	3.63E-05	-3.27E-06	-0.00012	-4.10E-05	1.000458	-0.0301
1.74E+09	0.302133	-0.86579	4.75E-05	-2.39E-05	-3.04E-05	-6.35E-05	0.999506	-0.02965
1.75E+09	0.233819	-0.88388	5.50E-05	1.06E-05	-1.92E-05	5.89E-05	0.998919	-0.02888
1.76E+09	0.163377	-0.89522	4.65E-05	6.01E-05	-6.15E-06	-1.94E-05	0.999321	-0.02809
1.77E+09	0.090183	-0.90178	4.33E-05	9.55E-06	5.01E-05	3.09E-05	0.999189	-0.02746
1.78E+09	0.015286	-0.90125	-5.61E-05	-5.17E-05	-6.21E-05	-2.32E-05	0.999279	-0.02692
1.79E+09	-0.06123	-0.89385	-1.56E-05	2.59E-05	-5.44E-05	-2.32E-05	0.999623	-0.02612
1.8E+09	-0.13811	-0.88177	-6.11E-05	-1.53E-05	1.55E-05	2.26E-05	0.998805	-0.02627
1.81E+09	-0.21476	-0.85976	-8.28E-05	-1.79E-05	-8.45E-05	6.26E-05	0.999058	-0.02683
1.82E+09	-0.29013	-0.83105	-4.64E-05	-9.55E-05	-4.38E-05	-0.00013	0.998347	-0.02734
1.83E+09	-0.36361	-0.79608	-3.65E-05	1.93E-05	-2.17E-05	8.52E-05	0.998972	-0.0281
1.84E+09	-0.43441	-0.75273	-3.98E-05	0.000159	-1.38E-06	-8.29E-05	0.999127	-0.02904
1.85E+09	-0.50151	-0.70281	6.37E-05	4.21E-05	-6.51E-05	8.70E-06	0.999478	-0.03003
1.86E+09	-0.56362	-0.64613	1.99E-05	5.12E-05	-1.30E-05	3.55E-06	0.998834	-0.03108
1.87E+09	-0.62041	-0.58366	1.98E-05	4.16E-05	-8.19E-05	0.000102	0.999428	-0.03234
1.88E+09	-0.67119	-0.51448	-5.54E-05	1.54E-05	-4.67E-05	-4.68E-05	0.999536	-0.03295
1.89E+09	-0.71473	-0.43999	2.02E-05	3.69E-05	3.26E-05	-7.79E-05	0.999182	-0.03316
1.9E+09	-0.75039	-0.36059	-9.05E-05	3.30E-05	-3.10E-05	-2.24E-05	0.998913	-0.03391
1.91E+09	-0.77757	-0.27637	-2.92E-05	-2.84E-05	4.64E-05	-4.50E-05	0.998581	-0.03425
1.92E+09	-0.79568	-0.18939	3.40E-05	-7.10E-05	5.64E-06	0.000156	0.998879	-0.03431

1.93E+09	-0.80437	-0.09975	5.96E-05	0.000135	-1.08E-05	-5.70E-05	0.999552	-0.03403
1.94E+09	-0.80234	-0.00928	4.95E-05	-0.00011	2.65E-05	-3.56E-05	0.998207	-0.03346
1.95E+09	-0.79009	0.080684	-7.14E-05	7.41E-05	5.84E-05	2.92E-05	0.99929	-0.03295
1.96E+09	-0.76751	0.169642	2.21E-05	-8.98E-05	6.47E-06	7.09E-05	0.998643	-0.03244
1.97E+09	-0.73453	0.255002	3.16E-05	-6.53E-05	4.63E-06	-3.81E-05	0.999218	-0.0319
1.98E+09	-0.69204	0.335484	-1.37E-05	2.80E-05	4.18E-05	-2.48E-06	1.000201	-0.03125
1.99E+09	-0.6406	0.410269	7.22E-06	2.90E-05	-7.83E-05	-6.40E-06	0.999391	-0.0306
2E+09	-0.58177	0.476867	5.98E-05	-1.45E-05	-2.11E-05	3.88E-05	0.999608	-0.02965
2.01E+09	-0.51574	0.535987	5.78E-05	-0.00011	-4.35E-05	8.28E-05	0.999842	-0.02908
2.02E+09	-0.44404	0.585459	-4.80E-05	3.37E-05	-6.16E-05	-3.10E-05	0.998881	-0.02851
2.03E+09	-0.36738	0.625179	1.02E-05	-9.46E-05	-2.53E-05	2.77E-05	0.999399	-0.0282
2.04E+09	-0.28668	0.654244	1.08E-06	6.65E-05	1.36E-05	-9.22E-08	0.999465	-0.02858
2.05E+09	-0.20305	0.672278	-4.94E-05	0.000117	4.39E-05	3.12E-05	0.999249	-0.02851
2.06E+09	-0.11858	0.678437	-2.00E-05	-6.63E-05	2.41E-05	-5.62E-05	0.998742	-0.02989
2.07E+09	-0.03345	0.672955	-7.04E-05	-4.06E-05	-6.45E-05	0.000105	0.999527	-0.03072
2.08E+09	0.050461	0.654566	1.34E-05	3.04E-05	-6.42E-05	-3.15E-05	0.998894	-0.03211
2.09E+09	0.131534	0.623626	-6.68E-05	5.42E-05	-0.0001	-0.00012	0.999136	-0.03372
2.1E+09	0.206839	0.581146	-2.77E-06	-2.56E-05	1.54E-05	3.64E-05	0.999433	-0.03495
2.11E+09	0.274964	0.526965	4.65E-05	0.000122	6.19E-06	-9.89E-07	0.999607	-0.03642
2.12E+09	0.33304	0.46217	-2.31E-05	3.36E-05	1.56E-05	-5.83E-05	0.999753	-0.03699
2.13E+09	0.378486	0.387758	8.49E-05	4.65E-05	-0.00014	1.05E-05	0.999496	-0.03803
2.14E+09	0.408854	0.306505	-4.23E-05	-9.88E-06	-5.50E-05	6.69E-05	0.998358	-0.0386
2.15E+09	0.421335	0.221611	3.21E-05	5.14E-05	-7.16E-05	-0.00011	0.998877	-0.03838
2.16E+09	0.413917	0.136809	-1.56E-05	-1.63E-05	-3.78E-05	-0.00015	0.999311	-0.03799
2.17E+09	0.386412	0.057872	5.13E-05	-3.55E-05	-8.81E-05	6.21E-05	0.998788	-0.03801
2.18E+09	0.339897	-0.01001	-7.71E-05	5.68E-05	-8.76E-05	0.000115	0.998293	-0.03708
2.19E+09	0.277892	-0.05984	0.000119	3.16E-05	3.48E-05	-2.44E-05	0.99926	-0.03669
2.2E+09	0.20651	-0.0879	-3.54E-05	-2.95E-05	-2.19E-06	1.23E-05	0.998941	-0.03594
2.21E+09	0.133902	-0.09189	-5.04E-05	4.51E-05	-5.80E-05	1.36E-07	1.000283	-0.03463
2.22E+09	0.07029	-0.07252	1.65E-05	-5.23E-05	1.95E-05	8.43E-06	1.000035	-0.03452
2.23E+09	0.023841	-0.03636	3.66E-05	9.07E-06	3.41E-05	-1.40E-05	0.999651	-0.03375
2.24E+09	0.000388	0.006185	6.52E-05	0.000138	5.76E-05	8.26E-06	1.000273	-0.03259
2.25E+09	-0.00124	0.043892	1.69E-05	7.67E-06	-5.90E-05	-8.58E-05	1.000315	-0.03208
2.26E+09	0.012499	0.066831	-1.58E-05	-1.30E-06	5.71E-05	-0.00012	0.998866	-0.03224
2.27E+09	0.031993	0.070973	8.52E-05	-1.66E-05	2.45E-05	3.13E-05	0.999386	-0.03256
2.28E+09	0.047053	0.055611	2.51E-05	1.61E-05	3.80E-06	4.43E-05	0.999162	-0.03199
2.29E+09	0.048835	0.026965	0.000102	7.44E-05	1.73E-05	8.42E-05	0.999215	-0.03296
2.3E+09	0.031599	-0.00848	-7.12E-05	2.06E-05	-2.77E-05	-9.76E-05	0.998996	-0.03316
2.31E+09	-0.0076	-0.04028	-4.67E-05	-9.15E-05	3.50E-05	3.21E-06	0.998773	-0.03447
2.32E+09	-0.06542	-0.05807	-4.92E-05	-2.14E-05	-2.48E-05	-7.12E-05	0.998599	-0.03627
2.33E+09	-0.13629	-0.05389	-0.00011	-7.45E-05	5.57E-05	5.01E-05	0.998244	-0.03756
2.34E+09	-0.21051	-0.02346	0.00012	4.78E-05	0.000124	-0.00012	0.998561	-0.03881
2.35E+09	-0.27826	0.032671	-0.0001	-9.91E-05	-0.00019	9.78E-05	0.998435	-0.04069
2.36E+09	-0.33126	0.112304	1.10E-05	6.81E-05	2.45E-05	3.11E-05	0.99909	-0.04186
2.37E+09	-0.36155	0.207663	3.11E-05	5.00E-05	9.92E-05	2.91E-05	0.998624	-0.04211
2.38E+09	-0.36832	0.310442	8.62E-05	2.07E-05	2.88E-05	-4.17E-06	0.998476	-0.04216
2.39E+09	-0.35019	0.413038	-1.79E-05	2.54E-05	9.00E-05	-3.10E-05	0.997287	-0.0424
2.4E+09	-0.30996	0.506952	8.57E-06	3.84E-05	-8.35E-06	1.81E-05	0.999186	-0.04104
2.41E+09	-0.25409	0.590577	4.24E-05	-1.84E-06	-3.29E-05	7.03E-05	0.998067	-0.04026
2.42E+09	-0.18555	0.658785	2.85E-05	-9.66E-05	-7.48E-05	-1.82E-05	0.999158	-0.03895

2.43E+09	-0.10911	0.711457	5.06E-05	-4.68E-05	-0.00015	1.91E-05	0.999593	-0.03778
2.44E+09	-0.02928	0.749163	-7.42E-05	2.49E-05	4.72E-05	3.31E-05	0.999652	-0.0368
2.45E+09	0.05163	0.773938	4.84E-06	-8.73E-05	6.05E-06	1.78E-05	0.999588	-0.03591
2.46E+09	0.131867	0.786071	4.57E-05	-5.86E-05	-2.06E-05	-6.01E-05	0.999426	-0.03541
2.47E+09	0.209586	0.788389	-4.85E-05	-1.73E-05	-5.60E-05	-8.33E-05	1.000421	-0.03522
2.48E+09	0.284366	0.780792	-1.27E-05	0.000102	-1.01E-05	4.62E-05	0.999102	-0.03528
2.49E+09	0.355841	0.766651	-1.11E-05	0.000104	-1.23E-05	-2.62E-05	0.999482	-0.03528
2.5E+09	0.422743	0.745174	-0.00011	-3.02E-05	0.000107	-3.98E-05	0.998878	-0.0362
2.51E+09	0.485782	0.718334	9.69E-06	7.04E-05	3.56E-05	-5.72E-05	0.998516	-0.03631
2.52E+09	0.544696	0.686422	7.19E-05	-3.91E-05	6.24E-05	-5.43E-05	0.998256	-0.03821
2.53E+09	0.598781	0.650899	-2.64E-06	-8.30E-05	-8.11E-05	3.89E-05	0.997853	-0.03935
2.54E+09	0.648381	0.613291	7.35E-06	-3.39E-05	5.76E-06	6.44E-06	0.998122	-0.03992
2.55E+09	0.692784	0.572245	-5.55E-05	6.04E-06	0.000131	-1.06E-05	0.998351	-0.04154
2.56E+09	0.732725	0.530108	2.14E-05	-6.87E-05	-9.50E-08	4.71E-05	0.99755	-0.04261
2.57E+09	0.768092	0.486674	-3.96E-06	-1.93E-05	-2.02E-05	0.000128	0.997307	-0.04331
2.58E+09	0.799181	0.442533	1.57E-05	1.85E-05	8.43E-05	6.77E-06	0.997097	-0.04521
2.59E+09	0.827115	0.398642	1.02E-05	3.48E-05	-8.07E-05	-1.66E-05	0.998211	-0.04614
2.6E+09	0.850272	0.35434	-2.06E-05	-3.06E-05	6.74E-05	-1.41E-05	0.998614	-0.04674
2.61E+09	0.87033	0.310326	-9.18E-06	5.34E-05	-2.42E-05	-0.00016	0.99873	-0.04692
2.62E+09	0.887781	0.26665	2.35E-05	0.000162	7.50E-06	2.81E-05	0.999407	-0.04621
2.63E+09	0.901349	0.222292	2.38E-05	-1.20E-05	-0.00014	-4.95E-05	0.999859	-0.04588
2.64E+09	0.913452	0.178908	-0.00012	8.51E-05	1.19E-06	2.84E-06	0.999549	-0.04467
2.65E+09	0.922816	0.135399	-6.72E-05	-7.63E-05	4.48E-05	-6.88E-05	0.999084	-0.04299
2.66E+09	0.930308	0.091559	4.69E-05	4.07E-06	5.39E-05	3.39E-05	0.999093	-0.04192
2.67E+09	0.933739	0.04762	5.11E-05	-1.65E-05	-0.00014	-3.04E-05	0.999023	-0.04067
2.68E+09	0.936384	0.004094	9.03E-05	-8.03E-05	-5.13E-05	2.02E-05	0.999824	-0.0396
2.69E+09	0.93687	-0.03965	-4.85E-05	-8.29E-05	-6.63E-05	-3.37E-05	0.998963	-0.03834
2.7E+09	0.93477	-0.08362	5.05E-05	-2.10E-05	-7.83E-05	7.01E-05	0.998971	-0.03762
2.71E+09	0.931473	-0.12677	0.000108	4.51E-05	-2.78E-05	-5.95E-05	0.999176	-0.03732
2.72E+09	0.927306	-0.16912	-2.39E-05	-8.79E-05	-2.73E-05	-4.09E-05	0.999556	-0.03797
2.73E+09	0.920263	-0.21101	-5.55E-05	0.000154	-1.07E-05	3.16E-05	0.998205	-0.0381
2.74E+09	0.91099	-0.25227	-8.95E-05	-3.62E-05	-1.95E-05	-0.0001	0.997871	-0.03955
2.75E+09	0.900133	-0.29224	-5.47E-05	-0.00011	0.000135	-2.14E-05	0.998532	-0.04065
2.76E+09	0.88774	-0.3305	-0.00015	0.000101	-4.94E-05	-4.11E-05	0.997914	-0.04204
2.77E+09	0.873537	-0.36724	-1.35E-05	1.55E-05	3.63E-05	9.52E-05	0.997887	-0.04283
2.78E+09	0.858598	-0.40276	6.96E-05	5.59E-05	4.40E-05	-2.27E-05	0.997614	-0.04399
2.79E+09	0.842422	-0.43618	-2.45E-05	6.57E-06	-1.90E-06	5.20E-05	0.997573	-0.04529
2.8E+09	0.825348	-0.46824	8.75E-05	-1.87E-05	4.04E-05	6.78E-05	0.998176	-0.04579
2.81E+09	0.807113	-0.49889	-6.99E-05	-5.65E-05	1.92E-05	-2.98E-05	0.997856	-0.04685
2.82E+09	0.78842	-0.52846	5.13E-05	-2.85E-05	9.91E-05	-8.02E-05	0.999312	-0.04725
2.83E+09	0.768847	-0.55676	-2.52E-05	5.98E-05	-0.00015	4.48E-05	0.998357	-0.04739
2.84E+09	0.749404	-0.58415	-5.65E-06	0.00013	4.22E-05	-2.44E-05	0.999331	-0.0473
2.85E+09	0.728755	-0.61113	-5.80E-05	0.000125	-6.32E-05	7.03E-05	0.999302	-0.04747
2.86E+09	0.706811	-0.63564	-5.02E-05	4.57E-05	2.42E-05	-1.34E-06	0.998804	-0.04721
2.87E+09	0.685117	-0.66118	4.44E-05	9.95E-05	-6.09E-05	-0.00014	0.998915	-0.04687
2.88E+09	0.662619	-0.68542	3.86E-05	2.74E-05	-0.00012	6.13E-05	0.998155	-0.0461
2.89E+09	0.638848	-0.70842	-0.00013	-3.94E-06	7.32E-06	-2.62E-05	0.999124	-0.04518
2.9E+09	0.614251	-0.73101	-3.98E-05	2.60E-05	8.24E-05	-4.34E-05	0.999273	-0.04463
2.91E+09	0.588661	-0.75286	-3.20E-05	4.84E-05	3.84E-05	3.58E-05	0.999295	-0.04403
2.92E+09	0.561508	-0.77208	-2.50E-06	7.73E-06	-8.69E-05	-1.98E-05	0.998233	-0.04272

93E+09	0.533702	-0.79098	-5.53E-05	7.00E-05	-4.14E-05	-5.58E-08	0.996276	-0.04152
94E+09	0.505286	-0.80886	0.000123	-1.72E-05	-9.07E-06	-2.81E-05	0.997068	-0.0413
95E+09	0.477895	-0.82773	-8.19E-05	0.000222	2.59E-05	-2.69E-05	0.998829	-0.04153
96E+09	0.44854	-0.84376	-7.00E-06	0.00011	1.47E-06	-3.57E-05	0.998223	-0.04232
97E+09	0.41939	-0.85873	6.91E-05	0.00011	-0.00012	3.33E-05	0.99922	-0.04279
98E+09	0.390245	-0.87212	-2.65E-05	9.86E-05	4.78E-05	9.16E-05	0.999058	-0.04433
99E+09	0.36142	-0.88339	-0.00011	5.76E-05	2.22E-05	-3.79E-06	0.998422	-0.04571
3E+09	0.333564	-0.89496	-5.17E-06	-7.77E-05	-5.07E-05	-1.21E-05	0.999503	-0.04746

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Silent Te N5230C MY490006 A.08.50.10

Silent N5230C: A.08.50.10

Date: Friday, April 08 2011 15:35:29

GIN CH1_DATA

q(Hz)	S11(DB)	S11(DEG)	S12(DB)	S12(DEG)	S21(DB)	S21(DEG)	S22(DB)	S22(DEG)
1E+09	-0.17832	119.7541	-76.7847	-101.731	-81.7443	-108.161	-0.00878	-1.08399
01E+09	-0.18462	117.6911	-86.4412	-130.709	-79.6363	-26.0198	-0.01297	-1.08865
02E+09	-0.18785	115.6124	-92.2465	140.3394	-81.7114	-142.191	-0.00621	-1.04108
03E+09	-0.18948	113.5495	-77.1564	-139.098	-88.0494	-40.4202	-0.00873	-1.06087
04E+09	-0.18825	111.4852	-87.0312	-174.259	-89.5046	80.02016	-0.00967	-1.03117
05E+09	-0.17981	109.4529	-78.3521	120.1154	-82.4325	18.38416	-0.00655	-1.01533
06E+09	-0.17945	107.4793	-84.4654	141.8434	-77.5006	-155.389	0.002963	-0.98172
07E+09	-0.17027	105.5321	-82.4637	174.5559	-77.5682	-28.6597	0.001731	-0.9572
08E+09	-0.16041	103.5725	-82.1315	143.3959	-82.1336	170.9516	0.008479	-0.93865
09E+09	-0.16265	101.632	-82.0808	158.8966	-78.4541	86.64364	0.001489	-0.89904
1.1E+09	-0.15516	99.68679	-80.3849	-138.894	-76.9706	-160.121	0.006038	-0.91315
11E+09	-0.15842	97.81767	-91.5938	-124.657	-82.6205	-115.52	0.008324	-0.90725
12E+09	-0.16096	95.9673	-80.7022	-157.911	-78.6894	-159.906	0.008927	-0.85074
13E+09	-0.16718	94.02441	-93.5005	-45.1898	-76.949	121.1413	0.015248	-0.89126
14E+09	-0.17368	92.06867	-80.6655	-93.1408	-83.6208	177.3902	0.013808	-0.89285
15E+09	-0.1803	90.06954	-80.471	-100.127	-77.2878	80.89557	0.007818	-0.9159
16E+09	-0.18714	88.02158	-86.1576	-146.57	-79.1712	105.895	0.004529	-0.96061
17E+09	-0.19856	85.92991	-81.7008	101.1838	-94.9979	9.771949	0.002193	-0.97301
18E+09	-0.20002	83.84119	-84.7622	130.7451	-78.1978	-151.753	0.008125	-1.0741
19E+09	-0.20672	81.68649	-86.008	100.439	-72.9509	-58.6058	0.007834	-1.1149
2.2E+09	-0.20391	79.51177	-78.3731	-175.447	-79.4001	-17.1712	0.005157	-1.14375
21E+09	-0.20212	77.33905	-88.708	22.43266	-85.1785	-97.4407	0.007308	-1.20893
22E+09	-0.20224	75.15205	-83.1919	-90.4528	-83.8271	-141.678	-0.00244	-1.23604
23E+09	-0.20033	73.00681	-82.315	-125.206	-81.3694	-64.8306	-7.48E-05	-1.26975
24E+09	-0.1972	70.83479	-76.8716	24.79647	-89.7322	-49.4935	0.000315	-1.29988
25E+09	-0.18801	68.71045	-78.9236	91.8496	-78.1586	135.3123	0.001805	-1.29222
26E+09	-0.1896	66.5818	-94.9885	122.6951	-89.374	178.8985	-0.00182	-1.33705
27E+09	-0.18462	64.49762	-81.5908	49.68206	-79.4265	-142.782	0.002597	-1.32573
28E+09	-0.18689	62.42593	-79.1796	-43.385	-76.4397	52.11364	0.005298	-1.30465
29E+09	-0.1846	60.30339	-83.5301	177.5009	-82.3114	-92.2431	0.003237	-1.28982
3.3E+09	-0.18735	58.19034	-84.7529	179.759	-96.5432	69.91601	0.008489	-1.27877
31E+09	-0.19896	56.09059	-91.2497	139.8426	-86.9338	122.5173	0.008926	-1.26516
32E+09	-0.20334	53.92939	-81.2817	-109.407	-79.0407	-13.0801	0.006543	-1.25742
33E+09	-0.21821	51.76151	-89.7998	-117.932	-86.0743	176.9638	0.008951	-1.2346
34E+09	-0.22564	49.54491	-81.9816	-122.422	-88.2957	-22.1407	0.004518	-1.22157
35E+09	-0.23306	47.25597	-80.7225	56.89963	-81.958	-44.3143	0.005837	-1.22729
36E+09	-0.23704	44.9207	-80.8106	108.5225	-77.2137	-34.2499	0.002869	-1.258
37E+09	-0.2426	42.57894	-82.5	-41.9785	-80.5519	-56.6616	-0.00035	-1.23909
38E+09	-0.24479	40.16171	-81.5492	177.4156	-81.8535	-89.223	-0.00228	-1.28262
39E+09	-0.24652	37.73777	-84.7516	-6.51364	-77.1856	127.4068	-0.0003	-1.29029
1.4E+09	-0.24609	35.28323	-78.7104	-42.3277	-77.1338	-73.9971	-0.00251	-1.33653
41E+09	-0.24993	32.82227	-81.7272	-159.213	-79.5069	38.26017	-0.00593	-1.34462
42E+09	-0.24965	30.34272	-78.0994	-83.8674	-89.0597	178.2155	-0.00365	-1.39184

43E+09	-0.25393	27.86529	-81.2686	-39.791	-85.1595	-97.973	-0.00683	-1.44368
44E+09	-0.25969	25.38633	-85.0311	-146.092	-83.4524	-109.183	-0.00592	-1.48258
45E+09	-0.24917	22.89566	-94.2974	0.076998	-88.9138	12.57413	0.000946	-1.51056
46E+09	-0.26578	20.40905	-83.1715	-54.1031	-73.0255	159.7187	-0.00247	-1.5299
47E+09	-0.28342	17.86609	-80.557	-2.86176	-77.1216	148.9482	-0.00358	-1.56165
48E+09	-0.28045	15.35424	-80.7742	-3.6062	-80.4307	103.4952	0.0039	-1.56717
49E+09	-0.29082	12.80806	-81.3967	-147.376	-75.9176	-39.2896	0.002351	-1.52061
1.5E+09	-0.29966	10.17636	-88.8032	-109.167	-88.2386	108.7833	1.40E-05	-1.49516
51E+09	-0.3063	7.491614	-84.2253	23.64183	-86.1396	93.35024	-0.00487	-1.47308
52E+09	-0.32369	4.879248	-76.7179	-13.4637	-81.8944	-67.5786	-0.00203	-1.43471
53E+09	-0.34537	2.135444	-83.3144	-153.408	-89.0187	-128.214	-0.00436	-1.39971
54E+09	-0.35685	-0.68812	-80.0486	-24.9993	-83.3426	-143.846	0.00299	-1.33576
55E+09	-0.37088	-3.54016	-77.5331	-102.049	-79.8601	144.2408	0.000232	-1.29558
56E+09	-0.37792	-6.48166	-84.7101	-165.769	-73.5752	-98.6583	-0.00787	-1.28383
57E+09	-0.39452	-9.50524	-84.1491	74.56564	-82.2342	-157.176	-0.00461	-1.28647
58E+09	-0.39061	-12.5641	-77.1942	-62.1376	-76.8662	-113.505	-0.00789	-1.29506
59E+09	-0.40447	-15.7144	-85.5414	-104.356	-77.469	-118.797	-0.00624	-1.29739
1.6E+09	-0.41727	-18.9092	-90.1232	-175.06	-85.8886	177.6857	-0.00434	-1.32712
61E+09	-0.43609	-22.1982	-100.391	-112.851	-78.3399	-57.7547	-0.00206	-1.36062
62E+09	-0.44839	-25.51	-89.0512	-27.048	-81.8315	48.97608	-0.00679	-1.41981
63E+09	-0.46754	-28.8758	-82.8612	155.5123	-79.6163	-127.913	-0.00656	-1.46228
64E+09	-0.48568	-32.3407	-84.4813	148.0565	-81.0037	-21.8916	0.00153	-1.47057
65E+09	-0.50896	-35.8751	-82.8529	-22.9326	-79.0203	167.019	-0.00103	-1.55911
66E+09	-0.53854	-39.4559	-77.9123	77.92478	-81.4648	-120.885	-0.00357	-1.60243
67E+09	-0.56667	-43.0996	-96.7805	-172.846	-81.1099	93.30925	-0.00802	-1.61811
68E+09	-0.58377	-46.8588	-79.581	161.071	-93.3641	-78.4451	-0.00562	-1.68897
69E+09	-0.60695	-50.6511	-84.7041	29.9952	-79.1094	-50.7748	-0.0038	-1.70544
1.7E+09	-0.64575	-54.5247	-80.061	-134.257	-75.4631	62.21247	0.012158	-1.72971
71E+09	-0.66489	-58.4683	-81.1681	9.167954	-78.4377	167.8103	0.004516	-1.71928
72E+09	-0.69526	-62.5448	-82.5341	169.1548	-79.8634	-46.4155	0.004254	-1.72759
73E+09	-0.71754	-66.6978	-84.1577	-69.3681	-82.9795	84.92274	0.011386	-1.70894
74E+09	-0.76065	-70.9528	-79.2032	160.8936	-87.272	-156.658	-0.00107	-1.67722
75E+09	-0.7809	-75.3696	-82.2033	-85.122	-79.0041	-56.4956	0.000264	-1.65941
76E+09	-0.81874	-79.8519	-81.7673	-15.5491	-76.5927	-91.3305	-0.00719	-1.62109
77E+09	-0.85937	-84.4893	-79.7108	-3.78344	-84.254	-1.47575	-0.00083	-1.55246
78E+09	-0.89924	-89.2215	-86.8737	-105.777	-83.8858	-78.7255	-0.00546	-1.51626
79E+09	-0.94977	-94.1285	-79.4752	-44.3298	-93.4935	58.30912	0.001757	-1.50544
80E+09	-0.99956	-99.1001	-79.0417	-94.4273	-81.2856	-152.296	-0.00648	-1.5162
81E+09	-1.04862	-104.236	-83.7714	-101.908	-82.2917	166.9396	-0.00362	-1.52363
1.82E+09	-1.10244	-109.462	-76.0268	-137.84	-76.0948	137.4385	-0.00545	-1.54764
83E+09	-1.15556	-114.766	-81.3173	83.17584	-75.058	-150.758	-0.00122	-1.59672
84E+09	-1.21622	-120.226	-79.2412	38.68499	-76.7648	-101.236	-0.0078	-1.64079
85E+09	-1.28281	-125.731	-80.5826	165.1492	-87.7855	82.45419	0.002964	-1.70624
86E+09	-1.33694	-131.321	-82.7258	-124.369	-88.3785	-148.081	-0.00605	-1.75575
87E+09	-1.39904	-136.958	-85.5815	61.26647	-91.2657	-74.07	0.000133	-1.82898
88E+09	-1.46156	-142.755	-81.9725	-152.322	-84.0666	109.5287	0.000997	-1.85793
89E+09	-1.52533	-148.589	-87.7935	18.75598	-86.1056	-34.7132	-0.00358	-1.8892
90E+09	-1.59238	-154.533	-78.8391	84.76657	-77.4914	-71.6712	-0.00088	-1.93396
91E+09	-1.65974	-160.659	-88.3929	-156.981	-103.554	-178.832	-0.00115	-1.97695
92E+09	-1.74994	-166.838	-79.6712	-77.1783	-79.4894	172.6423	-0.00281	-1.95682

93E+09	-1.82046	-173.145	-82.2587	18.33274	-79.7865	-96.039	-0.00133	-1.93356
94E+09	-1.91666	-179.55	-76.9834	-26.3212	-83.5135	123.0583	-0.00708	-1.89682
95E+09	-1.99666	173.9687	-91.1091	96.9157	-80.4636	-144.184	-0.00348	-1.8888
96E+09	-2.09376	167.313	-81.3611	5.242824	-83.0909	105.1796	-0.00443	-1.86214
97E+09	-2.19474	160.6437	-80.2189	-59.0934	-93.4638	160.813	-0.00271	-1.81634
98E+09	-2.27601	153.9341	-85.7245	154.6339	-88.4347	47.35135	0.00271	-1.79294
99E+09	-2.37563	147.192	-85.9567	46.3584	-79.7209	1.240928	0.002574	-1.73828
00E+09	-2.47799	140.458	-81.09	160.6395	-77.2741	-42.8627	0.000371	-1.6851
01E+09	-2.57264	133.723	-83.9635	-45.6537	-76.6453	-47.0281	-0.00281	-1.64954
02E+09	-2.67187	126.9666	-85.247	-142.788	-91.3705	-98.9914	-0.00192	-1.64035
03E+09	-2.7868	120.2504	-76.3774	-117.052	-80.6233	88.60654	0.000427	-1.61023
04E+09	-2.92347	113.4789	-79.9415	-123.664	-93.2328	-61.9164	-0.00278	-1.62144
05E+09	-3.06637	106.6102	-82.6134	85.23486	-88.1186	-133.878	-0.00543	-1.6067
06E+09	-3.24239	99.68784	-86.137	-157.386	-89.0404	107.2654	-0.00754	-1.70805
07E+09	-3.43427	92.63697	-82.8632	38.80159	-80.481	2.688022	-0.00785	-1.73993
08E+09	-3.64685	85.36668	-88.9543	-95.5707	-87.5904	-124.313	-0.00664	-1.81806
09E+09	-3.90077	77.86069	-77.6754	139.5781	-81.8039	-7.68799	-0.00315	-1.91028
10E+09	-4.19327	70.17998	-90.9388	163.3836	-83.1797	133.178	-0.00338	-2.00838
11E+09	-4.51696	62.18636	-79.6571	-10.5179	-83.9709	108.0247	0.002806	-2.07777
12E+09	-4.89995	53.98899	-79.8078	172.7262	-75.4084	179.8864	0.00661	-2.10666
13E+09	-5.32651	45.43385	-82.2929	-91.8373	-89.6231	148.8202	-0.00664	-2.17782
14E+09	-5.83814	36.60086	-77.0683	161.9694	-80.01	-88.905	0.000594	-2.1949
15E+09	-6.4494	27.45618	-78.467	-127.21	-85.4483	-42.3465	0.000747	-2.18661
16E+09	-7.22153	17.98406	-85.3876	-73.7649	-84.7713	133.1212	-0.00066	-2.16672
17E+09	-8.16885	8.166417	-88.5264	54.83539	-86.6331	26.32049	-0.00322	-2.1729
18E+09	-9.39497	-2.01387	-82.9976	-119.504	-82.5251	-104.938	-0.00094	-2.10987
19E+09	-10.9677	-12.4975	-80.0759	-5.67023	-82.9152	9.414132	-0.00534	-2.082
20E+09	-13.025	-23.4236	-80.2909	61.46191	-78.7823	31.1262	-0.00226	-2.03704
21E+09	-15.8606	-34.7933	-85.7363	134.4779	-85.9084	-85.7795	0.002946	-1.95583
22E+09	-20.0274	-46.1841	-83.3696	74.41937	-81.4148	-33.6096	-0.00061	-1.9603
23E+09	-27.5061	-56.7067	-79.9641	-57.0693	-87.5461	12.42859	0.00157	-1.92023
24E+09	-42.4299	86.53328	-77.2897	23.22901	-87.1766	44.35776	0.00392	-1.86339
25E+09	-26.9195	90.5614	-82.993	-139.196	-83.302	8.882317	0.005143	-1.81204
26E+09	-23.2191	78.63242	-78.9299	164.5004	-78.1092	-4.49608	-0.00666	-1.83247
27E+09	-22.1259	64.80951	-91.1679	117.4507	-85.2068	-137.949	-0.00507	-1.85059
28E+09	-22.6701	48.80601	-81.7715	-26.0072	-97.3595	100.252	-0.00278	-1.81218
29E+09	-24.983	27.38073	-80.8355	157.8454	-80.6223	-60.3778	-0.0067	-1.87891
30E+09	-29.4576	-16.8985	-82.9458	-91.9012	-78.019	-126.929	-0.00273	-1.90601
31E+09	-27.4913	-99.8716	-81.7235	-107.049	-83.2671	89.31709	-0.00269	-1.96977
32E+09	-21.0422	-137.717	-78.0137	-78.6421	-81.1928	-74.8003	-0.00561	-2.05019
33E+09	-16.5955	-158.051	-87.4549	59.46383	-75.4055	-45.6322	-0.01048	-2.14629
34E+09	-13.4363	-173.445	-83.3885	-25.7722	-78.4632	-72.8285	-0.00825	-2.22606
35E+09	-11.0202	173.3848	-87.9857	82.29417	-83.1164	-111.411	-0.00848	-2.30193
36E+09	-9.10557	161.3077	-80.4046	-16.1718	-90.3407	20.84007	0.000725	-2.37619
37E+09	-7.57959	150.1594	-78.5271	-88.2764	-82.8313	-17.5198	-0.00738	-2.39353
38E+09	-6.32982	139.8556	-82.0024	-113.321	-81.4349	32.05142	-0.00974	-2.42421
39E+09	-5.31957	130.2507	-78.9128	169.1599	-104.875	2.130514	-0.0051	-2.4288
40E+09	-4.51034	121.3836	-79.7127	-95.7691	-84.0231	19.66592	-0.0003	-2.35093
41E+09	-3.83355	113.2391	-79.7052	59.67138	-78.6544	-92.5599	-0.0076	-2.3025
42E+09	-3.28904	105.6931	-82.2869	-132.587	-90.3783	171.9115	0.000954	-2.2238

13E+09	-2.84934	98.70297	-99.0792	-124.844	-88.7498	17.89209	0.004109	-2.14896
14E+09	-2.49672	92.20483	-81.6465	-5.24884	-81.2654	-149.88	0.003068	-2.0894
15E+09	-2.20894	86.13922	-84.0949	-164.924	-89.2955	72.85487	-0.00062	-2.03871
16E+09	-1.96968	80.44105	-82.5522	-62.3383	-92.0636	158.1828	0.000122	-2.02019
17E+09	-1.76309	75.06899	-96.7186	-128.889	-91.1093	-99.0347	0.007016	-2.02635
18E+09	-1.60739	69.94476	-82.7428	-176.673	-75.5629	-74.3919	0.003798	-2.00046
19E+09	-1.46606	65.07579	-79.3767	4.177173	-93.5739	53.4539	0.00215	-2.00519
20E+09	-1.34105	60.41229	-84.1124	-127.406	-74.6684	163.9463	-0.0069	-2.06727
21E+09	-1.23913	55.89995	-78.9165	-140.564	-76.7166	98.08066	-0.00104	-2.06471
22E+09	-1.14214	51.53003	-82.6946	-22.3359	-84.3779	-24.1533	-0.01233	-2.16765
23E+09	-1.06052	47.37075	-84.2042	-135.763	-79.7784	-80.4398	-0.01355	-2.24021
24E+09	-0.98849	43.37976	-84.0765	55.9223	-84.9052	-123.223	-0.00917	-2.27322
25E+09	-0.92934	39.53241	-82.8942	-129.766	-84.503	137.8883	-0.00285	-2.37086
26E+09	-0.86426	35.85609	-82.9548	-149.567	-86.9247	-122.386	-0.00612	-2.41941
27E+09	-0.8248	32.33333	-99.8072	57.63493	-80.589	-148.337	-0.01414	-2.48728
28E+09	-0.77824	28.96253	-81.2717	-47.6669	-78.0362	62.51337	-0.01335	-2.57075
29E+09	-0.75034	25.70429	-84.4927	-158.313	-75.6095	29.71924	-0.00881	-2.63717
30E+09	-0.70393	22.58573	-89.2379	97.87254	-87.113	85.01759	-0.00579	-2.66178
31E+09	-0.68128	19.59004	-79.1735	104.494	-79.9206	-109.727	-0.00533	-2.69159
32E+09	-0.66045	16.67448	-75.1014	-32.1098	-80.4212	-58.2824	0.000824	-2.61749
33E+09	-0.63773	13.82586	-77.1946	-177.737	-80.3874	-176.64	-0.00209	-2.61575
34E+09	-0.62359	11.06415	-75.1444	176.9862	-76.2417	-5.3909	2.45E-05	-2.55193
35E+09	-0.60629	8.326057	-88.6524	-166.863	-84.6843	-31.8182	-0.00054	-2.44308
36E+09	-0.59122	5.615229	-80.7188	107.9255	-96.6944	-30.1513	0.007173	-2.38101
37E+09	-0.58531	2.913298	-87.603	120.2508	-86.4119	-84.005	-7.36E-05	-2.30605
38E+09	-0.57256	0.229496	-82.8537	-37.1662	-75.4501	64.75855	0.004732	-2.25333
39E+09	-0.55513	-2.4451	-87.433	-6.9384	-78.3132	-175.056	-0.00296	-2.19798
40E+09	-0.55102	-5.12545	-85.045	-42.1212	-80.7965	104.6241	-0.00429	-2.14204
41E+09	-0.53743	-7.77035	-78.278	-98.7519	-105.931	48.22538	-0.00139	-2.12608
42E+09	-0.51184	-10.3607	-95.2425	-21.4999	-93.7084	-109.248	-0.00284	-2.16166
43E+09	-0.50541	-12.9562	-79.1128	-144.08	-81.729	-167.011	-0.00231	-2.17898
44E+09	-0.49231	-15.4826	-82.2164	-84.2844	-82.5311	-51.8632	-0.00831	-2.27654
45E+09	-0.47768	-17.9899	-89.1395	-113.208	-86.75	-175.515	-0.00647	-2.30516
46E+09	-0.47238	-20.4183	-87.8303	-104.038	-98.1598	43.99054	-0.01592	-2.38208
47E+09	-0.46545	-22.8248	-89.9734	-173.583	-84.9044	98.1069	-0.0093	-2.45112
48E+09	-0.45998	-25.1255	-80.5742	156.7728	-81.0795	0.863685	-0.00892	-2.49231
49E+09	-0.45592	-27.4023	-78.5815	34.25447	-79.0186	-79.8164	-0.01339	-2.59041
50E+09	-0.45319	-29.5733	-82.5991	-4.64037	-80.3694	-9.39467	-0.01109	-2.59229
51E+09	-0.45681	-31.7306	-82.0968	-92.817	-76.0059	81.84937	-0.00671	-2.68316
52E+09	-0.45173	-33.8281	-78.8449	62.2683	-83.2957	101.5272	0.000502	-2.67045
53E+09	-0.45775	-35.9266	-81.8644	-80.2542	-83.3299	99.67439	-0.00064	-2.69598
54E+09	-0.44878	-37.9427	-94.4563	-130.234	-82.8555	-122.315	0.002758	-2.71524
55E+09	-0.43951	-39.982	-87.9107	157.1295	-80.775	-35.5775	0.002716	-2.70796
56E+09	-0.43381	-41.9843	-111.687	6.635704	-85.8802	-88.6469	0.001726	-2.69154
57E+09	-0.4353	-43.9669	-84.637	-122.918	-83.0551	-111.284	-0.00093	-2.67561
58E+09	-0.41667	-45.9481	-77.2168	164.0598	-100.461	-55.8411	-0.00527	-2.6034
59E+09	-0.41409	-47.9335	-84.1977	-126.94	-91.2931	6.58602	0.002041	-2.58363
60E+09	-0.39959	-49.9384	-97.0754	169.3996	-76.2718	-93.8471	0.002506	-2.53881
61E+09	-0.39076	-51.9455	-84.3847	166.0877	-80.4249	-170.769	0.001744	-2.50126
62E+09	-0.39919	-53.9495	-78.5723	-64.4543	-89.9993	-92.9012	-0.00682	-2.42261

3E+09	-0.41252	-55.9652	-81.8108	43.99494	-85.6732	89.04106	-0.0286	-2.37069
4E+09	-0.41432	-57.9805	-78.2246	145.6793	-89.6336	31.64859	-0.01744	-2.37546
5E+09	-0.39817	-59.985	-93.0525	129.5593	-87.6972	141.709	-0.00224	-2.36123
6E+09	-0.39597	-61.9812	-91.8611	93.55189	-85.2958	98.37099	-0.00728	-2.41308
7E+09	-0.39896	-63.9335	-85.0786	163.1486	-90.5764	41.24657	0.000685	-2.44875
8E+09	-0.39868	-65.8482	-79.5401	8.419581	-81.7215	-66.2492	0.00296	-2.51098
9E+09	-0.40567	-67.708	-91.2899	52.43124	-76.1731	51.06456	-0.00436	-2.62037
3E+09	-0.40244	-69.5295	-91.9896	-153.28	-81.9654	-163.211	0.003193	-2.69188





LAMPIRAN

Spesifikasi Substrate