SPECIFICATION

Daxian Communication Technology Limited

Shenzhen Daxian Technology Co., Ltd.

Rhino Mobility LLC T100

Main+diversity+BT&WIFI&GPS antenna

Product specification

Guest households	Rhino Mobility LLC	frequency band	WCDMA:B1/2/4/5 LTE B1/B2/B3/B4/B5/B7/B12/B13/B14/B17/B18/B19/B20/B25/B26/B29/B30/B41B66/B71 BT/WIFI/GPS+diversity
Project name	T100	version	V05
Material No.	Main：1T-100XX-009 Div：2T-100XX-009 BT&WIFI&GPS：3T-100XX-009	color	Black
R F design	Xitian.Chen	structure design	Yezhi.Bi
Quality Manager	Ziyin.Hu	R & D director	Lei.Zhang
Date	2023-07-11		

client confirmation：

Whether the assembly meets your requirements：☐OK ☐NG

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Change resume

version number	Change content	Reason for change	Initiate change Party	date	Modifier
V1.0	create			2023.7.11	

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1、Electrical specification standard

The frequency range of the antenna is

1920MHz~2170MHz,1850MHz~1990MHz,1710MHz~1880MHz,1710MHz~2155MHz,824MHz~894MHz,2500MHz~2690MHz,699MHz~746MHz,777MHz~756MHz,788MHz~768MHz,704MHz~746MHz,815MHz~875MHz,830MHz~890MHz,832MHz~821MHz,1850MHz~1995MHz,814MHz~894MHz,717MHz~728MHz,2305MHz~2360MHz,2496MHz~2690MHz,1710MHz~2200MHz,612MHz~651MHz,2400MHz~2500MHz,5150MHz~5850MHz , GPS : 1575MHz. **The following table indicates the electrical performance specifications of the antenna. The antenna is designed and manufactured by a large display.**

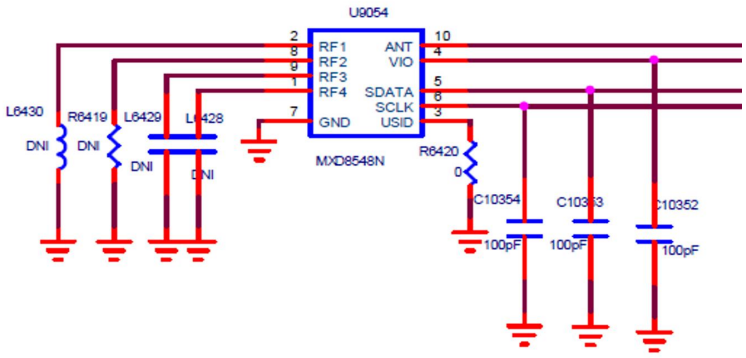
WCDMA&LTE -band B1				
band	**band (MHz)** **The transmit TX**	**VSWR**	**band (MHz)** **The receiving end RX**	**VSWR**
W/LTE -B1	1920~1980	≤4	2110~2170	≤4
WCDMA&LTE -band B2				
band	**band (MHz)** **The transmit TX**	**VSWR**	**band (MHz)** **The receiving end RX**	**VSWR**
W/LTE -B2	1850~1910	≤4	1930~1990	≤4
LTE -band B3				
band	**band (MHz)** **The transmitter TX**	**VSWR**	**band (MHz)** **The receiving end RX**	**VSWR**
LTE -B3	1710~1785	≤4	1805~1880	≤4
WCDMA&LTE -band B4				
band	**band (MHz)** **The transmitter TX**	**VSWR**	**band (MHz)** **The receiving end RX**	**VSWR**
W/LTE -B4	1710~1755	≤4	2110~2155	≤4
WCDMA&LTE -band B5				
band	**band (MHz)** **The transmitter TX**	**VSWR**	**band (MHz)** **The receiving end RX**	**VSWR**
W/LTE -B5	824~849	≤4	869~894	≤4
LTE -band B7				
band	**band (MHz)** **The transmitter TX**	**VSWR**	**band (MHz)** **The receiving end RX**	**VSWR**
LTE -B7	2500~2570	≤4	2620~2690	≤4
LTE -band B12				
band	**band (MHz)** **The transmitter TX**	**VSWR**	**band (MHz)** **The receiving end RX**	**VSWR**
LTE -B12	699~716	≤4	729~746	≤4

LTE -band B13				
band	band (MHz) The transmit TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B13	777~787	≤4	746~756	≤4
LTE -band B14				
band	band (MHz) The transmit TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B14	788~798	≤4	758~768	≤4
LTE -band B17				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B17	704~716	≤4	734~746	≤4
LTE -band B18				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B18	815~830	≤4	860~875	≤4
LTE -band B19				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B19	830~845	≤4	875~890	≤4
LTE -band B20				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B20	832~862	≤4	791~821	≤4
LTE -band B25				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B25	1850~1915	≤4	1930~1995	≤4
LTE -band B26				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B26	814~849	≤4	859~894	≤4

LTE -band B29				
band	band (MHz) The transmit TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B29	717~728	≤4	717~728	≤4
LTE -band B30				
band	band (MHz) The transmit TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B30	2305~2315	≤4	2350~2360	≤4
LTE -band B41				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B41	2496~2690	≤4	2496~2690	≤4
LTE -band B66				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B66	1710~1780	≤4	2110~2200	≤4
LTE -band B71				
band	band (MHz) The transmitter TX	VSWR	band (MHz) The receiving end RX	VSWR
LTE -B71	612~651	≤4	612~651	≤4

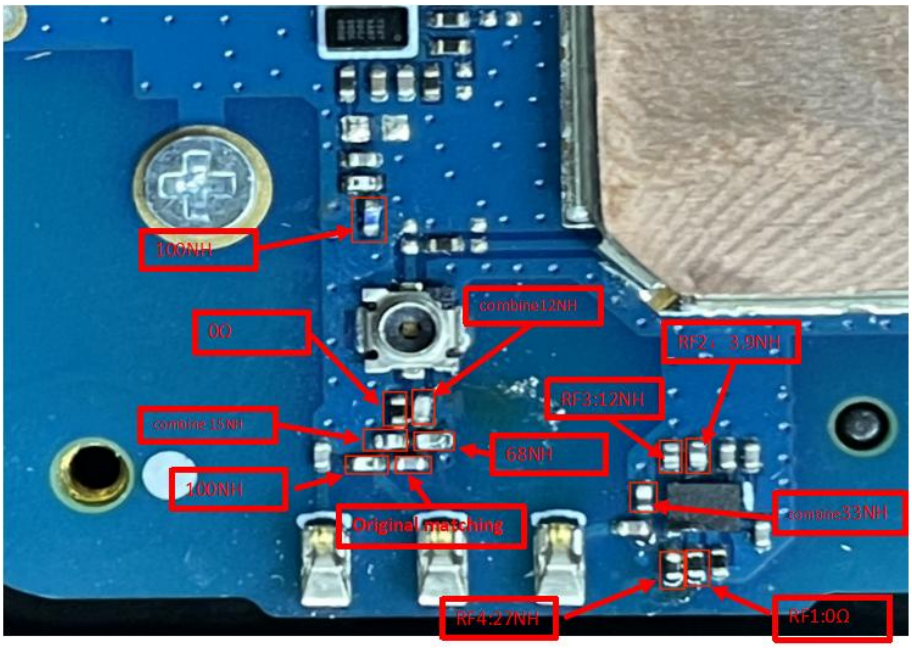
Frequency Range	Frequency (MHz)	VSWR
BT	**2400 ~ 2500**	**≤ 2**
WIFI	**2400 ~ 2500，5150~ 5850**	**≤ 2**
GPS	**1575MHz**	**≤ 2**

1.1 antenna matching--MAIN

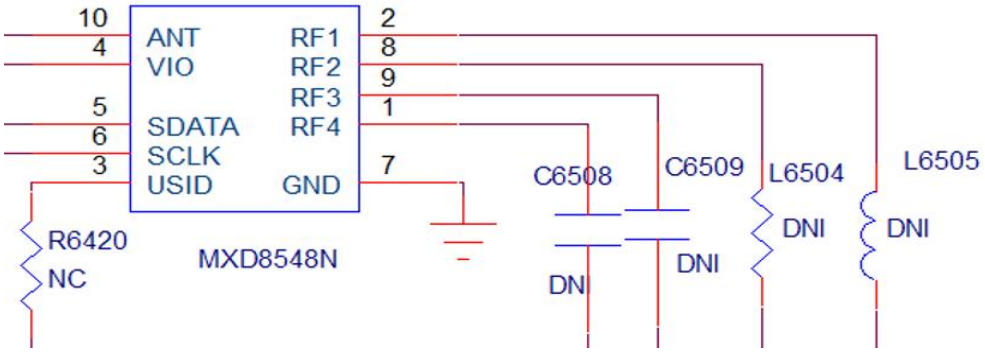


RF1:0Ω
RF2:3.9NH
RF3:12NH
RF4:27NH
Resident position: 33NH

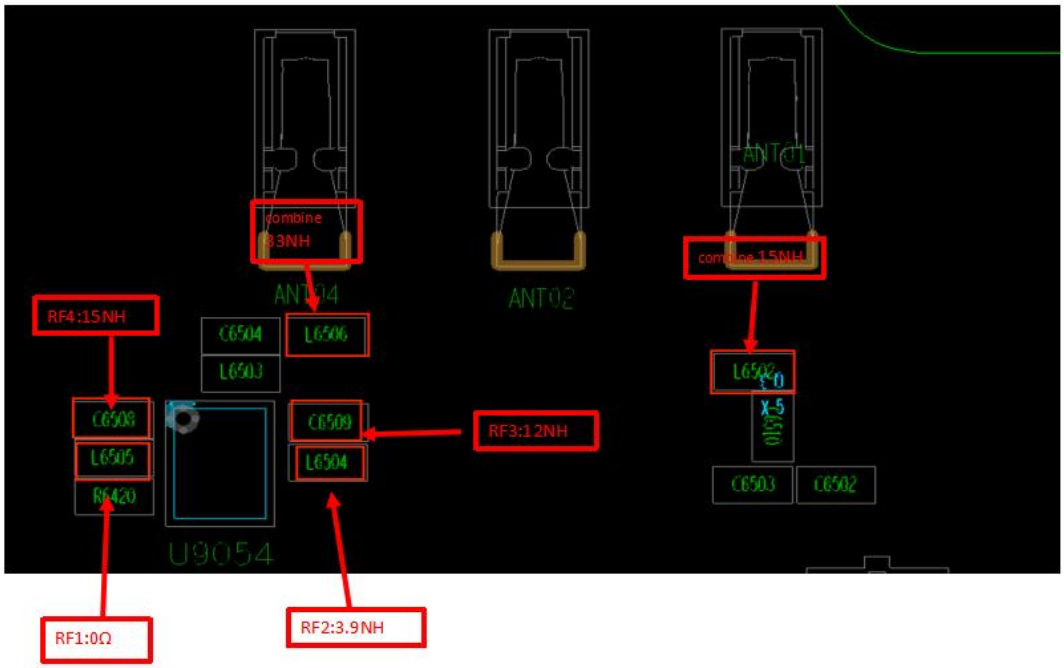
Antenna switch logic	
all off:	LTE 71
RF1: on	WCDMA 1/2/4/5 LTE 1/2/3/4/5/7/18/19/25/26/30/41/66
RF2:on	LTE B20
RF3:on	LTE 13/14
RF4:on	LTE 12/17



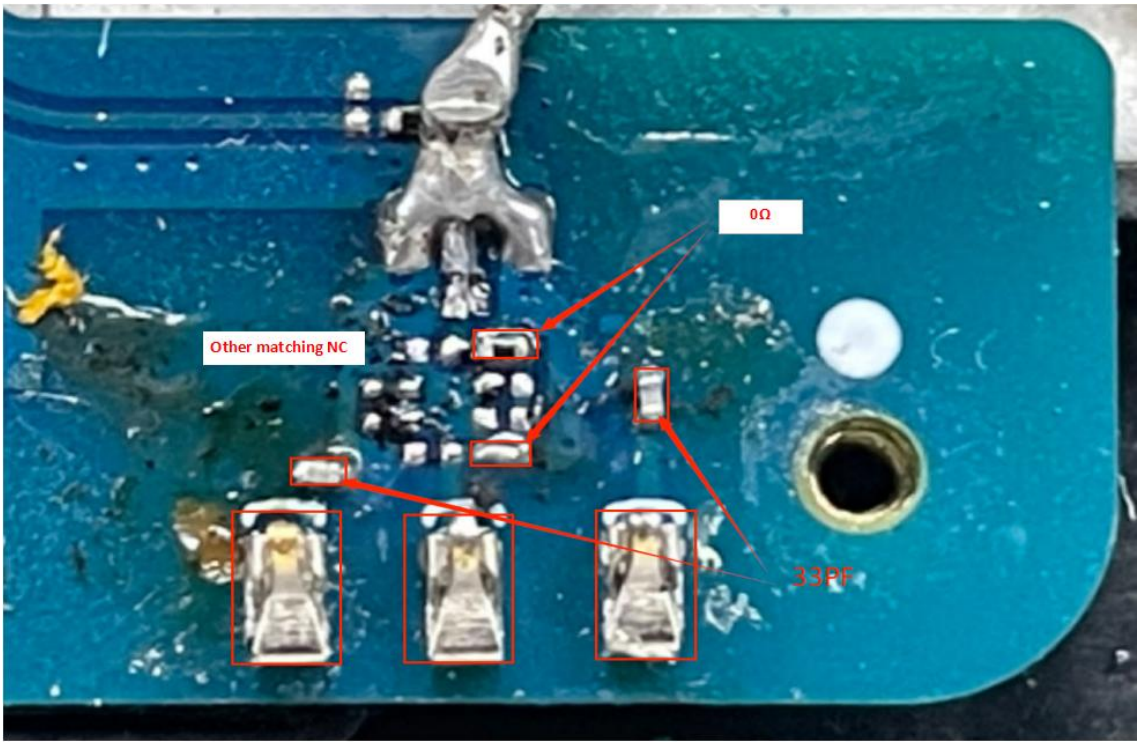
1.1.1 antenna matching--diversity



Diversity antenna switch logic	
all off:	LTE 71
RF1: on	WCDMA 1/2/4/5 LTE 1/2/3/4/5/7/18/19/25/26/30/41/66
RF2:on	LTE B20
RF3:on	LTE 13/14
RF4:on	LTE 12/17



1.1.2 antenna matching--BT&WIFI&GPS



1.2 Antenna composition

The antenna is mainly composed of FPC.

2、 The Equipment of Active Test

Satimo 3D Chamber　6×4×4(m)

Agilent 8960 E5515c

Network analyzer-R&S ZVL

Figure 2

3 test

3.1 The Test of standing Wave (VSWR)

3.1.1 The Test of standing Wave (VSWR)： In turn, the connection of the VSWR testing device is as follows: RES ZVL Network Analyzer / testing Line / testing tool

Actual measurement (with diagram)

3.2 Measurement of Efficiency, Power (TRP) and Sensitivity (TIS)

3.2.1 Test site：

Large-scale microwave darkroom. The test frequency range is 400MHz / 6GHz, the static range is 50cm circumferential and the reflectivity is less than-50 dB..

3.2.2 Test instrument：

Rs ZVL Network Analyzer, Agilent8960 E5515C, Standard Horn Antenna, French SATIMO-SG24SYSTEM system, Printer, etc.

3.2.3 test data ：In microwave anechoic chambers, the power and sensitivity values measured are shown in the following table:

OTA Active Test:

FRE-Band	TRP	TIS	FRE-Band	TRP	TIS
B1	19.53		B18	16.71	
	18.95			16.99	
	19.35	-97.34		17.68	-97.33
B2	19.68		B19	17.53	
	19.6			17.66	
	19.3	-96.91		18.18	-96.51
B3	19.92		B20	20.05	
	19.61			19.71	
	19.95	-94.95		19.56	-95.59
B4	20.5		B25	20.28	
	20.46			20	
	20.24	-99.17		20.06	-100.5
B5	17.39		B26	17.13	
	17.66			17.81	
	18.21	-95.67		18.46	-98.96
B7	21.31		B30	20.78	
	21.35			21.03	
	21.42	-94.87		21.12	-99.08
B12	16.43		B66	20.62	
	17.33			20.82	
	18.53	-98.54		21.12	-99.85
B13	20.13		B71	17.24	-95.42
	20.17			19.22	
	20.09	-92.32		20.36	
B14	21.68		B41	24.6	
	21.82			24.32	
	21.81	-95.26		23.72	-93.16
B17	17.81				
	18.18				
	18.96	-95.91			

3.2.4 OTA Passive Efficiency&Gain Test--B850--MAIN:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
820	32.18	-4.92	-0.61	1910	49.74	-3.03	1.01
830	36.29	-4.4	-0.56	1920	48.39	-3.15	0.79
840	37.69	-4.24	-0.72	1930	46.88	-3.29	0.58
850	39.43	-4.04	-0.87	1940	46.97	-3.28	0.6
860	45.74	-3.4	-0.47	1950	45.4	-3.43	0.49
870	47.5	-3.23	0.6	1960	43.41	-3.62	0.16
880	45.31	-3.44	-0.13	1970	44.52	-3.51	0.14
890	41.19	-3.85	-0.41	1980	44.15	-3.55	-0.16
				1990	41.27	-3.84	-0.5
1700	59.4	-2.26	4.05	2000	39.05	-4.08	-0.81
1710	56.59	-2.47	3.82	2010	37.86	-4.22	-0.74
1720	54.61	-2.63	3.62	2020	38.26	-4.17	-0.34
1730	54.16	-2.66	3.43	2030	37.41	-4.27	-0.54
1740	54.81	-2.61	3.16	2040	36.64	-4.36	-0.54
1750	54.89	-2.61	3.05	2050	38.2	-4.18	-0.57
1760	56.48	-2.48	2.97	2060	37.78	-4.23	-0.53
1770	57.4	-2.41	2.99	2070	37.03	-4.31	-0.72
1780	58.93	-2.3	2.94	2080	36.49	-4.38	-0.5
1790	58.42	-2.33	2.94	2090	36.51	-4.38	-0.17
1800	58.59	-2.32	2.89	2100	36.84	-4.34	0.03
1810	58.49	-2.33	2.83	2110	36.4	-4.39	-0.22
1820	56.59	-2.47	2.7	2120	36.76	-4.35	-0.51
1830	55.17	-2.58	2.51	2130	38.29	-4.17	-0.39
1840	54.24	-2.66	2.45	2140	39.07	-4.08	-0.19
1850	52.97	-2.76	2.29	2150	40.15	-3.96	0.16
1860	53.17	-2.74	2.28	2160	41.68	-3.8	0.44
1870	53.56	-2.71	2.11	2170	42.55	-3.71	0.79
1880	53.4	-2.72	1.89	2180	43.73	-3.59	1.07
1890	53.48	-2.72	1.58	2190	43.45	-3.62	1.22
1900	51.84	-2.85	1.33	2200	43.94	-3.57	1.55

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2210	44.3	-3.54	1.62	2510	55.77	-2.54	4.96
2220	44.15	-3.55	1.76	2520	57.6	-2.4	5.16
2230	45.32	-3.44	1.88	2530	56.56	-2.47	4.95
2240	45.24	-3.44	1.92	2540	57.86	-2.38	5.16
2250	44.98	-3.47	1.99	2550	56.92	-2.45	5.09
2260	45.13	-3.46	2.02	2560	53.3	-2.73	4.99
2270	44.5	-3.52	2.01	2570	50.67	-2.95	4.76
2280	41.9	-3.78	2.01	2580	48.76	-3.12	4.58
2290	42.33	-3.73	2.25	2590	47.92	-3.2	4.43
2300	43.02	-3.66	2.49	2600	46.21	-3.35	4.21
2310	43.58	-3.61	2.82	2610	44.84	-3.48	4.01
2320	45.18	-3.45	3.27	2620	45.07	-3.46	3.94
2330	47.34	-3.25	3.68	2630	45.94	-3.38	4.14
2340	47.94	-3.19	3.91	2640	47.1	-3.27	4.15
2350	48.44	-3.15	4.05	2650	48.94	-3.1	4.4
2360	48.86	-3.11	4.19	2660	49.47	-3.06	4.33
2370	49.18	-3.08	4.28	2670	51.04	-2.92	4.41
2380	49.86	-3.02	4.49	2680	54.57	-2.63	4.64
2390	47.78	-3.21	4.62	2690	56.8	-2.46	4.64
2400	47.11	-3.27	4.72	2700	58.17	-2.35	4.68
2410	46.96	-3.28	4.99				
2420	46.05	-3.37	5.04				
2430	45.03	-3.47	5.04				
2440	44.96	-3.47	4.94				
2450	45.32	-3.44	4.96				
2460	46.65	-3.31	4.95				
2470	47.47	-3.24	4.96				
2480	48.11	-3.18	4.73				
2490	49.3	-3.07	4.66				
2500	53.2	-2.74	4.84				

3.2.5 OTA Passive Efficiency&Gain Test--B12--MAIN:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
700	21.34	-6.71	-2.1	1910	40.35	-3.94	0.18
710	24.43	-6.12	-1.23	1920	42.46	-3.72	0.23
720	30.17	-5.2	-0.44	1930	42.8	-3.69	0.08
730	33.28	-4.78	-0.18	1940	43.55	-3.61	0.17
740	36.52	-4.37	0.1	1950	42.42	-3.72	0.01
750	36.99	-4.32	0.22	1960	41.2	-3.85	-0.11
760	36.82	-4.34	0.25	1970	42.28	-3.74	0
770	35.61	-4.48	0.43	1980	41.46	-3.82	-0.22
780	35.71	-4.47	0.67	1990	37.96	-4.21	-0.7
				2000	35.75	-4.47	-1.11
1700	19.98	-6.99	-1	2010	34.63	-4.61	-1.52
1710	18.37	-7.36	-1.29	2020	35.18	-4.54	-1.48
1720	16.96	-7.7	-1.55	2030	34.17	-4.66	-1.55
1730	15.42	-8.12	-1.99	2040	33.12	-4.8	-1.73
1740	14.68	-8.33	-2.51	2050	34.31	-4.65	-1.52
1750	14.39	-8.42	-2.92	2060	33.86	-4.7	-1.57
1760	13.71	-8.63	-3.59	2070	32.84	-4.84	-1.67
1770	11.93	-9.23	-4.51	2080	32.14	-4.93	-1.73
1780	10.8	-9.66	-5.16	2090	31.97	-4.95	-1.64
1790	10.32	-9.86	-5.37	2100	32.23	-4.92	-1.58
1800	10.15	-9.93	-5.53	2110	31.52	-5.01	-1.79
1810	9.8	-10.09	-5.64	2120	31.48	-5.02	-1.81
1820	10.14	-9.94	-5.87	2130	32.5	-4.88	-1.46
1830	11.85	-9.26	-5.28	2140	33.24	-4.78	-0.96
1840	14.44	-8.41	-4.17	2150	34.74	-4.59	-0.58
1850	16.75	-7.76	-3.41	2160	36.88	-4.33	-0.02
1860	20.46	-6.89	-2.54	2170	38.99	-4.09	0.48
1870	26.22	-5.81	-1.4	2180	41.45	-3.83	1.06
1880	31.62	-5	-0.57	2190	41.88	-3.78	1.48
1890	35.8	-4.46	-0.08	2200	42.47	-3.72	1.64
1900	38.02	-4.2	0.11	2210	43.69	-3.6	2.02

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2220	44.97	-3.47	2.08	2530	46.33	-3.34	5.42
2230	47.37	-3.24	2.41	2540	50.2	-2.99	5.9
2240	48.07	-3.18	2.33	2550	52.18	-2.83	6.06
2250	48.38	-3.15	2.49	2560	51.5	-2.88	6.15
2260	48.99	-3.1	2.58	2570	51.46	-2.89	6.12
2270	48.17	-3.17	2.61	2580	50.9	-2.93	6.08
2280	44.67	-3.5	2.11	2590	50.14	-3	5.99
2290	44.22	-3.54	2.08	2600	48.83	-3.11	5.74
2300	43.89	-3.58	2.05	2610	46.71	-3.31	5.55
2310	43.71	-3.59	2.06	2620	46.07	-3.37	5.28
2320	44.58	-3.51	2.47	2630	46.47	-3.33	5.34
2330	45.4	-3.43	2.9	2640	46.89	-3.29	5.23
2340	44.65	-3.5	3.08	2650	47.88	-3.2	5.34
2350	43.95	-3.57	3.26	2660	47.73	-3.21	5.26
2360	43.25	-3.64	3.34	2670	49.19	-3.08	5.32
2370	41.81	-3.79	3.39	2680	51.43	-2.89	5.5
2380	40.93	-3.88	3.5	2690	52.97	-2.76	5.42
2390	37.87	-4.22	3.73	2700	53.98	-2.68	5.42
2400	36.52	-4.37	3.78				
2410	35.39	-4.51	4.14				
2420	34	-4.69	4.22				
2430	33.47	-4.75	4.33				
2440	34.19	-4.66	4.48				
2450	34.96	-4.56	4.56				
2460	35.85	-4.46	4.62				
2470	35.94	-4.44	4.63				
2480	36.08	-4.43	4.52				
2490	36.42	-4.39	4.51				
2500	38.53	-4.14	4.74				
2510	40.89	-3.88	4.9				
2520	44.24	-3.54	5.29				

3.2.6 OTA Passive Efficiency&Gain Test--B13--MAIN:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
740	32.99	-4.82	0.54	1910	50.31	-2.98	2.04
750	34.14	-4.67	0.7	1920	49.4	-3.06	1.76
760	35.64	-4.48	0.73	1930	47.98	-3.19	1.61
770	36.06	-4.43	0.95	1940	47.76	-3.21	1.48
780	38.05	-4.2	1.16	1950	45.76	-3.39	1.23
790	36.61	-4.36	1.34	1960	43.48	-3.62	0.69
800	43.19	-3.65	1.56	1970	44.04	-3.56	0.51
810	39.39	-4.05	0.67	1980	43.16	-3.65	0.09
				1990	39.99	-3.98	-0.41
1700	11.57	-9.37	-3.54	2000	38.09	-4.19	-0.64
1710	10.97	-9.6	-3.86	2010	37.6	-4.25	-0.56
1720	11.08	-9.55	-3.89	2020	38.89	-4.1	-0.1
1730	12.33	-9.09	-3.45	2030	38.33	-4.16	-0.23
1740	15.06	-8.22	-2.67	2040	37.57	-4.25	-0.17
1750	18.64	-7.3	-1.6	2050	38.96	-4.09	-0.15
1760	22.43	-6.49	-0.77	2060	38.49	-4.15	-0.11
1770	25.71	-5.9	-0.02	2070	37.54	-4.25	-0.2
1780	30.98	-5.09	0.73	2080	37.07	-4.31	-0.22
1790	35.68	-4.48	1.39	2090	37.14	-4.3	0.01
1800	39.6	-4.02	1.77	2100	37.78	-4.23	0.18
1810	42.14	-3.75	1.99	2110	37.49	-4.26	0.05
1820	44.51	-3.52	2.25	2120	37.87	-4.22	-0.04
1830	46.88	-3.29	2.4	2130	39.1	-4.08	-0.18
1840	48.48	-3.14	2.6	2140	39.51	-4.03	-0.3
1850	48.33	-3.16	2.55	2150	40.34	-3.94	-0.09
1860	50.11	-3	2.78	2160	41.78	-3.79	0.18
1870	52.7	-2.78	2.9	2170	42.29	-3.74	0.36
1880	53.31	-2.73	2.81	2180	43.24	-3.64	0.51
1890	53.09	-2.75	2.61	2190	42.45	-3.72	0.36
1900	51.63	-2.87	2.3	2200	41.49	-3.82	0.46

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2210	39.63	-4.02	0.44	2510	60.63	-2.17	5.63
2220	37.38	-4.27	0.63	2520	63.34	-1.98	5.89
2230	36.69	-4.36	0.82	2530	63.55	-1.97	5.92
2240	34.56	-4.61	0.9	2540	65.7	-1.82	6.19
2250	31.33	-5.04	0.78	2550	65.9	-1.81	6.19
2260	28.33	-5.48	0.64	2560	63.05	-2	6.13
2270	25.36	-5.96	0.55	2570	61.38	-2.12	5.93
2280	21.51	-6.67	0.22	2580	59.75	-2.24	5.76
2290	19.21	-7.16	0.12	2590	58.31	-2.34	5.55
2300	17.95	-7.46	0	2600	56.16	-2.51	5.23
2310	17.86	-7.48	0.2	2610	53.52	-2.71	5.02
2320	18.85	-7.25	0.54	2620	52.79	-2.77	4.81
2330	20.1	-6.97	1	2630	52.71	-2.78	4.89
2340	21.52	-6.67	1.37	2640	52.87	-2.77	4.78
2350	24.64	-6.08	1.98	2650	53.45	-2.72	4.83
2360	27.86	-5.55	2.69	2660	52.85	-2.77	4.64
2370	31.28	-5.05	3.19	2670	53.97	-2.68	4.64
2380	36.64	-4.36	4.1	2680	56.52	-2.48	4.81
2390	41.31	-3.84	4.77	2690	58.16	-2.35	4.77
2400	45.15	-3.45	5.28	2700	58.61	-2.32	4.74
2410	47.27	-3.25	5.55				
2420	48.32	-3.16	5.67				
2430	49.25	-3.08	5.72				
2440	49.96	-3.01	5.65				
2450	49.42	-3.06	5.58				
2460	50.67	-2.95	5.46				
2470	52.2	-2.82	5.44				
2480	52.65	-2.79	5.25				
2490	53.4	-2.72	5.19				
2500	57.16	-2.43	5.4				

3.2.7 OTA Passive Efficiency&Gain Test--B20--MAIN:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
790	25.88	-5.87	0.17	1910	38.65	-4.13	-0.08
800	34.51	-4.62	0.93	1920	39.57	-4.03	-0.14
810	39.05	-4.08	0.99	1930	39.64	-4.02	-0.35
820	44.52	-3.51	1.07	1940	40.35	-3.94	-0.63
830	49.59	-3.05	1.33	1950	39.62	-4.02	-0.67
840	45.82	-3.39	0.22	1960	38.54	-4.14	-0.76
850	43.85	-3.58	-0.14	1970	39.91	-3.99	-0.58
860	45.18	-3.45	0.08	1980	39.59	-4.02	-0.63
870	46.06	-3.37	0.24	1990	36.83	-4.34	-1.07
880	42.35	-3.73	-0.62	2000	35.16	-4.54	-1.24
				2010	34.86	-4.58	-1.27
1700	45.92	-3.38	3.26	2020	36.01	-4.44	-1.04
1710	43.59	-3.61	3.11	2030	35.5	-4.5	-1.2
1720	41.88	-3.78	2.99	2040	35.15	-4.54	-1.27
1730	40.7	-3.9	2.75	2050	36.91	-4.33	-0.91
1740	40.86	-3.89	2.49	2060	36.89	-4.33	-0.59
1750	41.64	-3.8	2.35	2070	36.36	-4.39	-0.32
1760	42.69	-3.7	2.2	2080	36.16	-4.42	-0.12
1770	42.24	-3.74	1.97	2090	36.26	-4.41	-0.05
1780	42.2	-3.75	1.77	2100	36.8	-4.34	-0.07
1790	41.11	-3.86	1.61	2110	35.91	-4.45	-0.31
1800	39.67	-4.02	1.36	2120	35.62	-4.48	-0.61
1810	36.89	-4.33	1.02	2130	36.14	-4.42	-0.74
1820	33.13	-4.8	0.59	2140	36.12	-4.42	-0.33
1830	30.43	-5.17	0.2	2150	36.58	-4.37	-0.11
1840	28.9	-5.39	0.04	2160	37.52	-4.26	0.36
1850	27.45	-5.61	-0.31	2170	38.04	-4.2	0.71
1860	28.09	-5.51	-0.31	2180	39.13	-4.08	1.16
1870	30.82	-5.11	-0.15	2190	38.95	-4.09	1.54
1880	33.85	-4.7	0.01	2200	39.45	-4.04	1.73
1890	36.49	-4.38	0.1	2210	40.33	-3.94	2.07
1900	37.7	-4.24	0.03	2220	41.55	-3.81	2.09

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2230	44.06	-3.56	2.41	2550	49.32	-3.07	5.11
2240	45.1	-3.46	2.33	2560	46.39	-3.34	4.9
2250	45.49	-3.42	2.32	2570	44.3	-3.54	4.54
2260	46.33	-3.34	2.53	2580	42.79	-3.69	4.24
2270	45.98	-3.37	2.61	2590	41.88	-3.78	4.09
2280	43.26	-3.64	2.18	2600	40.71	-3.9	3.86
2290	43.42	-3.62	2.21	2610	39.73	-4.01	3.77
2300	43.84	-3.58	2.31	2620	40.41	-3.94	3.71
2310	44.37	-3.53	2.37	2630	41.72	-3.8	3.93
2320	46.01	-3.37	2.73	2640	43.23	-3.64	3.93
2330	47.8	-3.21	3.19	2650	44.9	-3.48	4.05
2340	48.11	-3.18	3.52	2660	45.8	-3.39	3.98
2350	48.27	-3.16	3.71	2670	47.87	-3.2	4.09
2360	48.53	-3.14	3.9	2680	50.86	-2.94	4.14
2370	48.33	-3.16	3.9	2690	53.21	-2.74	4.15
2380	48.55	-3.14	4.03	2700	54.71	-2.62	4.35
2390	45.94	-3.38	4.11				
2400	44.86	-3.48	4.08				
2410	44.08	-3.56	4.19				
2420	42.84	-3.68	4.28				
2430	41.77	-3.79	4.3				
2440	41.68	-3.8	4.23				
2450	42.14	-3.75	4.36				
2460	43.39	-3.63	4.41				
2470	43.6	-3.61	4.44				
2480	43.65	-3.6	4.23				
2490	44.56	-3.51	4.32				
2500	47.4	-3.24	4.66				
2510	48.85	-3.11	4.87				
2520	50.01	-3.01	5.15				
2530	49.42	-3.06	5.05				
2540	50.28	-2.99	5.35				

3.2.8 OTA Passive Efficiency&Gain Test--B71--MAIN:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
620	19.97	-7	-1.82	1910	49.28	-3.07	1.57
630	22.25	-6.53	-1.83	1920	47.39	-3.24	1.4
640	24.93	-6.03	-1.68	1930	45.4	-3.43	1.31
650	26.52	-5.76	-1.28	1940	45.08	-3.46	1.13
660	26.39	-5.79	-1.25	1950	43.14	-3.65	0.95
670	27.62	-5.59	-0.82	1960	41.01	-3.87	0.6
680	29.37	-5.32	-0.44	1970	41.32	-3.84	0.53
				1980	40.75	-3.9	0.25
1700	60.79	-2.16	2.97	1990	37.57	-4.25	-0.31
1710	58.89	-2.3	3	2000	35.26	-4.53	-0.74
1720	57.11	-2.43	2.61	2010	33.92	-4.7	-0.95
1730	57.84	-2.38	2.76	2020	34.14	-4.67	-0.81
1740	59.46	-2.26	2.71	2030	33.15	-4.8	-1.12
1750	58.8	-2.31	2.63	2040	31.92	-4.96	-1.55
1760	59.3	-2.27	2.6	2050	32.73	-4.85	-1.62
1770	60.26	-2.2	2.77	2060	31.8	-4.98	-1.67
1780	62.51	-2.04	2.78	2070	30.95	-5.09	-1.41
1790	61.41	-2.12	2.77	2080	30.29	-5.19	-1.13
1800	60.81	-2.16	2.62	2090	30.44	-5.17	-0.84
1810	59.74	-2.24	2.63	2100	31.07	-5.08	-0.76
1820	58.6	-2.32	2.63	2110	30.7	-5.13	-1.02
1830	57.53	-2.4	2.58	2120	30.98	-5.09	-1.28
1840	56.12	-2.51	2.65	2130	32.14	-4.93	-1.03
1850	53.8	-2.69	2.46	2140	33.21	-4.79	-0.64
1860	53.69	-2.7	2.55	2150	34.35	-4.64	-0.38
1870	54.44	-2.64	2.44	2160	36.41	-4.39	0.04
1880	53.53	-2.71	2.29	2170	38.17	-4.18	0.59
1890	53.3	-2.73	2.05	2180	40.27	-3.95	1.06
1900	51.2	-2.91	1.77	2190	40.62	-3.91	1.3

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2200	41.29	-3.84	1.68	2490	36.54	-4.37	4.28
2210	42.56	-3.71	1.78	2500	40.3	-3.95	4.69
2220	43.44	-3.62	2	2510	43.3	-3.64	4.76
2230	45.52	-3.42	2.05	2520	46.66	-3.31	5.11
2240	45.55	-3.41	2.11	2530	48.38	-3.15	5.1
2250	45.63	-3.41	2.03	2540	51.32	-2.9	5.36
2260	45.93	-3.38	1.95	2550	53.31	-2.73	5.33
2270	44.98	-3.47	1.87	2560	51.66	-2.87	5.13
2280	42.17	-3.75	1.51	2570	51.79	-2.86	4.94
2290	41.86	-3.78	1.59	2580	51.06	-2.92	4.75
2300	41.89	-3.78	1.77	2590	51.07	-2.92	4.71
2310	41.85	-3.78	1.94	2600	50.2	-2.99	4.59
2320	42.73	-3.69	2.51	2610	48.35	-3.16	4.33
2330	43.71	-3.59	2.85	2620	47.91	-3.2	4.15
2340	43.09	-3.66	3.06	2630	48.13	-3.18	4.11
2350	42.45	-3.72	3.13	2640	49.52	-3.05	4.05
2360	41.54	-3.82	3.21	2650	50.39	-2.98	4.08
2370	40.2	-3.96	3.26	2660	50.94	-2.93	3.98
2380	38.9	-4.1	3.31	2670	52.01	-2.84	4.04
2390	36.28	-4.4	3.59	2680	54.82	-2.61	4
2400	34.77	-4.59	3.63	2690	56.16	-2.51	4
2410	33.61	-4.73	3.95	2700	56.49	-2.48	3.92
2420	32.26	-4.91	3.97				
2430	31.19	-5.06	4.03				
2440	31.4	-5.03	4.1				
2450	31.74	-4.98	4.17				
2460	32.86	-4.83	4.29				
2470	33.39	-4.76	4.2				
2480	34.97	-4.56	4.26				

3.2.9 OTA Passive Efficiency&Gain Test--B850--diversity:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
820	25.41	-5.95	-3.19	1910	25.46	-5.94	-0.98
830	25.99	-5.85	-2.93	1920	25.19	-5.99	-0.79
840	30.73	-5.12	-2.35	1930	25.01	-6.02	-0.55
850	30.23	-5.2	-1.98	1940	25.08	-6.01	-0.38
860	32.31	-4.91	-1.54	1950	24.42	-6.12	-0.17
870	32.91	-4.83	-1.17	1960	23.82	-6.23	-0.38
880	30.57	-5.15	-1.48	1970	25.15	-5.99	0.03
890	27.3	-5.64	-2.2	1980	25.97	-5.86	0.06
900	23.14	-6.36	-2.58	1990	25.08	-6.01	0.16
910	22.57	-6.46	-3.46	2000	24.85	-6.05	0.34
				2010	25.46	-5.94	0.16
1700	30.13	-5.21	-1.27	2020	26.79	-5.72	0.06
1710	27.81	-5.56	-1.66	2030	25.93	-5.86	0.02
1720	26.19	-5.82	-1.99	2040	24.9	-6.04	-0.11
1730	25.6	-5.92	-2.04	2050	25.33	-5.96	-0.04
1740	24.78	-6.06	-2.18	2060	24.86	-6.05	-0.1
1750	23.34	-6.32	-2.36	2070	24.52	-6.1	-0.14
1760	23.48	-6.29	-2.48	2080	24.8	-6.06	-0.09
1770	24.84	-6.05	-2.31	2090	25.54	-5.93	0.08
1780	26.02	-5.85	-2.27	2100	26.57	-5.76	0.21
1790	25.29	-5.97	-2.1	2110	26.76	-5.73	0.25
1800	25.53	-5.93	-2.03	2120	27.5	-5.61	0.45
1810	27.03	-5.68	-1.35	2130	29.05	-5.37	0.71
1820	27.42	-5.62	-1.16	2140	30.16	-5.21	0.87
1830	26.79	-5.72	-0.94	2150	31.45	-5.02	1.1
1840	26.86	-5.71	-0.77	2160	33.27	-4.78	1.39
1850	27.01	-5.69	-0.86	2170	34.31	-4.65	1.59
1860	27.39	-5.62	-0.74	2180	35.1	-4.55	1.75
1870	26.84	-5.71	-1.18	2190	34.71	-4.6	1.77
1880	26.51	-5.77	-1.06	2200	34.93	-4.57	1.83
1890	26.87	-5.71	-1.15	2210	35.45	-4.5	1.87
1900	26.36	-5.79	-0.99	2220	34.68	-4.6	1.78

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2230	35.43	-4.51	1.82	2550	33.63	-4.73	1.72
2240	35.82	-4.46	1.93	2560	32.98	-4.82	1.74
2250	36.48	-4.38	2.11	2570	33.3	-4.78	1.71
2260	36.88	-4.33	2.24	2580	33.41	-4.76	1.63
2270	37.19	-4.3	2.39	2590	34.15	-4.67	1.65
2280	35.05	-4.55	1.97	2600	34.76	-4.59	1.56
2290	35.85	-4.45	2.09	2610	34.25	-4.65	1.49
2300	35.92	-4.45	2.01	2620	33.07	-4.81	1.26
2310	36.27	-4.4	2.06	2630	32.22	-4.92	1.14
2320	36.8	-4.34	2.47	2640	32.24	-4.92	1.05
2330	37.19	-4.3	2.73	2650	31.16	-5.06	0.92
2340	36.26	-4.41	2.69	2660	28.93	-5.39	0.62
2350	35.68	-4.48	2.67	2670	26.87	-5.71	0.12
2360	35.86	-4.45	2.63	2680	26.55	-5.76	0.29
2370	35.37	-4.51	2.44	2690	24.84	-6.05	0.01
2380	35.29	-4.52	2.26	2700	23.68	-6.26	-0.07
2390	33.66	-4.73	1.94				
2400	33.67	-4.73	1.87				
2410	33.68	-4.73	1.65				
2420	33.13	-4.8	1.59				
2430	33.17	-4.79	1.38				
2440	33.97	-4.69	1.18				
2450	34.95	-4.57	1.32				
2460	35.68	-4.48	1.42				
2470	35.99	-4.44	1.67				
2480	36.27	-4.4	1.74				
2490	35.77	-4.46	1.75				
2500	35.09	-4.55	1.58				
2510	34.71	-4.6	1.71				
2520	34.92	-4.57	1.87				
2530	34.19	-4.66	1.8				
2540	34.16	-4.66	1.9				

3.2.10 OTA Passive Efficiency&Gain Test--B12--diversity:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
700	19.8	-7.03	-3.71	1910	23.5	-6.29	-1.17
710	20.15	-6.96	-3.75	1920	23.19	-6.35	-1.01
720	22.48	-6.48	-3.27	1930	23.15	-6.35	-0.76
730	23.97	-6.2	-2.67	1940	23.26	-6.33	-0.53
740	23.07	-6.37	-2.67	1950	22.77	-6.43	-0.38
750	20.86	-6.81	-3.18	1960	22.26	-6.52	-0.56
760	23.39	-6.31	-2.67	1970	23.7	-6.25	-0.05
770	22.72	-6.44	-3.07	1980	24.58	-6.09	0.04
780	24.21	-6.16	-2.96	1990	23.92	-6.21	0.07
				2000	23.7	-6.25	0.24
1700	29.74	-5.27	-1.57	2010	24.46	-6.12	0.14
1710	26.83	-5.71	-2.21	2020	25.75	-5.89	-0.08
1720	24.74	-6.07	-2.69	2030	24.95	-6.03	-0.29
1730	23.72	-6.25	-2.92	2040	23.89	-6.22	-0.6
1740	22.64	-6.45	-3.14	2050	24.18	-6.17	-0.63
1750	21.03	-6.77	-3.55	2060	23.59	-6.27	-0.65
1760	20.86	-6.81	-3.46	2070	23.21	-6.34	-0.66
1770	21.92	-6.59	-2.94	2080	23.46	-6.3	-0.61
1780	22.72	-6.44	-2.68	2090	24.14	-6.17	-0.43
1790	21.96	-6.58	-2.33	2100	25.26	-5.98	-0.28
1800	22.03	-6.57	-2.23	2110	25.48	-5.94	-0.19
1810	23.45	-6.3	-1.47	2120	26.23	-5.81	-0.02
1820	23.89	-6.22	-1.19	2130	27.9	-5.54	0.34
1830	23.54	-6.28	-1.01	2140	28.97	-5.38	0.48
1840	23.82	-6.23	-0.83	2150	30.53	-5.15	0.75
1850	24.15	-6.17	-0.9	2160	32.46	-4.89	1.02
1860	24.7	-6.07	-0.83	2170	33.59	-4.74	1.2
1870	24.24	-6.15	-1.24	2180	34.5	-4.62	1.43
1880	24.31	-6.14	-1.18	2190	34.14	-4.67	1.48
1890	24.8	-6.06	-1.3	2200	34.4	-4.63	1.53
1900	24.38	-6.13	-1.12	2210	34.8	-4.58	1.59

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2220	34.04	-4.68	1.52	2530	34.7	-4.6	1.52
2230	34.58	-4.61	1.67	2540	34.81	-4.58	1.68
2240	34.81	-4.58	1.68	2550	34.25	-4.65	1.54
2250	35.32	-4.52	1.86	2560	33.49	-4.75	1.52
2260	35.67	-4.48	1.95	2570	33.92	-4.7	1.49
2270	35.84	-4.46	2.09	2580	34.03	-4.68	1.44
2280	33.44	-4.76	1.63	2590	34.67	-4.6	1.41
2290	34.22	-4.66	1.74	2600	35.12	-4.54	1.23
2300	34.49	-4.62	1.66	2610	34.58	-4.61	1.17
2310	35.01	-4.56	1.7	2620	33.28	-4.78	0.88
2320	35.79	-4.46	1.95	2630	32.42	-4.89	0.8
2330	36.55	-4.37	2.3	2640	32.33	-4.9	0.67
2340	35.91	-4.45	2.38	2650	31.22	-5.06	0.58
2350	35.46	-4.5	2.45	2660	28.86	-5.4	0.25
2360	35.82	-4.46	2.45	2670	26.75	-5.73	-0.27
2370	35.41	-4.51	2.37	2680	26.5	-5.77	-0.01
2380	35.34	-4.52	2.18	2690	24.88	-6.04	-0.3
2390	33.67	-4.73	1.92	2700	23.81	-6.23	-0.33
2400	33.67	-4.73	1.88				
2410	33.57	-4.74	1.67				
2420	33.21	-4.79	1.59				
2430	33.11	-4.8	1.4				
2440	33.96	-4.69	1.24				
2450	35.06	-4.55	1.07				
2460	35.75	-4.47	1.14				
2470	36.11	-4.42	1.45				
2480	36.42	-4.39	1.46				
2490	36.08	-4.43	1.51				
2500	35.52	-4.49	1.37				
2510	35.01	-4.56	1.46				
2520	35.43	-4.51	1.63				