



In Collaboration with

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CALIBRATION LABORATORY

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	$50.5\Omega - 3.27j\Omega$
Return Loss	- 29.7dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	$54.2\Omega + 0.81j\Omega$
Return Loss	- 27.8dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	$49.4\Omega + 1.99j\Omega$
Return Loss	- 33.6dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.098 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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DASY5 Validation Report for Head TSL

Date: 10.22.2021

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1315

Communication System: CW; Frequency: 5250 MHz, Frequency: 5600 MHz,
Frequency: 5750 MHz,

Medium parameters used: $f = 5250$ MHz; $\sigma = 4.704$ S/m; $\epsilon_r = 36.62$; $\rho = 1000$ kg/m³,
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.084$ S/m; $\epsilon_r = 36$; $\rho = 1000$ kg/m³,
Medium parameters used: $f = 5750$ MHz; $\sigma = 5.248$ S/m; $\epsilon_r = 35.78$; $\rho = 1000$ kg/m³,

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7517; ConvF(5.42, 5.42, 5.42) @ 5250 MHz; ConvF(4.75, 4.75, 4.75) @ 5600 MHz; ConvF(4.82, 4.82, 4.82) @ 5750 MHz; Calibrated: 2021-02-03
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2021-01-15
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Dipole Calibration /Pin=100mW, d=10mm, f=5250 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 70.32 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 31.0 W/kg

SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.2 W/kg

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 65%

Maximum value of SAR (measured) = 18.2 W/kg

Dipole Calibration /Pin=100mW, d=10mm, f=5600 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 71.09 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 34.9 W/kg

SAR(1 g) = 8.17 W/kg; SAR(10 g) = 2.34 W/kg

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 63.3%

Maximum value of SAR (measured) = 19.9 W/kg

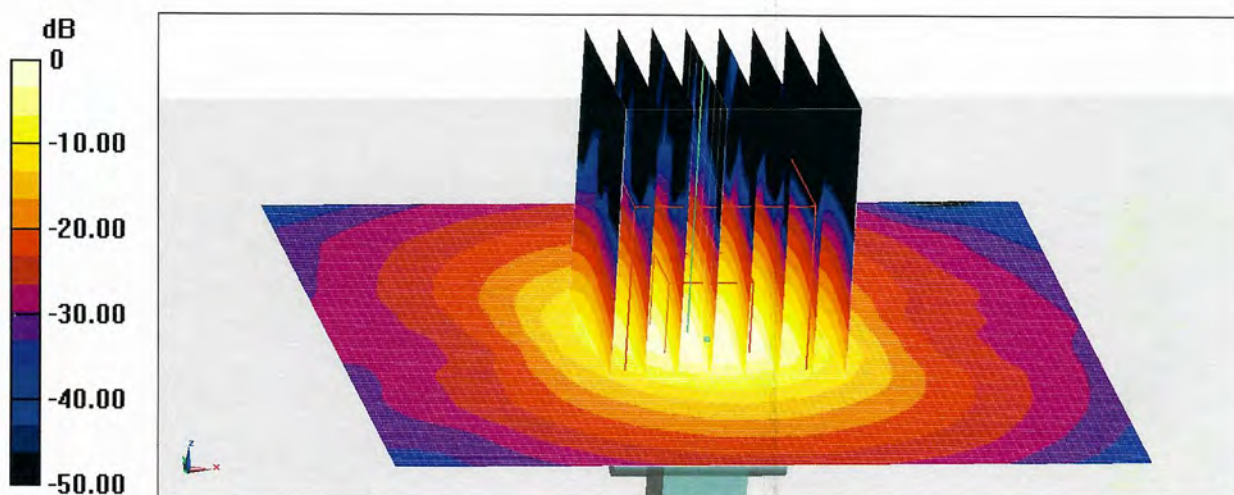


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Dipole Calibration /Pin=100mW, d=10mm, f=5750 MHz/Zoom Scan,
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.72 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 33.5 W/kg
SAR(1 g) = 7.59 W/kg; SAR(10 g) = 2.16 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 62.4%
Maximum value of SAR (measured) = 18.6 W/kg



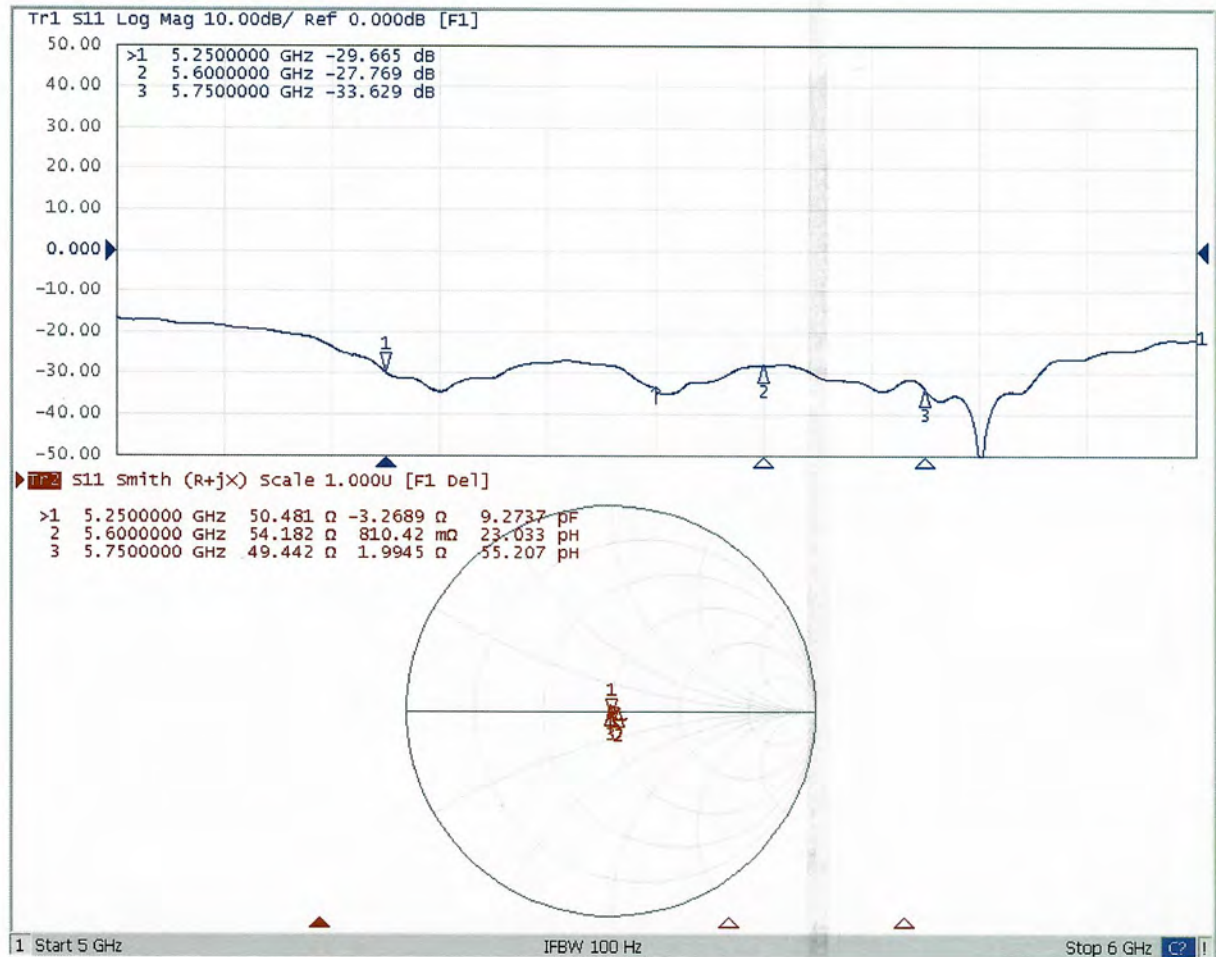
0 dB = 18.6 W/kg = 12.70 dBW/kg



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Impedance Measurement Plot for Head TSL



D5GHzV2 - SN: 1315 Extended Dipole Calibrations

Referring to KDB 865664 D01, if dipoles are verified in return loss ($<-20\text{dB}$, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

D5GHzV2 - SN: 1315						
5250MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
10.22.2021	-29.7		50.5		-3.27	
10.21.2022	-34.53	16.26	51.16	0.66	1.56	4.83
10.20.2023	-25.84	-12.98	54.50	4.00	-2.96	0.31

D5GHzV2 - SN: 1315						
5600MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
10.22.2021	-27.8		54.2		0.81	
10.21.2022	-31.03	11.63	49.59	-4.61	-2.79	-3.60
10.20.2023	-26.15	-5.95	54.92	0.71	-1.82	-2.63

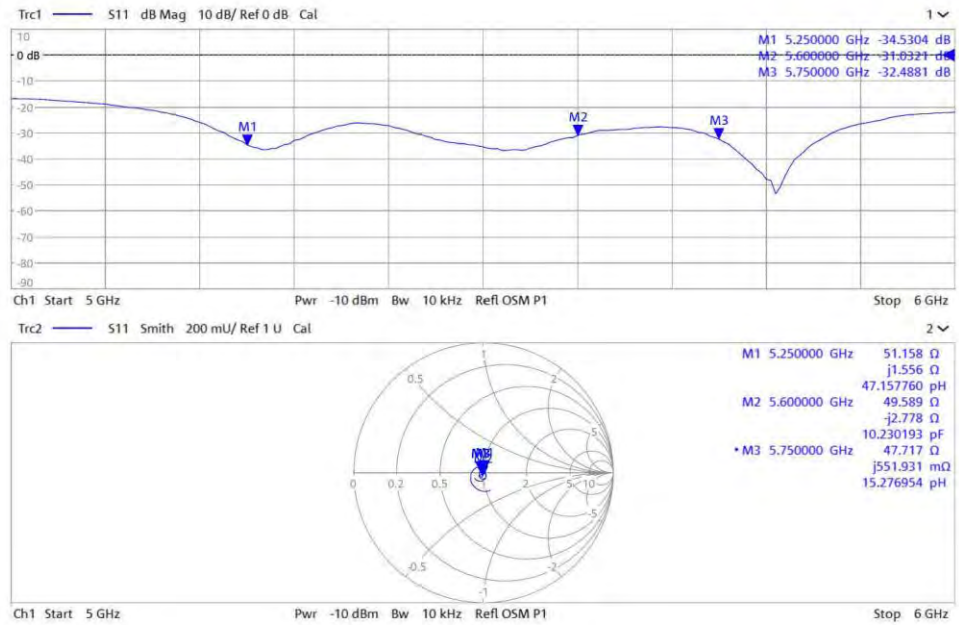
D5GHzV2 - SN: 1315						
5750MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
10.22.2021	-33.6		49.4		1.99	
10.21.2022	-32.49	-3.31	47.72	-1.68	0.55	-1.44
10.20.2023	-36.43	8.41	50.87	1.47	1.34	-0.65

<Justification of the extended calibration>

The return loss is $<-20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Dipole Verification Data>

Head 5250-5750MHz _2022.10.21

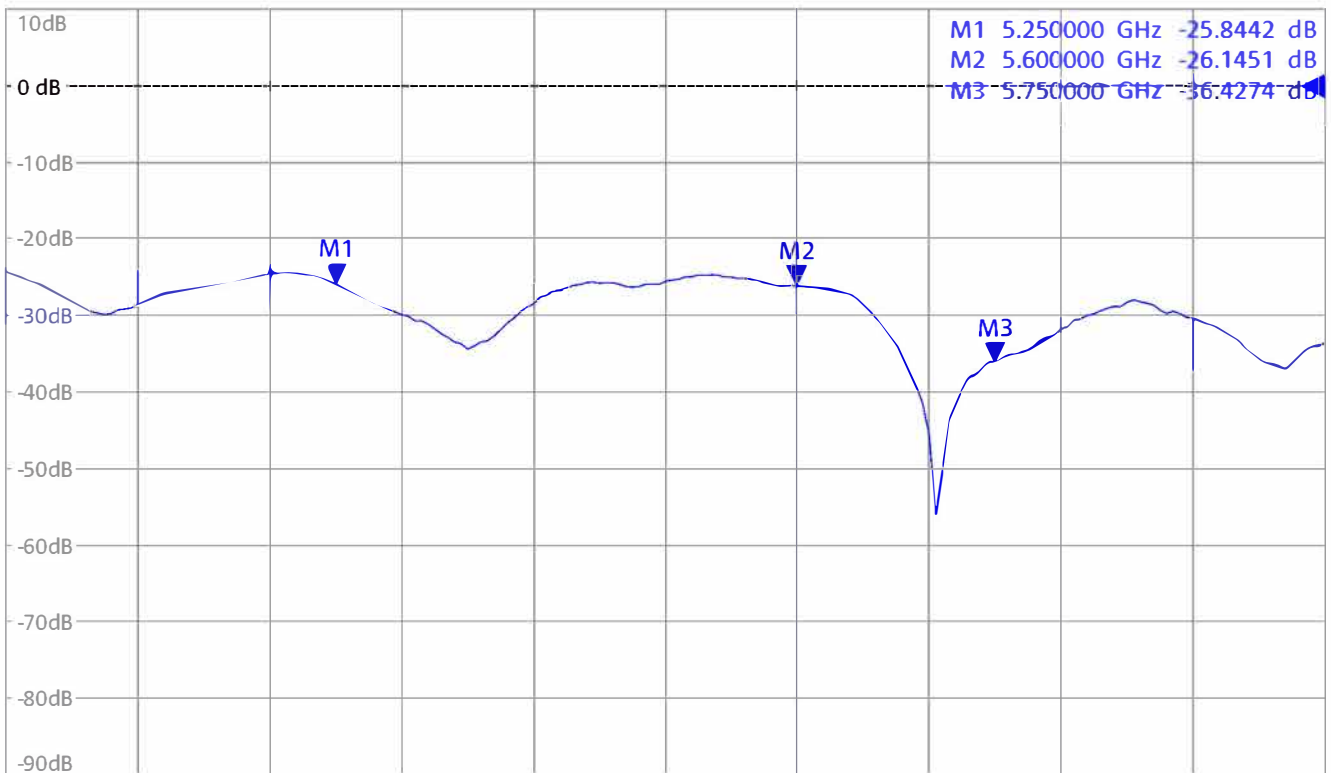


<Dipole Verification Data>

Head 5250-5750MHz _2023.10.20

Trc1 — S11 dB Mag 10 dB/ Ref 0 dB Cal

1

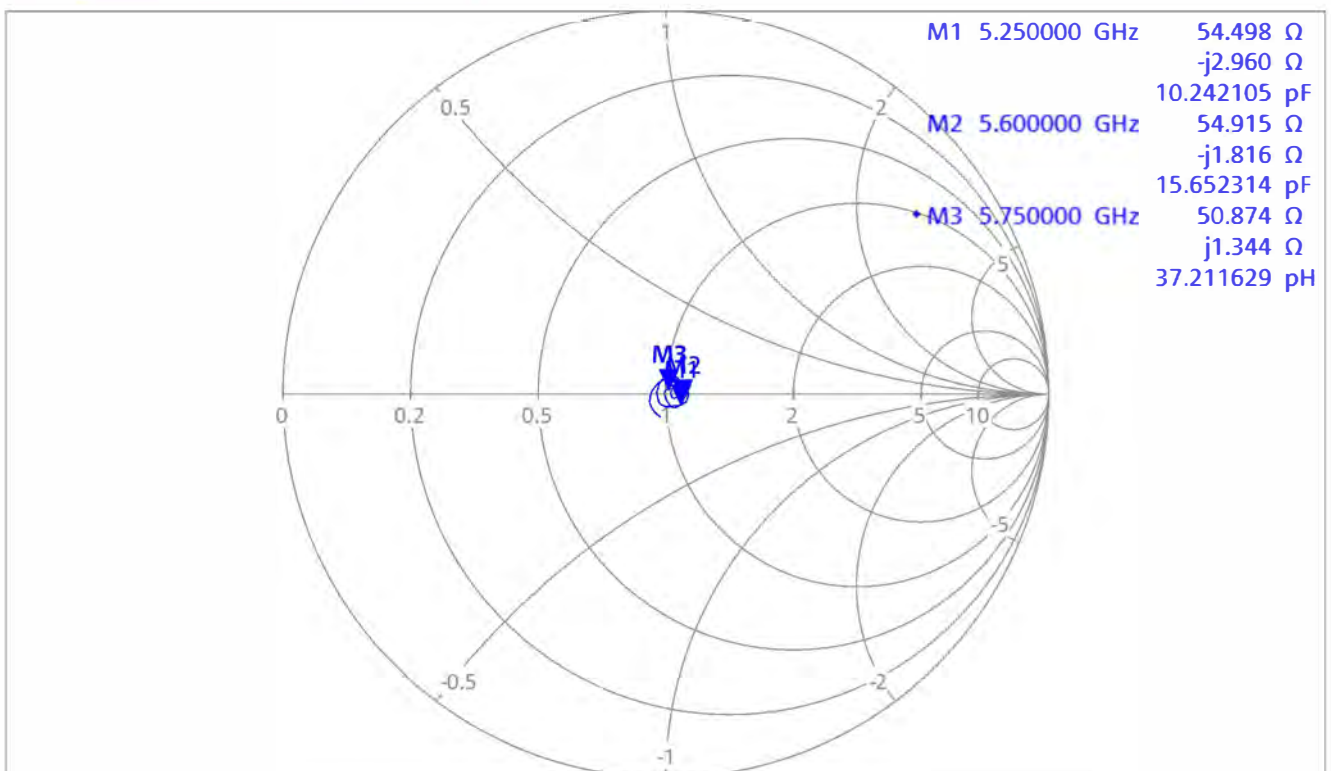


Ch1 Start 5 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1

Stop 6 GHz

Trc2 — S11 Smith 200 mU/ Ref 1 U Cal

2



Ch1 Start 5 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1

Stop 6 GHz



Appendix D. Conducted RF Output Power Table

The detailed power table are shown as follows.

<WWAN Full Power>

Band	GSM850				GSM1900			
Channel	128	189	251	Max. Tune-up Power (dBm)	512	661	810	Max. Tune-up Power (dBm)
Frequency (MHz)	824.2	836.4	848.8		1850.2	1880	1909.8	
GSM	33.42	33.48	33.37	34.50	30.02	30.26	30.43	31.50
GPRS 1Tx Slot	33.56	33.49	33.35	34.50	30.03	30.21	30.39	31.50
GPRS 2Tx Slot	32.14	32.10	32.02	33.00	29.05	29.26	29.45	30.50
GPRS 3Tx Slot	30.89	30.94	30.87	32.00	27.62	27.84	28.04	29.00
GPRS 4Tx Slot	26.78	26.91	26.84	28.00	25.84	25.98	26.04	27.00
EDGE 1Tx Slot	27.37	27.54	27.59	29.00	26.16	26.42	26.58	28.00
EDGE 2Tx Slot	25.89	25.99	25.96	27.00	25.58	25.73	25.87	27.00
EDGE 3Tx Slot	24.32	24.43	24.39	26.00	23.54	23.58	23.76	25.00
EDGE 4Tx Slot	22.25	22.29	22.27	23.00	21.62	21.69	21.83	23.00

Source-Based Time-Averaged Power								
Band	GSM850				GSM1900			
Channel	128	189	251	Max. Tune-up Power (dBm)	512	661	810	Max. Tune-up Power (dBm)
GSM	24.42	24.48	24.37	25.50	21.02	21.26	21.43	22.50
GPRS 1Tx Slot	24.56	24.49	24.35	25.50	21.03	21.21	21.39	22.50
GPRS 2Tx Slot	26.14	26.10	26.02	27.00	23.05	23.26	23.45	24.50
GPRS 3Tx Slot	26.63	26.68	26.61	27.74	23.36	23.58	23.78	24.74
GPRS 4Tx Slot	23.78	23.91	23.84	25.00	22.84	22.98	23.04	24.00
EDGE 1Tx Slot	18.37	18.54	18.59	20.00	17.16	17.42	17.58	19.00
EDGE 2Tx Slot	19.89	19.99	19.96	21.00	19.58	19.73	19.87	21.00
EDGE 3Tx Slot	20.06	20.17	20.13	21.74	19.28	19.32	19.50	20.74
EDGE 4Tx Slot	19.25	19.29	19.27	20.00	18.62	18.69	18.83	20.00

Band	WCDMA II			WCDMA II	WCDMA IV			WCDMA IV	WCDMA V			WCDMA V
TX Channel	9262	9400	9538	Max. Tune-up Power (dBm)	1312	1413	1513	Max. Tune-up Power (dBm)	4132	4182	4233	Max. Tune-up Power (dBm)
Rx Channel	9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
RMC 12.2K	24.52	24.69	24.73	25.50	24.80	24.83	24.75	25.50	24.01	24.47	24.59	25.50
HSDPA Subtest-1	23.71	23.89	23.88	24.50	23.91	24.05	23.89	24.50	23.23	23.62	23.79	24.50
HSDPA Subtest-2	23.65	23.83	23.91	24.50	23.90	23.99	23.88	24.50	23.18	23.56	23.84	24.50
HSDPA Subtest-3	23.17	23.39	23.45	24.00	23.53	23.55	23.39	24.00	22.69	23.11	23.29	24.00
HSDPA Subtest-4	23.13	23.33	23.32	24.00	23.45	23.50	23.39	24.00	22.72	23.13	23.29	24.00
DC-HSDPA Subtest-1	23.63	23.83	23.78	24.50	23.89	23.98	23.79	24.50	23.07	23.63	23.64	24.50
DC-HSDPA Subtest-2	23.65	23.72	23.83	24.50	23.92	23.98	23.81	24.50	23.16	23.60	23.62	24.50
DC-HSDPA Subtest-3	23.24	23.22	23.40	24.00	23.51	23.39	23.33	24.00	22.63	23.01	23.25	24.00
DC-HSDPA Subtest-4	23.17	23.25	23.34	24.00	23.46	23.43	23.36	24.00	22.66	23.03	23.17	24.00
HSUPA Subtest-1	23.69	23.86	23.94	24.50	23.97	24.01	23.92	24.50	23.09	23.67	23.68	24.50
HSUPA Subtest-2	22.68	22.88	22.94	23.50	22.90	22.88	22.88	23.50	22.10	22.59	22.70	23.50
HSUPA Subtest-3	23.19	23.23	23.31	24.00	23.36	23.47	23.37	24.00	22.66	23.15	23.28	24.00
HSUPA Subtest-4	22.64	22.79	22.88	23.50	22.95	22.91	22.80	23.50	22.14	22.60	22.74	23.50
HSUPA Subtest-5	23.67	23.82	23.87	24.50	23.87	23.98	23.79	24.50	23.03	23.60	23.63	24.50

Band	CDMA BC0				Tune-up Limit (dBm)	CDMA BC1				Tune-up Limit (dBm)
TX Channel	1013	384	777			25	600	1175		
Frequency (MHz)	824.7	836.52	848.31			1851.25	1880	1908.75		
RC1 SO55	23.74	23.95	23.09	25.00	24.73	24.68	24.79	25.50	25.50	25.50
RC3 SO55	23.89	24.17	23.32	25.00	24.86	24.98	24.83	25.50	25.50	25.50
RC3 SO32 (F+SCH)	23.77	23.86	22.98	25.00	24.92	24.88	24.85	25.50	25.50	25.50
RC3 SO32 (+SCH)	23.57	23.87	22.95	25.00	24.95	24.96	24.95	25.50	25.50	25.50
RTAP 153.6Kbps	23.81	24.16	23.31	25.00	24.93	24.92	24.90	25.50	25.50	25.50
RTAP 4096Bits	23.80	24.15	23.29	25.00	24.90	24.95	24.88	25.50	25.50	25.50

LTE Band 7									
BW	Modulation	RB Size	RB Offset	Mid		High	SCPP MPR (dB)	Max. Turn-up (dBm)	
		Channel Frequency (MHz)	Channel	2010	2110	2150			
20M	QPSK	1	0	24.05	24.05	24.09	0	25	
		1	50	24.16	24.11	24.18	0	25	
		1	99	23.75	23.87	23.88	0	25	
		50	0	23.19	23.16	23.18	1	24	
		50	25	23.22	23.18	23.25	1	24	
		50	50	23.06	23.01	23.09	1	24	
	16QAM	100	0	23.07	22.93	23.14	1	24	
		1	0	23.14	23.13	23.08	1	24	
		1	50	23.19	23.51	23.30	1	24	
		1	99	22.77	22.97	22.84	1	24	
		50	0	22.39	21.91	22.21	2	23	
		50	25	22.27	22.23	22.28	2	23	
40M	64QAM	50	50	22.09	22.02	22.16	2	23	
		100	0	22.16	22.11	22.23	2	23	
		1	0	22.01	22.05	21.89	2	23	
		1	50	22.28	22.12	21.99	2	23	
		1	99	22.02	22.17	21.77	2	23	
		50	0	20.98	20.75	20.67	3	22	
	16QAM	50	25	20.89	20.97	20.64	3	22	
		50	50	20.64	20.76	20.61	3	22	
		100	0	20.75	20.75	20.54	3	22	
60M	QPSK	Channel	20925	21100	21375	SCPP MPR (dB)	Max. Turn-up (dBm)		
		Frequency (MHz)	2097.5	2098	2092.5				
		1	49	23.54	23.90	23.73	0	25	
		1	37	24.12	23.96	24.05	0	25	
		1	74	23.73	23.82	23.80	0	25	
		36	0	23.04	23.22	23.09	1	24	
120M	16QAM	36	18	23.14	23.07	23.17	1	24	
		36	36	22.96	22.80	23.02	1	24	
		75	0	23.02	22.89	23.00	1	24	
		1	0	23.10	22.99	22.93	1	24	
		1	37	23.08	23.39	23.22	1	24	
		1	74	22.68	22.83	22.22	1	24	
	64QAM	36	0	22.30	21.83	22.16	2	23	
		36	18	22.19	22.14	22.25	2	23	
		36	36	21.99	22.01	22.15	2	23	
		75	0	22.15	21.96	22.15	2	23	
		1	0	21.98	22.11	21.86	2	23	
		1	37	22.18	22.03	21.94	2	23	
180M	QPSK	1	74	21.98	22.07	21.65	2	23	
		36	0	20.91	20.70	20.59	3	22	
		36	18	20.87	20.88	20.60	3	22	
		36	36	20.55	20.66	20.55	3	22	
		75	0	20.73	20.68	20.53	3	22	
		1	0	20.73	20.68	20.53	3	22	
240M	QPSK	Channel	20975	21100	21425	SCPP MPR (dB)	Max. Turn-up (dBm)		
		Frequency (MHz)	2092.5	2098	2092.5				
		1	0	24.04	23.97	24.06	0	25	
		1	49	23.60	23.75	23.73	0	25	
		1	24	23.70	23.74	23.82	0	25	
		12	0	23.06	23.03	23.07	1	24	
360M	16QAM	12	6	23.09	23.14	23.22	1	24	
		12	13	23.01	22.95	23.06	1	24	
		25	0	22.97	22.90	23.01	1	24	
		1	0	23.06	23.11	22.98	1	24	
		1	12	23.02	23.46	23.17	1	24	
		1	24	22.68	22.89	22.20	1	24	
480M	64QAM	12	0	22.34	21.85	22.11	2	23	
		12	6	22.14	22.17	22.13	2	23	
		12	13	22.08	21.91	22.07	2	23	
		25	0	22.07	21.97	22.15	2	23	
		1	0	21.91	22.04	21.79	2	23	
		1	12	22.19	22.03	21.90	2	23	
600M	QPSK	1	24	21.96	22.05	21.76	2	23	
		12	0	20.91	20.62	20.52	3	22	
		12	6	20.74	20.93	20.63	3	22	
		12	13	20.62	20.72	20.67	3	22	
		25	0	20.70	20.67	20.46	3	22	
		1	0	20.70	20.67	20.46	3	22	

LTE Band 12									
BW	MCS Index	RB Size	RB Offset	Mid		High	SCPP MPR (dB)	Max. Turn-up (dBm)	
		Channel	Channel	2360	2385	2375			
10M	QPSK	Frequency (MHz)	704	707.5	711				
		1	0	23.52	23.43	23.56	0	24.5	
		1	24	23.16	23.46	23.14	0	24.5	
		1	49	23.27	23.53	23.30	0	24.5	
		25	0	22.45	22.56	22.43	1	23.5	
		25	12	22.42	22.55	22.41	1	23.5	
20M	16QAM	25	25	22.35	22.47	22.10	1	23.5	
		50	0	22.47	22.50	22.54	1	23.5	
		1	0	22.56	22.69	22.71	1	23.5	
		1	24	22.51	22.66	22.49	1	23.5	
		1	49	22.57	22.70	22.47	1	23.5	
		25	0	21.50	21.62	21.47	2	22.5	
40M	64QAM	25	12	21.47	21.64	21.51	2	22.5	
		25	25	21.46	21.50	21.44	2	22.5	
		50	0	21.51	21.54	21.45	2	22.5	
		1	0	21.62	21.78	21.65	2	22.5	
		1	24	21.60	21.79	21.50	2	22.5	
		1	49	21.56	21.62	21.14	2	22.5	
60M	QPSK	Channel	23605	23855	23755	SCPP MPR (dB)	Max. Turn-up (dBm)		
		Frequency (MHz)	707.5	707.5	713.5				
		1	12	23.09	23.31	23.03	0	24.5	
		1	24	23.24	23.44	23.29	0	24.5	
		12	0	22.43	22.45	22.34	1	23.5	
		12	6	22.81	22.86	22.37	1	23.5	
120M	16QAM	12	13	22.31	22.36	22.07	1	23.5	
		25	0	22.36	22.49	22.51	1	23.5	
		1	0	22.45	22.59	22.46	1	23.5	
		1	12	22.36	22.55	22.41	1	23.5	
		1	24	22.52	22.61	22.42	1	23.5	
		12	0	21.47	21.47	21.36	2	22.5	
180M	64QAM	12	6	21.41	21.51	21.48	2	22.5	
		12	13	21.34	21.37	21.31	2	22.5	
		25	0	21.41	21.43	21.40	2	22.5	
		1	0	21.56	21.59	21.46	2	22.5	
		1	12	21.57	21.65	21.43	2	22.5	
		1	24	21.53	21.50	21.12	2	22.5	
240M	QPSK	Channel	23605	23855	23755	SCPP MPR (dB)	Max. Turn-up (dBm)		
		Frequency (MHz)	707.5	707.5	713.5				
		1	0	23.41	23.82	23.46	0	24.5	
		1	7	23.15	23.32	23.03	0	24.5	
		1	44	23.18	23.46	23.25	0	24.5	
		6	0	22.54	22.52	22.31	1	23.5	
360M	16QAM	6	3	22.37	22.40	22.36	1	23.5	
		6	7	22.26	22.36	22.04	1	23.5	
		15	0	22.42	22.54	22.43	1	23.5	
		1	0	22.45	22.58	22.88	1	23.5	
		1	7	22.41	22.59	22.46	1	23.5	
		1	14	22.52	22.63	22.39	1	23.5	
480M	64QAM	6	0	21.49	21.48	21.43	2	22.5	
		6	3	21.33	21.53	21.49	2	22.5	
		6	7	21.34	21.42	21.33	2	22.5	
		15	0	21.36	21.42	21.40	2	22.5	
		1	0	21.59	21.65	21.67	2	22.5	
		1	7	21.56	21.70	21.37	2	22.5	
600M	QPSK	Channel	23605	23855	23755	SCPP MPR (dB)	Max. Turn-up (dBm)		
		Frequency (MHz)	699.7	707.5	713.5				
		1	0	23.66	23.50	23.43	0	24.5	
		1	2	23.01	23.32	23.09	0	24.5	
		1	5	23.18	23.41	23.22	0	24.5	
		3	0	23.16	23.28	23.11	0	24.5	
840M	16QAM	3	0	23.10	23.20	23.19	0	24.5	
		3	3	23.16	23.34	22.91	0	24.5	
		6	0	22.46	22.52	22.52	1	23.5	

LTE Band 14							
BW	MCS Index	RB Size	RB Offset	Mid	SPP MPPE (dB)	Max. Time-up (dBm)	
		Channel Frequency (MHz)	Channel	2330 793			
10M	QPSK	1	0	23.96	0	24.5	
		1	24	23.65	0	24.5	
		1	49	23.65	0	24.5	
		25	0	22.79	1	23.5	
		25	12	22.64	1	23.5	
		25	25	22.66	1	23.5	
		50	0	22.75	1	23.5	
	16QAM	1	0	23.16	1	23.5	
		1	24	22.84	1	23.5	
		1	49	22.89	1	23.5	
		25	0	21.73	2	22.5	
		25	12	21.56	2	22.5	
		25	25	21.64	2	22.5	
		50	0	21.57	2	22.5	
	64QAM	1	0	21.13	2	22.5	
		1	24	21.56	2	22.5	
		1	49	21.72	2	22.5	
		25	0	20.74	3	21.5	
		25	12	20.63	3	21.5	
		25	25	20.61	3	21.5	
		50	0	20.56	3	21.5	
BW	MCS Index	Channel	2335	2330	2335	SPP MPPE (dB)	Max. Time-up
		Frequency (MHz)	793.5	793	793.5		
5M	QPSK	1	0	23.64	23.76	23.63	0 24.5
		1	12	23.59	23.60	23.52	0 24.5
		1	24	23.60	23.61	23.55	0 24.5
		12	0	22.64	22.96	22.62	1 23.5
		12	6	22.75	22.58	22.84	1 23.5
		12	13	22.47	22.62	22.56	1 23.5
		25	0	22.72	22.61	22.73	1 23.5
	16QAM	1	0	22.89	22.98	22.78	1 23.5
		1	12	22.92	22.87	22.79	1 23.5
		1	24	22.73	22.72	22.77	1 23.5
		12	0	21.67	21.93	21.66	2 22.5
		12	6	21.77	21.63	21.65	2 22.5
		12	13	21.69	21.70	21.68	2 22.5
		25	0	21.76	21.65	21.72	2 22.5
	64QAM	1	0	21.85	21.83	21.76	2 22.5
		1	12	21.87	21.88	21.76	2 22.5
		1	24	21.76	21.71	21.65	2 22.5
		12	0	20.65	20.68	20.67	3 21.5
		12	6	20.63	20.65	20.61	3 21.5
		12	13	20.77	20.66	20.56	3 21.5
		25	0	20.69	20.57	20.63	3 21.5

LTE Band 17							
BW	MCS Index	RB Size	RB Offset	Mid	High	SPP MPPE (dB)	Max. Time-up (dBm)
		Channel Frequency (MHz)	Channel	2370 709	2370 716	2369 711	
10M	QPSK	1	0	23.73	23.61	23.66	0 24.5
		1	24	23.56	23.41	23.32	0 24.5
		1	49	23.62	23.43	23.53	0 24.5
		25	0	22.69	22.65	22.63	1 23.5
		25	12	22.65	22.64	22.61	1 23.5
		25	25	22.66	22.56	22.59	1 23.5
		50	0	22.70	22.62	22.69	1 23.5
	16QAM	1	0	22.84	22.64	22.80	1 23.5
		1	24	22.68	22.53	22.55	1 23.5
		1	49	22.66	22.49	22.76	1 23.5
		25	0	21.46	21.45	21.50	2 22.5
		25	12	21.58	21.40	21.69	2 22.5
		25	25	21.67	21.56	21.63	2 22.5
		50	0	21.72	21.63	21.70	2 22.5
	64QAM	1	0	21.51	21.47	21.59	2 22.5
		1	24	21.69	21.84	21.54	2 22.5
		1	49	21.63	21.54	21.61	2 22.5
		25	0	20.62	20.59	20.49	3 21.5
		25	12	20.41	20.35	20.55	3 21.5
		25	25	20.65	20.61	20.58	3 21.5
		50	0	20.68	20.60	20.69	3 21.5
BW	MCS Index	Channel	2375	2370	2369	SPP MPPE (dB)	Max. Time-up
		Frequency (MHz)	709.5	716	715.5		
5M	QPSK	1	0	23.53	23.52	23.59	0 24.5
		1	12	23.46	23.32	23.41	0 24.5
		1	24	23.48	23.31	23.51	0 24.5
		12	0	22.59	22.52	22.55	1 23.5
		12	6	22.57	22.58	22.51	1 23.5
		12	13	22.55	22.46	22.51	1 23.5
		25	0	22.62	22.59	22.54	1 23.5
	16QAM	1	0	22.72	22.53	22.75	1 23.5
		1	12	22.55	22.39	22.50	1 23.5
		1	24	22.62	22.36	22.69	1 23.5
		12	0	21.34	21.38	21.41	2 22.5
		12	6	21.45	21.25	21.67	2 22.5
		12	13	21.65	21.51	21.53	2 22.5
		25	0	21.68	21.59	21.68	2 22.5
	64QAM	1	0	21.46	21.42	21.50	2 22.5
		1	12	21.58	21.59	21.40	2 22.5
		1	24	21.59	21.39	21.56	2 22.5
		12	0	20.58	20.50	20.46	3 21.5
		12	6	20.35	20.24	20.47	3 21.5
		12	13	20.56	20.55	20.56	3 21.5
		25	0	20.67	20.55	20.62	3 21.5

LTE Band 38									
BW	Modulation	RB Size	RB Offset	Low	Mid	High	SPP	MPR	Max. Time-up
		Channel Frequency (MHz)	Channel	2880	2885	2890	(dB)	(dB)	(dBm)
20M	QPSK	1	0	23.56	23.55	23.61	0	24.5	
		1	50	23.67	23.72	23.69	0	24.5	
		1	99	23.61	23.56	23.65	0	24.5	
		50	0	22.75	22.81	22.77	1	23.5	
		50	25	22.65	22.46	22.64	1	23.5	
		50	50	22.73	22.67	22.72	1	23.5	
	16QAM	100	0	22.80	22.82	22.79	1	23.5	
		1	0	22.71	22.81	22.95	1	23.5	
		1	50	22.85	22.87	22.96	1	23.5	
		1	99	22.86	22.89	22.91	1	23.5	
		50	0	21.75	21.83	21.71	2	22.5	
		50	25	21.69	21.55	21.76	2	22.5	
64QAM	50	50	21.62	21.77	21.71	2	22.5		
	100	0	21.80	21.50	21.79	2	22.5		
	1	0	21.08	21.01	21.37	2	22.5		
	1	50	21.02	21.16	21.45	2	22.5		
	1	99	21.13	21.14	21.21	2	22.5		
	50	0	20.67	20.45	20.66	3	21.5		
20M	QPSK	50	25	20.52	20.55	20.73	3	21.5	
		50	50	20.73	20.47	20.68	3	21.5	
		100	0	20.71	20.79	20.76	3	21.5	
		75	0	22.77	22.79	22.70	1	23.5	
		1	0	22.66	22.80	22.81	1	23.5	
		1	37	22.79	22.80	22.84	1	23.5	
	16QAM	1	74	22.86	22.65	22.79	1	23.5	
		36	0	21.65	21.71	21.69	2	22.5	
		36	19	21.45	21.48	21.64	2	22.5	
		36	39	21.55	21.63	21.56	2	22.5	
		75	0	21.70	21.35	21.75	2	22.5	
		1	0	21.07	20.96	21.06	2	22.5	
64QAM	1	37	20.94	21.12	21.37	2	22.5		
	1	74	21.01	21.04	21.17	2	22.5		
	36	0	20.59	20.37	20.52	3	21.5		
	36	19	20.45	20.46	20.68	3	21.5		
	36	39	20.68	20.33	20.65	3	21.5		
	75	0	20.58	20.73	20.55	3	21.5		
BW	Modulation	Channel	3780	3780	3775	SPP	MPR	Max. Time-up	
		Frequency (MHz)	2895	2895	2895.5	(dB)	(dB)	(dBm)	
15M	QPSK	1	0	23.41	23.40	23.52	0	24.5	
		1	24	23.53	23.65	23.68	0	24.5	
		1	49	23.55	23.55	23.68	0	24.5	
		25	0	22.71	22.75	22.59	1	23.5	
		25	12	22.54	22.41	22.55	1	23.5	
		25	25	22.64	22.63	22.79	1	23.5	
	16QAM	50	0	22.71	22.70	22.71	1	23.5	
		1	0	22.62	22.77	22.83	1	23.5	
		1	24	22.72	22.79	22.85	1	23.5	
		1	49	22.80	22.61	22.76	1	23.5	
		25	0	21.74	21.71	21.68	2	22.5	
		25	12	21.46	21.48	21.68	2	22.5	
	64QAM	25	25	21.56	21.70	21.63	2	22.5	
		50	0	21.70	21.44	21.71	2	22.5	
		1	0	21.04	20.94	21.34	2	22.5	
		1	24	20.87	21.14	21.34	2	22.5	
15M	16QAM	1	49	21.08	20.99	21.09	2	22.5	
		25	0	20.54	20.35	20.51	3	21.5	
		25	12	20.49	20.49	20.63	3	21.5	
		25	25	20.76	20.46	20.63	3	21.5	
		50	0	20.63	20.67	20.69	3	21.5	
		50	25	20.67	20.45	20.65	3	21.5	
BW	Modulation	Channel	3775	3780	3785	SPP	MPR	Max. Time-up	
		Frequency (MHz)	2872.5	2880	2887.5	(dB)	(dB)	(dBm)	
5M	QPSK	1	0	23.55	23.46	23.55	0	24.5	
		12	0	23.56	23.56	23.56	0	24.5	
		1	24	23.59	23.65	23.67	0	24.5	
		12	0	22.65	22.65	22.67	1	23.5	
		12	6	22.63	22.42	22.55	1	23.5	
		12	13	22.59	22.58	22.70	1	23.5	
	16QAM	1	0	22.68	22.78	22.71	1	23.5	
		1	0	22.69	22.76	22.80	1	23.5	
		1	12	22.63	22.42	22.66	1	23.5	
		1	24	22.84	22.59	22.88	1	23.5	
		12	0	21.61	21.70	21.57	2	22.5	
		12	6	21.48	21.52	21.72	2	22.5	
	64QAM	12	13	21.58	21.67	21.57	2	22.5	
		25	0	21.65	21.49	21.75	2	22.5	
		1	0	20.99	21.00	21.31	2	22.5	
		1	12	20.93	21.07	21.33	2	22.5	
15M	16QAM	1	24	21.11	21.03	21.07	2	22.5	
		12	0	20.55	20.39	20.59	3	21.5	
		12	6	20.50	20.44	20.60	3	21.5	
		12	13	20.68	20.55	20.63	3	21.5	
25	0	20.67	20.65	20.75	3	21.5			

LTE Band 41 (2496 ~ 2690MHz) For FCC SAR											
BW	Modulation	RB Size	RB Offset	Low	Low Mid	Mid	High Mid	High	3GPP MPR (dB)	Max. Tune-up (dBm)	
		Channel	Frequency (MHz)	2496	2545.5	2595	2644.5	2694			
20M	QPSK	1	0	23.75	23.84	24.00	23.86	24.01	0	25	
		1	50	23.83	23.96	24.04	23.91	24.03	0	25	
		1	99	23.51	23.65	23.88	23.58	23.98	0	25	
		50	0	22.83	22.87	22.95	22.85	22.91	1	24	
		50	25	22.88	22.93	23.00	22.86	22.98	1	24	
		50	50	22.85	22.77	22.78	22.77	22.95	1	24	
		100	0	22.87	22.74	23.95	22.84	22.90	1	24	
		1	0	22.96	22.85	23.06	22.92	23.04	1	24	
		1	50	22.98	22.90	23.06	23.11	23.14	1	24	
		1	99	22.81	22.73	22.75	22.95	23.11	1	24	
	16QAM	50	0	21.95	21.87	21.97	21.78	21.85	2	23	
		50	25	21.96	21.82	22.01	21.92	21.94	2	23	
		50	50	21.99	21.78	21.86	21.87	21.83	2	23	
		100	0	21.89	21.88	21.94	21.84	21.87	2	23	
		1	0	21.96	21.84	21.95	21.96	21.46	2	23	
		1	50	21.71	21.53	21.53	21.43	21.35	2	23	
		1	99	21.53	21.35	21.48	21.20	21.21	2	23	
		50	0	20.95	20.89	20.93	20.85	20.84	3	22	
		50	25	20.92	20.81	21.01	20.80	20.74	3	22	
		50	50	20.96	20.77	20.77	20.65	21.01	3	22	
	64QAM	100	0	20.89	20.83	20.91	20.82	20.70	3	22	
15M	QPSK	Channel	Frequency (MHz)	2496.5	2545.3	2593	2643.7	2693.5	3GPP MPR (dB)	Max. Tune-up (dBm)	
		1	0	23.67	23.53	23.90	23.81	24.00	0	25	
		1	37	23.71	23.78	24.03	23.76	23.96	0	25	
		1	74	23.37	23.57	23.73	23.56	23.96	0	25	
		36	0	22.72	22.80	22.89	22.73	22.84	1	24	
		36	19	22.87	22.87	22.86	22.81	22.84	1	24	
		36	39	22.77	22.74	22.68	22.76	22.89	1	24	
		75	0	22.74	22.84	22.83	22.82	22.83	1	24	
		1	0	22.85	22.73	22.98	22.76	23.02	1	24	
		1	37	22.90	22.88	22.93	23.00	23.11	1	24	
	16QAM	1	74	22.76	22.69	22.71	22.84	23.00	1	24	
		36	0	21.81	21.84	21.89	21.69	21.80	2	23	
		36	19	21.84	21.71	21.98	21.79	21.85	2	23	
		36	39	21.92	21.68	21.73	21.82	21.71	2	23	
		75	0	21.85	21.78	21.93	21.70	21.76	2	23	
		1	0	21.65	21.36	21.40	21.43	21.44	2	23	
		1	37	21.68	21.39	21.51	21.29	21.23	2	23	
		1	74	21.50	21.20	21.40	21.14	21.14	2	23	
		36	0	20.86	20.85	20.87	20.72	20.75	3	22	
		36	19	20.90	20.76	20.88	20.68	20.62	3	22	
	64QAM	36	39	20.89	20.69	20.69	20.53	20.52	3	22	
10M	QPSK	Channel	Frequency (MHz)	2497	2547	2593	2643	2693	3GPP MPR (dB)	Max. Tune-up (dBm)	
		1	0	23.60	23.59	23.87	23.75	23.92	0	25	
		1	24	23.74	23.72	24.02	23.87	23.94	0	25	
		1	49	23.39	23.60	23.73	23.53	23.85	0	25	
		25	0	22.69	22.80	22.89	22.82	22.78	1	24	
		25	12	22.79	22.85	22.90	22.80	22.84	1	24	
		25	25	22.82	22.83	22.92	22.85	22.89	1	24	
		50	0	22.74	22.67	22.90	22.90	22.80	1	24	
		1	0	22.85	22.79	23.04	22.82	22.90	1	24	
		1	24	22.92	22.89	22.93	23.09	23.05	1	24	
	16QAM	1	49	22.74	22.69	22.60	22.89	23.10	1	24	
		25	0	21.89	21.74	21.96	21.74	21.70	2	23	
		25	12	21.83	21.80	21.93	21.83	21.82	2	23	
		25	25	21.87	21.84	21.75	21.72	21.74	2	23	
		50	0	21.84	21.76	21.83	21.69	21.82	2	23	
		1	0	21.60	21.38	21.50	21.52	21.43	2	23	
		1	24	21.60	21.50	21.51	21.38	21.25	2	23	
		1	49	21.48	21.29	21.37	21.16	21.10	2	23	
		25	0	20.90	20.74	20.84	20.80	20.82	3	22	
		25	12	20.83	20.73	20.97	20.70	20.71	3	22	
	64QAM	25	25	20.86	20.66	20.64	20.61	20.69	3	22	
5M	QPSK	Channel	Frequency (MHz)	2497.5	2547.5	2593.5	2643.5	2693.5	3GPP MPR (dB)	Max. Tune-up (dBm)	
		1	0	23.62	23.51	23.85	23.81	23.89	0	25	
		1	12	23.73	23.79	23.89	23.89	23.98	0	25	
		1	24	23.46	23.59	23.79	23.54	23.90	0	25	
		12	0	22.81	22.77	22.85	22.78	22.81	1	24	
		12	6	22.82	22.80	22.90	22.85	22.89	1	24	
		12	13	22.72	22.73	22.77	22.66	22.86	1	24	
		25	0	22.85	22.71	23.93	22.88	22.84	1	24	
		1	0	22.94	22.84	23.00	22.83	22.92	1	24	
		1	12	22.96	22.85	22.96	22.98	23.06	1	24	
	16QAM	1	24	22.75	22.65	22.70	22.81	23.07	1	24	
		12	0	21.87	21.73	21.82	21.84	21.71	2	23	
		12	6	21.94	21.70	21.97	21.82	21.82	2	23	
		12	13	21.89	21.67	21.72	21.72	21.73	2	23	
		25	0	21.78	21.81	21.81	21.83	21.84	2	23	
		1	0	21.63	21.43	21.45	21.46	21.44	2	23	
		1	12	21.65	21.42	21.48	21.29	21.22	2	23	
		1	24	21.48	21.30	21.35	21.09	21.10	2	23	
		12	0	20.87	20.83	20.79	20.71	20.62	3	22	
		12	6	20.79	20.70	20.94	20.75	20.62	3	22	
	64QAM	12	13	20.92	20.76	20.69	20.52	20.90	3	22	
		25	0	20.80	20.69	20.89	20.69	20.62	3	22	

LTE Band 66												
BW	Modulation	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	Max. Tune-up (dBm)				
		Channel	Frequency (MHz)	132072	132322	132872						
20M	QPSK	1	0	23.27	23.60	23.50	0	25				
		1	50	23.74	23.76	23.62	0	25				
		1	99	23.88	23.99	23.87	0	25				
		50	0	22.74	22.87	22.85	1	24				
		50	25	22.80	23.07	22.94	1	24				
		50	50	22.76	22.91	22.71	1	24				
		100	0	22.66	22.94	22.91	1	24				
		1	0	22.43	22.58	22.53	1	24				
		1	50	22.83	22.87	22.82	1	24				
		1	99	23.14	23.22	23.07	1	24				
	16QAM	50	0	21.57	21.85	21.73	2	23				
		50	25	21.83	21.97	21.93	2	23				
		50	50	21.72	21.98	21.75	2	23				
		100	0	21.66	21.83	21.59	2	23				
		1	0	21.35	21.69	21.64	2	23				
		1	50	21.45	22.14	21.63	2	23				
		1	99	22.05	22.20	22.09	2	23				
		50	0	20.47	20.84	20.76	3	22				
		50	25	20.53	20.74	20.73	3	22				
		50	50	20.84	20.91	20.90	3	22				
	64QAM	100	0	20.78	20.88	20.68	3	22				
Channel		Frequency (MHz)	132047	132322	132647	3GPP MPR (dB)	Max. Tune-up (dBm)					
1		0	23.21	23.51	23.44	0	25					
1		37	23.68	23.65	23.61	0	25					
1		74	23.89	23.83	23.59	0	25					
36		0	22.73	22.81	22.80	1	24					
36		19	22.79	23.02	22.87	1	24					
36		39	22.75	22.83	22.57	1	24					
15M	16QAM	75	0	22.58	22.81	22.81	1	24				
		1	0	22.31	22.51	22.49	1	24				
		1	37	22.78	22.76	22.67	1	24				
		1	74	23.00	23.15	22.93	1	24				
		36	0	21.49	21.71	21.62	2	23				
		36	19	21.75	21.85	21.86	2	23				
		36	39	21.84	21.95	21.70	2	23				
		75	0	21.65	21.73	21.44	2	23				
		1	0	21.26	21.64	21.52	2	23				
		1	37	21.31	22.01	21.62	2	23				
	64QAM	1	74	21.98	22.10	21.94	2	23				
		36	0	20.40	20.72	20.63	3	22				
		36	19	20.44	20.69	20.60	3	22				
		36	39	20.74	20.76	20.77	3	22				
		75	0	20.76	20.83	20.62	3	22				
		Channel	Frequency (MHz)	132022	132322	132622	3GPP MPR (dB)	Max. Tune-up (dBm)				
		1	0	23.14	23.48	23.41	0	25				
		1	24	23.61	23.70	23.49	0	25				
		1	49	23.86	23.82	23.53	0	25				
		25	0	22.64	22.84	22.76	1	24				
	10M	QPSK	25	12	22.73	23.05	22.90	1	24			
25			25	22.75	22.81	22.65	1	24				
50			0	22.57	22.91	22.84	1	24				
1			0	22.29	22.43	22.51	1	24				
1			24	22.70	22.76	22.75	1	24				
1			49	23.05	23.10	22.98	1	24				
25			0	21.56	21.79	21.66	2	23				
25			12	21.81	21.87	21.81	2	23				
25			25	21.70	21.92	21.61	2	23				
50			0	21.64	21.79	21.55	2	23				
16QAM		1	0	21.29	21.60	21.54	2	23				
		1	24	21.37	22.12	21.56	2	23				
		1	49	21.95	22.16	22.02	2	23				
		25	0	20.38	20.81	20.65	3	22				
		25	12	20.42	20.73	20.63	3	22				
		25	25	20.80	20.88	20.83	3	22				
		50	0	20.75	20.82	20.58	3	22				
		Channel	Frequency (MHz)	131987	132322	132647	3GPP MPR (dB)	Max. Tune-up (dBm)				
		1	0	23.24	23.59	23.41	0	25				
		5M	QPSK	1	12	23.05	23.91	23.58	0	25		
1				24	23.76	23.95	23.59	0	25			
12	0			22.69	22.85	22.75	1	24				
12	6			22.79	23.04	22.83	1	24				
12	13			22.63	22.76	22.68	1	24				
25	0			22.61	22.87	22.90	1	24				
1	0			22.42	22.47	22.44	1	24				
1	12			22.74	22.80	22.68	1	24				
1	24			23.12	23.07	23.03	1	24				
12	0			21.51	21.78	21.66	2	23				
64QAM	12		6	21.75	21.85	21.78	2	23				
	12		13	21.68	21.86	21.62	2	23				
	25		0	21.55	21.81	21.55	2	23				
	1		0	21.24	21.65	21.51	2	23				
	1		12	21.35	21.61	21.58	2	23				
	1		24	22.03	22.12	22.04	2	23				
	12		0	20.43	20.71	20.75	3	22				
	12		6	20.39	20.62	20.63	3	22				
	12		13	20.76	20.78	20.86	3	22				
	25		0	20.63	20.79	20.57	3	22				
3M	QPSK		Channel	Frequency (MHz)	131987	132322	132647	3GPP MPR (dB)	Max. Tune-up (dBm)			
		1	0	23.22	23.59	23.44	0	25				
		1	7	23.59	23.70	23.49	0	25				
		1	14	23.77	23.91	23.66	0	25				
		8	0	22.66	22.83	22.71	1	24				
		8	3	22.69	22.91	22.93	1	24				
		8	7	22.70	22.88	22.57	1	24				
		15	0	22.58	22.85	22.88	1	24				
		1	0	22.34	22.51	22.38	1	24				
		1	7	22.78	22.74	22.69	1	24				
	16QAM	1	14	23.06	23.21	23.01	1	24				
		8	0	21.51	21.74	21.71	2	23				
		8	3	21.77	21.86	21.89	2	23				
		8	7	21.99	21.85	21.72	2	23				
		15	0	21.63	21.69	21.47	2	23				
		1	0	21.32	21.65	21.55	2	23				
		1	7	21.35	21.99	21.51	2	23				
		1	14	21.97	22.13	21.97	2	23				
		8	0	20.46	20.79	20.61	3	22				
		8	3	20.49	20.65	20.62	3	22				
	1.4M	QPSK	8	7	20.72	20.80	20.77	3	22			
15			0	20.63	20.84	20.67	3	22				
Channel			Frequency (MHz)	131979	132322	132668	3GPP MPR (dB)	Max. Tune-up (dBm)				
1			0	23.16	23.53	23.39	0	25				
1			2	23.71	23.73	23.54	0	25				
1			5	23.75	23.88	23.57	0	25				
3			0	23.43	23.63	23.54	0	25				
3			1	23.51	23.67	23.73	0	25				
3			3	23.50	23.70	23.38	0	25				
6			0	22.64	22.83	22.78	1	24				
16QAM		1	0	22.37	22.57	22.51	1	24				
		1	2	22.71	22.78	22.77	1	24				
		1	5	23.01	23.08	23.05	1	24				
		3	0	22.62	22.21	22.41	1	24				
		3	1	22.49	22.52	22.59	1	24				
		3	3	22.49	22.70	22.47	1	24				
		6	0	21.64	21.72	21.54	2	23				
		1	0	21.24	21.63	21.62	2	23				
		1	2	21.40	22.00	21.50	2	23				
		64QAM	1	5	21.98	22.11	22.08	2	23			
3			0	21.23	21.54	21.51	2	23				
3	1		21.23	21.47	21.22	2	23					
3	3		21.55	21.70	21.67	2	23					
6	0		20.89	20.75	20.60	3	22					

<LTE Sensor Power>

LTE Band 7										
BW	Modulation	RB Size	RB Offset	Low	Mid	High	Max. Tune-up (dBm)			
		Channel	20860	21100	21350					
20M	QPSK	Frequency (MHz)	2510	2535	2560					
		1	0	19.33	19.22	19.26	20			
		1	50	19.45	19.53	19.55	20			
		1	99	19.21	19.05	19.05	20			
		50	0	19.45	19.38	19.43	20			
		50	25	19.46	19.42	19.48	20			
		50	50	19.37	19.40	19.42	20			
		100	0	19.39	19.43	19.52	20			
		1	0	19.42	19.39	19.36	20			
		1	50	19.47	19.44	19.42	20			
	16QAM	1	99	19.47	19.39	19.30	20			
		50	0	19.44	19.40	19.37	20			
		50	25	19.42	19.47	19.48	20			
		50	50	19.35	19.46	19.40	20			
		100	0	19.45	19.60	19.35	20			
	64QAM	1	50	19.45	19.49	19.26	20			
		1	99	19.38	19.46	19.22	20			
		50	0	19.44	19.43	19.47	20			
		50	25	19.45	19.49	19.43	20			
		50	50	19.37	19.49	19.25	20			
		100	0	19.43	19.47	19.40	20			
		15M	QPSK	Channel	20825	21100	21375	Max. Tune-up (dBm)		
Frequency (MHz)	2567.5			2585	2562.5					
1	0			19.24	19.14	19.11	20			
1	37			19.43	19.44	19.44	20			
1	74			19.14	19.06	19.04	20			
36	0			19.33	19.30	19.33	20			
36	19			19.38	19.40	19.39	20			
36	39			19.23	19.36	19.40	20			
75	0			19.25	19.42	19.40	20			
1	0			19.40	19.33	19.31	20			
16QAM	1		37	19.32	19.43	19.40	20			
	1		74	19.36	19.27	19.17	20			
	36		0	19.40	19.31	19.25	20			
	36		19	19.34	19.38	19.44	20			
	36		39	19.24	19.37	19.35	20			
	75		0	19.40	19.41	19.31	20			
	1		0	19.38	19.32	19.32	20			
	1		37	19.32	19.48	19.13	20			
	1		74	19.23	19.37	19.21	20			
	36		0	19.34	19.39	19.44	20			
64QAM	36	19	19.42	19.48	19.35	20				
	36	39	19.24	19.39	19.16	20				
	75	0	19.41	19.40	19.31	20				
	10M	QPSK	Channel	20880	21100	21400	Max. Tune-up (dBm)			
			Frequency (MHz)	2566	2555	2565				
			1	0	19.32	19.10	19.22	20		
			1	24	19.38	19.60	19.42	20		
			1	49	19.19	19.04	18.97	20		
			25	0	19.37	19.23	19.37	20		
			25	12	19.40	19.37	19.44	20		
25			25	19.35	19.39	19.30	20			
50			0	19.25	19.38	19.37	20			
1			0	19.40	19.25	19.23	20			
16QAM		1	24	19.45	19.30	19.36	20			
		1	49	19.35	19.30	19.26	20			
		25	0	19.41	19.38	19.30	20			
		25	12	19.38	19.33	19.36	20			
		25	25	19.24	19.38	19.32	20			
		50	0	19.38	19.39	19.28	20			
		1	0	19.24	19.32	19.44	20			
		1	24	19.35	19.38	19.20	20			
		1	49	19.27	19.33	19.07	20			
		25	0	19.35	19.38	19.36	20			
5M	QPSK	Channel	20775	21100	21425	Max. Tune-up (dBm)				
		Frequency (MHz)	2562.5	2535	2567.5					
20M	QPSK	1	0	19.30	19.10	19.14	20			
		1	12	19.30	19.44	19.61	20			
		1	24	19.09	18.96	19.00	20			
		12	0	19.32	19.36	19.31	20			
		12	6	19.31	19.39	19.34	20			
		12	13	19.26	19.32	19.27	20			
		25	0	19.26	19.42	19.45	20			
		1	0	19.34	19.29	19.26	20			
		1	12	19.33	19.33	19.31	20			
		1	24	19.44	19.29	19.29	20			
	16QAM	12	0	19.32	19.30	19.28	20			
		12	6	19.33	19.35	19.40	20			
		12	13	19.32	19.36	19.25	20			
		25	0	19.31	19.36	19.22	20			
		1	0	19.33	19.34	19.37	20			
	64QAM	1	12	19.34	19.39	19.25	20			
		1	24	19.33	19.41	19.19	20			
		12	0	19.43	19.32	19.38	20			
		12	6	19.43	19.43	19.43	20			
		12	13	19.28	19.44	19.10	20			
		25	0	19.34	19.41	19.33	20			
		25	0	19.34	19.41	19.33	20			

Full Power							
CA_7C							
Combination 20MHz+20MHz (100RB+100RB)							
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size
		n	RB Size	RB offset	RB Size	RB offset	Measured Power (dBm)
20850	21048	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
21100	21298	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
21350	21152	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1

CA_41C For FCC							
Combination 20MHz+20MHz (100RB+100RB)							
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size
		n	RB Size	RB offset	RB Size	RB offset	Measured Power (dBm)
39750	39948	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
40185	40383	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
40620	40422	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
41055	40857	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
41490	41292	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1

Sensor Power							
CA_7C							
Combination 20MHz+20MHz (100RB+100RB)							
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size
		n	RB Size	RB offset	RB Size	RB offset	Measured Power (dBm)
20850	21048	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
21100	21298	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
21350	21152	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1

CA_41C For FCC							
Combination 20MHz+20MHz (100RB+100RB)							
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size
		n	RB Size	RB offset	RB Size	RB offset	Measured Power (dBm)
39750	39948	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
40185	40383	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
40620	40422	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
41055	40857	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1
41490	41292	QPSK	1	0	0	0	1
		16QAM	1	0	0	0	1
		64QAM	1	0	0	0	1

Full Power					
2.4GHz WLAN					
2.4GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit (dBm)
	802.11b 1Mbps	1	2412	14.10	15.50
		6	2437	14.36	15.50
		11	2462	14.26	15.50
	802.11g 6Mbps	1	2412	12.15	13.50
		6	2437	12.49	13.50
		11	2462	12.24	13.50
	802.11n-HT20 MCS0	1	2412	11.11	12.50
		6	2437	11.60	12.50
		11	2462	11.39	12.50
	802.11n-HT40 MCS0	3	2422	10.34	12.00
		6	2437	10.48	12.00
		9	2452	10.78	12.00
	802.11ac-VHT20 MCS0	1	2412	8.93	10.50
		6	2437	9.03	10.50
		11	2462	9.55	10.50
	802.11ac-VHT40 MCS0	3	2422	9.51	11.00
		6	2437	9.82	11.00
		9	2452	10.25	11.00

5GHz WLAN					
5.2GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit (dBm)
	802.11a 6Mbps	36	5180	10.70	12.00
		40	5200	10.60	12.00
		44	5220	10.58	12.00
		48	5240	10.71	12.00
	802.11n-HT20 MCS0	36	5180	10.68	12.00
		40	5200	10.64	12.00
		44	5220	10.62	12.00
		48	5240	10.68	12.00
	802.11n-HT40 MCS0	38	5190	11.48	13.00
		46	5230	11.16	13.00
		36	5180	7.63	9.00
		40	5200	7.50	9.00
	802.11ac-VHT20 MCS0	44	5220	7.44	9.00
		48	5240	7.81	9.00
	802.11ac-VHT40 MCS0	38	5190	8.56	9.50
		46	5230	7.95	9.50
	802.11ac-VHT80 MCS0	42	5210	8.24	9.50

5GHz WLAN					
5.3GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit (dBm)
	802.11a 6Mbps	52	5260	10.74	12.00
		56	5280	10.72	12.00
		60	5300	10.78	12.00
		64	5320	10.86	12.00
	802.11n-HT20 MCS0	52	5260	10.58	12.00
		56	5280	10.55	12.00
		60	5300	10.74	12.00
		64	5320	10.89	12.00
	802.11n-HT40 MCS0	54	5270	11.26	13.00
		62	5310	11.57	13.00
	802.11ac-VHT20 MCS0	52	5260	7.93	9.00
		56	5280	7.43	9.00
		60	5300	7.41	9.00
		64	5320	7.94	9.00
	802.11ac-VHT40 MCS0	54	5270	8.59	9.50
		62	5310	8.06	9.50
	802.11ac-VHT80 MCS0	58	5290	8.22	9.50

5GHz WLAN					
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit (dBm)
	802.11a 6Mbps	149	5745	10.11	10.50
		157	5785	8.67	10.50
		165	5825	8.66	10.50
	802.11n-HT20 MCS0	149	5745	6.82	7.50
		157	5785	5.67	7.50
		165	5825	5.84	7.50
	802.11n-HT40 MCS0	151	5755	7.14	8.00
		159	5795	6.49	8.00
	802.11ac-VHT20 MCS0	149	5745	6.76	7.50
		157	5785	5.57	7.50
		165	5825	5.72	7.50
	802.11ac-VHT40 MCS0	151	5755	6.99	8.00
		159	5795	6.33	8.00
	802.11ac-VHT80 MCS0	155	5775	6.51	8.00

BR/EDR					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit (dBm)	
GFSK	CH 0	2402	4.67	6.00	
	CH 39	2441	2.24	4.00	
	CH 78	2480	6.24	8.00	
DQPSK	CH 0	2402	1.46	3.00	
	CH 39	2441	-0.45	1.00	
	CH 78	2480	3.60	5.00	
8DPSK	CH 0	2402	1.56	3.00	
	CH 39	2441	-0.59	1.00	
	CH 78	2480	3.70	5.00	

BLE					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit (dBm)	
1Mbps	CH 0	2402	5.28	7.00	
	CH 19	2440	3.05	4.00	
	CH 39	2480	7.23	8.00	
2Mbps	CH 0	2404	6.86	8.00	
	CH 19	2440	4.19	5.00	
	CH 39	2478	8.82	10.00	
S2	CH 0	2402	5.53	7.00	
	CH 19	2440	3.36	4.00	
	CH 39	2480	7.63	9.00	
S8	CH 0	2402	4.82	6.00	
	CH 19	2440	2.70	4.00	
	CH 39	2480	6.83	8.00	