Appendix E

Conducted RF Output Power

Measurement of RF conducted Power	
1	Conducted Power of GSM
2	Conducted Power of WCDMA
3	Conducted Power of LTE
4	Conducted Power of WIFI
5	Conducted Power of Bluetooth

1 Conducted Power of GSM

GSM 850										
Burst Output Power(dBm)						Division Factors	Frame-Average Output Power(dBm)			
Channel		128	190	251	Tune up		128	190	251	Tune up
GPRS/EGPRS (GMSK)	1 TX Slot	33.55	33.40	33.54	34.00	-9.19	24.36	24.21	24.35	24.81
	2 TX Slots	32.37	32.33	32.38	33.00	-6.18	26.19	26.15	26.20	26.82
	3 TX Slots	30.38	30.38	30.33	31.00	-4.42	25.96	25.96	25.91	26.58
	4 TX Slots	29.33	29.34	29.32	30.00	-3.17	26.16	26.17	26.15	26.83
EGPRS(8PSK)	1 TX Slot	28.19	28.16	27.86	29.00	-9.19	19.00	18.97	18.67	19.81
	2 TX Slots	27.24	27.35	27.12	28.00	-6.18	21.06	21.17	20.94	21.82
	3 TX Slots	26.30	25.64	25.34	27.00	-4.42	21.88	21.22	20.92	22.58
	4 TX Slots	24.68	25.53	25.50	26.00	-3.17	21.51	22.36	22.33	22.83

GSM 1900										
Burst Output Power(dBm)						Division Factors	Frame-Average Output Power(dBm)			
Channel		512	661	810	Tune up		512	661	810	Tune up
GPRS/EGPRS (GMSK)	1 TX Slot	29.75	29.56	29.56	30.00	-9.19	20.56	20.37	20.37	20.81
	2 TX Slots	28.69	28.47	28.47	29.00	-6.18	22.51	22.29	22.29	22.82
	3 TX Slots	26.74	26.50	26.50	27.00	-4.42	22.32	22.08	22.08	22.58
	4 TX Slots	25.55	25.64	25.64	26.00	-3.17	22.38	22.47	22.47	22.83
EGPRS(8PSK)	1 TX Slot	27.95	27.31	26.90	28.00	-9.19	18.76	18.12	17.71	18.81
	2 TX Slots	26.94	26.35	25.93	27.00	-6.18	20.76	20.17	19.75	20.82
	3 TX Slots	24.88	24.59	23.90	25.00	-4.42	20.46	20.17	19.48	20.58
	4 TX Slots	23.41	23.80	22.44	24.00	-3.17	20.24	20.63	19.27	20.83

2 Conducted Power of WCDMA

WCDMA Band II					
Average Conducted Power(dBm)					
Channel		9262	9400	9538	Tune up
WCDMA	12.2kbps RMC	23.66	23.73	23.69	24.00
HSDPA	Subtest 1	22.95	23.33	23.07	24.00
	Subtest 2	22.95	23.34	23.07	24.00
	Subtest 3	22.94	23.33	23.06	24.00
	Subtest 4	22.90	23.32	23.02	24.00
HSUPA	Subtest 1	20.96	21.28	20.99	22.00
	Subtest 2	21.06	20.81	20.51	22.00
	Subtest 3	20.54	20.97	20.66	22.00
	Subtest 4	21.08	20.99	20.96	22.00
	Subtest 5	20.89	21.24	20.52	22.00

WCDMA Band V					
Average Conducted Power(dBm)					
Channel		4132	4182	4233	Tune up
WCDMA	12.2kbps RMC	24.13	24.17	24.09	24.50
HSDPA	Subtest 1	24.35	24.09	23.82	24.50
	Subtest 2	24.35	24.09	23.80	24.50
	Subtest 3	24.35	24.09	23.80	24.50
	Subtest 4	24.37	24.11	23.81	24.50
HSUPA	Subtest 1	21.81	22.13	22.00	22.50
	Subtest 2	21.83	21.58	21.99	22.50
	Subtest 3	21.72	22.11	21.67	22.50
	Subtest 4	22.15	21.58	21.99	22.50
	Subtest 5	21.85	21.85	21.95	22.50

3 Conducted Power of LTE

LTE Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193	Tune up
1.4MHz	QPSK	1	0	22.89	22.79	21.90	23.50
		1	2	22.93	22.72	21.90	23.50
		1	5	22.93	22.80	22.02	23.50
		3	0	22.99	22.84	21.98	23.50
		3	2	23.05	22.86	21.96	23.50
		3	3	22.98	22.79	21.94	23.50
		6	0	21.90	21.86	21.93	22.50
	16QAM	1	0	22.02	21.50	21.92	22.50
		1	2	22.03	21.48	21.91	22.50
		1	5	21.99	21.52	22.00	22.50
		3	0	21.85	21.67	21.99	22.50
		3	2	21.82	21.68	21.98	22.50
		3	3	21.81	21.64	21.98	22.50
		6	0	20.99	20.76	21.38	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185	Tune up
3MHz	QPSK	1	0	22.99	22.74	22.99	23.50
		1	7	22.91	22.76	23.00	23.50
		1	14	22.89	22.80	23.03	23.50
		8	0	21.89	21.92	22.06	22.50
		8	4	21.92	21.83	22.09	22.50
		8	7	21.88	21.81	22.01	22.50
		15	0	21.85	21.88	21.98	22.50
	16QAM	1	0	21.51	22.37	22.45	22.50
		1	7	21.44	22.33	22.44	22.50
		1	14	21.37	22.30	22.44	22.50
		8	0	21.22	20.99	21.40	21.50
		8	4	21.14	21.00	21.43	21.50
		8	7	21.22	21.02	21.45	21.50
		15	0	21.00	20.94	21.23	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175	Tune up
5MHz	QPSK	1	0	22.86	22.64	23.00	23.50
		1	13	22.76	22.73	22.98	23.50
		1	24	22.66	22.75	23.02	23.50
		12	0	21.92	21.87	22.01	22.50
		12	6	21.90	21.92	21.93	22.50
		12	13	21.74	21.76	22.01	22.50
		25	0	21.87	21.88	22.07	22.50
	16QAM	1	0	21.16	21.89	22.15	22.50
		1	13	21.10	21.93	22.13	22.50
		1	24	20.94	22.01	22.12	22.50
		12	0	20.93	20.87	21.15	21.50
		12	6	20.95	20.91	21.06	21.50
		12	13	20.92	20.89	21.16	21.50
		25	0	21.01	20.94	21.08	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 18650	Channel 18900	Channel 19150	Tune up
10MHz	QPSK	1	0	22.94	22.90	23.12	23.50

		1	25	22.63	22.93	22.92	23.50
		1	49	22.53	23.02	22.99	23.50
		25	0	21.87	21.81	22.10	22.50
		25	13	21.81	21.88	21.98	22.50
		25	25	21.55	21.87	22.06	22.50
		50	0	21.75	21.91	22.05	22.50
	16QAM	1	0	21.76	21.99	22.41	22.50
		1	25	21.56	22.09	22.29	22.50
		1	49	21.35	22.12	22.25	22.50
		25	0	21.10	20.99	21.26	21.50
		25	13	20.94	21.05	21.11	21.50
		25	25	20.88	21.06	21.14	21.50
		50	0	20.85	20.96	21.20	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 18675	Channel 18900	Channel 19125	Tune up
15MHz	QPSK	1	0	22.90	22.79	23.17	23.50
		1	38	22.59	22.81	23.05	23.50
		1	74	22.49	22.93	23.13	23.50
		36	0	21.77	21.84	22.28	22.50
		36	18	21.68	21.84	22.27	22.50
		36	39	21.57	22.00	21.95	22.50
		75	0	21.69	21.95	22.21	22.50
	16QAM	1	0	22.40	22.18	22.42	22.50
		1	38	22.06	22.16	22.31	22.50
		1	74	21.98	22.40	22.21	22.50
		36	0	20.97	20.90	21.45	21.50
		36	18	20.67	20.95	21.37	21.50
		36	39	20.63	20.96	21.20	21.50
		75	0	20.72	20.93	21.31	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 18700	Channel 18900	Channel 19100	Tune up
20MHz	QPSK	1	0	23.18	23.24	23.21	23.50
		1	50	22.47	22.99	23.16	23.50
		1	99	22.65	22.38	23.02	23.50
		50	0	22.26	22.38	22.35	22.50
		50	25	21.52	21.84	22.03	22.50
		50	50	21.55	21.90	22.06	22.50
		100	0	21.70	21.94	22.15	22.50
	16QAM	1	0	22.09	22.38	22.33	22.50
		1	50	21.66	22.22	22.37	22.50
		1	99	21.76	22.12	22.35	22.50
		50	0	20.91	20.81	21.37	21.50
		50	25	20.67	20.95	21.39	21.50
		50	50	20.71	21.05	21.24	21.50
		100	0	20.74	21.05	21.32	21.50

LTE Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 20407	Channel 20525	Channel 20643	Tune up
1.4MHz	QPSK	1	0	24.26	24.17	24.09	25.00
		1	2	24.37	24.30	24.07	25.00
		1	5	24.22	24.31	24.13	25.00
		3	0	24.42	24.33	24.06	25.00
		3	2	24.39	24.25	24.06	25.00
		3	3	24.35	24.19	24.11	25.00
		6	0	23.28	23.20	23.15	24.00
	16QAM	1	0	23.33	22.85	23.70	24.00
		1	2	23.30	22.77	23.55	24.00
		1	5	23.30	22.76	23.70	24.00
		3	0	23.14	22.93	23.02	24.00
		3	2	23.09	22.90	22.99	24.00
		3	3	23.14	22.90	22.95	24.00
		6	0	22.34	22.22	22.18	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 20415	Channel 20525	Channel 20635	Tune up
3MHz	QPSK	1	0	24.25	24.18	24.15	25.00
		1	7	24.24	24.32	24.14	25.00
		1	14	24.10	24.30	24.18	25.00
		8	0	23.32	23.19	23.14	24.00
		8	4	23.19	23.07	23.15	24.00
		8	7	23.18	23.04	23.08	24.00
		15	0	23.16	23.11	23.12	24.00
	16QAM	1	0	23.22	22.91	23.89	24.00
		1	7	23.25	22.89	23.88	24.00
		1	14	23.27	22.83	23.87	24.00
		8	0	22.51	22.27	22.27	23.00
		8	4	22.44	22.37	22.29	23.00
		8	7	22.47	22.34	22.20	23.00
		15	0	22.34	22.18	22.23	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 20425	Channel 20525	Channel 20625	Tune up
5MHz	QPSK	1	0	24.25	24.11	24.11	25.00
		1	13	24.08	24.09	24.07	25.00
		1	24	24.06	24.10	24.05	25.00
		12	0	23.21	23.21	22.98	24.00
		12	6	23.19	23.10	23.14	24.00
		12	13	23.15	23.11	23.11	24.00
		25	0	23.14	23.06	23.11	24.00
	16QAM	1	0	22.50	23.20	23.08	24.00
		1	13	22.40	23.06	23.20	24.00
		1	24	22.45	23.20	23.15	24.00
		12	0	22.22	22.20	22.16	23.00
		12	6	22.21	22.16	22.20	23.00
		12	13	22.18	22.15	22.17	23.00
		25	0	22.34	22.23	22.15	23.00

Bandwidth	Modulation	RB size	RB offset	Channel 20450	Channel 20525	Channel 20600	Tune up
10MHz	QPSK	1	0	24.37	24.46	24.33	25.00
		1	25	24.18	24.19	24.19	25.00
		1	49	24.08	24.14	24.22	25.00
		25	0	23.12	23.24	23.17	24.00
		25	13	23.21	23.05	23.15	24.00
		25	25	23.13	23.19	23.12	24.00
		50	0	23.17	23.06	23.16	24.00
	16QAM	1	0	23.58	22.62	23.28	24.00
		1	25	23.59	22.66	23.36	24.00
		1	49	23.47	22.67	23.39	24.00
		25	0	22.26	22.31	22.32	23.00
		25	13	22.21	22.28	22.27	23.00
		25	25	22.02	22.29	22.34	23.00
		50	0	22.12	22.18	22.23	23.00

LTE Band 7				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 20775	Channel 21100	Channel 21425	Tune up
5MHz	QPSK	1	0	24.40	24.57	24.75	25.50
		1	13	24.44	24.45	24.79	25.50
		1	24	24.42	24.42	24.81	25.50
		12	0	23.68	23.66	23.81	24.50
		12	6	23.69	23.50	23.81	24.50
		12	13	23.77	23.53	23.78	24.50
		25	0	23.71	23.49	23.80	24.50
	16QAM	1	0	23.74	23.60	23.05	24.50
		1	13	23.77	23.53	23.18	24.50
		1	24	23.74	23.39	22.98	24.50
		12	0	22.68	22.62	22.87	23.50
		12	6	22.73	22.62	22.86	23.50
		12	13	22.73	22.58	22.82	23.50
		25	0	22.82	22.65	22.93	23.50
Bandwidth	Modulation	RB size	RB offset	Channel 20800	Channel 21100	Channel 21400	Tune up
10MHz	QPSK	1	0	24.59	24.74	24.77	25.50
		1	25	24.64	24.58	24.76	25.50
		1	49	24.61	24.47	24.83	25.50
		25	0	23.74	23.75	23.85	24.50
		25	13	23.70	23.63	23.77	24.50
		25	25	23.74	23.48	23.75	24.50
		50	0	23.74	23.48	23.85	24.50
	16QAM	1	0	23.79	23.31	23.89	24.50
		1	25	23.86	23.03	23.98	24.50
		1	49	23.87	23.01	23.97	24.50
		25	0	22.79	22.87	22.93	23.50
		25	13	22.87	22.77	22.89	23.50
		25	25	22.90	22.70	22.94	23.50
		50	0	22.86	22.63	22.89	23.50
Bandwidth	Modulation	RB size	RB offset	Channel 20825	Channel 21100	Channel 21375	Tune up
15MHz	QPSK	1	0	24.57	24.85	24.70	25.50
		1	38	24.61	24.60	24.77	25.50
		1	74	24.64	24.39	24.80	25.50
		36	0	23.76	23.76	23.82	24.50
		36	18	23.78	23.53	23.81	24.50
		36	39	23.69	23.47	23.76	24.50
		75	0	23.64	23.60	23.79	24.50
	16QAM	1	0	24.06	24.20	24.01	24.50
		1	38	24.22	23.99	24.15	24.50
		1	74	24.16	23.85	24.16	24.50
		36	0	22.87	22.83	22.90	23.50
		36	18	22.87	22.68	22.95	23.50
		36	39	22.91	22.52	22.94	23.50
		75	0	22.89	22.65	22.96	23.50

Bandwidth	Modulation	RB size	RB offset	Channel 20850	Channel 21100	Channel 21350	Tune up
20MHz	QPSK	1	0	24.86	24.98	24.95	25.50
		1	50	24.61	24.69	24.69	25.50
		1	99	24.81	24.60	24.84	25.50
		50	0	23.66	23.68	23.67	24.50
		50	25	23.63	23.48	23.71	24.50
		50	50	23.79	23.40	23.72	24.50
		100	0	23.57	23.77	23.68	24.50
	16QAM	1	0	23.53	24.31	24.12	24.50
		1	50	23.64	24.00	24.22	24.50
		1	99	23.77	23.88	24.37	24.50
		50	0	22.90	22.71	22.93	23.50
		50	25	22.90	22.64	22.97	23.50
		50	50	22.96	22.43	23.04	23.50
		100	0	22.88	22.64	22.75	23.50

LTE Band 38				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				37775	38000	38225	
5MHz	QPSK	1	0	24.33	23.69	24.29	25.00
		1	13	24.32	23.73	24.20	25.00
		1	24	24.40	23.89	24.44	25.00
		12	0	23.34	22.89	23.25	24.00
		12	6	23.34	22.83	23.33	24.00
		12	13	23.36	22.75	23.28	24.00
		25	0	23.29	22.72	23.15	24.00
	16QAM	1	0	23.25	23.75	23.25	24.00
		1	13	23.26	23.52	23.34	24.00
		1	24	23.23	23.47	23.40	24.00
		12	0	22.29	21.89	22.33	23.00
		12	6	22.32	21.69	22.17	23.00
		12	13	22.12	21.84	22.23	23.00
		25	0	22.26	21.87	22.38	23.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				37800	38000	38200	
10MHz	QPSK	1	0	24.32	23.79	24.27	25.00
		1	25	24.29	23.83	24.36	25.00
		1	49	24.29	23.79	24.24	25.00
		25	0	23.32	22.94	23.15	24.00
		25	13	23.17	22.86	23.20	24.00
		25	25	23.32	22.98	23.14	24.00
		50	0	23.20	22.73	23.14	24.00
	16QAM	1	0	23.40	23.26	23.85	24.00
		1	25	23.41	23.24	23.84	24.00
		1	49	23.11	23.03	23.85	24.00
		25	0	22.29	22.13	22.37	23.00
		25	13	22.25	22.11	22.30	23.00
		25	25	22.37	22.23	22.31	23.00
		50	0	22.29	21.79	22.32	23.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				37825	38000	38175	
15MHz	QPSK	1	0	24.42	23.90	24.25	25.00
		1	38	24.32	23.78	24.23	25.00
		1	74	24.17	23.86	24.38	25.00
		36	0	23.25	22.77	23.20	24.00
		36	18	23.37	22.89	23.26	24.00
		36	39	23.14	22.90	23.32	24.00
		75	0	23.40	22.87	23.30	24.00
	16QAM	1	0	23.33	22.80	23.91	24.00
		1	38	23.35	22.96	23.98	24.00
		1	74	23.04	23.18	23.98	24.00
		36	0	22.35	22.01	22.19	23.00
		36	18	22.31	21.87	22.23	23.00
		36	39	22.18	22.10	22.27	23.00
		75	0	22.41	21.90	22.24	23.00

Bandwidth	Modulation	RB size	RB offset	Channel 37850	Channel 38000	Channel 38150	Tune up
20MHz	QPSK	1	0	24.44	24.49	24.41	25.00
		1	50	24.13	23.79	23.95	25.00
		1	99	23.87	24.15	24.22	25.00
		50	0	23.19	23.28	23.04	24.00
		50	25	23.34	22.91	23.01	24.00
		50	50	22.94	22.92	23.17	24.00
		100	0	23.15	23.18	23.17	24.00
	16QAM	1	0	23.68	23.29	23.20	24.00
		1	50	23.67	23.13	22.95	24.00
		1	99	23.30	23.83	23.01	24.00
		50	0	22.54	21.98	22.19	23.00
		50	25	22.42	22.05	22.31	23.00
		50	50	22.35	22.08	22.23	23.00
		100	0	22.32	21.90	22.10	23.00

4 Conducted Power of WIFI

WIFI 2.4G					
Mode	Channel	Frequency (MHz)	Data Rate(Mbps)	Average Power (dBm) Main Ant	Tune up
802.11b	1	2412	1	13.58	14.5
	6	2437		13.63	14.5
	11	2462		14.27	14.5
802.11g	1	2412	6	13.87	13
	6	2437		13.16	13
	11	2462		13.85	13
802.11n HT20 SISO	1	2412	6.5	12.79	13
	6	2437		12.95	13
	11	2462		13.87	13
802.11n HT40 SISO	3	2422	13	11.55	12
	6	2437		11.87	12
	9	2452		11.86	12

WIFI 5G						
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11a	U-NII-1	36	5180	6	7.52	8
		40	5200		7.14	8
		48	5240		7.72	8
	U-NII-2A	52	5260		8.51	9
		60	5300		8.77	9
		64	5320		8.72	9
	U-NII-2C	100	5500		9.89	10
		116	5580		8.9	10
		140	5700		8.55	10
	U-NII-3	149	5745		9.22	10
		157	5785		8.9	10
		165	5825		9.79	10
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11n-HT20	U-NII-1	36	5180	MCS0	6.97	8
		40	5200		6.25	8
		48	5240		6.7	8
	U-NII-2A	52	5260		7.76	9
		60	5300		8.33	9
		64	5320		8.61	9
	U-NII-2C	100	5500		9.91	10
		116	5580		8.83	10
		140	5700		8.32	10
	U-NII-3	149	5745		8.88	10
		157	5785		8.41	10
		165	5825		9.51	10
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11n-HT40	U-NII-1	38	5190	MCS0	7.76	8
		46	5230		7.21	8

	U-NII-2A	54	5270		8.63	10
		62	5310		9.12	10
	U-NII-2C	102	5510		9.31	10
		110	5550		8.72	10
		134	5670		8.75	10
	U-NII-3	151	5755		9.12	10
		159	5795		9.15	10
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 20M	U-NII-1	36	5180	MCS0	6.68	8
		40	5200		6.27	8
		48	5240		6.85	8
	U-NII-2A	52	5260		7.92	9
		60	5300		8.5	9
		64	5320		8.7	9
	U-NII-2C	100	5500		9.93	10
		116	5580		8.12	10
		140	5700		8.69	10
	U-NII-3	149	5745		9.18	10
		157	5785		8.71	10
		165	5825		9.88	10
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 40M	U-NII-1	38	5190	MCS0	7.49	8
		46	5230		7.5	8
	U-NII-2A	54	5270		8.37	10
		62	5310		8.8	10
	U-NII-2C	102	5510		9.92	10
		110	5550		8.69	10
		134	5670		8.6	10
	U-NII-3	151	5755		8.95	10
		159	5795		8.9	10
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 80M	U-NII-1	42	5210	MCS0	8.35	9
	U-NII-2A	58	5290		9.07	10
	U-NII-2C	106	5530		9.44	10
		122	5610		8.91	10
	U-NII-3	155	5775		9.29	10

5 Conducted Power of Bluetooth

BT			Average Conducted Power (dBm)	Tune up (dBm)
Modulation	Channel	Frequency(MHz)		
GFSK	0	2402	7.93	9
	39	2441	8.2	9
	78	2480	7.68	9
π/4DQPSK	0	2402	9.58	11
	39	2441	10.36	11
	78	2480	9.44	11
8DPSK	0	2402	9.8	11
	39	2441	10.74	11
	78	2480	9.55	11

BLE_1Mbps			Average Conducted Power (dBm)	Tune up (dBm)
Modulation	Channel	Frequency(MHz)		
GFSK	0	2402	-0.21	1.5
	19	2440	0.7	1.5
	39	2480	1.41	1.5