

Appendix for LTE Band 2

Product Name: Smart Phone

Model No: Black G4

Appendix A: Average Power Output Data

Test Result

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
1.4MHz	18607	1850.7	QPSK	1	0	23.54	23.0±1	/
				1	2	23.59	23.0±1	/
				1	5	23.45	23.0±1	/
				3	0	23.54	23.0±1	/
				3	1	23.53	23.0±1	/
				3	2	23.46	23.0±1	/
				6	0	22.47	23.0±1	1.0
			16QAM	1	0	22.41	22.0±1	1.0
				1	2	22.47	22.0±1	1.0
				1	5	22.41	22.0±1	1.0
				3	0	22.42	22.0±1	1.0
				3	1	22.48	22.0±1	1.0
				3	2	22.37	22.0±1	1.0
				6	0	21.58	22.0±1	1.0
	18900	1880	QPSK	1	0	23.49	23.0±1	/
				1	2	23.58	23.0±1	/
				1	5	23.48	23.0±1	/
				3	0	23.52	23.0±1	/
				3	1	23.56	23.0±1	/
				3	2	23.51	23.0±1	/
				6	0	22.51	23.0±1	1.0
			16QAM	1	0	22.74	22.0±1	1.0
				1	2	22.8	22.0±1	1.0
				1	5	22.7	22.0±1	1.0
				3	0	22.64	22.0±1	1.0
				3	1	22.64	22.0±1	1.0
				3	2	22.61	22.0±1	1.0
				6	0	21.36	22.0±1	1.0
	19193	1909.3	QPSK	1	0	23.24	23.0±1	/
				1	2	23.38	23.0±1	/
				1	5	23.27	23.0±1	/
				3	0	23.34	23.0±1	/
				3	1	23.34	23.0±1	/
				3	2	23.35	23.0±1	/
				6	0	22.38	23.0±1	1.0

			16QAM	1	0	22.23	22.0±1	1.0
				1	2	22.25	22.0±1	1.0
				1	5	22.22	22.0±1	1.0
				3	0	22.43	22.0±1	1.0
				3	1	22.49	22.0±1	1.0
				3	2	22.39	22.0±1	1.0
				6	0	21.45	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
3MHz	18615	1851.5	QPSK	1	0	23.59	23.0±1	/
				1	8	23.69	23.0±1	/
				1	14	23.55	23.0±1	/
				6	0	22.46	23.0±1	1.0
				6	4	22.51	23.0±1	1.0
				6	9	22.47	23.0±1	1.0
				15	0	22.45	23.0±1	1.0
			16QAM	1	0	22.31	22.0±1	1.0
				1	8	22.39	22.0±1	1.0
				1	14	22.3	22.0±1	1.0
				6	0	21.53	22.0±1	1.0
				6	4	21.54	22.0±1	1.0
				6	9	21.48	22.0±1	1.0
				15	0	21.45	22.0±1	1.0
	18900	1880	QPSK	1	0	23.57	23.0±1	/
				1	8	23.68	23.0±1	/
				1	14	23.54	23.0±1	/
				6	0	22.52	23.0±1	1.0
				6	4	22.58	23.0±1	1.0
				6	9	22.5	23.0±1	1.0
				15	0	22.5	23.0±1	1.0
			16QAM	1	0	22.8	22.0±1	1.0
				1	8	22.93	22.0±1	1.0
				1	14	22.84	22.0±1	1.0
				6	0	21.59	22.0±1	1.0
				6	4	21.6	22.0±1	1.0
				6	9	21.55	22.0±1	1.0
				15	0	21.53	22.0±1	1.0
	19185	1908.5	QPSK	1	0	23.41	23.0±1	/
				1	8	23.53	23.0±1	/
				1	14	23.34	23.0±1	/

				6	0	22.4	23.0±1	1.0
				6	4	22.44	23.0±1	1.0
				6	9	22.35	23.0±1	1.0
				15	0	22.35	23.0±1	1.0
			16QAM	1	0	22.32	22.0±1	1.0
				1	8	22.41	22.0±1	1.0
				1	14	22.27	22.0±1	1.0
				6	0	21.38	22.0±1	1.0
				6	4	21.39	22.0±1	1.0
				6	9	21.35	22.0±1	1.0
				15	0	21.27	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	18625	1852.5	QPSK	1	0	23.41	23.0±1	/
				1	12	23.62	23.0±1	/
				1	24	23.4	23.0±1	/
				12	0	22.43	23.0±1	1.0
				12	6	22.49	23.0±1	1.0
				12	11	22.45	23.0±1	1.0
				25	0	22.42	23.0±1	1.0
			16QAM	1	0	22.51	22.0±1	1.0
				1	12	22.73	22.0±1	1.0
				1	24	22.5	22.0±1	1.0
				12	0	21.46	22.0±1	1.0
				12	6	21.51	22.0±1	1.0
				12	11	21.51	22.0±1	1.0
				25	0	21.45	22.0±1	1.0
	18900	1880	QPSK	1	0	23.5	23.0±1	/
				1	12	23.69	23.0±1	/
				1	24	23.46	23.0±1	/
				12	0	22.52	23.0±1	1.0
				12	6	22.53	23.0±1	1.0
				12	11	22.46	23.0±1	1.0
				25	0	22.49	23.0±1	1.0
			16QAM	1	0	22.88	22.0±1	1.0
				1	12	23.04	22.0±1	1.0
				1	24	22.88	22.0±1	1.0
				12	0	21.63	22.0±1	1.0
				12	6	21.65	22.0±1	1.0
				12	11	21.59	22.0±1	1.0

	19175	1907.5	QPSK	25	0	21.57	22.0±1	1.0
				1	0	23.37	23.0±1	/
				1	12	23.59	23.0±1	/
				1	24	23.34	23.0±1	/
				12	0	22.4	23.0±1	1.0
				12	6	22.41	23.0±1	1.0
				12	11	22.29	23.0±1	1.0
			16QAM	25	0	22.32	23.0±1	1.0
				1	0	22.34	22.0±1	1.0
				1	12	22.52	22.0±1	1.0
				1	24	22.3	22.0±1	1.0
				12	0	21.38	22.0±1	1.0
				12	6	21.41	22.0±1	1.0
				12	11	21.29	22.0±1	1.0
				25	0	21.27	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	18650	1855	QPSK	1	0	23.61	23.0±1	/
				1	24	23.64	23.0±1	/
				1	49	23.52	23.0±1	/
				25	0	22.46	23.0±1	1.0
				25	12	22.51	23.0±1	1.0
				25	24	22.49	23.0±1	1.0
				50	0	22.52	23.0±1	1.0
			16QAM	1	0	22.32	22.0±1	1.0
				1	24	22.38	22.0±1	1.0
				1	49	22.27	22.0±1	1.0
				25	0	21.48	22.0±1	1.0
				25	12	21.51	22.0±1	1.0
				25	24	21.51	22.0±1	1.0
				50	0	21.5	22.0±1	1.0
	18900	1880	QPSK	1	0	23.58	23.0±1	/
				1	24	23.68	23.0±1	/
				1	49	23.54	23.0±1	/
				25	0	22.55	23.0±1	1.0
				25	12	22.54	23.0±1	1.0
				25	24	22.46	23.0±1	1.0
				50	0	22.49	23.0±1	1.0
			16QAM	1	0	22.79	22.0±1	1.0
				1	24	22.93	22.0±1	1.0

	19150	1905		1	49	22.76	22.0±1	1.0
				25	0	21.58	22.0±1	1.0
				25	12	21.56	22.0±1	1.0
				25	24	21.51	22.0±1	1.0
				50	0	21.54	22.0±1	1.0
			QPSK	1	0	23.43	23.0±1	/
				1	24	23.51	23.0±1	/
				1	49	23.36	23.0±1	/
				25	0	22.42	23.0±1	1.0
				25	12	22.4	23.0±1	1.0
				25	24	22.31	23.0±1	1.0
				50	0	22.36	23.0±1	1.0
			16QAM	1	0	22.41	22.0±1	1.0
				1	24	22.39	22.0±1	1.0
				1	49	22.27	22.0±1	1.0
				25	0	21.47	22.0±1	1.0
				25	12	21.49	22.0±1	1.0
				25	24	21.39	22.0±1	1.0
				50	0	21.39	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
15MHz	18675	1857.5	QPSK	1	0	23.47	23.0±1	/
				1	37	23.66	23.0±1	/
				1	74	23.36	23.0±1	/
				36	0	22.58	23.0±1	1.0
				36	16	22.57	23.0±1	1.0
				36	35	22.56	23.0±1	1.0
				75	0	22.57	23.0±1	1.0
			16QAM	1	0	22.23	22.0±1	1.0
				1	37	22.5	22.0±1	1.0
				1	74	22.19	22.0±1	1.0
				36	0	21.48	22.0±1	1.0
				36	16	21.52	22.0±1	1.0
				36	35	21.49	22.0±1	1.0
				75	0	21.52	22.0±1	1.0
	18900	1880	QPSK	1	0	23.47	23.0±1	/
				1	37	23.71	23.0±1	/
				1	74	23.46	23.0±1	/
				36	0	22.62	23.0±1	1.0
				36	16	22.64	23.0±1	1.0

				36	35	22.61	23.0±1	1.0
				75	0	22.56	23.0±1	1.0
			16QAM	1	0	22.73	22.0±1	1.0
				1	37	22.97	22.0±1	1.0
				1	74	22.7	22.0±1	1.0
				36	0	21.57	22.0±1	1.0
				36	16	21.59	22.0±1	1.0
				36	35	21.55	22.0±1	1.0
				75	0	21.53	22.0±1	1.0
	19125	1902.5	QPSK	1	0	23.52	23.0±1	/
				1	37	23.66	23.0±1	/
				1	74	23.35	23.0±1	/
				36	0	22.52	23.0±1	1.0
				36	16	22.54	23.0±1	1.0
				36	35	22.45	23.0±1	1.0
				75	0	22.47	23.0±1	1.0
			16QAM	1	0	22.78	22.0±1	1.0
				1	37	22.84	22.0±1	1.0
				1	74	22.49	22.0±1	1.0
				36	0	21.43	22.0±1	1.0
				36	16	21.38	22.0±1	1.0
				36	35	21.36	22.0±1	1.0
				75	0	21.41	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
20MHz	18700	1860	QPSK	1	0	23.23	23.0±1	/
				1	49	23.49	23.0±1	/
				1	99	23.15	23.0±1	/
				50	0	22.42	23.0±1	1.0
				50	24	22.48	23.0±1	1.0
				50	49	22.5	23.0±1	1.0
				100	0	22.48	23.0±1	1.0
			16QAM	1	0	22.68	22.4±1	1.0
				1	49	23.02	22.4±1	1.0
				1	99	22.63	22.4±1	1.0
				50	0	21.48	22.4±1	1.0
				50	24	21.49	22.4±1	1.0
				50	49	21.57	22.4±1	1.0
				100	0	21.52	22.4±1	1.0
	18900	1880	QPSK	1	0	23.29	23.0±1	/

				1	49	23.72	23.0±1	/
				1	99	23.27	23.0±1	/
				50	0	22.52	23.0±1	1.0
				50	24	22.52	23.0±1	1.0
				50	49	22.45	23.0±1	1.0
				100	0	22.47	23.0±1	1.0
			16QAM	1	0	22.64	22.0±1	1.0
				1	49	22.98	22.0±1	1.0
				1	99	22.59	22.0±1	1.0
				50	0	21.53	22.0±1	1.0
				50	24	21.57	22.0±1	1.0
				50	49	21.49	22.0±1	1.0
				100	0	21.48	22.0±1	1.0
	19100	1900	QPSK	1	0	23.33	23.0±1	/
				1	49	23.59	23.0±1	/
				1	99	23.14	23.0±1	/
				50	0	22.55	23.0±1	1.0
				50	24	22.49	23.0±1	1.0
				50	49	22.29	23.0±1	1.0
				100	0	22.45	23.0±1	1.0
			16QAM	1	0	22.64	22.0±1	1.0
				1	49	22.9	22.0±1	1.0
				1	99	22.38	22.0±1	1.0
				50	0	21.54	22.0±1	1.0
				50	24	21.48	22.0±1	1.0
				50	49	21.3	22.0±1	1.0
				100	0	21.47	22.0±1	1.0

Appendix B: Peak-to-Average Ratio(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band2	1.4MHz	QPSK	18607	1RB#0	3.48	13	PASS
Band2	1.4MHz	QPSK	18607	6RB#0	4.46	13	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	4.61	13	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	5.33	13	PASS
Band2	1.4MHz	QPSK	18900	1RB#0	3.30	13	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	4.32	13	PASS
Band2	1.4MHz	16QAM	18900	1RB#0	4.43	13	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	5.30	13	PASS
Band2	1.4MHz	QPSK	19193	1RB#0	2.96	13	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	4.06	13	PASS
Band2	1.4MHz	16QAM	19193	1RB#0	4.17	13	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	5.04	13	PASS
Band2	3MHz	QPSK	18615	1RB#0	3.42	13	PASS
Band2	3MHz	QPSK	18615	15RB#0	4.61	13	PASS
Band2	3MHz	16QAM	18615	1RB#0	4.38	13	PASS
Band2	3MHz	16QAM	18615	15RB#0	5.51	13	PASS
Band2	3MHz	QPSK	18900	1RB#0	3.30	13	PASS
Band2	3MHz	QPSK	18900	15RB#0	4.43	13	PASS
Band2	3MHz	16QAM	18900	1RB#0	4.43	13	PASS
Band2	3MHz	16QAM	18900	15RB#0	5.36	13	PASS
Band2	3MHz	QPSK	19185	1RB#0	2.90	13	PASS
Band2	3MHz	QPSK	19185	15RB#0	4.17	13	PASS
Band2	3MHz	16QAM	19185	1RB#0	3.94	13	PASS
Band2	3MHz	16QAM	19185	15RB#0	5.13	13	PASS
Band2	5MHz	QPSK	18625	1RB#0	3.54	13	PASS
Band2	5MHz	QPSK	18625	25RB#0	4.72	13	PASS
Band2	5MHz	16QAM	18625	1RB#0	4.43	13	PASS
Band2	5MHz	16QAM	18625	25RB#0	5.57	13	PASS
Band2	5MHz	QPSK	18900	1RB#0	3.48	13	PASS
Band2	5MHz	QPSK	18900	25RB#0	4.49	13	PASS
Band2	5MHz	16QAM	18900	1RB#0	4.43	13	PASS
Band2	5MHz	16QAM	18900	25RB#0	5.36	13	PASS
Band2	5MHz	QPSK	19175	1RB#0	3.07	13	PASS
Band2	5MHz	QPSK	19175	25RB#0	4.26	13	PASS
Band2	5MHz	16QAM	19175	1RB#0	4.09	13	PASS
Band2	5MHz	16QAM	19175	25RB#0	5.16	13	PASS

Band2	10MHz	QPSK	18650	1RB#0	3.48	13	PASS
Band2	10MHz	QPSK	18650	50RB#0	4.84	13	PASS
Band2	10MHz	16QAM	18650	1RB#0	4.41	13	PASS
Band2	10MHz	16QAM	18650	50RB#0	5.65	13	PASS
Band2	10MHz	QPSK	18900	1RB#0	3.54	13	PASS
Band2	10MHz	QPSK	18900	50RB#0	4.52	13	PASS
Band2	10MHz	16QAM	18900	1RB#0	4.52	13	PASS
Band2	10MHz	16QAM	18900	50RB#0	5.42	13	PASS
Band2	10MHz	QPSK	19150	1RB#0	3.57	13	PASS
Band2	10MHz	QPSK	19150	50RB#0	4.52	13	PASS
Band2	10MHz	16QAM	19150	1RB#0	4.61	13	PASS
Band2	10MHz	16QAM	19150	50RB#0	5.39	13	PASS
Band2	15MHz	QPSK	18675	1RB#0	3.57	13	PASS
Band2	15MHz	QPSK	18675	75RB#0	5.07	13	PASS
Band2	15MHz	16QAM	18675	1RB#0	4.52	13	PASS
Band2	15MHz	16QAM	18675	75RB#0	5.77	13	PASS
Band2	15MHz	QPSK	18900	1RB#0	3.74	13	PASS
Band2	15MHz	QPSK	18900	75RB#0	4.67	13	PASS
Band2	15MHz	16QAM	18900	1RB#0	4.75	13	PASS
Band2	15MHz	16QAM	18900	75RB#0	5.51	13	PASS
Band2	15MHz	QPSK	19125	1RB#0	3.77	13	PASS
Band2	15MHz	QPSK	19125	75RB#0	4.81	13	PASS
Band2	15MHz	16QAM	19125	1RB#0	4.78	13	PASS
Band2	15MHz	16QAM	19125	75RB#0	5.59	13	PASS
Band2	20MHz	QPSK	18700	1RB#0	3.68	13	PASS
Band2	20MHz	QPSK	18700	100RB#0	4.96	13	PASS
Band2	20MHz	16QAM	18700	1RB#0	4.55	13	PASS
Band2	20MHz	16QAM	18700	100RB#0	5.83	13	PASS
Band2	20MHz	QPSK	18900	1RB#0	3.91	13	PASS
Band2	20MHz	QPSK	18900	100RB#0	4.72	13	PASS
Band2	20MHz	16QAM	18900	1RB#0	4.75	13	PASS
Band2	20MHz	16QAM	18900	100RB#0	5.62	13	PASS
Band2	20MHz	QPSK	19100	1RB#0	4.00	13	PASS
Band2	20MHz	QPSK	19100	100RB#0	4.87	13	PASS
Band2	20MHz	16QAM	19100	1RB#0	4.87	13	PASS
Band2	20MHz	16QAM	19100	100RB#0	5.74	13	PASS

Test Graphs



















