

Halo Technologies Europe Ltd.
Tune-up(dBm) procedure

This is to formally certify that:

The tune up procedures of Body Camera (FCC ID: 2A9JS-HS-40)

The tune up procedures of is not open to end user. The end user is not allowed to perform final tune. All the power and frequency set up were finished at the manufacturer stage.

Tune up procedure shall be over the power range or at specific operating power levels.

Procedure:

1. Set theBody Camera to operational voltage and on one certain channel in a special service mode by means of company proprietary software.

2. The actual power is measured at several power levels.

3. The gain factors of each individualBody Camera are adjusted via the Board-test SW using automatic adjustment arithmetic until the Tune-up Range (dBm) value is met.

It must provide an operational voltage (DC 3.85V by battery) to turn on the device and on one certain channel in service mode by means of company proprietary software. spectrum analyzer(Agilent, N9020A) and Power meter

(DARE, RPR3006W) measures the 2.4G/5G device specific RF characteristics.

Base station simulator (R&S CMW500) measures the 3G/4G device specific RF characteristics.

The maximum power of each individual channels are adjusted until the target value met.

WCDMA Conducted Power

WCDMA Band 2	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
RMC12.2K	22.50	22.25	22.38	22.47
HSDPA Sub 1	22.00	21.31	21.62	21.53
HSDPA Sub 2	21.50	21.20	21.31	21.24
HSDPA Sub 3	20.50	20.22	20.37	20.22
HSDPA Sub 4	20.50	19.92	20.45	19.79
HSUPA Sub 1	21.50	20.69	21.11	20.94
HSUPA Sub 2	22.00	21.53	21.84	21.75
HSUPA Sub 3	21.50	21.05	21.46	20.94
HSUPA Sub 4	22.00	21.85	21.84	21.51
HSUPA Sub 5	21.50	21.02	21.11	21.03
WCDMA Band 4	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	1312	1413	1513
Frequency (MHz)		1712.4	1732.6	1752.6
RMC12.2K	23.50	22.65	22.80	23.05
HSDPA Sub 1	22.50	21.77	21.91	22.32
HSDPA Sub 2	22.50	21.71	21.73	22.09
HSDPA Sub 3	21.00	20.70	20.83	20.89
HSDPA Sub 4	21.00	20.66	20.41	20.93
HSUPA Sub 1	21.50	20.52	20.73	21.11
HSUPA Sub 2	22.00	21.29	21.34	21.92
HSUPA Sub 3	21.50	20.71	20.85	21.14
HSUPA Sub 4	22.00	21.42	21.39	21.66
HSUPA Sub 5	21.50	20.74	20.69	21.16
WCDMA Band 5	Burst-Averaged output Power (dBm)			

Tx Channel	Tune-up (dBm)	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC12.2K	23.00	22.72	22.73	22.75
HSDPA Sub 1	22.00	21.72	21.75	21.67
HSDPA Sub 2	22.00	21.53	21.52	21.47
HSDPA Sub 3	21.00	20.43	20.65	20.51
HSDPA Sub 4	21.00	20.62	20.69	20.31
HSUPA Sub 1	21.50	21.02	21.01	21.04
HSUPA Sub 2	22.00	21.72	21.75	21.77
HSUPA Sub 3	21.50	21.04	21.23	21.12
HSUPA Sub 4	22.00	21.78	21.87	21.83
HSUPA Sub 5	21.50	21.20	21.14	20.91

LTE Conducted Power

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18607/1850.7	18900/1880	19193/1909.3
LTE Band 2	1.4MHz	QPSK	1	0	23.50	22.77	22.80	22.50
			1	2	23.50	22.83	23.04	22.80
			1	5	23.50	22.65	22.94	22.76
			3	0	23.50	22.80	22.97	22.61
			3	1	23.50	23.05	22.99	22.71
			3	2	23.50	23.00	22.93	22.71
		16QAM	6	0	22.00	21.93	21.88	21.64
			1	0	22.00	21.77	21.92	21.87
			1	2	22.00	21.84	21.82	21.81
			1	5	22.00	21.68	21.78	21.36
			3	0	22.50	21.69	21.88	21.33
			3	1	22.50	21.94	22.15	21.74
			3	2	22.50	22.05	22.19	21.75
			6	0	21.50	20.99	21.08	20.52
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18615/1851.5	18900/1880	19185/1908.5
LTE Band 2	3MHz	QPSK	1	0	23.50	22.86	22.97	22.69
			1	7	23.50	23.09	22.95	22.79
			1	14	23.50	23.18	22.93	22.74
			8	0	22.50	21.94	21.95	21.36
			8	4	22.50	22.05	21.96	21.84
			8	7	22.50	21.96	21.98	21.66
			15	0	22.50	21.90	22.02	21.42
		16QAM	1	0	22.00	21.69	21.73	21.45
			1	7	22.00	21.61	21.57	21.27
			1	14	22.00	21.73	21.66	21.18
			8	0	21.00	20.76	20.39	20.23
			8	4	21.00	20.62	20.52	20.57
			8	7	21.00	20.88	20.42	20.58
			15	0	21.00	20.66	20.97	20.29
Band	Band	Modulation	RB		Tune-	Channel/Frequency(MHz)		

	Width		Configuration		up (dBm)			
			RB Size	RB Offset		18625/1852.5	18900/1880	19175/1907.5
LTE Band 2	5MHz	QPSK	1	0	23.00	22.59	22.58	22.33
			1	12	23.00	22.97	22.73	22.80
			1	24	23.00	22.73	22.73	22.76
			12	0	22.00	21.57	21.72	21.23
			12	6	22.00	21.76	21.73	21.66
			12	11	22.00	21.72	21.75	21.54
			25	0	22.00	21.62	21.67	21.41
		16QAM	1	0	21.50	21.43	21.47	21.28
			1	12	21.50	21.47	21.37	21.14
			1	24	21.50	21.41	21.42	21.09
			12	0	21.00	20.34	20.37	19.99
			12	6	21.00	20.68	20.37	20.48
			12	11	21.00	20.47	20.47	20.54
			25	0	21.00	20.58	20.63	20.40
Band	Band Width	Modulation	RB Configuration		Tune- up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18650/1855	18900/1880	19150/1905
LTE Band 2	10MHz	QPSK	1	0	23.50	22.86	22.60	22.52
			1	24	23.50	23.14	22.95	22.72
			1	49	23.50	22.49	22.55	22.42
			25	0	22.00	21.58	21.83	21.43
			25	12	22.00	21.81	21.79	21.42
			25	24	22.00	21.63	21.46	21.37
			50	0	22.00	21.49	21.53	21.29
		16QAM	1	0	22.00	21.47	21.20	21.29
			1	24	22.00	21.92	21.47	21.31
			1	49	22.00	21.20	20.85	20.92
			25	0	21.00	20.41	20.56	20.28
			25	12	21.00	20.76	20.74	20.46
			25	24	21.00	20.59	20.61	20.50
			50	0	21.00	20.46	20.57	20.22
Band	Band Width	Modulation	RB Configuration		Tune- up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18675/1857.5	18900/1880	19125/1902.5
LTE Band 2	15MHz	QPSK	1	0	23.50	22.79	22.46	22.25
			1	37	23.50	23.02	22.85	22.33
			1	74	23.50	22.24	22.38	22.20
			36	0	22.00	21.33	21.52	21.53
			36	18	22.00	21.78	21.56	21.16
			36	37	22.00	21.52	21.57	21.10
			75	0	22.00	21.30	21.56	21.28
		16QAM	1	0	22.00	21.17	21.30	21.06
			1	37	22.00	21.56	21.35	20.61
			1	74	22.00	20.86	20.88	20.67
			36	0	20.50	20.13	20.26	20.16
			36	18	20.50	20.47	20.47	20.18
			36	37	20.50	20.43	20.31	20.00
			75	0	20.50	20.32	20.47	20.24

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	20MHz	QPSK	1	0	23.50	22.64	22.35	22.37
			1	49	23.50	23.10	23.02	22.77
			1	99	23.50	22.06	22.36	21.80
			50	0	22.50	22.46	22.27	22.34
			50	24	22.50	22.16	22.45	22.02
			50	49	22.50	22.16	22.30	21.87
			100	0	21.50	21.13	21.18	21.24
		16QAM	1	0	22.00	20.87	21.12	21.02
			1	49	22.00	21.78	21.42	21.13
			1	99	22.00	20.67	20.98	20.23
			50	0	20.50	20.10	20.10	20.29
			50	24	20.50	20.46	20.29	19.97
			50	49	20.50	20.11	20.33	19.86
			100	0	20.50	20.09	20.19	20.26

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19957/1710.7	20175/1732.5	20393/1754.3
LTE Band 4	1.4MHz	QPSK	1	0	23.00	22.20	22.59	22.65
			1	2	23.00	22.53	22.67	22.75
			1	5	23.00	22.47	22.71	22.79
			3	0	23.00	22.51	22.76	22.77
			3	1	23.00	22.65	22.38	22.82
			3	2	23.00	22.61	22.65	22.77
			6	0	22.00	21.59	21.75	21.83
		16QAM	1	0	22.00	21.94	21.68	21.49
			1	2	22.00	21.96	21.63	21.65
			1	5	22.00	21.46	21.65	21.62
			3	0	22.00	21.31	21.59	21.59
			3	1	22.00	21.43	21.80	21.63
			3	2	22.00	21.43	21.76	21.61
			6	0	21.50	20.46	21.05	20.85
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
LTE Band 4	3MHz	QPSK	1	0	23.00	22.54	22.66	22.53
			1	7	23.00	22.71	22.84	22.74
			1	14	23.00	22.55	22.77	22.76
			8	0	22.00	21.67	21.90	21.91
			8	4	22.00	21.77	21.86	21.80
			8	7	22.00	21.68	21.84	21.89
			15	0	22.00	21.61	21.92	21.86
		16QAM	1	0	22.00	21.94	21.90	21.56
			1	7	22.00	21.52	21.53	21.53
			1	14	22.00	21.49	21.43	21.55
			8	0	21.00	20.32	20.48	20.70
			8	4	21.00	20.46	20.57	20.99

			8	7	21.00	20.43	20.93	20.88
			15	0	21.00	20.63	20.84	20.81
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5
LTE Band 4	5MHz	QPSK	1	0	23.00	22.57	22.63	22.57
			1	12	23.00	22.61	22.78	22.80
			1	24	23.00	22.62	22.67	22.84
			12	0	22.00	21.65	21.72	21.86
			12	6	22.00	21.67	21.73	21.65
			12	11	22.00	21.58	21.65	21.72
			25	0	22.00	21.51	21.65	21.70
		16QAM	1	0	22.00	21.69	21.44	21.77
			1	12	22.00	21.47	21.40	21.31
			1	24	22.00	21.20	21.25	21.39
			12	0	21.00	20.30	20.49	20.40
			12	6	21.00	20.54	20.51	20.51
			12	11	21.00	20.53	20.37	20.66
			25	0	21.00	20.64	20.63	20.74
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band 4	10MHz	QPSK	1	0	23.00	22.45	22.51	22.32
			1	24	23.00	22.94	22.94	22.87
			1	49	23.00	22.25	22.20	22.60
			25	0	22.00	21.66	21.85	21.56
			25	12	22.00	21.76	21.74	21.53
			25	24	22.00	21.53	21.48	21.53
			50	0	22.00	21.58	21.56	21.46
		16QAM	1	0	22.00	21.22	21.32	21.08
			1	24	22.00	21.60	21.82	21.54
			1	49	22.00	20.88	20.92	20.88
			25	0	21.00	20.57	20.50	20.50
			25	12	21.00	20.64	20.69	20.70
			25	24	21.00	20.47	20.39	20.44
			50	0	21.00	20.51	20.49	20.44
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band 4	15MHz	QPSK	1	0	23.50	22.39	22.33	22.23
			1	37	23.50	22.92	23.08	22.78
			1	74	23.50	22.44	22.02	22.21
			36	0	22.00	21.72	21.73	21.57
			36	18	22.00	21.54	21.59	21.34
			36	37	22.00	21.35	21.24	21.23
			75	0	22.00	21.53	21.36	21.22
		16QAM	1	0	22.00	21.26	21.01	21.03
			1	37	22.00	21.44	21.71	21.34
			1	74	22.00	20.89	20.66	20.76
			36	0	21.00	20.47	20.42	20.36

			36	18	21.00	20.52	20.57	20.41
			36	37	21.00	20.36	20.30	20.13
			75	0	20.50	20.42	20.47	20.24
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band 4	20MHz	QPSK	1	0	23.00	22.16	22.22	22.27
			1	49	23.00	22.77	22.82	22.93
			1	99	23.00	22.13	21.95	22.19
			50	0	22.00	21.63	21.49	21.48
			50	24	22.00	21.32	21.43	21.15
			50	49	22.00	21.18	21.19	21.07
			100	0	21.50	21.25	21.25	21.07
		16QAM	1	0	22.00	21.03	21.06	20.94
			1	49	22.00	21.53	21.68	21.55
			1	99	22.00	20.42	20.46	20.57
			50	0	20.50	20.44	20.21	20.26
			50	24	20.50	20.35	20.34	20.29
			50	49	20.50	20.25	20.18	20.06
			100	0	20.50	20.39	20.26	20.07

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20407/824.7	20525/836.5	20643/848.3
LTE Band 5	1.4MHz	QPSK	1	0	23.00	22.44	22.32	22.25
			1	2	23.00	22.39	22.50	22.34
			1	5	23.00	22.32	22.43	22.46
			3	0	23.00	22.43	22.26	22.15
			3	1	23.00	22.50	22.32	22.15
			3	2	23.00	22.55	22.28	22.17
			6	0	21.50	21.42	21.28	21.02
		16QAM	1	0	21.50	21.30	21.13	21.09
			1	2	21.50	21.37	21.21	20.99
			1	5	21.50	21.25	21.15	20.87
			3	0	21.50	21.20	21.10	20.96
			3	1	21.50	21.41	21.20	21.20
			3	2	21.50	21.31	21.10	21.24
			6	0	20.50	20.23	20.19	20.17
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20415/825.5	20525/836.5	20635/847.5
LTE Band 5	3MHz	QPSK	1	0	22.50	22.28	22.15	22.35
			1	7	22.50	22.27	22.29	22.29
			1	14	22.50	22.23	22.31	22.18
			8	0	21.50	21.31	21.24	21.20
			8	4	21.50	21.18	21.25	21.25
			8	7	21.50	21.15	21.24	21.16
			15	0	21.50	21.22	21.20	21.01
		16QAM	1	0	21.50	21.45	21.47	21.06
			1	7	21.50	20.98	20.91	20.79
			1	14	21.50	20.82	20.72	20.66

			8	0	20.50	20.00	19.86	20.00
			8	4	20.50	19.93	20.18	20.28
			8	7	20.50	20.20	19.97	20.39
			15	0	20.50	20.00	19.95	20.18
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20425/826.5	20525/836.5	20625/846.5
LTE Band 5	5MHz	QPSK	1	0	22.50	22.17	22.30	22.24
			1	12	22.50	22.41	22.36	22.24
			1	24	22.50	22.17	22.16	22.12
			12	0	21.50	21.29	21.25	21.21
			12	6	21.50	21.23	21.23	21.16
			12	11	21.50	21.17	21.18	21.03
			25	0	21.50	21.20	21.10	21.08
		16QAM	1	0	21.50	21.30	20.84	20.94
			1	12	21.50	21.10	20.86	20.94
			1	24	21.50	20.58	20.67	20.59
			12	0	20.50	20.21	19.81	20.05
			12	6	20.50	20.31	20.09	20.13
			12	11	20.50	20.15	20.06	19.96
			25	0	20.50	20.17	20.18	20.18
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20450/829	20525/836.5	20600/844
LTE Band 5	10MHz	QPSK	1	0	23.00	22.27	22.15	22.21
			1	24	23.00	22.39	22.61	22.62
			1	49	23.00	22.16	22.04	21.98
			25	0	21.50	21.46	21.21	21.35
			25	12	21.50	21.07	21.32	21.28
			25	24	21.50	20.97	21.06	21.10
			50	0	21.50	21.14	21.09	21.17
		16QAM	1	0	21.50	21.07	20.86	20.92
			1	24	21.50	21.07	21.25	21.19
			1	49	21.50	20.49	20.47	20.33
			25	0	20.50	20.36	20.06	20.22
			25	12	20.50	20.45	20.28	20.25
			25	24	20.50	20.02	20.13	20.12
			50	0	20.50	20.23	20.05	20.15

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20775/2502.5	21100/2535	21425/2567.5
LTE Band 7	5MHz	QPSK	1	0	21.00	20.15	20.65	20.85
			1	12	21.00	20.30	20.77	20.99
			1	24	21.00	19.98	20.69	20.72
			12	0	20.50	19.19	19.93	20.08
			12	6	20.50	19.29	19.79	19.92
			12	11	20.50	19.18	19.79	19.77
			25	0	20.00	19.29	19.81	19.88
		16QAM	1	0	20.00	18.93	19.51	19.73

			1	12	20.00	19.01	19.44	19.68
			1	24	20.00	18.76	19.36	19.28
			12	0	19.00	17.94	18.73	18.89
			12	6	19.00	18.08	18.93	18.98
			12	11	19.00	17.97	18.71	18.78
			25	0	19.00	18.17	18.81	19.00
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band 7	10MHz	QPSK	1	0	21.50	20.11	20.56	21.02
			1	24	21.50	20.71	21.16	21.23
			1	49	21.50	20.14	20.77	20.80
			25	0	20.50	19.22	20.09	20.47
			25	12	20.50	19.32	19.90	20.08
			25	24	20.50	19.11	19.70	19.81
			50	0	20.50	19.08	19.84	20.07
		16QAM	1	0	20.50	19.00	19.38	20.01
			1	24	20.50	19.31	19.82	19.81
			1	49	20.50	18.74	19.19	19.07
			25	0	19.50	18.00	18.92	19.33
			25	12	19.50	18.40	18.95	18.99
			25	24	19.50	18.19	18.82	18.75
			50	0	19.50	17.99	18.87	19.02
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20825/2507.5	21100/2535	21375/2562.5
LTE Band 7	15MHz	QPSK	1	0	21.50	20.10	20.47	20.87
			1	37	21.50	20.78	20.92	21.06
			1	74	21.50	19.99	20.69	20.57
			36	0	21.00	19.12	19.97	20.63
			36	18	21.00	19.37	19.81	19.94
			36	37	21.00	19.11	19.75	19.78
			75	0	20.50	19.02	19.80	20.04
		16QAM	1	0	20.00	18.97	19.88	19.78
			1	37	20.00	19.34	19.62	19.67
			1	74	20.00	18.42	19.27	19.08
			36	0	19.50	17.93	18.81	19.28
			36	18	19.50	18.22	18.92	18.89
			36	37	19.50	17.95	18.67	18.76
			75	0	19.50	18.04	18.76	19.08
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20850/2510	21100/2535	21350/2560
LTE Band 7	20MHz	QPSK	1	0	21.50	20.03	20.30	20.77
			1	49	21.50	20.82	21.03	21.43
			1	99	21.50	19.76	20.59	20.49
			50	0	21.00	19.31	19.97	20.59
			50	24	21.00	19.42	19.83	19.78
			50	49	21.00	19.06	19.67	19.70
			100	0	20.50	18.95	19.75	20.05

		16QAM	1	0	20.50	18.94	19.33	19.62
			1	49	20.50	19.44	19.71	20.03
			1	99	20.50	18.26	19.05	19.03
			50	0	19.50	17.96	18.72	19.24
			50	24	19.50	18.33	18.86	18.83
			50	49	19.50	18.00	18.57	18.68
			100	0	19.50	17.89	18.66	19.04

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23017/699.7	23095/707.5	23173/715.3
LTE Band 12	1.4MHz	QPSK	1	0	22.50	21.81	21.98	21.70
			1	2	22.50	21.81	22.17	21.87
			1	5	22.50	21.76	22.20	22.10
			3	0	22.50	21.68	22.22	22.08
			3	1	22.50	21.91	22.15	21.78
			3	2	22.50	21.94	22.20	21.86
			6	0	21.50	20.87	21.16	20.97
		16QAM	1	0	21.50	20.51	20.96	20.77
			1	2	21.50	20.69	21.03	20.58
			1	5	21.50	20.45	20.94	20.84
			3	0	21.50	20.55	20.84	20.72
			3	1	21.50	20.83	21.09	20.66
			3	2	21.50	20.80	21.31	20.75
			6	0	20.50	19.90	20.27	19.98
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23025/700.5	23095/707.5	23165/714.5
LTE Band 12	3MHz	QPSK	1	0	22.50	21.63	21.88	21.92
			1	7	22.50	22.12	22.09	21.93
			1	14	22.50	21.84	22.03	21.86
			8	0	21.50	20.83	21.19	21.16
			8	4	21.50	20.88	21.15	20.96
			8	7	21.50	20.91	21.20	20.76
			15	0	21.50	20.87	21.19	20.95
		16QAM	1	0	21.00	20.54	20.79	20.76
			1	7	21.00	20.69	20.87	20.50
			1	14	21.00	20.24	20.84	20.41
			8	0	20.50	19.69	19.76	19.97
			8	4	20.50	19.90	19.82	19.84
			8	7	20.50	20.01	19.77	19.82
			15	0	20.50	19.92	19.89	20.03
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23035/701.5	23095/707.5	23155/713.5
LTE Band 12	5MHz	QPSK	1	0	22.50	21.49	21.79	21.87
			1	12	22.50	22.09	22.38	21.84
			1	24	22.50	21.65	21.85	21.65
			12	0	21.50	20.97	21.10	21.07
			12	6	21.50	20.82	21.18	20.92

			12	11	21.50	20.66	21.04	20.71
			25	0	21.50	20.96	21.01	20.84
		16QAM	1	0	21.50	20.57	21.12	20.65
			1	12	21.50	20.57	20.75	20.53
			1	24	21.50	20.14	20.43	20.14
			12	0	20.00	19.76	19.83	19.99
			12	6	20.00	19.86	19.94	19.88
			12	11	20.00	19.65	19.79	19.68
			25	0	20.00	19.79	19.85	19.79
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23060/704	23095/707.5	23130/711
LTE Band 12	10MHz	QPSK	1	0	23.00	21.62	21.69	21.96
			1	24	23.00	22.35	22.68	22.29
			1	49	23.00	21.92	21.76	21.62
			25	0	21.50	21.10	21.14	21.28
			25	12	21.50	20.92	21.20	21.00
			25	24	21.50	20.97	20.94	20.79
			50	0	21.50	20.93	21.05	20.96
			1	0	22.00	20.42	20.98	20.81
		16QAM	1	24	22.00	20.89	21.53	21.00
			1	49	22.00	20.39	20.42	20.08
			25	0	20.50	19.91	19.98	20.17
			25	12	20.50	19.96	20.12	19.92
			25	24	20.50	19.96	19.93	19.83
			50	0	20.50	20.04	19.99	19.90

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23205/779.5	23230/782	23255/784.5
LTE Band 13	5MHz	QPSK	1	0	22.50	22.16	22.15	21.87
			1	12	22.50	21.77	22.27	22.30
			1	24	22.50	22.04	22.11	22.00
			12	0	21.50	21.31	20.99	21.19
			12	6	21.50	21.15	21.09	21.15
			12	11	21.50	21.08	21.11	21.00
			25	0	21.50	21.13	21.06	21.11
		16QAM	1	0	21.50	21.12	20.65	21.14
			1	12	21.50	20.44	20.96	20.78
			1	24	21.50	20.51	20.79	20.38
			12	0	20.50	19.84	19.76	19.87
			12	6	20.50	19.90	19.96	20.01
			12	11	20.50	19.81	19.95	19.96
			25	0	20.00	19.90	19.99	19.96
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		/	23230/782	/
LTE Band 13	10MHz	QPSK	1	0	22.50	/	22.39	/
			1	24	22.50	/	22.22	/
			1	49	22.50	/	21.83	/

			25	0	21.50	/	21.13	/
			25	12	21.50	/	21.09	/
			25	24	21.50	/	21.12	/
			50	0	21.50	/	21.10	/
		16QAM	1	0	21.50	/	21.17	/
			1	24	21.50	/	20.95	/
			1	49	21.50	/	20.27	/
			25	0	20.50	/	19.93	/
			25	12	20.50	/	20.13	/
			25	24	20.50	/	20.18	/
			50	0	20.00	/	20.00	/

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		24025/832.5	24075/837.5	24125/842.5
LTE Band 19	5MHz	QPSK	1	0	23.50	22.75	22.63	22.69
			1	12	23.50	22.86	22.94	23.07
			1	24	23.50	22.74	22.88	22.7
			12	0	22.00	21.85	21.86	21.96
			12	6	22.00	21.89	21.85	21.85
			12	11	22.00	21.72	21.82	21.78
		16QAM	25	0	22.00	21.75	21.82	21.83
			1	0	22.00	21.53	21.97	21.5
			1	12	22.00	21.55	21.47	21.6
			1	24	22.00	21.48	21.48	21.13
			12	0	21.00	20.56	20.48	20.64
			12	6	21.00	20.83	20.58	20.89
			12	11	21.00	20.79	20.52	20.73
			25	0	21.00	20.9	20.65	20.66
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		24050/835	24075/837.5	24100/840
LTE Band 19	10MHz	QPSK	1	0	23.50	22.65	22.74	22.7
			1	24	23.50	23.27	23.34	23.29
			1	49	23.50	22.7	22.85	22.52
			25	0	22.00	21.84	21.77	21.82
			25	12	22.00	21.94	21.96	21.91
			25	24	22.00	21.8	21.63	21.72
			50	0	22.00	21.67	21.64	21.68
		16QAM	1	0	22.00	21.65	21.43	21.5
			1	24	22.00	21.72	21.82	21.82
			1	49	22.00	21.19	21.34	21.19
			25	0	21.50	20.74	20.6	20.77
			25	12	21.50	21.02	20.85	20.96
			25	24	21.50	20.95	20.86	20.78
			50	0	21.00	20.7	20.77	20.73
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		/	24075/837.5	/

LTE Band 19	15MHz	QPSK	1	0	23.50	/	22.64	/
			1	37	23.50	/	23.23	/
			1	74	23.50	/	22.82	/
			36	0	22.00	/	21.85	/
			36	18	22.00	/	21.8	/
			36	37	22.00	/	21.73	/
			75	0	22.00	/	21.61	/
		16QAM	1	0	22.00	/	21.46	/
			1	37	22.00	/	21.73	/
			1	74	22.00	/	21.34	/
			36	0	21.00	/	20.56	/
			36	18	21.00	/	20.82	/
			36	37	21.00	/	20.74	/
			75	0	21.00	/	20.63	/

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)				
			RB Size	RB Offset		39675/2498.5	40145/2545.5	40620/2593	41090/2640	41565/2687.5
LTE Band 41	5MHz	QPSK	1	0	22.50	20.34	21.28	21.21	21.48	21.86
			1	12	22.50	20.56	21.03	21.23	21.77	22.03
			1	24	22.50	20.56	21.81	21.12	21.24	22.08
			12	0	21.50	19.3	19.44	20.4	20.83	20.91
			12	6	21.50	19.46	20.3	20.31	20.94	21.01
			12	11	21.50	19.52	20.12	20.29	21.19	21
			25	0	22.00	19.36	21.5	20.43	19.26	20.95
		16QAM	1	0	24.00	18.46	23.38	19.66	23.74	20.25
			1	12	24.00	18.55	19.88	19.32	19.63	20.24
			1	24	24.00	18.44	21.9	19.24	19.3	20.22
			12	0	23.00	17.98	20.52	19.2	18.51	19.79
			12	6	23.00	18.22	22.51	19.22	20.65	19.95
			12	11	23.00	18.25	20.55	19.21	20.26	19.95
			25	0	21.00	18.26	20.54	19.2	19.26	19.98
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)				
			RB Size	RB Offset		39700/2501	40145/2545.5	40620/2593	41090/2640	41540/2685
LTE Band 41	10MHz	QPSK	1	0	22.50	20.44	21.41	21.45	20.62	22.1
			1	24	22.50	20.65	21.86	21.58	20.97	22.26
			1	49	22.50	20.67	21.87	21.48	21.78	21.99
			25	0	21.50	19.47	19.77	20.58	20.59	21.04
			25	12	21.50	19.7	19.74	20.52	20.77	21.1
			25	24	21.50	19.71	19.84	20.51	19.77	21.08
			50	0	23.50	19.56	19.78	20.5	23.3	21.07
		16QAM	1	0	22.00	18.64	20.96	19.75	19.23	20.38
			1	24	22.00	18.81	21.89	19.69	20.99	20.36
			1	49	22.00	18.85	19.83	19.46	20.62	20.35
			25	0	23.50	18.32	21.23	19.46	21.39	20.01
			25	12	23.50	18.97	19.66	19.45	23.19	20.01
			25	24	23.50	18.69	18.82	19.4	23.09	20.09
			50	0	23.00	18.6	19.77	19.53	22.9	20.03

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)				
			RB Size	RB Offset		39725/2503.5	40145/2545.5	40620/2593	41090/2640	41515/2682.5
LTE Band 41	15MHz	QPSK	1	0	22.50	20.14	21.61	21.25	22.4	21.81
			1	37	22.50	20.72	21.79	21.58	21.48	22.13
			1	74	22.50	20.72	21.29	21.19	21.26	22.05
			36	0	21.00	19.34	19.26	20.5	20.15	20.94
			36	18	21.00	19.64	19.08	20.46	19.9	20.94
			36	37	21.00	19.68	19.2	20.41	20.93	20.99
			75	0	21.00	19.52	19.75	20.42	20.6	20.9
		16QAM	1	0	20.50	18.47	19.87	19.77	19.09	20.21
			1	37	20.50	18.78	19.41	19.58	19.91	20.15
			1	74	20.50	18.81	20.01	19.36	19.55	20.18
			36	0	20.00	18	18.13	19.35	18.01	19.83
			36	18	20.00	18.73	18.29	18.51	18.48	19.93
			36	37	20.00	18.77	18.66	19.46	18.45	19.89
			75	0	20.50	18.66	18.86	19.51	19.66	20.03
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)				
			RB Size	RB Offset		39750/2506	40145/2545.5	40620/2593	41090/2640	41490/2680
LTE Band 41	20MHz	QPSK	1	0	22.50	21.23	21.99	22.47	21.21	21.8
			1	49	22.50	21.88	21.08	21.62	21.48	22
			1	99	22.50	21.41	21.46	22.45	21.71	21.77
			50	0	21.00	19.38	20.79	20.42	20.23	20.79
			50	24	21.00	19.72	20.7	20.54	20.32	20.98
			50	49	21.00	19.61	20.81	20.34	20.63	20.96
			100	0	21.50	19.52	21.18	20.45	20.69	20.86
		16QAM	1	0	21.00	18.44	20.61	19.56	18.51	19.97
			1	49	21.00	19.1	19.57	19.79	20.43	20.1
			1	99	21.00	18.55	19.67	19.26	20.27	20.02
			50	0	23.00	18.31	19.89	19.33	22.26	19.63
			50	24	23.00	18.79	19.59	19.46	22.6	19.97
			50	49	23.00	18.69	22.72	19.38	18.43	20.1
			100	0	21.50	18.56	21.2	19.53	20.14	19.98

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		131979/1710.7	132322/1745	132665/1779
LTE Band 66	1.4MHz	QPSK	1	0	23.50	22.27	22.60	22.91
			1	2	23.50	22.42	22.84	23.10
			1	5	23.50	22.31	22.72	23.00
			3	0	23.00	22.55	22.74	22.90
			3	1	23.00	22.61	22.71	22.92
			3	2	23.00	22.68	22.68	22.97
			6	0	22.00	21.62	21.74	21.97
		16QAM	1	0	22.00	21.98	21.65	21.85
			1	2	22.00	21.70	21.85	21.81
			1	5	22.00	21.70	21.53	21.72
			3	0	22.50	21.53	21.58	21.90

			3	1	22.50	21.56	21.69	22.06
			3	2	22.50	21.58	21.66	22.01
			6	0	21.00	20.57	20.62	20.93
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		131987/1711.5	132322/1745	132657/1778
LTE Band 66	3MHz	QPSK	1	0	23.50	22.57	22.79	23.04
			1	7	23.50	22.79	22.85	23.08
			1	14	23.50	22.58	22.73	23.07
			8	0	22.50	21.62	21.82	22.09
			8	4	22.50	21.73	21.93	22.15
			8	7	22.50	21.64	21.82	22.09
			15	0	22.50	21.67	21.76	22.09
		16QAM	1	0	22.00	21.90	21.53	21.86
			1	7	22.00	21.58	21.56	21.68
			1	14	22.00	21.47	21.61	21.63
			8	0	21.00	20.55	20.58	20.89
			8	4	21.00	20.64	20.58	20.84
			8	7	21.00	20.63	20.70	20.80
			15	0	21.00	20.50	20.70	20.84
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		131997/1712.5	132322/1745	132647/1777
LTE Band 66	5MHz	QPSK	1	0	23.50	22.59	22.62	23.00
			1	12	23.50	22.77	23.01	23.22
			1	24	23.50	22.54	22.74	23.04
			12	0	22.50	21.80	21.79	22.24
			12	6	22.50	21.77	21.90	22.13
			12	11	22.50	21.76	21.74	22.15
			25	0	22.50	21.78	21.75	22.05
		16QAM	1	0	22.50	21.61	21.64	22.34
			1	12	22.50	21.59	21.62	22.08
			1	24	22.50	21.24	21.35	21.43
			12	0	21.50	20.54	20.60	20.85
			12	6	21.50	20.62	20.80	21.03
			12	11	21.50	20.61	20.77	21.10
			25	0	21.50	20.79	20.64	21.08
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		132022/1715	132322/1745	132622/1775
LTE Band 66	10MHz	QPSK	1	0	24.00	22.68	22.95	23.09
			1	24	24.00	23.28	23.41	23.75
			1	49	24.00	22.59	22.81	22.98
			25	0	22.50	22.05	22.31	22.33
			25	12	22.50	21.94	21.95	22.34
			25	24	22.50	21.80	21.72	22.05
			50	0	22.50	21.84	21.80	22.20
		16QAM	1	0	22.50	21.58	21.87	22.01
			1	24	22.50	21.87	22.06	22.20
			1	49	22.50	21.14	21.39	21.58

			25	0	21.50	20.99	21.01	21.17
			25	12	21.50	20.99	20.99	21.30
			25	24	21.50	20.73	20.76	21.20
			50	0	21.50	20.86	20.92	21.23
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		132047/1717.5	132322/1745	132597/1772
LTE Band 66	15MHz	QPSK	1	0	24.00	22.84	23.05	23.04
			1	37	24.00	23.16	23.47	23.67
			1	74	24.00	22.80	22.53	22.82
			36	0	22.50	22.03	22.19	22.23
			36	18	22.50	21.93	21.96	22.20
			36	37	22.50	21.69	21.56	22.01
			75	0	22.50	21.81	21.77	22.01
		16QAM	1	0	22.50	21.67	21.83	21.93
			1	37	22.50	21.86	21.98	22.01
			1	74	22.50	21.19	21.20	21.31
			36	0	21.50	20.95	20.89	21.08
			36	18	21.50	20.91	20.97	21.14
			36	37	21.50	20.72	20.65	20.94
			75	0	21.50	20.89	20.77	21.14
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		132072/1720	132322/1745	132572/1770
LTE Band 66	20MHz	QPSK	1	0	24.00	22.67	22.98	22.86
			1	49	24.00	23.12	23.48	23.55
			1	99	24.00	22.84	22.71	22.65
			50	0	22.50	21.87	22.13	22.08
			50	24	22.50	21.91	21.93	22.06
			50	49	22.50	21.85	21.67	21.92
			100	0	22.00	21.87	21.81	21.94
		16QAM	1	0	22.50	21.50	21.62	21.79
			1	49	22.50	21.70	22.09	22.06
			1	99	22.50	21.26	21.09	21.26
			50	0	21.00	20.82	20.87	20.96
			50	24	21.00	20.85	20.92	20.99
			50	49	21.00	20.79	20.71	20.84
			100	0	21.00	20.78	20.70	20.96

WLAN & Bluetooth Output Power

Mode	Channel	Frequency (MHz)	Max Tune-up (dBm)	Output Power (dBm)
802.11b	1	2412	16.00	15.57
	6	2437	16.00	15.77
	11	2462	16.00	15.67
802.11g	1	2412	16.00	15.54
	6	2437	16.00	15.15
	11	2462	16.00	15.41
802.11n HT20	1	2412	14.50	14.20

802.11n HT40	6	2437	14.50	14.16
	11	2462	14.50	14.24
	3	2422	14.50	13.88
	6	2437	14.50	13.76
	9	2452	14.50	14.09

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Max Tune-up (dBm)	Output Power (dBm)
802.11a	36	5180	10.00	9.67
	40	5200	10.00	9.47
	48	5240	10.00	8.96
802.11n HT20	36	5180	10.00	9.26
	40	5200	10.00	9.68
	48	5240	10.00	8.78
802.11n HT40	38	5190	9.00	8.59
	46	5230	9.00	8.00
802.11ac VHT20	36	5180	9.50	9.37
	40	5200	9.50	9.33
	48	5240	9.50	8.68
802.11ac VHT40	38	5190	10.00	9.97
	46	5230	10.00	9.70
802.11ac VHT80	42	5210	9.50	9.39

NOTE: Power measurement results of WLAN 5.2G.

BR+EDR	Output Power (dBm)				
	Data Rates	Max Tune-up (dBm)	Channel		
			0CH	39CH	78CH
	1M	9.00	7.22	8.10	8.77
	2M	7.00	5.39	5.85	6.84
	3M	7.50	5.84	6.35	7.22

NOTE: Power measurement results of Bluetooth.

BLE	Channel	Tune-up (dBm)	Output Power (dBm)
	0CH	7.00	6.33
	19CH	7.00	6.77
	39CH	7.00	6.95

NOTE: Power measurement results of Bluetooth.

NFC

Channel Freq (MHz)	Min Distance (mm)	Max power (dBm)	tune-up power (dBm)	Max power (mW)	Limits (mW)	SAR Test Exclusion
13.56	10	-25.75	-25.75 ± 1	0.00335	1	Yes

Tune-up recorded below represents the maximum Tune-up power, and Tune-up tolerance is limited to 2dB.

Diwei He/ Senior Engineer

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