



Tune Up Procedure

Tune-up procedure

GSM/WCDMA/LTE TEST

Measurement Procedure:

GSMWCDMA/LTE

1.Connect EUT with CMU200(E5515C)/CMW500, through RF cable. Make a call from CMU200(E5515C)/CMW500;

2.Measure the Output Power Average value;

3.Remarks: All Output Power are tested in Average Value specification.

For WIFI/BT

1: Connect to Power meter (NRVD) through RF cable and let the EUT Continuously transmit

2: Measure the Output Power Average value

Manufacturing tolerance

1.1.1. Conducted power measurement results for GSM850

GSM 850										
Burst Output Power(dBm)					Tune up	Division Factors	Frame-Average Output Power(dBm)			Tune up
Channel		128	190	251			128	190	251	
GSM(GMS K)	GSM	32.8 6	32.9 9	33.0 4	33.50	-9.19	23.67	23.80	23.85	24.31
GPRS(GMS K)	1 TX Slot	32.8 6	32.9 4	32.9 7	33.00	-9.19	23.67	23.75	23.78	23.81
	2 TX Slots	32.1 0	32.1 9	32.2 4	32.50	-6.18	25.92	26.01	26.06	26.32
	3 TX Slots	30.3 0	30.4 2	30.4 6	30.50	-4.42	25.88	26.00	26.04	26.08
	4 TX Slots	29.1 4	29.2 8	29.3 1	29.50	-3.17	25.97	26.11	26.14	26.33
EGPRS(8P SK)	1 TX Slot	25.5 4	25.5 7	25.5 0	26.00	-9.19	16.35	16.38	16.31	16.81
	2 TX Slots	24.4 4	24.4 0	24.1 1	24.50	-6.18	18.26	18.22	17.93	18.32
	3 TX Slots	22.1 8	22.0 6	21.8 9	22.50	-4.42	17.76	17.64	17.47	18.08
	4 TX Slots	20.5 2	20.6 4	20.5 3	21.00	-3.17	17.35	17.47	17.36	17.83





1.1.2. Conducted power measurement results for PCS1900

GSM 1900										
Burst Output Power(dBm)					Tune up	Division Factors	Frame-Average Output Power(dBm)			Tune up
Channel		512	661	810			512	661	810	
GSM(GMS K)	GSM	28.9 0	28.9 7	28.8 3	29.00	-9.19	19.71	19.78	19.64	19.81
GPRS(GMS K)	1 TX Slot	28.9 2	28.9 4	28.7 9	29.00	-9.19	19.73	19.75	19.60	19.81
	2 TX Slots	28.6 0	28.6 7	28.5 3	29.00	-6.18	22.42	22.49	22.35	22.82
	3 TX Slots	27.2 6	27.3 6	27.2 7	27.50	-4.42	22.84	22.94	22.85	23.08
	4 TX Slots	26.1 1	26.2 5	26.2 1	26.50	-3.17	22.94	23.08	23.04	23.33
EGPRS(8P SK)	1 TX Slot	24.7 3	25.8 7	24.1 3	26.00	-9.19	15.54	16.68	14.94	16.81
	2 TX Slots	23.5 8	23.3 3	22.9 2	24.00	-6.18	17.40	17.15	16.74	17.82
	3 TX Slots	21.2 0	20.9 1	20.5 5	21.50	-4.42	16.78	16.49	16.13	17.08
	4 TX Slots	19.7 8	20.8 8	19.1 3	21.00	-3.17	16.61	17.71	15.96	17.83

1.1.3. Conducted Power Measurement Results(WCDMA Band II)

Item	Band	WCDMA Band II result (dBm)			
		Channel/Frequency(MHz)			
	sub-test	9262/1852.4	9400/1880	9538/1907.6	Tune up
RMC	12.2kbps RMC	23.12	23.07	22.98	23.50
HSDPA	Sub -Test 1	20.80	20.84	20.66	21.00
	Sub -Test 2	20.80	20.83	20.66	21.00
	Sub -Test 3	20.82	20.83	20.64	21.00
	Sub -Test 4	20.81	20.83	20.63	21.00
HSUPA	Sub -Test 1	18.88	18.80	18.70	19.00
	Sub -Test 2	18.87	18.54	18.53	19.00
	Sub -Test 3	18.68	18.60	18.14	19.00
	Sub -Test 4	18.88	18.27	18.18	19.00
	Sub -Test 5	18.86	18.55	18.46	19.00



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**1.1.4. Conducted Power Measurement Results(WCDMA Band V**

Item	Band	WCDMA Band V result (dBm)			
		Channel/Frequency(MHz)			
	sub-test	4132/826.4	4182/836.4	4233/846.6	Tune up
RMC	12.2kbps RMC	23.75	23.56	23.53	24.00
HSDPA	Sub –Test 1	21.41	21.41	21.41	21.50
	Sub –Test 2	21.38	21.39	21.41	21.50
	Sub –Test 3	21.38	21.44	21.45	21.50
	Sub –Test 4	21.37	21.40	21.44	21.50
HSUPA	Sub –Test 1	19.45	19.38	19.37	19.50
	Sub –Test 2	19.46	19.25	19.38	19.50
	Sub –Test 3	18.93	18.80	19.08	19.50
	Sub –Test 4	18.98	18.85	19.03	19.50
	Sub –Test 5	18.94	18.87	18.90	19.00

1.1.5. Conducted Power Measurement Results(LTE Band 2)

Band: 2 / Bandwidth: 1.4MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1850.7	1	0	23.59	24.00
			2	23.63	24.00
			5	23.60	24.00
		3	0	23.62	24.00
			2	23.63	24.00
			3	23.63	24.00
		6	0	22.64	23.00
	1880	1	0	23.51	24.00
			2	23.53	24.00
			5	23.47	24.00
		3	0	23.57	24.00
			2	23.55	24.00
			3	23.55	24.00
		6	0	22.57	23.00
	1909.3	1	0	23.03	24.00
			2	22.74	23.00
			5	22.72	23.00
		3	0	22.84	23.00
			2	22.86	23.00
			3	22.83	23.00



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16QAM	1850.7	6	0	21.86	22.00
		1	0	22.48	23.00
			2	22.53	23.00
			5	22.51	23.00
		3	0	22.59	23.00
			2	22.63	23.00
			3	22.62	23.00
		6	0	21.53	22.00
	1880	1	0	22.53	23.00
			2	22.59	23.00
			5	22.53	23.00
		3	0	22.45	23.00
			2	22.30	23.00
			3	22.33	23.00
		6	0	21.27	22.00
	1909.3	1	0	21.71	22.00
			2	21.73	22.00
			5	21.72	22.00
		3	0	21.99	22.00
			2	22.02	23.00
			3	22.00	23.00
		6	0	20.90	21.00

Band: 2 / Bandwidth: 3MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1851.5	1	0	23.41	24.00
			7	23.13	24.00
			14	22.85	23.00
		8	0	22.05	23.00
			4	22.09	23.00
			7	21.98	22.00
		15	0	22.00	23.00
	1880	1	0	22.76	23.00
			7	22.87	23.00
			14	22.74	23.00
		8	0	21.96	22.00
			4	22.01	23.00
			7	21.92	22.00
		15	0	21.90	22.00



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	1908.5	1	0	22.63	23.00
			7	22.77	23.00
			14	22.64	23.00
		8	0	21.87	22.00
			4	21.89	22.00
			7	21.80	22.00
		15	0	21.88	22.00
16QAM	1851.5	1	0	22.34	23.00
			7	22.48	23.00
			14	22.27	23.00
		8	0	21.15	22.00
			4	21.22	22.00
			7	21.15	22.00
		15	0	21.02	22.00
	1880	1	0	21.77	22.00
			7	21.92	22.00
			14	21.77	22.00
		8	0	21.05	22.00
			4	21.08	22.00
			7	21.02	22.00
		15	0	21.01	22.00
	1908.5	1	0	21.78	22.00
			7	21.93	22.00
			14	21.81	22.00
		8	0	20.84	21.00
			4	20.88	21.00
			7	20.84	21.00
		15	0	20.81	21.00

Band: 2 / Bandwidth: 5MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1852.5	1	0	23.07	24.00
			13	23.24	24.00
			24	23.09	24.00
		12	0	22.07	23.00
			6	22.12	23.00
			13	22.08	23.00
		25	0	22.09	23.00
	1880	1	0	23.03	24.00





16QAM			13	23.13	24.00
			24	23.01	24.00
			0	22.00	23.00
		12	6	22.06	23.00
			13	22.01	23.00
		25	0	22.08	23.00
	1907.5	1	0	22.87	23.00
			13	23.03	24.00
			24	22.91	23.00
		12	0	21.92	22.00
			6	21.98	22.00
			13	21.84	22.00
		25	0	21.85	22.00
	1852.5	1	0	22.13	23.00
			13	22.28	23.00
			24	22.22	23.00
		12	0	21.13	22.00
			6	21.12	22.00
			13	21.10	22.00
		25	0	21.15	22.00
16QAM	1880	1	0	22.28	23.00
			13	22.36	23.00
			24	22.31	23.00
		12	0	21.06	22.00
			6	21.12	22.00
			13	21.05	22.00
		25	0	21.09	22.00
	1907.5	1	0	21.75	22.00
			13	21.92	22.00
			24	21.84	22.00
		12	0	20.94	21.00
			6	21.00	22.00
			13	20.83	21.00
		25	0	20.94	21.00

Band: 2 / Bandwidth: 10MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1855	1	0	23.12	24.00
			25	23.12	24.00





16QAM		25	49	23.21	24.00
			0	22.11	23.00
			13	22.18	23.00
			25	22.10	23.00
			0	22.16	23.00
	1880	1	0	23.08	24.00
			25	23.12	24.00
			49	23.08	24.00
		25	0	22.03	23.00
			13	22.12	23.00
			25	22.00	23.00
		50	0	22.03	23.00
	1905	1	0	22.85	23.00
			25	22.96	23.00
			49	22.98	23.00
		25	0	21.72	22.00
			13	21.94	22.00
			25	21.81	22.00
		50	0	21.82	22.00
	1855	1	0	22.11	23.00
			25	22.19	23.00
			49	22.16	23.00
		25	0	21.28	22.00
			13	21.25	22.00
			25	21.23	22.00
		50	0	21.17	22.00
	1880	1	0	22.26	23.00
			25	22.30	23.00
			49	22.22	23.00
		25	0	21.06	22.00
			13	21.16	22.00
			25	21.04	22.00
		50	0	21.05	22.00
	1905	1	0	22.44	23.00
			25	22.58	23.00
			49	22.53	23.00
		25	0	20.82	21.00
			13	21.06	22.00
			25	20.88	21.00
		50	0	20.83	21.00



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Band: 2 / Bandwidth: 15MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1857.5	1	0	23.01	24.00
			38	23.13	24.00
			74	23.07	24.00
		36	0	22.08	23.00
			18	22.10	23.00
			39	22.10	23.00
		75	0	22.14	23.00
	1880	1	0	23.05	24.00
			38	23.16	24.00
			74	23.02	24.00
		36	0	22.01	23.00
			18	22.08	23.00
			39	21.95	22.00
		75	0	22.05	23.00
	1902.5	1	0	22.81	23.00
			38	22.93	23.00
			74	22.91	23.00
		36	0	21.74	22.00
			18	21.87	22.00
			39	21.85	22.00
		75	0	21.86	22.00
16QAM	1857.5	1	0	22.40	23.00
			38	22.61	23.00
			74	22.53	23.00
		36	0	21.12	22.00
			18	21.11	22.00
			39	21.14	22.00
		75	0	21.17	22.00
	1880	1	0	22.24	23.00
			38	22.28	23.00
			74	22.15	23.00
		36	0	21.06	22.00
			18	21.13	22.00
			39	20.98	21.00
		75	0	21.10	22.00
	1902.5	1	0	22.40	23.00
			38	22.52	23.00



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		74	22.50	23.00
		0	20.81	21.00
		18	20.97	21.00
		39	20.92	21.00
		75	20.90	21.00

Band: 2 / Bandwidth: 20MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1860	1	0	23.45	24.00
			50	23.17	24.00
			99	23.09	24.00
		50	0	22.16	23.00
			25	22.17	23.00
			50	22.31	23.00
		100	0	22.25	23.00
	1880	1	0	23.48	24.00
			50	23.12	24.00
			99	22.96	23.00
		50	0	21.98	22.00
			25	22.13	23.00
			50	21.88	22.00
		100	0	21.96	22.00
	1900	1	0	23.25	24.00
			50	22.91	23.00
			99	22.88	23.00
		50	0	21.91	22.00
			25	21.99	22.00
			50	22.01	23.00
		100	0	21.94	22.00
16QAM	1860	1	0	22.59	23.00
			50	22.42	23.00
			99	22.32	23.00
		50	0	21.21	22.00
			25	21.20	22.00
			50	21.32	22.00
		100	0	21.27	22.00
	1880	1	0	22.78	23.00
			50	22.45	23.00
			99	22.24	23.00



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		50	0	20.98	21.00
			25	21.13	22.00
			50	20.88	21.00
		100	0	20.95	21.00
	1900	1	0	22.86	23.00
			50	22.50	23.00
			99	22.39	23.00
		50	0	20.89	21.00
			25	21.00	22.00
			50	21.03	22.00
		100	0	20.95	21.00

1.1.6. Conducted Power Measurement Results(LTE Band 4)

Band: 4 / Bandwidth: 1.4MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1710.7	1	0	23.26	24.00
			2	22.86	23.00
			5	22.78	23.00
		3	0	22.95	23.00
			2	22.99	23.00
			3	22.99	23.00
		6	0	21.90	22.00
	1732.5	1	0	22.89	23.00
			2	22.92	23.00
			5	22.91	23.00
		3	0	23.01	24.00
			2	23.04	24.00
			3	23.00	24.00
		6	0	22.05	23.00
	1754.3	1	0	22.69	23.00
			2	22.80	23.00
			5	22.73	23.00
		3	0	22.93	23.00
			2	22.95	23.00
			3	22.93	23.00
		6	0	21.92	22.00
16QAM	1710.7	1	0	21.85	22.00
			2	21.95	22.00
			5	21.93	22.00



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		3	0	22.11	23.00
			2	22.11	23.00
			3	22.12	23.00
		6	0	20.96	21.00
	1732.5	1	0	21.99	22.00
			2	22.04	23.00
			5	21.94	22.00
		3	0	21.91	22.00
			2	21.96	22.00
			3	21.95	22.00
		6	0	21.07	22.00
	1754.3	1	0	21.72	22.00
			2	21.82	22.00
			5	21.74	22.00
		3	0	22.11	23.00
			2	22.13	23.00
			3	22.15	23.00
		6	0	21.01	22.00

Band: 4 / Bandwidth: 3MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1711.5	1	0	22.55	23.00
			7	22.68	23.00
			14	22.62	23.00
		8	0	21.82	22.00
			4	21.90	22.00
			7	21.82	22.00
		15	0	21.89	22.00
	1732.5	1	0	22.76	23.00
			7	22.88	23.00
			14	22.70	23.00
		8	0	21.92	22.00
			4	21.97	22.00
			7	21.89	22.00
		15	0	21.83	22.00
	1753.5	1	0	22.61	23.00
			7	22.74	23.00
			14	22.60	23.00
		8	0	21.87	22.00



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16QAM		15	4	21.90	22.00
			7	21.85	22.00
			0	21.83	22.00
	1711.5	1	0	22.34	23.00
			7	22.39	23.00
			14	22.31	23.00
		8	0	21.05	22.00
			4	21.14	22.00
			7	21.10	22.00
		15	0	20.96	21.00
	1732.5	1	0	21.67	22.00
			7	21.81	22.00
			14	21.68	22.00
		8	0	21.00	22.00
			4	20.99	21.00
			7	20.92	21.00
		15	0	20.91	21.00
		1	0	21.80	22.00
			7	21.95	22.00
			14	21.79	22.00
		8	0	20.86	21.00
			4	20.92	21.00
			7	20.83	21.00
		15	0	20.84	21.00

Band: 4 / Bandwidth: 5MHz / NTV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1712.5	1	0	22.90	23.00
			13	23.07	24.00
			24	22.91	23.00
		12	0	21.91	22.00
			6	21.94	22.00
			13	22.01	23.00
	1732.5	25	0	22.02	23.00
		1	0	22.94	23.00
			13	23.06	24.00
			24	22.94	23.00
		12	0	21.95	22.00
			6	22.00	23.00



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			13	21.95	22.00
		25	0	21.92	22.00
	1752.5	1	0	22.88	23.00
			13	22.96	23.00
			24	22.90	23.00
		12	0	21.89	22.00
			6	21.95	22.00
			13	21.96	22.00
25		0	22.01	23.00	
16QAM	1712.5	1	0	22.23	23.00
			13	22.40	23.00
			24	22.32	23.00
		12	0	21.05	22.00
			6	21.13	22.00
			13	21.13	22.00
		25	0	21.07	22.00
	1732.5	1	0	21.67	22.00
			13	21.81	22.00
			24	21.73	22.00
		12	0	20.95	21.00
			6	21.00	22.00
			13	20.99	21.00
		25	0	21.03	22.00
	1752.5	1	0	22.00	23.00
			13	22.09	23.00
			24	22.00	23.00
		12	0	20.92	21.00
			6	21.04	22.00
			13	21.03	22.00
		25	0	21.04	22.00

Band: 4 / Bandwidth: 10MHz / NTNv

Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1715	1	0	22.92	23.00
			25	22.98	23.00
			49	22.97	23.00
		25	0	21.85	22.00
			13	22.05	23.00
			25	22.06	23.00



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	1732.5	50	0	22.06	23.00
		1	0	23.08	24.00
			25	23.03	24.00
			49	22.99	23.00
		25	0	21.96	22.00
			13	21.98	22.00
			25	21.95	22.00
		50	0	21.95	22.00
	1750	1	0	22.99	23.00
			25	23.01	24.00
			49	22.98	23.00
		25	0	21.87	22.00
			13	22.04	23.00
			25	21.99	22.00
		50	0	21.99	22.00
16QAM	1715	1	0	22.15	23.00
			25	22.22	23.00
			49	22.21	23.00
		25	0	20.93	21.00
			13	21.18	22.00
			25	21.18	22.00
		50	0	21.13	22.00
	1732.5	1	0	22.43	23.00
			25	22.49	23.00
			49	22.51	23.00
		25	0	21.06	22.00
			13	21.13	22.00
			25	21.08	22.00
		50	0	21.02	22.00
	1750	1	0	22.02	23.00
			25	22.05	23.00
			49	21.96	22.00
		25	0	21.05	22.00
			13	21.17	22.00
			25	21.15	22.00
		50	0	21.05	22.00

Band: 4 / Bandwidth: 15MHz / NTNV

Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		



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QPSK	1717.5	1	0	22.84	23.00
			38	23.00	24.00
			74	23.02	24.00
		36	0	21.89	22.00
			18	22.03	23.00
			39	22.05	23.00
		75	0	22.03	23.00
	1732.5	1	0	22.98	23.00
			38	23.08	24.00
			74	22.97	23.00
		36	0	22.11	23.00
			18	22.12	23.00
			39	22.06	23.00
		75	0	22.06	23.00
	1747.5	1	0	22.90	23.00
			38	23.05	24.00
			74	22.88	23.00
		36	0	21.93	22.00
			18	21.98	22.00
			39	21.99	22.00
		75	0	22.03	23.00
16QAM	1717.5	1	0	22.53	23.00
			38	22.64	23.00
			74	22.45	23.00
		36	0	20.95	21.00
			18	21.10	22.00
			39	21.08	22.00
		75	0	21.03	22.00
	1732.5	1	0	22.14	23.00
			38	22.28	23.00
			74	22.37	23.00
		36	0	21.02	22.00
			18	21.05	22.00
			39	21.05	22.00
		75	0	21.03	22.00
	1747.5	1	0	22.13	23.00
			38	22.30	23.00
			74	22.06	23.00
		36	0	20.99	21.00
			18	21.05	22.00



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		39	21.05	22.00
	75	0	21.09	22.00

Band: 4 / Bandwidth: 20MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	1720	1	0	23.35	24.00
			50	23.05	24.00
			99	22.98	23.00
		50	0	21.86	22.00
			25	22.07	23.00
			50	22.00	23.00
		100	0	21.93	22.00
	1732.5	1	0	23.39	24.00
			50	23.04	24.00
			99	22.92	23.00
		50	0	22.02	23.00
			25	22.05	23.00
			50	21.99	22.00
		100	0	21.97	22.00
	1745	1	0	23.32	24.00
			50	23.00	24.00
			99	22.82	23.00
		50	0	22.02	23.00
			25	22.11	23.00
			50	22.16	23.00
		100	0	22.07	23.00
16QAM	1720	1	0	22.59	23.00
			50	22.23	23.00
			99	22.02	23.00
		50	0	20.91	21.00
			25	21.11	22.00
			50	21.00	22.00
		100	0	20.97	21.00
	1732.5	1	0	22.51	23.00
			50	22.25	23.00
			99	22.24	23.00
		50	0	20.97	21.00
			25	21.05	22.00
			50	21.02	22.00



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	1745	100	0	21.05	22.00
		1	0	22.79	23.00
			50	22.67	23.00
			99	22.41	23.00
		50	0	21.06	22.00
			25	21.12	22.00
			50	21.22	22.00
		100	0	21.13	22.00

1.1.7. Conducted Power Measurement Results(LTE Band 7)

Band: 7 / Bandwidth: 5MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	2502.5	1	0	22.60	23.00
			13	22.75	23.00
			24	22.69	23.00
		12	0	21.69	22.00
			6	21.77	22.00
			13	21.64	22.00
		25	0	21.70	22.00
			0	22.91	23.00
			13	23.08	24.00
	2535	1	24	22.98	23.00
			0	21.97	22.00
			6	22.02	23.00
		12	13	21.99	22.00
			0	22.00	23.00
			0	23.15	24.00
		1	13	23.34	24.00
			24	23.22	24.00
			0	22.16	23.00
	2567.5	12	6	22.21	23.00
			13	22.15	23.00
			0	22.13	23.00
16QAM	2502.5	1	0	21.69	22.00
			13	21.89	22.00
			24	21.82	22.00
		12	0	20.68	21.00
			6	20.77	21.00
			13	20.69	21.00



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	2535	25	0	20.77	21.00
		1	0	22.15	23.00
			13	22.30	23.00
			24	22.23	23.00
		12	0	21.07	22.00
			6	21.13	22.00
			13	21.04	22.00
		25	0	21.04	22.00
	2567.5	1	0	21.92	22.00
			13	22.04	23.00
			24	21.94	22.00
		12	0	21.16	22.00
			6	21.20	22.00
			13	21.13	22.00
		25	0	21.17	22.00

Band: 7 / Bandwidth: 10MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	2505	1	0	22.70	23.00
			25	22.86	23.00
			49	22.91	23.00
		25	0	21.78	22.00
			13	21.81	22.00
			25	21.86	22.00
		50	0	21.84	22.00
	2535	1	0	22.98	23.00
			25	23.06	24.00
			49	23.08	24.00
		25	0	22.04	23.00
			13	22.06	23.00
			25	22.01	23.00
		50	0	22.03	23.00
	2565	1	0	23.23	24.00
			25	23.33	24.00
			49	23.37	24.00
		25	0	22.13	23.00
			13	22.22	23.00
			25	22.16	23.00
		50	0	22.17	23.00



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16QAM	2505	1	0	21.71	22.00
			25	21.88	22.00
			49	21.87	22.00
		25	0	20.87	21.00
			13	20.93	21.00
			25	20.93	21.00
		50	0	20.83	21.00
	2535	1	0	22.14	23.00
			25	22.21	23.00
			49	22.24	23.00
		25	0	21.15	22.00
			13	21.14	22.00
			25	21.07	22.00
		50	0	21.06	22.00
	2565	1	0	22.59	23.00
			25	22.64	23.00
			49	22.58	23.00
		25	0	21.19	22.00
			13	21.31	22.00
			25	21.25	22.00
		50	0	21.23	22.00

Band: 7 / Bandwidth: 15MHz / NTNV					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	2507.5	1	0	22.55	23.00
			38	22.81	23.00
			74	22.84	23.00
		36	0	21.73	22.00
			18	21.80	22.00
			39	21.86	22.00
		75	0	21.85	22.00
	2535	1	0	22.92	23.00
			38	23.07	24.00
			74	23.09	24.00
		36	0	22.07	23.00
			18	22.11	23.00
			39	22.04	23.00
		75	0	22.12	23.00
	2562.5	1	0	23.14	24.00



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		36	38	23.40	24.00
			74	23.37	24.00
			0	22.21	23.00
			18	22.32	23.00
			39	22.36	23.00
		75	0	22.30	23.00
16QAM	2507.5	1	0	21.77	22.00
			38	22.03	23.00
			74	21.95	22.00
		36	0	20.75	21.00
			18	20.84	21.00
			39	20.87	21.00
		75	0	20.85	21.00
	2535	1	0	22.32	23.00
			38	22.52	23.00
			74	22.56	23.00
		36	0	21.09	22.00
			18	21.13	22.00
			39	21.05	22.00
		75	0	21.11	22.00
	2562.5	1	0	22.34	23.00
			38	22.47	23.00
			74	22.32	23.00
		36	0	21.17	22.00
			18	21.29	22.00
			39	21.32	22.00
		75	0	21.24	22.00

Band: 7 / Bandwidth: 20MHz / NTN					
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Tune Up (dBm)
		Size	Offset		
QPSK	2510	1	0	22.49	23.00
			50	22.88	23.00
			99	22.86	23.00
		50	0	21.73	22.00
			25	21.87	22.00
			50	21.97	22.00
		100	0	21.83	22.00
	2535	1	0	22.83	23.00
			50	23.10	24.00



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		50	99	23.06	24.00
			0	22.02	23.00
			25	22.06	23.00
			50	21.92	22.00
			100	21.98	22.00
	2560	1	0	22.95	23.00
			50	23.29	24.00
			99	23.26	24.00
		50	0	22.06	23.00
			25	22.32	23.00
			50	22.25	23.00
		100	0	22.18	23.00
	16QAM	2510	1	0	21.70
				50	22.04
				99	22.00
		50	0	20.74	21.00
			25	20.91	21.00
			50	21.04	22.00
		100	0	20.87	21.00
		2535	1	0	22.03
				50	22.33
				99	22.31
		50	0	21.07	22.00
			25	21.12	22.00
			50	20.95	21.00
		100	0	21.06	22.00
		2560	1	0	22.42
				50	22.66
				99	22.50
		50	0	21.10	22.00
			25	21.25	22.00
			50	21.23	22.00
		100	0	21.19	22.00

1.1.8. Conducted Power Measurement Results(WIFI 2.4G)

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)	Maximum Average Conducted Output Power (dBm)	Tune Up (dBm)
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			ANT1	ANT1	
802.11b	SISO	2412	16.00	14	15.00
		2437	13.94	11.94	12.00
		2462	15.02	13.02	14.00
802.11g	SISO	2412	21.01	16.01	17.00
		2437	18.90	13.9	14.00
		2462	19.92	14.92	15.00
802.11n (HT20)	SISO	2412	21.66	13.66	14.00
		2437	19.74	11.74	12.00
		2462	20.82	12.82	13.00
802.11n (HT40)	SISO	2422	21.87	11.87	12.00
		2437	20.40	10.4	11.00
		2452	21.33	11.33	12.00

1.1.9. Conducted Power Measurement Results(WIFI 5.2G)

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)	Tune Up (dBm)
			ANT1	
802.11a	SISO	5180	9.48	10.00
		5200	8.82	9.00
		5240	8.28	9.00
802.11n (HT20)	SISO	5180	10.02	11.00
		5200	9.36	10.00
		5240	8.71	9.00
802.11n (HT40)	SISO	5190	9.59	10.00
		5230	8.55	9.00
802.11ac (VHT20)	SISO	5180	12.56	13.00
		5200	12.29	13.00
		5240	12.25	13.00
802.11ac (VHT40)	SISO	5190	12.69	13.00
		5230	12.19	13.00
802.11ac (VHT80)	SISO	5210	12.47	13.00

1.1.10. Conducted Power Measurement Results(WIFI 5.8G)

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)	Tune Up (dBm)
			ANT1	



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802.11a	SISO	5745	10.68	11.00
		5785	10.18	11.00
		5825	8.56	9.00
802.11n (HT20)	SISO	5745	10.91	11.00
		5785	10.40	11.00
		5825	8.57	9.00
802.11n (HT40)	SISO	5755	10.13	11.00
		5795	9.08	10.00
802.11ac (VHT20)	SISO	5745	11.69	12.00
		5785	11.37	12.00
		5825	9.55	10.00
802.11ac (VHT40)	SISO	5755	12.02	13.00
		5795	11.53	12.00
802.11ac (VHT80)	SISO	5775	11.74	12.00

1.1.11. Conducted Power Measurement Results(Bluetooth)

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)	Maximum Average Conducted Output Power (dBm)	Tune Up (dBm)
			ANT1	ANT1	
1M	SISO	2402	4.53	2.53	3.00
		2440	4.85	2.85	3.00
		2480	5.41	3.41	4.00

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)	Maximum Average Conducted Output Power (dBm)	Tune Up (dBm)
				ANT1	ANT1	
GFSK	SISO	2402	DH5	2.49	0.49	1.00
		2441	DH5	3.79	1.79	2.00
		2480	DH5	4.00	2	3.00
Pi/4DQPSK	SISO	2402	2DH5	4.37	2.37	3.00
		2441	2DH5	5.81	3.81	4.00



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		2480	2DH5	6.00	4	5.00
8DPSK	SISO	2402	3DH5	4.69	2.69	3.00
		2441	3DH5	6.08	4.08	5.00
		2480	3DH5	6.24	4.24	5.00

Tune Up Procedure

1. RX Gain Calibration
 - a. Put DUT in test mode
 - b. Put DUT in BCH mode
 - c. Put DUT in selected channel band
 - d. Total gain chain calibration at center ARFCN
 - e. Frequency Ripple calibration
 - f. Complete RX_AGC Gain table
2. TX Power Calibration
 - a. Put DUT in test mode
 - b. Put DUT in BCH mode
 - c. Put DUT in selected channel band
 - d. Total gain chain calibration at center ARFCN
 - e. Frequency Ripple calibration
 - f. Complete TX_APC Gain table
3. AFC Calibration
 - a. Put DUT in test mode
 - b. Put DUT in selected channel mode
 - c. Calibration AFC at center ARFCN
 - d. Complete AFC result table

