

3 Composition / Information on ingredients

The Item is composed of the following ingredients:

Water	50 – 73 %	
Non-ionic detergents	25 – 50 %	polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %	
Preservative	0.05 – 0.1 %	Preventol-D7

Safety relevant ingredients:

CAS-No. 55965-84-9	< 0.1 %	aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 %	polyoxyethylenesorbitan monolaurate

According to international guidelines, the product is not a dangerous mixture and therefore not required to be marked by symbols.

Figure D-4
Composition of 2.4 GHz Head Tissue Equivalent Matter

Note: 2.4 GHz head liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

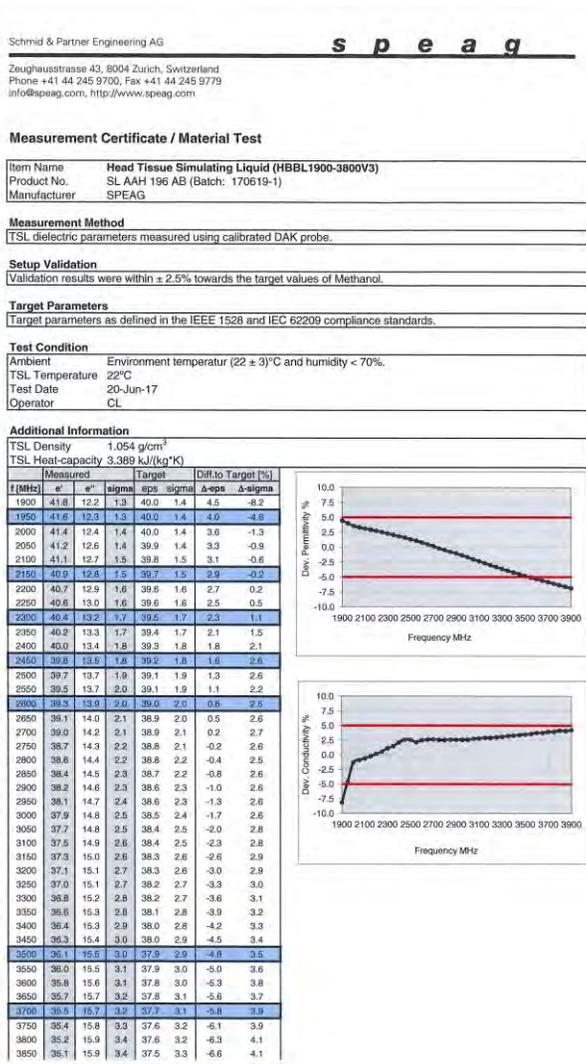


Figure D-5
2.4 GHz Head Tissue Equivalent Matter

FCC ID: A3LSMG973U		SAR EVALUATION REPORT		Approved by: Quality Manager
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2 Composition / Information on ingredients

The Item is composed of the following ingredients:

Water	50 – 65%
Mineral oil	10 – 30%
Emulsifiers	8 – 25%
Sodium salt	0 – 1.5%

Figure D-6

Composition of 3.5 – 5 GHz Head Tissue Equivalent Matter

Note: 3.5 – 5 GHz head liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

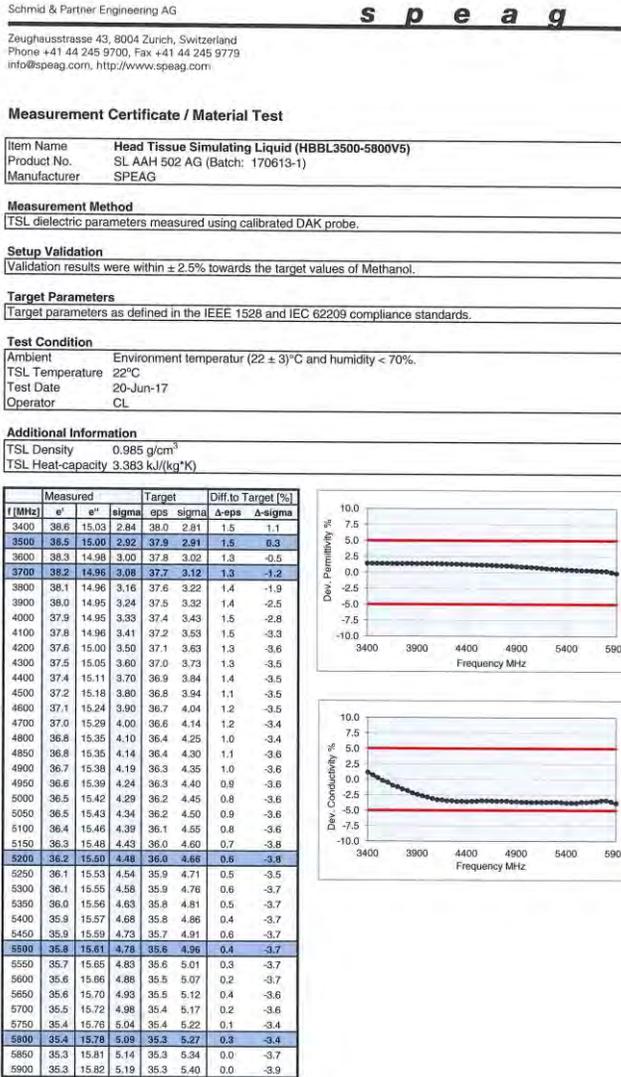


Figure D-7

3.5 – 5 GHz Head Tissue Equivalent Matter

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3 Composition / Information on ingredients

The Item is composed of the following ingredients:

Water	60 – 80%
Esters, Emulsifiers, Inhibitors	20 – 40%
Sodium salt	0 – 1.5%

Figure D-8
Composition of 3.5 – 5 GHz Body Tissue Equivalent Matter

Note: 3.5 – 5 GHz Body liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

Schmid & Partner Engineering AG

s p e a g

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Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

Measurement Certificate / Material Test

Item Name	Body Tissue Simulating Liquid (MBBL3500-5800V5)
Product No.	SL AAM 501 EA (Batch: 180423-2)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probes.

Setup Validation

Validation results were within ± 2.5% towards the target values of Methanol.

Target Parameters

Target parameters as defined in the KDB 865664 compliance standard.

Test Condition

Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	25-Apr-18
Operator	WM

Additional Information

TSL Density	0.996 g/cm ³
TSL Heat-capacity	3.765 kJ/(kg*K)

f [MHz]	Measured		Target		Diff.to Target [%]	
	ε'	ε''	ε' sigma	ε'' sigma	Δ-ε'	Δ-ε''
3400	50.7	16.46	3.11	51.5	3.20	-1.5 -2.7
3500	50.5	16.56	3.21	51.3	3.31	-1.6 -3.1
3600	50.4	16.56	3.32	51.2	3.43	-1.5 -3.2
3700	50.3	16.62	3.42	51.1	3.55	-1.5 -3.6
3800	50.2	16.72	3.53	50.9	3.66	-1.4 -3.7
3900	50.1	16.81	3.65	50.8	3.78	-1.3 -3.5
4000	49.9	16.93	3.77	50.6	3.90	-1.5 -3.3
4100	49.8	17.05	3.89	50.5	4.01	-1.4 -3.1
4200	49.6	17.18	4.01	50.4	4.13	-1.5 -2.9
4300	49.5	17.32	4.14	50.2	4.25	-1.5 -2.5
4400	49.3	17.46	4.27	50.1	4.37	-1.6 -2.2
4500	49.2	17.59	4.40	50.0	4.48	-1.5 -1.8
4600	49.0	17.73	4.54	49.8	4.60	-1.7 -1.3
4700	48.8	17.86	4.67	49.7	4.72	-1.8 -1.0
4800	48.6	17.99	4.80	49.6	4.83	-1.9 -0.7
4850	48.5	18.05	4.87	49.5	4.89	-2.0 -0.4
4900	48.4	18.11	4.94	49.4	4.95	-2.1 -0.2
4950	48.3	18.17	5.00	49.4	5.01	-2.1 -0.1
5000	48.2	18.23	5.07	49.3	5.07	-2.2 0.1
5050	48.1	18.29	5.14	49.2	5.12	-2.3 0.3
5100	48.0	18.34	5.20	49.2	5.18	-2.3 0.3
5150	47.9	18.39	5.27	49.1	5.24	-2.4 0.6
5200	47.9	18.45	5.34	49.0	5.30	-2.3 0.8
5250	47.8	18.50	5.40	48.9	5.36	-2.3 0.8
5300	47.7	18.55	5.47	48.9	5.42	-2.4 1.0
5350	47.6	18.61	5.54	48.8	5.47	-2.5 1.2
5400	47.5	18.67	5.61	48.7	5.53	-2.5 1.4
5450	47.4	18.72	5.68	48.7	5.59	-2.6 1.6
5500	47.3	18.77	5.74	48.6	5.65	-2.7 1.8
5550	47.2	18.83	5.81	48.5	5.71	-2.8 1.8
5600	47.1	18.89	5.88	48.5	5.77	-2.8 2.0
5650	47.1	18.93	5.95	48.4	5.82	-2.7 2.1
5700	47.0	18.99	6.02	48.3	5.88	-2.8 2.3
5750	46.9	19.04	6.09	48.3	5.94	-2.8 2.5
5800	46.8	19.10	6.16	48.2	6.00	-2.9 2.7
5850	46.7	19.16	6.23	48.1	6.06	-3.0 2.8
5900	46.6	19.22	6.31	48.1	6.12	-3.0 3.2

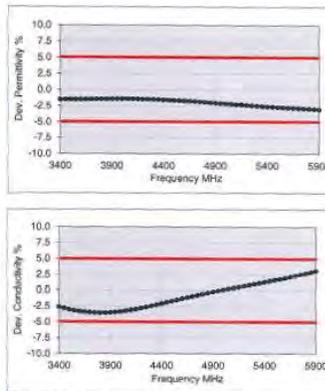


Figure D-9
3.5 – 5 GHz Body Tissue Equivalent Matter

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APPENDIX E: SAR SYSTEM VALIDATION

Per FCC KDB Publication 865664 D02v01r02, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

Table E-1
SAR System Validation Summary – 1g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (ϵ_r)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
I	750	11/1/2018	7406	750	Head	0.898	42.449	PASS	PASS	PASS	N/A	N/A	N/A
L	835	11/12/2018	7308	835	Head	0.893	42.128	PASS	PASS	PASS	GMSK	PASS	N/A
M	1750	11/5/2018	3287	1750	Head	1.342	39.217	PASS	PASS	PASS	N/A	N/A	N/A
E	1900	5/22/2018	3213	1900	Head	1.447	38.909	PASS	PASS	PASS	GMSK	PASS	N/A
M	1900	11/5/2018	3287	1900	Head	1.430	39.014	PASS	PASS	PASS	GMSK	PASS	N/A
G	2300	8/8/2018	7410	2300	Head	1.701	40.133	PASS	PASS	PASS	N/A	N/A	N/A
G	2450	8/7/2018	7410	2450	Head	1.865	39.618	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
I	2450	12/24/2018	7406	2450	Head	1.797	38.399	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
G	2600	8/8/2018	7410	2600	Head	2.040	39.033	PASS	PASS	PASS	TDD	PASS	N/A
H	3700	10/30/2018	3949	3700	Head	2.997	38.156	PASS	PASS	PASS	TDD	PASS	N/A
H	5250	7/5/2018	7409	5250	Head	4.492	34.994	PASS	PASS	PASS	OFDM	N/A	PASS
H	5600	7/5/2018	7409	5600	Head	4.839	34.496	PASS	PASS	PASS	OFDM	N/A	PASS
H	5750	7/5/2018	7409	5750	Head	4.995	34.288	PASS	PASS	PASS	OFDM	N/A	PASS
I	750	7/19/2018	7406	750	Body	0.969	53.451	PASS	PASS	PASS	N/A	N/A	N/A
G	835	8/29/2018	7410	835	Body	0.956	54.177	PASS	PASS	PASS	GMSK	PASS	N/A
H	835	11/1/2018	7409	835	Body	0.955	53.843	PASS	PASS	PASS	GMSK	PASS	N/A
L	835	11/6/2018	7308	835	Body	0.994	53.703	PASS	PASS	PASS	GMSK	PASS	N/A
I	835	8/8/2018	7406	835	Body	0.980	53.497	PASS	PASS	PASS	GMSK	PASS	N/A
J	1750	9/5/2018	3347	1750	Body	1.454	53.515	PASS	PASS	PASS	N/A	N/A	N/A
H	1750	8/17/2018	7409	1750	Body	1.505	52.002	PASS	PASS	PASS	N/A	N/A	N/A
H	1900	9/25/2018	7409	1900	Body	1.541	50.669	PASS	PASS	PASS	GMSK	PASS	N/A
E	1900	8/9/2018	3213	1900	Body	1.570	51.136	PASS	PASS	PASS	GMSK	PASS	N/A
E	1900	12/3/2018	3332	1900	Body	1.518	51.796	PASS	PASS	PASS	GMSK	PASS	N/A
K	2300	4/3/2018	3319	2300	Body	1.871	51.575	PASS	PASS	PASS	N/A	N/A	N/A
K	2450	4/3/2018	3319	2450	Body	2.043	51.130	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
I	2450	12/27/2018	7406	2450	Body	2.028	51.400	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2600	4/3/2018	3319	2600	Body	2.225	50.665	PASS	PASS	PASS	TDD	PASS	N/A
L	3700	11/2/2018	3914	3700	Body	3.550	51.310	PASS	PASS	PASS	TDD	PASS	N/A
D	5250	6/11/2018	7357	5250	Body	5.529	48.096	PASS	PASS	PASS	OFDM	N/A	PASS
D	5600	6/11/2018	7357	5600	Body	6.007	47.521	PASS	PASS	PASS	OFDM	N/A	PASS
D	5750	6/11/2018	7357	5750	Body	6.214	47.275	PASS	PASS	PASS	OFDM	N/A	PASS
L	5600	10/29/2018	7308	5600	Body	5.994	48.200	PASS	PASS	PASS	OFDM	N/A	PASS
L	5750	10/29/2018	7308	5750	Body	6.219	47.960	PASS	PASS	PASS	OFDM	N/A	PASS

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Table E-2
SAR System Validation Summary – 10g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (ϵ_r)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
J	1750	9/5/2018	3347	1750	Body	1.454	53.515	PASS	PASS	PASS	N/A	N/A	N/A
E	1900	8/9/2018	3213	1900	Body	1.570	51.136	PASS	PASS	PASS	GMSK	PASS	N/A
H	1900	9/25/2018	7409	1900	Body	1.541	50.669	PASS	PASS	PASS	GMSK	PASS	N/A
K	2300	4/3/2018	3319	2300	Body	1.871	51.575	PASS	PASS	PASS	N/A	N/A	N/A
K	2450	4/3/2018	3319	2450	Body	2.043	51.13	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2600	4/3/2018	3319	2600	Body	2.225	50.665	PASS	PASS	PASS	TDD	PASS	N/A
D	5250	6/11/2018	7357	5250	Body	5.529	48.096	PASS	PASS	PASS	OFDM	N/A	PASS
D	5600	6/11/2018	7357	5600	Body	6.007	47.521	PASS	PASS	PASS	OFDM	N/A	PASS
D	5750	6/11/2018	7357	5750	Body	6.214	47.275	PASS	PASS	PASS	OFDM	N/A	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to FCC KDB Publication 865664 D01v01r04.

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APPENDIX G POWER REDUCTION VERIFICATION

Per the May 2017 TCBC Workshop Notes, demonstration of proper functioning of the power reduction mechanisms is required to support the corresponding SAR configurations. The verification process was divided into two parts: (1) evaluation of output power levels for individual or multiple triggering mechanisms and (2) evaluation of the triggering distances for proximity-based sensors.

G.1 Power Verification Procedure

The power verification was performed according to the following procedure:

1. A base station simulator was used to establish a conducted RF connection and the output power was monitored. The power measurements were confirmed to be within expected tolerances for all states before and after a power reduction mechanism was triggered.
2. Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.
3. Steps 1 and 2 were repeated for all individual power reduction mechanisms and combinations thereof. For the combination cases, one mechanism was switched to a 'triggered' state at a time; powers were confirmed to be within tolerances after each additional mechanism was activated.

G.2 Distance Verification Procedure

The distance verification procedure was performed according to the following procedure:

1. A base station simulator was used to establish an RF connection and to monitor the power levels. The device being tested was placed below the relevant section of the phantom with the relevant side or edge of the device facing toward the phantom.
2. The device was moved toward and away from the phantom to determine the distance at which the mechanism triggers and the output power is reduced, per KDB Publication 616217 D04v01r02 and FCC Guidance. Each applicable test position was evaluated. The distances were confirmed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.
3. Steps 1 and 2 were repeated for low, mid, and high bands, as appropriate (see note below Table G-2 for more details).
4. Steps 1 through 3 were repeated for all distance-based power reduction mechanisms.

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G.3 Main Antenna Verification Summary

**Table G-1
Power Measurement Verification for Main Antenna**

Mechanism(s)			Mode/Band	Conducted Power (dBm)			
1st	2nd	3rd		Un-triggered (Max)	Mechanism #1 (Reduced)	Mechanism #2 (Reduced)	Mechanism #3 (Reduced)
Hotspot On			PCS CDMA	24.22	19.59		
Hotspot On	Grip		PCS CDMA	24.14	19.56	19.55	
Grip			PCS CDMA	24.13	21.45		
Grip	Hotspot On		PCS CDMA	24.07	21.50	19.56	
Hotspot On			GPRS 1900	25.76	23.89		
Hotspot On	Grip		GPRS 1900	25.77	23.86	23.87	
Grip			GPRS 1900	25.77	23.76		
Grip	Hotspot On		GPRS 1900	25.72	23.75	23.76	
Hotspot On			UMTS 1750	24.55	20.59		
Hotspot On	Grip		UMTS 1750	24.52	20.54	20.53	
Grip			UMTS 1750	24.59	20.59		
Grip	Hotspot On		UMTS 1750	24.59	20.54	20.60	
Hotspot On			UMTS 1900	24.62	19.63		
Hotspot On	Grip		UMTS 1900	24.57	19.62	19.61	
Grip			UMTS 1900	24.61	21.42		
Grip	Hotspot On		UMTS 1900	24.59	21.41	19.60	
Hotspot On			LTE FDD Band 66	24.45	20.46		
Hotspot On	Grip		LTE FDD Band 66	24.51	20.50	20.47	
Grip			LTE FDD Band 66	24.48	20.55		
Grip	Hotspot On		LTE FDD Band 66	24.49	20.51	20.52	
Hotspot On			LTE FDD Band 4	24.54	20.53		
Hotspot On	Grip		LTE FDD Band 4	24.54	20.51	20.55	
Grip			LTE FDD Band 4	24.55	20.50		
Grip	Hotspot On		LTE FDD Band 4	24.49	20.54	20.52	
Hotspot On			LTE FDD Band 25	24.58	19.49		
Hotspot On	Grip		LTE FDD Band 25	24.47	19.47	19.46	
Grip			LTE FDD Band 25	24.50	20.68		
Grip	Hotspot On		LTE FDD Band 25	24.51	20.70	19.46	
Hotspot On			LTE FDD Band 2	23.97	19.42		
Hotspot On	Grip		LTE FDD Band 2	23.89	19.41	19.40	
Grip			LTE FDD Band 2	23.91	20.73		
Grip	Hotspot On		LTE FDD Band 2	23.92	20.72	19.37	
Hotspot On			LTE FDD Band 30	22.34	19.33		
Hotspot On	Grip		LTE FDD Band 30	22.30	19.37	19.34	
Grip			LTE FDD Band 30	22.31	20.82		
Grip	Hotspot On		LTE FDD Band 30	22.31	20.85	19.27	
Hotspot On			LTE FDD Band 7 Ant B	23.49	20.49		
Hotspot On	Grip		LTE FDD Band 7 Ant B	23.58	20.48	20.50	
Grip			LTE FDD Band 7 Ant B	23.57	20.58		
Grip	Hotspot On		LTE FDD Band 7 Ant B	23.55	20.54	20.54	
Hotspot On			LTE FDD Band 7 Ant A	23.60	21.33		
Hotspot On	Grip		LTE FDD Band 7 Ant A	23.68	21.25	21.29	
Grip			LTE FDD Band 7 Ant A	23.67	21.38		
Grip	Hotspot On		LTE FDD Band 7 Ant A	23.66	21.32	21.33	
Hotspot On			LTE TDD Band 41 (PC3)	23.66	22.24		
Hotspot On			LTE TDD Band 41 (PC2)	26.82	22.22		
Hotspot On	Grip		LTE TDD Band 41 (PC2)	26.85	22.25	22.25	
Grip			LTE TDD Band 41 (PC2)	26.88	23.87		
Grip	Hotspot On		LTE TDD Band 41 (PC2)	26.87	23.84	22.28	
Hotspot On			LTE TDD Band 38	22.72	21.77		
Earjack Active			LTE FDD Band 25	23.95	21.00		
Earjack Active	Hotspot On		LTE FDD Band 25	24.14	20.95	19.15	
Earjack Active	Grip		LTE FDD Band 25	24.08	20.89	20.91	
Earjack Active	Hotspot On	Grip	LTE FDD Band 25	24.05	20.91	19.10	19.05
Earjack Active	Grip	Hotspot On	LTE FDD Band 25	24.04	20.92	20.95	19.08
Hotspot On	Earjack Active		LTE FDD Band 25	24.01	19.11	19.09	
Hotspot On	Earjack Active	Grip	LTE FDD Band 25	24.05	19.08	19.10	19.12
Hotspot On	Grip	Earjack Active	LTE FDD Band 25	24.08	19.05	19.06	19.03
Grip	Earjack Active		LTE FDD Band 25	24.12	20.99	20.98	
Grip	Earjack Active	Hotspot On	LTE FDD Band 25	24.15	20.97	20.99	19.17
Grip	Hotspot On	Earjack Active	LTE FDD Band 25	24.06	20.94	19.11	19.08
Earjack Active			PCS CDMA	24.00	21.20		
Earjack Active	Hotspot On		PCS CDMA	24.07	21.11	19.62	
Earjack Active	Grip		PCS CDMA	24.12	21.16	21.20	
Earjack Active	Hotspot On	Grip	PCS CDMA	24.05	21.15	19.65	19.61
Earjack Active	Grip	Hotspot On	PCS CDMA	24.03	21.17	21.23	19.57
Hotspot On	Earjack Active		PCS CDMA	24.10	19.69	19.67	
Hotspot On	Earjack Active	Grip	PCS CDMA	24.13	19.65	19.68	19.69
Hotspot On	Grip	Earjack Active	PCS CDMA	24.00	19.60	19.64	19.62
Grip	Earjack Active		PCS CDMA	24.13	21.28	21.30	
Grip	Earjack Active	Hotspot On	PCS CDMA	24.11	21.30	21.27	19.71
Grip	Hotspot On	Earjack Active	PCS CDMA	24.03	21.24	19.67	19.62

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Table G-2
Distance Measurement Verification for Main Antenna

Mechanism(s)	Test Condition	Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Grip	Phablet - Back Side	Mid	7	9	7
Grip	Phablet - Back Side	High	7	9	7
Grip	Phablet - Front Side	Mid	5	7	5
Grip	Phablet - Front Side	High	5	7	5
Grip	Phablet - Bottom Edge	Mid	9	11	9
Grip	Phablet - Bottom Edge	High	9	11	9

*Note: Mid band refers to: CDMA BC1, GSM1900, UMTS B2/4, LTE B2/4/25/66;
High band refers to: LTE B7 Ant A & Ant B, LTE B41 PC2, LTE B30.

G.4 WIFI Verification Summary

Table G-3
Power Measurement Verification WIFI

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
		Un-triggered (Max)	Mechanism #1 (Reduced)
1st			
Held-to-Ear	802.11b	20.39	15.58
Held-to-Ear	802.11g	17.12	15.15
Held-to-Ear	802.11n (2.4GHz)	17.06	15.24
Held-to-Ear	802.11a	16.81	13.27
Held-to-Ear	802.11n (5GHz, 20MHz BW)	17.32	13.54
Held-to-Ear	802.11ac (20MHz BW)	17.75	13.53
Held-to-Ear	802.11n (5GHz, 40MHz BW)	16.87	13.65
Held-to-Ear	802.11ac (40MHz BW)	16.35	12.49
Held-to-Ear	802.11ac (80MHz BW)	15.73	13.87

*Note: 802.11 ax and MIMO WIFI modes were not evaluated due to equipment limitations.

FCC ID: A3LSMG973U	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 11/11/2018 – 01/14/2019	DUT Type: Portable Handset			APPENDIX G: Page 3 of 3

1.2 LTE Downlink Only Carrier Aggregation Test Selection and Setup

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers (CCs) supported by the product implementation. For those configurations required by April 2018 TCBC Workshop Notes, conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive among the channel bandwidth, modulation, and RB combinations in each frequency band.

This device supports LAA with downlink carrier aggregation only. It uses carrier aggregation in the downlink to combine LTE in the unlicensed spectrum (i.e. LTE Band 46) with LTE in the licensed band (served as PCC). All uplink communications and acknowledgements on the PCC remain identical to specifications when downlink carrier aggregation is inactive.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the maximum average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive. All bands required for SAR testing per FCC KDB procedures were considered. Based on the measured maximum powers below, no additional SAR tests were required for DLCA SAR configurations.

General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)iii) of KDB 941225 D05 V01r02. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
- To maximize aggregated bandwidth, highest channel bandwidth available for that CA combination was selected for SCC. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
- All selected PCC and SCC(s) remained fully within the uplink/downlink transmission band of the respective component carrier.

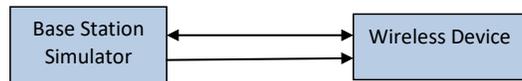


Figure 1
DL CA Power Measurement Setup

FCC ID: A3LSMG973U	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 11/11/18 - 01/14/19	DUT Type: Portable Handset	APPENDIX H: Page 2 of 16		

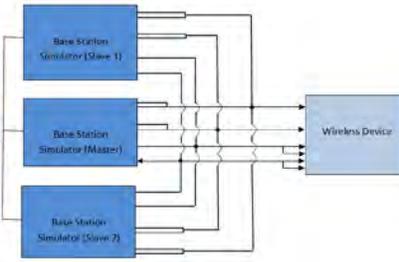


Figure 2
DL CA with DL 4x4 MIMO Power Measurement Setup

1.3 Downlink Carrier Aggregation RF Conducted Powers

1.3.1 LTE Band 71 as PCC

Table 1
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC 1			SCC 2			SCC 3			LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]			
										SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band			SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]
CA 4A-4A-71A	LTE B71	20	133207	680.5	QPSK	1	0	68761	634.5	LTE B4	20	2175	2132.5	LTE B4	10	2300	2150	-	-	-	24.54	24.47	
CA 2A-2A-4A-71A	LTE B71	20	133207	680.5	QPSK	1	0	68761	634.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	24.62	24.47
CA 2A-6A-6A-71A	LTE B71	20	133207	680.5	QPSK	1	0	68761	634.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	68786	2145	24.65	24.47
CA 2A-6A-6A-71A	LTE B71	20	133207	680.5	QPSK	1	0	68761	634.5	LTE B2	20	900	1960	LTE B66	20	68786	2145	LTE B66	20	68786	2100	24.61	24.47
CA 2A-6C-71A	LTE B71	20	133207	680.5	QPSK	1	0	68761	634.5	LTE B2	20	900	1960	LTE B66	20	68786	2145	LTE B66	20	68984	2164.8	24.57	24.47

1.3.2 LTE Band 12 as PCC

Table 2
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC 1			SCC 2			SCC 3			SCC 4			LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]					
										SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]			SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	
CA 2A-12A (1)	LTE B12	5	23165	714.5	QPSK	1	14	5185	744.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	24.80	24.65			
CA 4A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	24.62	24.60		
CA 4A-12A (2)	LTE B12	5	23165	714.5	QPSK	1	24	5185	744.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	24.76	24.65		
CA 12A-25A	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B05	20	835	182.5	-	-	-	-	-	-	-	-	-	-	-	-	24.65	24.60	
CA 12A-66A (1)	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B06	20	68786	2145	-	-	-	-	-	-	-	-	-	-	-	-	24.62	24.60	
CA 12A-66A (2)	LTE B12	5	23165	714.5	QPSK	1	24	5185	744.5	LTE B06	20	68786	2145	-	-	-	-	-	-	-	-	-	-	-	-	24.66	24.65	
CA 4A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B4	20	2175	2132.5	LTE B4	10	2300	2150	-	-	-	-	-	-	-	-	24.65	24.60	
CA 2A-2A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	24.62	24.60	
CA 2A-2A-2A-6A-12A	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	68786	2145	-	-	-	-	24.76	24.60	
CA 2A-12A-6A-6A	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B2	20	900	1960	LTE B66	20	68786	2145	LTE B66	20	68786	2145	-	-	-	-	24.60	24.60	
CA 2A-12A-6C	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B2	20	900	1960	LTE B66	20	68786	2145	LTE B66	20	68984	2164.8	-	-	-	-	24.77	24.60	
CA 4A-12A-12B	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B12	5	5047	732.7	LTE B4	20	2175	2132.5	LTE B7	20	3100	2655	-	-	-	-	-	24.48	24.60
CA 2A-2A-7A-12A-6A	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B7	20	3100	2655	LTE B66	20	68786	2145	24.67	24.60	
CA 2A-7A-12B-6A	LTE B12	5	23095	707.5	QPSK	1	24	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B66	20	68786	2145	-	-	-	-	24.56	24.60	

1.3.3 LTE Band 13 as PCC

Table 3
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC 1			SCC 2			SCC 3			SCC 4			LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]						
										SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]			SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]		
CA 13A-13A-6A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	507.5	-	-	-	-	-	-	-	-	-	24.81	24.80	
CA 13A-6A-6A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B66	20	68986	2157.5	-	-	-	-	-	-	-	-	-	-	-	-	-	24.81	24.80	
CA 2A-13A-6C	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	-	-	-	-	-	-	24.82	24.80
CA 2A-13A-6B	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B66	15	68786	2145	LTE B66	5	68786	2154.5	-	-	-	-	-	-	24.76	24.80
CA 2A-13A-6C	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B66	20	68786	2145	LTE B66	20	68984	2164.8	-	-	-	-	-	-	24.77	24.80
CA 13A-6C-6B	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B66	20	68786	2145	-	-	-	-	-	-	-	-	-	24.76	24.80	
CA 13A-6A-6C	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B66	20	68786	2145	LTE B66	20	68984	2164.8	-	-	-	-	-	-	24.76	24.80
CA 2A-2A-4A-4A-13A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	LTE B4	10	2300	2150	-	-	24.92	24.80
CA 2A-2A-13A-6A-6A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	68786	2145	LTE B66	20	68786	2145	-	-	24.83	24.80
CA 2A-13A-6A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	-	-	24.80	24.80
CA 2A-13A-6A-6C	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	-	-	24.81	24.80
CA 2A-13A-6A-6B	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	-	-	24.80	24.80
CA 2A-13A-6C-6A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	-	-	24.80	24.80
CA 13A-6A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	LTE B46	20	50663	552.3	-	-	24.81	24.80
CA 13A-6A-6B	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	LTE B46	20	50663	552.3	-	-	24.81	24.80
CA 13A-6A-6C	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	LTE B46	20	50663	552.3	-	-	24.81	24.80
CA 13A-6A-6B-6A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	LTE B46	20	50663	552.3	-	-	24.81	24.80
CA 13A-6A-6B-6B	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	LTE B46	20	50663	552.3	-	-	24.81	24.80
CA 13A-6A-6B-6C	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	LTE B46	20	50663	552.3	-	-	24.81	24.80
CA 13A-6A-6B-6A-6A	LTE B13	5	22230	782	QPSK	1	24	5230	751	LTE B46	20	50665	507.5	LTE B46	20	50667	517.7	LTE B46	20	50663	552.3	LTE B46	20						

1.3.4 LTE Band 14 as PCC

Table 4
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC1			SCC2			SCC3			SCC4			Power							
										SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)		
CA 2A-2A-14A-30A-66A	LTE B14	10	21330	793	QPSK	1	0	5330	763	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	800	2130	LTE B06	20	66786	2145	67236	2190	24.16	24.05
CA 2A-2A-14A-66A-66A	LTE B14	10	21330	793	QPSK	1	0	5330	763	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B06	20	66786	2145	LTE B06	20	66786	2145	67236	2190	24.16	24.05
CA 2A-14A-30A-66A-66A	LTE B14	10	21330	793	QPSK	1	0	5330	763	LTE B2	20	900	1960	LTE B30	10	800	2135	LTE B06	20	66786	2145	LTE B06	20	67236	2190	67236	2190	24.16	24.05

1.3.5 LTE Band 5 as PCC

Table 5
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC1			SCC2			SCC3			SCC4			Power									
										SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)				
CA 5A-5A (1)	LTE B5	3	20235	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CA 5B (1)	LTE B5	3	20235	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2486	877.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CA 5A-7A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B7	20	3100	2655	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CA 5A-25A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B09	20	3365	192.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CA 5A-35A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B09	20	3800	2355	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CA 5A-46A (1)	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B09	20	5065	557.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CA 2A-2A-6A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	5095	557.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
CA 2B-6A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B46	20	5095	557.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
CA 5A-46A-6A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B46	20	5065	557.5	LTE B06	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	-	
CA 5A-6C (1)	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B46	20	5065	557.5	LTE B46	20	50467	557.7	-	-	-	-	-	-	-	-	-	-	-	-	-	
CA 2A-2A-5A-6A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B09	20	900	1960	LTE B4	20	2178	2123.5	LTE B30	10	800	2355	-	-	-	-	-	-	-	-	-	-
CA 2A-2A-42C	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	5065	557.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
CA 5A-5A-6A-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B05	5	2425	871.5	LTE B05	5	66786	2145	LTE B06	20	67236	2190	-	-	-	-	-	-	-	-	-	-
CA 5A-6A-66B	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B05	5	2425	871.5	LTE B05	5	66786	2145	LTE B06	20	66786	2145	-	-	-	-	-	-	-	-	-	
CA 5A-6A-66C	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B05	5	2425	871.5	LTE B05	5	66786	2145	LTE B06	20	66984	2164.8	-	-	-	-	-	-	-	-	-	
CA 5B-46C	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B05	5	2453	874.3	LTE B46	20	50467	557.7	-	-	-	-	-	-	-	-	-	-	-	-	-	
CA 5A-6C-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B46	20	5065	557.5	LTE B46	20	50467	557.7	LTE B06	20	66786	2145	-	-	-	-	-	-	-	-	-	
CA 5A-46D (1)	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B46	20	5065	557.5	LTE B46	20	50467	557.7	LTE B46	20	5065	557.5	-	-	-	-	-	-	-	-	-	
CA 2A-2A-4A-5A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2123.5	LTE B4	10	2150	2150	2481	24.75	-	-		
CA 2A-2A-4A-6B	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2123.5	2481	24.75	-	-		
CA 2A-2A-5A-30A-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	800	2355	LTE B06	20	66786	2145	66786	2145	24.81	24.75		
CA 2A-2A-5A-6A-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B06	20	66786	2145	LTE B06	20	67236	2190	24.86	24.75	-	-		
CA 2A-2A-5A-66B	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B06	20	66786	2145	LTE B06	20	66786	2145	66984	2164.8	24.81	24.75		
CA 2A-2A-4A-5B	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B4	20	2175	2123.5	LTE B4	10	2150	2150	24.86	24.75	-	-		
CA 2A-2A-4A-6B	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	5065	557.5	LTE B4	20	2175	2123.5	LTE B4	10	2150	2150	24.86	24.75	-	-		
CA 2A-2A-5A-6A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B30	10	800	2355	LTE B06	20	66786	2145	66786	2145	24.76	24.75		
CA 2A-2A-5A-66B	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B46	20	50467	557.7	LTE B46	20	5065	557.5	5065	557.5	24.76	24.75		
CA 2A-2A-5A-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B06	20	66786	2145	LTE B06	20	67236	2190	24.86	24.75	-	-		
CA 2A-2A-30A-66A-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B20	10	800	2355	LTE B06	20	66786	2145	LTE B06	20	67236	2190	24.74	24.75	-	-		
CA 2A-2A-5A-6A-46C	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	5590	3625	LTE B46	20	55340	3560	LTE B46	20	55338	3579.8	55338	3579.8	24.74	24.75		
CA 2A-2A-4A-6B	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	5590	3625	LTE B46	20	56188	3644.8	LTE B46	20	56186	3644.8	56186	3644.8	24.80	24.75		
CA 2A-2A-4A-6A-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	5590	3625	LTE B46	20	55340	3560	LTE B06	20	66786	2145	66786	2145	24.74	24.75		
CA 2A-2A-5A-66C-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	5590	3625	LTE B46	20	56188	3644.8	LTE B06	20	66786	2145	66786	2145	24.80	24.75		
CA 5B-46C	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B05	5	2453	874.3	LTE B46	20	5065	557.5	LTE B46	20	50467	557.7	LTE B46	20	5065	557.5	5065	557.5	24.80	24.75		
CA 5A-46C-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B46	20	5065	557.5	LTE B46	20	50467	557.7	LTE B46	20	5065	557.5	LTE B06	20	66786	2145	66786	2145	24.75	24.75		
CA 5A-46D-66A	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B46	20	5065	557.5	LTE B46	20	50467	557.7	LTE B46	20	5065	557.5	LTE B06	20	66786	2145	66786	2145	24.75	24.75		
CA 5A-46C-46C	LTE B5	10	20235	836.5	QPSK	1	0	2525	881.5	LTE B46	20	5590	3625	LTE B46	20	55340	3560	LTE													

1.3.13 LTE Band 41 PC2 as PCC

Table 13
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]									
				PCC (DL) Freq [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq [MHz]	SCC Band	SCC BW [MHz]			SCC (DL) Channel	SCC (DL) Freq [MHz]							
CA 41A-41A (1)	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	41480	2680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.86	27.85			
CA 41A-41C	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	41292	2690.2	LTE B41 PC2	20	41480	2680	-	-	-	-	-	-	-	-	-	-	-	-	-	27.86	27.85		
CA 41C-41A	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	40383	2569.3	LTE B41 PC2	20	41480	2680	-	-	-	-	-	-	-	-	-	-	-	-	-	27.86	27.85		
CA 41A-41D	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	41094	2640.4	LTE B41 PC2	20	41292	2690.2	LTE B41 PC2	20	41480	2680	-	-	-	-	-	-	-	-	-	-	27.86	27.85	
CA 41D-41A	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	40383	2569.3	LTE B41 PC2	20	40581	2589.1	LTE B41 PC2	20	41480	2680	-	-	-	-	-	-	-	-	-	-	27.86	27.85	
CA 41C-41C	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	40383	2569.3	LTE B41 PC2	20	41292	2690.2	LTE B41 PC2	20	41480	2680	-	-	-	-	-	-	-	-	-	-	27.86	27.85	
CA 41E	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	40383	2569.3	LTE B41 PC2	20	40581	2589.1	LTE B41 PC2	20	40779	2608.9	-	-	-	-	-	-	-	-	-	-	27.86	27.85	
CA 41C-41D	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	40383	2569.3	LTE B41 PC2	20	41094	2640.4	LTE B41 PC2	20	41292	2690.2	LTE B41 PC2	20	41480	2680	-	-	-	-	-	-	-	27.86	27.85
CA 41D-41C	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	40383	2569.3	LTE B41 PC2	20	40581	2589.1	LTE B41 PC2	20	41292	2690.2	LTE B41 PC2	20	41480	2680	-	-	-	-	-	-	-	27.86	27.85
CA 41F	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41 PC2	20	40383	2569.3	LTE B41 PC2	20	40581	2589.1	LTE B41 PC2	20	40779	2608.9	LTE B41 PC2	20	40977	2628.7	-	-	-	-	-	-	-	27.86	27.85

1.3.14 LTE Band 48 as PCC

Table 14
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]										
				PCC (DL) Freq [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq [MHz]	SCC Band	SCC BW [MHz]			SCC (DL) Channel	SCC (DL) Freq [MHz]								
CA 48A-48A	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	55340	3560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.39	24.37			
CA 48C-48A	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	56494	3675.4	LTE B48	20	55340	3560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.39	24.37		
CA 48A-48C	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	56340	3560	LTE B48	20	55338	3579.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.39	24.37		
CA 48A-48D	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	55340	3560	LTE B48	20	55338	3579.8	LTE B48	20	55736	3599.6	-	-	-	-	-	-	-	-	-	-	-	24.41	24.37	
CA 48C-48A	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	56494	3675.4	LTE B48	20	55338	3579.8	LTE B48	20	55340	3560	-	-	-	-	-	-	-	-	-	-	-	24.39	24.37	
CA 48C-48C	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	56494	3675.4	LTE B48	20	55340	3560	LTE B48	20	55338	3579.8	-	-	-	-	-	-	-	-	-	-	-	24.42	24.37	
CA 48A-48E	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	55340	3560	LTE B48	20	55338	3579.8	LTE B48	20	55736	3599.6	LTE B48	20	55934	3629.4	-	-	-	-	-	-	-	24.38	24.37	
CA 48E-48A	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	56494	3675.4	LTE B48	20	56296	3655.6	LTE B48	20	60096	3835.2	LTE B48	20	58140	3860	-	-	-	-	-	-	-	-	24.40	24.37
CA 48C-48D	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	56494	3675.4	LTE B48	20	55340	3560	LTE B48	20	55338	3579.8	LTE B48	20	55736	3599.6	-	-	-	-	-	-	-	24.39	24.37	
CA 48D-48C	LTE B48	15	5665	3692.5	QPSK	1	74	5665	3692.5	LTE B48	20	56494	3675.4	LTE B48	20	56296	3655.6	LTE B48	20	55340	3560	LTE B48	20	55338	3579.8	-	-	-	-	-	-	-	24.12	24.37	

1.4 DL CA with DL 4x4 MIMO RF Conduction Powers

This device supports downlink 4x4 MIMO operations for some LTE bands. Uplink transmission is limited to a single output stream. When carrier aggregation was applicable, the general test selection and setup procedures described in Section 1.2 were applied.

Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

1.4.1 LTE 4x4 MIMO DL Standalone Powers

Table 15
Maximum Output Powers

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]
66	20	132572	1770	QPSK	1	0	24.10	24.06
25	1.4	26365	1882.5	QPSK	1	0	23.98	23.92
7	5	21425	2567.5	QPSK	1	24	23.96	23.91
30	5	27710	2310	QPSK	1	12	22.65	22.69
41	15	40185	2549.5	QPSK	1	0	24.49	24.59
41 PC2	20	40185	2549.5	QPSK	1	0	27.86	27.85

FCC ID: A3LSMG973U	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 11/11/18 - 01/14/19	DUT Type: Portable Handset	APPENDIX H: Page 7 of 16		

1.4.4 LTE Band 13 as PCC

Table 18
Maximum Output Powers

Combination	PCC										SCC 1			SCC 2			SCC 3			SCC 4			Power											
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	LTE Tx Power with CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]		
CA [2A]-[3A]-[4A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B40	20	50655	5537.5	2x2	-	-	-	-	-	-	-	-	-	-	24.79	24.80		
CA [2A]-[3A]-[4A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B40	20	50655	5537.5	2x2	-	-	-	-	-	-	-	-	-	-	24.79	24.80		
CA [2A]-[2A]-[1A]-[1A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	-	-	-	-	-	-	24.73	24.80	
CA [2A]-[2A]-[1A]-[1A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.75	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.77	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.86	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.81	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.77	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.79	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.80	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.80	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.80	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.80	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.80	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.80	24.80
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B02	20	900	1569	4x4	LTE B02	20	700	1540	2x2	LTE B04	20	2175	2132.5	4x4	LTE B06	20	66786	2145	4x4	-	-	24.80	24.80

1.4.5 LTE Band 14 as PCC

Table 19
Maximum Output Powers

Combination	PCC										SCC 1			SCC 2			SCC 3			SCC 4			Power											
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	LTE Tx Power with CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]		
CA [2A]-[2A]-[1A]-[1A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	-	-	-	-	-	25.12	25.05		
CA [2A]-[2A]-[1A]-[1A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	-	-	-	-	-	25.09	25.05		
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.03	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.00	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.05	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.16	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.16	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.16	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.17	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.15	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.16	25.05
CA [2A]-[2A]-[1A]-[1A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]-[6A]	LTE B14	10	21310	793	QPSK	1	0	5130	763	2x2	LTE B02	20	900	1560	4x4	LTE B02	20	700	1540	2x2	LTE B30	10	8820	2355	4x4	LTE B06	20	66786	2145	4x4	-	-	25.16	25.05

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1.5 Downlink Carrier Aggregation with CA_41C Uplink Carrier Aggregation enabled

This device supports uplink carrier aggregation (ULCA) with additional Carrier Aggregation configurations active in the downlink. Power measurements were performed with ULCA active and additional CA configurations active in the downlink for the configuration per Fall 2017 TCB Workshop Notes.

Per FCC Guidance, additional SAR measurements for these configurations were not required since their maximum output power was not more than 0.25 dB higher than the maximum output power for with only ULCA active.

1.5.1 DL Carrier Aggregation RF Conducted Powers

Table 29
Maximum Output Powers

Combination on DL	PCC								SCC1						SCC2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	CA_41C ULCA Tx. Power with add'l CA configuration active in DL (dBm)	CA_41C ULCA Tx. Power (dBm)
CA_41D	LTE B41	20	41055	2636.5	QPSK	1	0	LTE B41	20	40857	2616.7	QPSK	1	99	LTE B41	20	41253	2656.3	24.20	24.58
CA_41D	LTE B41 PC2	20	41055	2636.5	QPSK	1	0	LTE B41 PC2	20	40857	2616.7	QPSK	1	99	LTE B41 PC2	20	41253	2656.3	28.04	27.72

1.5.2 DL Carrier Aggregation with DL 4x4 MIMO RF Conducted Powers

Note: 4x4 DL MIMO is only operating in the downlink. Uplink transmission is limited to a single output stream for each component carrier of ULCA.

1.5.2.1 LTE Band 41

Table 30
Maximum Output Powers

Combination on DL	PCC								SCC1						SCC2				Power				
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	DL Ant. Config.	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	DL Ant. Config.	Modulation	SCC UL# RB	SCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	DL Ant. Config.	CA_41C ULCA Tx. Power with add'l CA configuration active in DL (dBm)	CA_41C ULCA Tx. Power (dBm)
CA_41C (1)	LTE B41	20	41055	2636.5	4x4	QPSK	1	0	LTE B41	20	40857	2616.7	4x4	QPSK	1	99	-	-	-	-	-	24.40	24.58
CA_41D	LTE B41	20	41055	2636.5	4x4	QPSK	1	0	LTE B41	20	40857	2616.7	4x4	QPSK	1	99	LTE B41	20	41253	2656.3	4x4	24.36	24.58
CA_41C (1)	LTE B41 PC2	20	41055	2636.5	4x4	QPSK	1	0	LTE B41 PC2	20	40857	2616.7	4x4	QPSK	1	99	-	-	-	-	-	27.95	27.72
CA_41D	LTE B41 PC2	20	41055	2636.5	4x4	QPSK	1	0	LTE B41 PC2	20	40857	2616.7	4x4	QPSK	1	99	LTE B41 PC2	20	41253	2656.3	4x4	27.97	27.72

1.5.2.2 LTE Band 66

Table 31
Maximum Output Powers

Combination on DL	PCC								SCC						Power							
	PCC Band	PCC Bandwidth [MHz]	PCC UL Channel	PCC UL Frequency [MHz]	PCC DL Channel	PCC DL Frequency [MHz]	DL Ant. Config.	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC UL Channel	SCC UL Frequency [MHz]	SCC DL Channel	SCC DL Frequency [MHz]	DL Ant. Config.	Modulation	SCC UL# RB	SCC UL RB Offset	ULCA Tx. Power with add'l CA configuration active in DL (dBm)	ULCA Tx. Power (dBm)
CA_66C	LTE B66	20	132572	1770.0	67036	2170.0	4x4	QPSK	1	0	LTE B66	20	132374	1750.2	66838	2150.2	4x4	QPSK	1	99	24.34	24.84
CA_66B	LTE B66	10	132622	1775.0	67086	2175.0	4x4	QPSK	1	0	LTE B66	10	132523	1765.1	66987	2165.1	4x4	QPSK	1	49	24.18	24.58

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APPENDIX I: IEEE 802.11AX RU SAR EXCLUSION

1.1 IEEE 802.11ax RU SAR Exclusion

To make the most efficient use of the additional available subcarriers (data tones), IEEE 802.11ax can utilize Orthogonal Frequency-Division Multiple Access (OFDMA) which divides the existing 802.11 channels into smaller subchannels called Resource Units (RUs). Possible RU sizes are: 26T, 52T, 106T, 242T, 484T and 996T.

Per FCC Guidance, 802.11ax was considered a higher order 802.11 mode when compared to a/b/g/n/ac to apply KDB Publication 248227 D01v02r02 for OFDM mode selection. Therefore, SAR tests were not required for 802.11ax based on the maximum allowed output powers of OFDM modes and the reported SAR values. Per FCC Guidance, maximum conducted powers were performed for each RU size to demonstrate that the output powers would not be higher than the other OFDM 802.11 modes.

1.2 IEEE 802.11ax RU Target Powers

1.2.1 Maximum 802.11ax RU WLAN Output Power

Tones		IEEE 802.11 ax RU											
		SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
		2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
Ch & RU index													
26T	Maximum	14	11	11	11	14	11	11	11	14	11	11	11
	Nominal	13	10	10	10	13	10	10	10	13	10	10	10
52T	Maximum	16	13	13	13	16	13	13	13	16	13	13	13
	Nominal	15	12	12	12	15	12	12	12	15	12	12	12
106T	Maximum	18	15	15	15	18	15	15	15	18	15	15	15
	Nominal	17	14	14	14	17	14	14	14	17	14	14	14
242T	Maximum	18 ch 1: 16, ch 11, 17	18 ch 36: 16, ch 64: 16.5 ch 100: 17.5	18 ch 38: 13.5, ch 62: 13.5, ch 102: 12.5	18 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5	18 ch 1: 16, ch 11, 17	18 ch 36: 16, ch 64: 16.5 ch 100: 17.5	18 ch 38: 13.5, ch 62: 13.5, ch 102: 112.5	18 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5	18 ch 1: 16, ch 11, 17	18 ch 36: 16, ch 64: 16.5 ch 100: 17.5	18 ch 38: 13.5, ch 62: 13.5, ch 102: 12.5	18 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5
	Nominal	17 ch 1: 15, ch 11: 16	17 ch 36: 15, ch 64: 15.5, Ch.100: 16.5	17 ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	17 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5	17 ch 1: 15, ch 11, 16	17 ch 36: 15, ch 64: 15.5, Ch.100: 16.5	17 ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	17 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5	17 ch 1: 15, ch 11: 16	17 ch 36: 15, ch 64: 15.5, Ch.100: 16.5	17 ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	17 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5
484T	Maximum			17 ch 38: 13.5, ch 62: 13.5, ch 102: 12.5	17 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5			17 ch 38: 13.5, ch 62: 13.5, ch 102: 12.5	18 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5			17 ch 38: 13.5, ch 62: 13.5, ch 102: 12.5	17 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5
	Nominal			16 ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	16 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5			16 ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	17 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5			16 ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	16 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5
996T	Maximum				16 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5				18 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5				16 ch 42: 12.5, ch 58, 12.5 ch 106: 12.5
	Nominal				15 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5				17 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5				15 ch 42: 11.5, ch 58, 11.5 ch 106: 11.5

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1.2.2 Reduced 802.11ax RU WLAN Output Power

IEEE 802.11 ax RU													
Tones		SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
		2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
Ch & RU index													
26T	Maximum	14	11	11	11	14	11	11	11	14	11	11	11
	Nominal	13	10	10	10	13	10	10	10	13	10	10	10
52T	Maximum	16	13	13	13	16	13	13	13	16	13	13	13
	Nominal	15	12	12	12	15	12	12	12	15	12	12	12
106T	Maximum	17	14	14	14	17	14	14	14	18	14	14	14
	Nominal	16	13	13	13	16	13	13	13	17	13	13	13
242T	Maximum	17	14	14	14	17	14	14	14	18	17	17	17
		ch 1: 16		ch 38: 13	ch 42: 12, ch 58, 12.5 ch 106: 12.5	ch 1: 16		ch 38: 13	ch 42: 12, ch 58, 12.5	ch 1: 15, ch 11, 13.5	ch 36: 15, ch 64: 16	ch 38: 13, ch 62: 14, ch 102: 14 ch 118: 15	ch 42: 12, ch 58, 12.5 ch 106: 12.5
	Nominal	16	13	13	13	16	13	13	13	17	16	16	16
		Ch 1: 15		ch 38: 12.5, Ch.62: 12.5, Ch.102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5	Ch 1: 15		ch 38: 12.5, Ch.62: 12.5, Ch.102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5	ch 1: 15, ch 11: 16	ch 36: 15, ch 64: 15.5	ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5
484T	Maximum			14	14			14	14			17	17
	Nominal			13	13			13	13			16	16
996T	Maximum				14				14				16
	Nominal				13				13				15

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1.2.3 Maximum 802.11ax RU WLAN Output Power During Conditions with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN

		IEEE 802.11 ax RU											
		SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
Tones		2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
Ch & RU index													
26T	Maximum	14	11	11	11	14	11	11	11	14	11	11	11
	Nominal	13	10	10	10	13	10	10	10	13	10	10	10
52T	Maximum	16	13	13	13	16	13	13	13	16	13	13	13
	Nominal	15	12	12	12	15	12	12	12	15	12	12	12
106T	Maximum	17	14	14	14	17	14	14	14	18	14	14	14
	Nominal	16	13	13	13	16	13	13	13	17	13	13	13
242T	Maximum	17	14	14	14	17	14	14	14	18	17	17	17
		ch 1: 16		ch 38: 13.5, Ch.62: 13.5, Ch.102: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5	ch 1: 16		ch 38: 13.5, Ch.62: 13.5, Ch.102: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5	ch 1: 16, ch 11, 17	ch 36: 16, ch 64: 16.5	ch 38: 13.5, ch 62: 13.5, ch 102: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5
	Nominal	16	13	13	13	16	13	13	13	17	16	16	16
		Ch 1: 15		ch 38: 12.5, Ch.62: 12.5, Ch.102: 11.5	ch 42: 11.5, ch 58, 11.5, ch 106: 11.5	Ch 1: 15		ch 38: 12.5, Ch.62: 12.5, Ch.102: 11.5	ch 42: 11.5, ch 58, 11.5, ch 106: 11.5	ch 1: 15, ch 11: 16	ch 36: 15, ch 64: 15.5	ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	ch 42: 11.5, ch 58, 11.5, ch 106: 11.5
484T	Maximum			14	14			14	14			17	17
				ch 38: 13.5, Ch.62: 13.5, Ch.102: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5			ch 38: 13.5, Ch.62: 13.5, Ch.102: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5			ch 38: 13.5, ch 62: 13.5, ch 102: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5
996T	Maximum			14	14			14	14			16	16
				ch 42: 12.5, ch 58, 12.5, ch 106: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5			ch 42: 12.5, ch 58, 12.5, ch 106: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5			ch 42: 12.5, ch 58, 12.5, ch 106: 12.5	ch 42: 12.5, ch 58, 12.5, ch 106: 12.5
996T	Nominal			13	13			13	13			15	15
				ch 42: 11.5, ch 58, 11.5, ch 106: 11.5	ch 42: 11.5, ch 58, 11.5, ch 106: 11.5			ch 42: 11.5, ch 58, 11.5, ch 106: 11.5	ch 42: 11.5, ch 58, 11.5, ch 106: 11.5			ch 42: 11.5, ch 58, 11.5, ch 106: 11.5	ch 42: 11.5, ch 58, 11.5, ch 106: 11.5

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1.2.4 Reduced 802.11ax RU WLAN Output Power During Conditions with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN

		IEEE 802.11 ax RU											
		SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
Tones		2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
Ch & RU index													
26T	Maximum	14	11	11	11	14	11	11	11	14	11	11	11
	Nominal	13	10	10	10	13	10	10	10	13	10	10	10
52T	Maximum	14	13	13	13	14	13	13	13	16	13	13	13
	Nominal	13	12	12	12	13	12	12	12	15	12	12	12
106T	Maximum	14	14	14	14	14	14	14	14	17	14	14	14
	Nominal	13	13	13	13	13	13	13	13	16	13	13	13
242T	Maximum	14	14	14	14	14	14	14	14	17	17	17	17
				ch 38: 13.5, Ch.62: 13.5, Ch.102: 12.5	ch 42: 12.5, ch 58, 12.5 ch 106: 12.5			ch 38: 13.5, Ch.62: 13.5, Ch.102: 12.5	ch 42: 12.5, ch 58, 12.5 ch 106: 12.5	ch 1: 16	ch 36: 16, ch 64: 16.5	ch 38: 13.5, ch 62: 13.5, ch 102: 12.5	ch 42: 12.5, ch 58, 12.5 ch 106: 12.5
	Nominal	13	13	13	13	13	13	13	13	16	16	16	16
				ch 38: 12.5, Ch.62: 12.5, Ch.102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5			ch 38: 12.5, Ch.62: 12.5, Ch.102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5	ch 1: 15	ch 36: 15, ch 64: 15.5	ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5
484T	Maximum			14	14			14	14			17	17
				ch 38: 13.5, Ch.62: 13.5, Ch.102: 12.5	ch 42: 12.5, ch 58, 12.5 ch 106: 12.5			ch 38: 13.5, Ch.62: 13.5, Ch.102: 12.5	ch 42: 12.5, ch 58, 12.5 ch 106: 12.5			ch 38: 13, ch 62: 14, ch 102: 14 ch 118: 15	ch 42: 12, ch 58, 12.5 ch 106: 12.5
	Nominal			13	13			13	13			16	16
				ch 38: 12.5, Ch.62: 12.5, Ch.102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5			ch 38: 12.5, Ch.62: 12.5, Ch.102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5			ch 38: 12.5, ch 62: 12.5, ch 102: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5
996T	Maximum			14	14			14	14			16	16
				ch 42: 12.5, ch 58, 12.5 ch 106: 12.5	ch 42: 12.5, ch 58, 12.5 ch 106: 12.5			ch 42: 12.5, ch 58, 12.5 ch 106: 12.5	ch 42: 12, ch 58, 12.5 ch 106: 12.5				
	Nominal			13	13			13	13			15	15
				ch 42: 11.5, ch 58, 11.5 ch 106: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5			ch 42: 11.5, ch 58, 11.5 ch 106: 11.5	ch 42: 11.5, ch 58, 11.5 ch 106: 11.5				

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1.3 IEEE 802.11ax Measured Powers

Table 1
Maximum 2.4 GHz 802.11ax RU Output Power – Ant 1

RU Index	Tonnes	Ch. 1	Ch. 6	Ch. 11
		Average	Average	Average
0	26	13.43	13.76	13.41
4	26	13.98	13.86	13.55
8	26	13.82	13.94	13.73
37	52	15.55	15.68	15.78
38	52	15.98	15.88	15.57
40	52	15.97	15.91	15.84
53	106	17.64	17.96	17.47
54	106	17.59	17.79	17.51
61	242	15.64	17.71	16.87

Table 2
Maximum 2.4 GHz 802.11ax RU Output Power – Ant 2

RU Index	Tonnes	Ch. 1	Ch. 6	Ch. 11
		Average	Average	Average
0	26	13.82	13.73	13.73
4	26	13.51	13.85	13.96
8	26	13.96	13.68	13.98
37	52	15.91	15.65	15.87
38	52	15.48	15.81	15.94
40	52	15.72	15.97	15.91
53	106	17.77	17.63	17.87
54	106	17.5	17.56	17.85
61	242	15.61	17.89	16.96

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Table 3
Maximum 5 GHz 802.11ax RU Output Power – Ant 1

5GHz - 20MHz													
RU Index	Tonnes	UNII 1			UNII 2A			UNII 2C			UNII 3		
		Ch. 36	Ch. 40	Ch. 48	Ch. 52	Ch. 56	Ch. 64	Ch. 100	Ch. 120	Ch. 144	Ch. 149	Ch. 157	U3 - Ch. 165
		Average											
0	26	10.97	10.68	10.93	10.72	10.91	10.69	10.88	10.75	10.66	10.80	10.66	10.77
4	26	10.88	10.98	10.56	10.63	10.78	10.98	10.71	10.57	10.93	10.62	10.59	10.68
8	26	10.81	10.96	10.48	10.97	10.98	10.82	10.94	10.83	10.79	10.73	10.75	10.73
37	52	12.84	12.97	12.76	12.58	12.68	12.97	12.78	12.52	12.75	12.96	12.97	12.68
38	52	12.75	12.73	12.98	12.81	12.97	12.68	12.92	12.79	12.94	12.64	12.69	12.93
40	52	12.85	12.76	12.94	12.73	12.98	12.61	12.87	12.73	12.96	12.99	12.98	12.81
53	106	14.98	14.57	14.74	14.66	14.66	14.97	14.95	14.96	14.77	14.94	14.81	14.61
54	106	14.71	14.75	14.97	14.80	14.87	14.59	14.72	14.99	14.82	14.81	14.76	14.68
61	242	15.86	17.83	17.95	17.75	17.91	16.47	17.36	17.97	17.76	17.83	17.72	17.94

5GHz - 40MHz											
RU Index	Tonnes	UNII 1		UNII 2A		UNII 2C			UNII 3		
		Ch. 38	Ch. 46	Ch. 54	Ch. 62	Ch. 102	Ch. 118	Ch. 142	Ch. 151	Ch. 159	
		Average									
0	26	10.84	10.72	10.96	10.95	10.93	10.61	10.81	10.94	10.83	
8	26	10.91	10.89	10.61	10.97	10.97	10.84	10.97	10.67	10.99	
17	26	10.97	10.68	10.77	10.72	10.81	10.76	10.93	10.98	10.54	
37	52	12.80	12.97	12.94	12.58	12.64	12.65	12.71	12.94	12.83	
40	52	12.64	12.99	12.98	12.81	12.91	12.72	12.78	12.98	12.87	
44	52	12.73	12.53	12.83	12.84	12.61	12.79	12.83	12.68	12.97	
53	106	14.81	14.64	14.76	14.93	14.79	14.81	14.86	14.72	14.65	
54	106	14.94	14.97	14.68	14.76	14.63	14.97	14.93	14.93	14.73	
56	106	14.87	14.93	14.56	14.59	14.80	14.99	14.91	14.77	14.75	
61	242	13.48	17.97	17.94	13.37	12.38	17.78	17.82	17.91	17.98	
62	242	13.33	17.84	17.98	13.29	12.48	17.81	17.69	17.84	17.99	
65	484	13.23	16.71	16.86	13.47	12.36	16.68	16.73	16.73	16.84	

5GHz - 80MHz							
RU Index	Tonnes	UNII 1	UNII 2A	UNII 2C		UNII 3	
		Ch. 42	Ch. 58	Ch. 106	Ch. 122	Ch. 138	Ch. 155
		Average	Average	Average	Average	Average	Average
0	26	10.87	10.88	10.65	10.93	10.62	10.64
17	26	10.71	10.94	10.59	10.73	10.72	10.95
36	26	10.76	10.86	10.81	10.70	10.99	10.69
37	52	12.89	12.84	12.96	12.68	12.87	12.61
44	52	12.60	12.63	12.75	12.81	12.81	12.53
52	52	12.57	12.72	12.92	12.97	12.84	12.74
53	106	14.74	14.57	14.72	14.73	14.79	14.62
56	106	14.64	14.60	14.86	14.81	14.82	14.97
60	106	14.91	14.96	14.98	14.94	14.81	14.75
61	242	12.48	12.47	12.23	17.78	17.91	17.94
62	242	12.39	12.31	12.05	17.94	17.74	17.76
64	242	12.42	12.49	12.44	17.81	17.83	17.84
65	484	12.11	12.30	12.13	16.78	16.90	16.77
66	484	12.24	12.46	12.41	16.97	16.92	16.82
67	996	12.48	12.49	12.21	15.86	15.83	15.78

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Table 4
Maximum 5 GHz 802.11ax RU Output Power – Ant 2

5GHz - 20MHz													
RU Index	Tonnes	UNII 1			UNII 2A			UNII 2C			UNII 3		
		Ch. 36	Ch. 40	Ch. 48	Ch. 52	Ch. 56	Ch. 64	Ch. 100	Ch. 120	Ch. 144	Ch. 149	Ch. 157	U3 - Ch. 165
		Average											
0	26	10.71	10.79	10.96	10.90	10.91	10.97	10.97	10.91	10.78	10.97	10.92	10.59
4	26	10.80	10.65	10.48	10.96	10.64	10.76	10.73	10.96	10.94	10.69	10.75	10.92
8	26	10.97	10.93	10.72	10.64	10.98	10.88	10.95	10.55	10.99	10.71	10.82	10.99
37	52	12.96	12.96	12.97	12.96	12.58	12.74	12.84	12.97	12.97	12.69	12.97	12.89
38	52	12.79	12.95	12.65	12.69	12.74	12.88	12.93	12.95	12.99	12.77	12.79	12.97
40	52	12.77	12.94	12.94	12.92	12.59	12.70	12.98	12.71	12.76	12.92	12.91	12.73
53	106	14.75	14.92	14.57	14.82	14.96	14.64	14.97	14.97	14.72	14.98	14.91	14.68
54	106	14.82	14.96	14.61	14.77	14.99	14.56	14.91	14.68	14.67	14.75	14.86	14.99
61	242	15.93	17.62	17.80	17.82	17.92	16.06	17.24	17.96	17.94	17.62	17.76	17.96

5GHz - 40MHz											
RU Index	Tonnes	UNII 1		UNII 2A		UNII 2C			UNII 3		
		Ch. 38	Ch. 46	Ch. 54	Ch. 62	Ch. 102	Ch. 118	Ch. 142	Ch. 151	Ch. 159	
		Average									
0	26	10.84	10.96	10.72	10.79	10.92	10.65	10.73	10.73	10.96	
8	26	10.97	10.93	10.65	10.69	10.76	10.73	10.91	10.89	10.82	
17	26	10.81	10.76	10.67	10.64	10.89	10.84	10.97	10.76	10.71	
37	52	12.77	12.87	12.96	12.82	12.66	12.82	12.91	12.84	12.93	
40	52	12.61	12.97	12.88	12.97	12.93	12.96	12.63	12.98	12.98	
44	52	12.67	12.74	12.97	12.68	12.75	12.67	12.72	12.73	12.72	
53	106	14.86	14.83	14.97	14.79	14.93	14.96	14.96	14.95	14.77	
54	106	14.97	14.94	14.66	14.83	14.81	14.92	14.93	14.82	14.69	
56	106	14.77	14.78	14.99	14.63	14.97	14.84	14.92	14.80	14.92	
61	242	13.24	17.96	17.82	13.16	12.31	17.91	17.97	17.74	17.98	
62	242	13.27	17.90	17.89	13.12	12.39	17.96	17.98	17.82	17.97	
65	484	13.47	16.86	16.68	13.39	12.33	16.94	16.96	16.95	16.69	

5GHz - 80MHz							
RU Index	Tonnes	UNII 1	UNII 2A	UNII 2C		UNII 3	
		Ch. 42	Ch. 58	Ch. 106	Ch. 122	Ch. 138	Ch. 155
		Average	Average	Average	Average	Average	Average
0	26	10.83	10.97	10.99	10.98	10.98	10.96
17	26	10.67	10.69	10.65	10.95	10.94	10.74
36	26	10.53	10.79	10.96	10.82	10.79	10.99
37	52	12.97	12.74	12.84	12.80	12.73	12.72
44	52	12.95	12.80	12.98	12.86	12.83	12.77
52	52	12.89	12.57	12.94	12.83	12.76	12.65
53	106	14.91	14.69	14.64	14.97	14.97	14.83
56	106	14.88	14.75	14.97	14.93	14.86	14.70
60	106	14.90	14.71	14.98	14.87	14.83	14.68
61	242	12.13	12.41	12.31	17.72	17.63	17.92
62	242	12.23	12.44	12.49	17.69	17.60	17.97
64	242	12.14	12.38	12.38	17.61	17.62	17.85
65	484	12.24	12.44	12.31	17.95	17.95	17.85
66	484	12.28	12.49	12.38	17.63	17.98	17.84
67	996	12.48	12.48	12.06	17.65	17.65	17.92

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