

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
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CAS-No. 9005-64-5	<50 %	polyoxyethylenesorbitan monolaurate
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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.

Measurement Certificate / Material Test

Item Name	Head Tissue Simulating Liquid (HBBL1900-3800V3)
Product No.	SL AAH 196 AB (Batch: 160330-1)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation

Validation results were within $\pm 2.5\%$ towards the target values of Methanol.

Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

Test Condition

Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	30-Mar-16
Operator	WM

Additional Information

TSL Density 1.054 g/cm³

TSL Heat-capacity 3.389 kJ/(kg·K)

f [MHz]	ε'	ε''	sigma	eps-sigma	Δ-eps	Δ-sigma	Diff to Target [%]
1900	40.7	12.3	1.3	40.0	1.4	1.7	-6.9
1950	40.5	12.5	1.4	40.0	1.4	1.2	-3.3
2000	40.3	12.6	1.4	40.0	1.4	0.8	0.1
2050	40.1	12.7	1.5	39.9	1.4	0.6	0.5
2100	39.9	12.9	1.5	39.8	1.5	0.3	0.9
2150	39.8	13.0	1.6	39.7	1.5	0.1	1.2
2200	39.6	13.1	1.6	39.6	1.6	-0.2	1.7
2250	39.4	13.2	1.7	39.6	1.6	-0.3	2.0
2300	39.2	13.3	1.7	39.5	1.7	-0.6	2.4
2350	39.1	13.5	1.8	39.4	1.7	-0.8	2.9
2400	38.9	13.6	1.8	39.3	1.8	-1.0	3.4
2450	38.7	13.7	1.9	39.2	1.8	-1.2	4.0
2500	38.5	13.8	1.9	39.1	1.9	-1.5	3.9
2550	38.3	13.9	2.0	39.1	1.9	-1.9	3.5
2600	38.2	14.1	2.0	39.0	2.0	-2.2	3.8
2650	37.9	14.2	2.1	38.9	2.0	-2.6	3.8
2700	37.8	14.3	2.2	38.9	2.1	-2.8	3.9
2750	37.5	14.4	2.2	38.9	2.1	-3.3	3.6
2800	37.4	14.5	2.3	38.9	2.2	-3.6	3.6
2850	37.2	14.6	2.3	38.7	2.2	-3.9	3.7
2900	37.0	14.7	2.4	38.6	2.3	-4.1	3.8
2950	36.8	14.8	2.4	38.6	2.3	-4.5	3.7
3000	36.6	14.9	2.5	38.5	2.4	-4.8	3.6
3050	36.4	15.0	2.5	38.4	2.5	-5.2	3.8
3100	36.2	15.1	2.6	38.4	2.5	-5.6	3.8
3150	36.1	15.2	2.7	38.3	2.6	-5.9	4.0
3200	35.9	15.2	2.7	38.3	2.6	-6.2	3.9
3250	35.7	15.3	2.8	38.2	2.7	-6.6	4.1
3300	35.5	15.3	2.8	38.2	2.7	-6.9	4.0
3350	35.4	15.4	2.9	38.1	2.8	-7.2	4.2
3400	35.2	15.5	2.9	38.0	2.8	-7.5	4.1
3450	35.0	15.5	3.0	38.0	2.9	-7.8	4.2
3500	34.9	15.6	3.0	37.9	2.9	-8.1	4.2
3550	34.7	15.6	3.1	37.9	3.0	-8.4	4.2
3600	34.5	15.7	3.1	37.8	3.0	-8.7	4.4
3650	34.4	15.8	3.2	37.8	3.1	-9.0	4.3
3700	34.2	15.8	3.3	37.7	3.1	-9.3	4.5
3750	34.1	15.9	3.3	37.6	3.2	-9.5	4.4
3800	33.9	15.9	3.4	37.6	3.2	-9.9	4.7
3850	33.7	16.0	3.4	37.5	3.3	-10.1	4.7

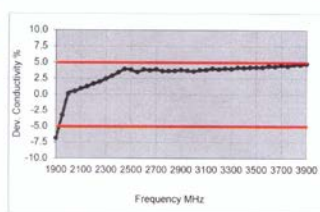
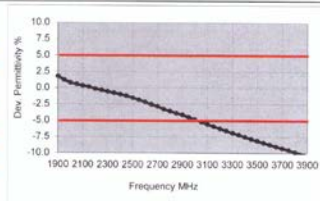


Figure D-5
2.4 GHz Head Tissue Equivalent Matter

FCC ID ZNFG710VM		SAR EVALUATION REPORT		Approved by: Quality Manager
Test Dates: 02/28/18 - 03/19/18	DUT Type: Portable Handset			APPENDIX D: Page 4 of 5

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 5 GHz Head Tissue Equivalent Matter

Note: 5GHz 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.

Measurement Certificate / Material Test

Item Name	Head Tissue Simulating Liquid (HBBL3500-5800V5)
Product No.	SL AAH 502 AG (Batch: 160331-2)
Manufacturer	SPEAG
Measurement Method	
TSL dielectric parameters measured using calibrated DAK probe.	
Setup Validation	
Validation results were within $\pm 2.5\%$ towards the target values of Methanol.	
Target Parameters	
Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.	
Test Condition	
Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	4-Apr-16
Operator	WM
Additional Information	
TSL Density	0.985 g/cm ³
TSL Heat-capacity	3.383 kJ/(kg*K)

	Measured			Target		Diff.to Target [%]	
f [MHz]	ϵ'	ϵ''	σ	eps	sigma	Δ eps	Δ sigma
3400	39.0	15.12	2.86	38.0	2.81	2.5	1.8
3500	38.8	15.09	2.94	37.9	2.91	2.3	0.9
3600	38.7	15.08	3.02	37.8	3.02	2.3	0.2
3700	38.6	15.08	3.10	37.7	3.12	2.4	-0.6
3800	38.4	15.07	3.19	37.6	3.22	2.2	-0.9
3900	38.3	15.09	3.27	37.5	3.32	2.2	-1.6
4000	38.2	15.10	3.36	37.4	3.43	2.3	-1.9
4100	38.1	15.13	3.45	37.2	3.53	2.3	-2.2
4200	38.0	15.18	3.55	37.1	3.63	2.3	-2.2
4300	37.8	15.22	3.64	37.0	3.73	2.1	-2.5
4400	37.7	15.29	3.74	36.9	3.84	2.2	-2.5
4500	37.6	15.34	3.84	36.8	3.94	2.2	-2.5
4600	37.4	15.41	3.94	36.7	4.04	2.0	-2.5
4700	37.3	15.47	4.05	36.6	4.14	2.0	-2.2
4800	37.1	15.53	4.15	36.4	4.25	1.8	-2.2
4850	37.1	15.57	4.20	36.4	4.30	2.0	-2.2
4900	37.0	15.60	4.25	36.3	4.35	1.8	-2.2
4950	36.9	15.62	4.30	36.3	4.40	1.7	-2.2
5000	36.8	15.66	4.35	36.2	4.45	1.6	-2.2
5050	36.8	15.68	4.40	36.2	4.50	1.8	-2.2
5100	36.7	15.73	4.46	36.1	4.55	1.7	-2.0
5150	36.6	15.75	4.51	36.0	4.60	1.5	-2.0
5200	36.5	15.78	4.57	36.0	4.66	1.4	-1.8
5250	36.4	15.80	4.62	35.9	4.71	1.3	-1.8
5300	36.4	15.84	4.67	35.9	4.76	1.5	-1.8
5350	36.3	15.85	4.72	35.8	4.81	1.4	-1.8
5400	36.2	15.88	4.77	35.8	4.86	1.2	-1.9
5450	36.2	15.90	4.82	35.7	4.91	1.4	-1.9
5500	36.1	15.91	4.87	35.6	4.96	1.3	-1.9
5550	36.0	15.95	4.93	35.6	5.01	1.2	-1.7
5600	35.9	15.99	4.98	35.5	5.07	1.0	-1.7
5650	35.9	16.02	5.04	35.5	5.12	1.2	-1.5
5700	35.8	16.05	5.09	35.4	5.17	1.1	-1.5
5750	35.7	16.09	5.15	35.4	5.22	1.0	-1.3
5800	35.7	16.10	5.20	35.3	5.27	1.1	-1.3
5850	35.6	16.14	5.25	35.3	5.34	0.8	-1.6
5900	35.5	16.15	5.30	35.3	5.40	0.6	-1.9

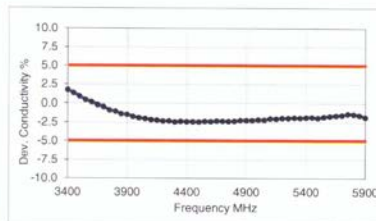
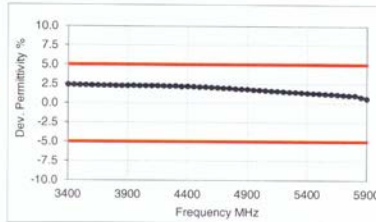


Figure D-7

5GHz Head Tissue Equivalent Matter

FCC ID ZNFG710VM		SAR EVALUATION REPORT		Approved by: Quality Manager
Test Dates: 02/28/18 - 03/19/18	DUT Type: Portable Handset			APPENDIX D: Page 5 of 5

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 TYPE	PROBE CAL. POINT	COND.	PERM.	CW VALIDATION			MOD. VALIDATION		
						(σ)	(ε _r)	SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
E	750	3/11/2018	3213	ES3DV3	750	Head	0.890	40.788	PASS	PASS	PASS	N/A	N/A
E	835	3/5/2018	3213	ES3DV3	835	Head	0.925	43.335	PASS	PASS	PASS	GMSK	PASS
E	1750	3/2/2018	3213	ES3DV3	1750	Head	1.397	38.415	PASS	PASS	PASS	N/A	N/A
G	1900	8/31/2017	3332	ES3DV3	1900	Head	1.457	40.398	PASS	PASS	PASS	GMSK	PASS
H	2450	9/5/2017	7410	EX3DV4	2450	Head	1.869	38.852	PASS	PASS	PASS	OFDM/TDD	PASS
H	2600	9/5/2017	7410	EX3DV4	2600	Head	2.037	38.270	PASS	PASS	PASS	TDD	PASS
K	2450	5/2/2017	7406	EX3DV4	2450	Head	1.873	39.496	PASS	PASS	PASS	OFDM/TDD	PASS
H	5250	1/31/2018	3589	EX3DV4	5250	Head	4.516	36.066	PASS	PASS	PASS	OFDM	N/A
H	5600	1/31/2018	3589	EX3DV4	5600	Head	4.869	35.597	PASS	PASS	PASS	OFDM	N/A
H	5750	1/31/2018	3589	EX3DV4	5750	Head	5.112	35.351	PASS	PASS	PASS	OFDM	N/A
K	750	5/3/2017	7406	EX3DV4	750	Body	0.952	53.745	PASS	PASS	PASS	N/A	N/A
J	835	3/4/2018	3914	EX3DV4	835	Body	0.998	52.865	PASS	PASS	PASS	GMSK	PASS
E	835	3/16/2018	3213	ES3DV3	835	Body	0.968	53.713	PASS	PASS	PASS	GMSK	PASS
K	1750	5/1/2017	7406	EX3DV4	1750	Body	1.514	51.685	PASS	PASS	PASS	N/A	N/A
H	1900	9/5/2017	7410	EX3DV4	1900	Body	1.580	52.546	PASS	PASS	PASS	GMSK	PASS
J	1900	3/9/2018	3914	EX3DV4	1900	Body	1.533	53.731	PASS	PASS	PASS	GMSK	PASS
K	2450	5/3/2017	7406	EX3DV4	2450	Body	1.995	50.521	PASS	PASS	PASS	OFDM/TDD	PASS
K	2600	5/3/2017	7406	EX3DV4	2600	Body	2.203	49.895	PASS	PASS	PASS	TDD	PASS
G	2450	10/10/2017	3332	ES3DV3	2450	Body	2.040	51.023	PASS	PASS	PASS	OFDM/TDD	PASS
D	5250	10/24/2017	7308	EX3DV4	5250	Body	5.405	48.529	PASS	PASS	PASS	OFDM	N/A
D	5600	10/24/2017	7308	EX3DV4	5600	Body	5.910	47.818	PASS	PASS	PASS	OFDM	N/A
D	5750	10/24/2017	7308	EX3DV4	5750	Body	6.135	47.546	PASS	PASS	PASS	OFDM	N/A

Table E-2
SAR System Validation Summary – 10g

SAR SYSTEM #	FREQ. [MHz]	DATE	PROBE SN	PROBE TYPE	PROBE CAL. POINT	COND.	PERM.	CW VALIDATION			MOD. VALIDATION		
						(σ)	(ε _r)	SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
I	1750	3/12/2018	3287	ES3DV3	1750	Body	1.462	52.352	PASS	PASS	PASS	N/A	N/A
H	1750	8/30/2017	7410	EX3DV4	1750	Body	1.532	51.024	PASS	PASS	PASS	N/A	N/A
J	1900	3/9/2018	3914	EX3DV4	1900	Body	1.533	53.731	PASS	PASS	PASS	GMSK	PASS
D	5250	10/24/2017	7308	EX3DV4	5250	Body	5.405	48.529	PASS	PASS	PASS	OFDM	N/A
D	5600	10/24/2017	7308	EX3DV4	5600	Body	5.910	47.818	PASS	PASS	PASS	OFDM	N/A
D	5750	10/24/2017	7308	EX3DV4	5750	Body	6.135	47.546	PASS	PASS	PASS	OFDM	N/A

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.

FCC ID ZNFG710V/M		SAR EVALUATION REPORT		Approved by: Quality Manager
Test Dates: 02/28/18 - 03/19/18	DUT Type: Portable Handset			APPENDIX E: Page 1 of 1

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.

1.1 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.

1.2 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 all relevant frequency bands.
4. Steps 1 through 3 were repeated for all distance-based power reduction mechanisms.

FCC ID: ZNFG710VM	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Test Dates: 02/28/18 - 03/19/18	DUT Type: Portable Handset	APPENDIX G: Page 1 of 2

1.3 Main Antenna Verification Summary

Table G-1
Power Measurement Verification for Main Antenna

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
		Un-triggered (Max)	Mechanism #1 (Reduced)
Proximity Sensor	UMTS B4	24.79	23.98
Proximity Sensor	UMTS B2	25.29	24.27
Proximity Sensor	CDMA BC1	24.98	23.82
Proximity Sensor	LTE B4	24.72	23.94
Proximity Sensor	LTE B66	24.85	24.05
Proximity Sensor	LTE B2	24.87	23.89
Proximity Sensor	LTE B25	25.02	24.11

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	
Proximity Sensor	Phablet - Back Side	Mid	9	10	6
Proximity Sensor	Phablet - Front Side	Mid	9	10	3
Proximity Sensor	Phablet - Bottom Edge	Mid	14	16	7

*Note: Mid band refers to: CDMA BC1, UMTS B2/4, LTE B2/4/25/66

1.4 WIFI Verification Summary

Table G-3
Power Measurement Verification WIFI

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
		Un-triggered (Max)	Mechanism #1 (Reduced)
Held-to-Ear	802.11b	20.42	17.57
Held-to-Ear	802.11g	19.71	16.63
Held-to-Ear	802.11n (2.4GHz)	18.46	16.93

*Note: 802.11ac (2.4 GHz) was not capable of being measured due to equipment limitations.

FCC ID: ZNFG710VM	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Test Dates: 02/28/18 - 03/19/18	DUT Type: Portable Handset	APPENDIX G: Page 2 of 2

APPENDIX H: DOWNLINK LTE CA RF CONDUCTED POWERS

1.1 LTE Downlink Only Carrier Aggregation Test Reduction Methodology

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number of component carriers (CCs) supported by the product implementation. Per FCC Guidance, the following test reduction methodology was applied to determine the combinations required for conducted power measurements.

LTE DLCA Test Reduction Methodology:

- The supported combinations were arranged by the number of component carriers in columns.
- Any limitations on the PCC or SCC for each combination were identified alongside the combination (e.g. CA_2A-2A-4A-12A, but B12 can only be configured as a SCC).
- Power measurements were performed for "supersets" (LTE CA combinations with multiple components carriers) and any "subsets" (LTE CA combinations with fewer component carriers) that were not completely covered by the supersets.
- Only subsets that have the exact same components as a superset were excluded for measurement.
- When there were certain restrictions on component carriers that existed in the superset that were not applied for the subset, the subset configuration was additionally evaluated.
- Both inter-band and intra-band downlink carrier aggregation scenarios were considered.
- Downlink CA combinations for SISO and 4x4 Downlink MIMO operations were measured independently, per May 2017 TCBC Workshop notes.

Table 1 – Example of Exclusion Table for SISO Configurations

Example 1: Single-Entity Example					Example 2: Multi-Entity Example				
Year	SEC	Aggregated Owner Estimated (SEC)	Responsible	Completely Covered by Measurement Support	Year	SEC	Aggregated Owner Estimated (SEC)	Responsible	Completely Covered by Measurement Support
2021	CA 34	1.10, 1.20	SEC 46	Yes	2021	CA 34-34-34A	1.10, 1.20, 1.30, 1.40, 1.50, 1.60, 1.70, 1.80, 1.90, 2.00, 2.10, 2.20, 2.30, 2.40, 2.50, 2.60, 2.70, 2.80, 2.90, 3.00, 3.10, 3.20, 3.30, 3.40, 3.50, 3.60, 3.70, 3.80, 3.90, 4.00, 4.10, 4.20, 4.30, 4.40, 4.50, 4.60, 4.70, 4.80, 4.90, 5.00, 5.10, 5.20, 5.30, 5.40, 5.50, 5.60, 5.70, 5.80, 5.90, 6.00, 6.10, 6.20, 6.30, 6.40, 6.50, 6.60, 6.70, 6.80, 6.90, 7.00, 7.10, 7.20, 7.30, 7.40, 7.50, 7.60, 7.70, 7.80, 7.90, 8.00, 8.10, 8.20, 8.30, 8.40, 8.50, 8.60, 8.70, 8.80, 8.90, 9.00, 9.10, 9.20, 9.30, 9.40, 9.50, 9.60, 9.70, 9.80, 9.90, 10.00, 10.10, 10.20, 10.30, 10.40, 10.50, 10.60, 10.70, 10.80, 10.90, 11.00, 11.10, 11.20, 11.30, 11.40, 11.50, 11.60, 11.70, 11.80, 11.90, 12.00, 12.10, 12.20, 12.30, 12.40, 12.50, 12.60, 12.70, 12.80, 12.90, 13.00, 13.10, 13.20, 13.30, 13.40, 13.50, 13.60, 13.70, 13.80, 13.90, 14.00, 14.10, 14.20, 14.30, 14.40, 14.50, 14.60, 14.70, 14.80, 14.90, 15.00, 15.10, 15.20, 15.30, 15.40, 15.50, 15.60, 15.70, 15.80, 15.90, 16.00, 16.10, 16.20, 16.30, 16.40, 16.50, 16.60, 16.70, 16.80, 16.90, 17.00, 17.10, 17.20, 17.30, 17.40, 17.50, 17.60, 17.70, 17.80, 17.90, 18.00, 18.10, 18.20, 18.30, 18.40, 18.50, 18.60, 18.70, 18.80, 18.90, 19.00, 19.10, 19.20, 19.30, 19.40, 19.50, 19.60, 19.70, 19.80, 19.90, 20.00, 20.10, 20.20, 20.30, 20.40, 20.50, 20.60, 20.70, 20.80, 20.90, 21.00, 21.10, 21.20, 21.30, 21.40, 21.50, 21.60, 21.70, 21.80, 21.90, 22.00, 22.10, 22.20, 22.30, 22.40, 22.50, 22.60, 22.70, 22.80, 22.90, 23.00, 23.10, 23.20, 23.30, 23.40, 23.50, 23.60, 23.70, 23.80, 23.90, 24.00, 24.10, 24.20, 24.30, 24.40, 24.50, 24.60, 24.70, 24.80, 24.90, 25.00, 25.10, 25.20, 25.30, 25.40, 25.50, 25.60, 25.70, 25.80, 25.90, 26.00, 26.10, 26.20, 26.30, 26.40, 26.50, 26.60, 26.70, 26.80, 26.90, 27.00, 27.10, 27.20, 27.30, 27.40, 27.50, 27.60, 27.70, 27.80, 27.90, 28.00, 28.10, 28.20, 28.30, 28.40, 28.50, 28.60, 28.70, 28.80, 28.90, 29.00, 29.10, 29.20, 29.30, 29.40, 29.50, 29.60, 29.70, 29.80, 29.90, 30.00, 30.10, 30.20, 30.30, 30.40, 30.50, 30.60, 30.70, 30.80, 30.90, 31.00, 31.10, 31.20, 31.30, 31.40, 31.50, 31.60, 31.70, 31.80, 31.90, 32.00, 32.10, 32.20, 32.30, 32.40, 32.50, 32.60, 32.70, 32.80, 32.90, 33.00, 33.10, 33.20, 33.30, 33.40, 33.50, 33.60, 33.70, 33.80, 33.90, 34.00, 34.10, 34.20, 34.30, 34.40, 34.50, 34.60, 34.70, 34.80, 34.90, 35.00, 35.10, 35.20, 35.30, 35.40, 35.50, 35.60, 35.70, 35.80, 35.90, 36.00, 36.10, 36.20, 36.30, 36.40, 36.50, 36.60, 36.70, 36.80, 36.90, 37.00, 37.10, 37.20, 37.30, 37.40, 37.50, 37.60, 37.70, 37.80, 37.90, 38.00, 38.10, 38.20, 38.30, 38.40, 38.50, 38.60, 38.70, 38.80, 38.90, 39.00, 39.10, 39.20, 39.30, 39.40, 39.50, 39.60, 39.70, 39.80, 39.90, 40.00, 40.10, 40.20, 40.30, 40.40, 40.50, 40.60, 40.70, 40.80, 40.90, 41.00, 41.10, 41.20, 41.30, 41.40, 41.50, 41.60, 41.70, 41.80, 41.90, 42.00, 42.10, 42.20, 42.30, 42.40, 42.50, 42.60, 42.70, 42.80, 42.90, 43.00, 43.10, 43.20, 43.30, 43.40, 43.50, 43.60, 43.70, 43.80, 43.90, 44.00, 44.10, 44.20, 44.30, 44.40, 44.50, 44.60, 44.70, 44.80, 44.90, 45.00, 45.10, 45.20, 45.30, 45.40, 45.50, 45.60, 45.70, 45.80, 45.90, 46.00, 46.10, 46.20, 46.30, 46.40, 46.50, 46.60, 46.70, 46.80, 46.90, 47.00, 47.10, 47.20, 47.30, 47.40, 47.50, 47.60, 47.70, 47.80, 47.90, 48.00, 48.10, 48.20, 48.30, 48.40, 48.50, 48.60, 48.70, 48.80, 48.90, 49.00, 49.10, 49.20, 49.30, 49.40, 49.50, 49.60, 49.70, 49.80, 49.90, 50.00, 50.10, 50.20, 50.30, 50.40, 50.50, 50.60, 50.70, 50.80, 50.90, 51.00, 51.10, 51.20, 51.30, 51.40, 51.50, 51.60, 51.70, 51.80, 51.90, 52.00, 52.10, 52.20, 52.30, 52.40, 52.50, 52.60, 52.70, 52.80, 52.90, 53.00, 53.10, 53.20, 53.30, 53.40, 53.50, 53.60, 53.70, 53.80, 53.90, 54.00, 54.10, 54.20, 54.30, 54.40, 54.50, 54.60, 54.70, 54.80, 54.90, 55.00, 55.10, 55.20, 55.30, 55.40, 55.50, 55.60, 55.70, 55.80, 55.90, 56.00, 56.10, 56.20, 56.30, 56.40, 56.50, 56.60, 56.70, 56.80, 56.90, 57.00, 57.10, 57.20, 57.30, 57.40, 57.50, 57.60, 57.70, 57.80, 57.90, 58.00, 58.10, 58.20, 58.30, 58.40, 58.50, 58.60, 58.70, 58.80, 58.90, 59.00, 59.10, 59.20, 59.30, 59.40, 59.50, 59.60, 59.70, 59.80, 59.90, 60.00, 60.10, 60.20, 60.30, 60.40, 60.50, 60.60, 60.70, 60.80, 60.90, 61.00, 61.10, 61.20, 61.30, 61.40, 61.50, 61.60, 61.70, 61.80, 61.90, 62.00, 62.10, 62.20, 62.30, 62.40, 62.50, 62.60, 62.70, 62.80, 62.90, 63.00, 63.10, 63.20, 63.30, 63.40, 63.50, 63.60, 63.70, 63.80, 63.90, 64.00, 64.10, 64.20, 64.30, 64.40, 64.50, 64.60, 64.70, 64.80, 64.90, 65.00, 65.10, 65.20, 65.30, 65.40, 65.50, 65.60, 65.70, 65.80, 65.90, 66.00, 66.10, 66.20, 66.30, 66.40, 66.50, 66.60, 66.70, 66.80, 66.90, 67.00, 67.10, 67.20, 67.30, 67.40, 67.50, 67.60, 67.70, 67.80, 67.90, 68.00, 68.10, 68.20, 68.30, 68.40, 68.50, 68.60, 68.70, 68.80, 68.90, 69.00, 69.10, 69.20, 69.30, 69.40, 69.50, 69.60, 69.70, 69.80, 69.90, 70.00, 70.10, 70.20, 70.30, 70.40, 70.50, 70.60, 70.70, 70.80, 70.90, 71.00, 71.10, 71.20, 71.30, 71.40, 71.50, 71.60, 71.70, 71.80, 71.90, 72.00, 72.10, 72.20, 72.30, 72.40, 72.50, 72.60, 72.70, 72.80, 72.90, 73.00, 73.10, 73.20, 73.30, 73.40, 73.50, 73.60, 73.70, 73.80, 73.90, 74.00, 74.10, 74.20, 74.30, 74.40, 74.50, 74.60, 74.70, 74.80, 74.90, 75.00, 75.10, 75.20, 75.30, 75.40, 75.50, 75.60, 75.70, 75.80, 75.90, 76.00, 76.10, 76.20, 76.30, 76.40, 76.50, 76.60, 76.70, 76.80, 76.90, 77.00, 77.10, 77.20, 77.30, 77.40, 77.50, 77.60, 77.70, 77.80, 77.90, 78.00, 78.10, 78.20, 78.30, 78.40, 78.50, 78.60, 78.70, 78.80, 78.90, 79.00, 79.10, 79.20, 79.30, 79.40, 79.50, 79.60, 79.70, 79.80, 79.90, 80.00, 80.10, 80.20, 80.30, 80.40, 80.50, 80.60, 80.70, 80.80, 80.90, 81.00, 81.10, 81.20, 81.30, 81.40, 81.50, 81.60, 81.70, 81.80, 81.90, 82.00, 82.10, 82.20, 82.30, 82.40, 82.50, 82.60, 82.70, 82.80, 82.90, 83.00, 83.10, 83.20, 83.30, 83.40, 83.50, 83.60, 83.70, 83.80, 83.90, 84.00, 84.10, 84.20, 84.30, 84.40, 84.50, 84.60, 84.70, 84.80, 84.90, 85.00, 85.10, 85.20, 85.30, 85.40, 85.50, 85.60, 85.70, 85.80, 85.90, 86.00, 86.10, 86.20, 86.30, 86.40, 86.50, 86.60, 86.70, 86.80, 86.90, 87.00, 87.10, 87.20, 87.30, 87.40, 87.50, 87.60, 87.70, 87.80, 87.90, 88.00, 88.10, 88.20, 88.30, 88.40, 88.50, 88.60, 88.70, 88.80, 88.90, 89.00, 89.10, 89.20, 89.30, 89.40, 89.50, 89.60, 89.70, 89.80, 89.90, 90.00, 90.10, 90.20, 90.30, 90.40, 90.50, 90.60, 90.70, 90.80, 90.90, 91.00, 91.10, 91.20, 91.30, 91.40, 91.50, 91.60, 91.70, 91.80, 91.90, 92.00, 92.10, 92.20, 92.30, 92.40, 92.50, 92.60, 92.70, 92.80, 92.90, 93.00, 93.10, 93.20, 93.30, 93.40, 93.50, 93.60, 93.70, 93.80, 93.90, 94.00, 94.10, 94.20, 94.30, 94.40, 94.50, 94.60, 94.70, 94.80, 94.90, 95.00, 95.10, 95.20, 95.30, 95.40, 95.50, 95.60, 95.70, 95.80, 95.90, 96.00, 96.10, 96.20, 96.30, 96.40, 96.50, 96.60, 96.70, 96.80, 96.90, 97.00, 97.10, 97.20, 97.30, 97.40, 97.50, 97.60, 97.70, 97.80, 97.90, 98.00, 98.10, 98.20, 98.30, 98.40, 98.50, 98.60, 98.70, 98.80, 98.90, 99.00, 99.10, 99.20, 99.30, 99.40, 99.50, 99.60, 99.70, 99.80, 99.90, 100.00, 100.10, 100.20, 100.30, 100.40, 100.50, 100.60, 100.70, 100.80, 100.90, 101.00, 101.10, 101.20, 101.30, 101.40, 101.50, 101.60, 101.70, 101.80, 101.90, 102.00, 102.10, 102.20, 102.30, 102.40, 102.50, 102.60, 102.70, 102.80, 102.90, 103.00, 103.10, 103.20, 103.30, 103.40, 103.50, 103.60, 103.70, 103.80, 103.90, 104.00, 104.10, 104.20, 104.30, 104.40, 104.50, 104.60, 104.70, 104.80, 104.90, 105.00, 105.10, 105.20, 105.30, 105.40, 105.50, 105.60, 105.70, 105.80, 105.90, 106.00, 106.10, 106.20, 106.30, 106.40, 106.50, 106.60, 106.70, 106.80, 106.90, 107.00, 107.10, 107.20, 107.30, 107.40, 107.50, 107.60, 107.70, 107.80, 107.90, 108.00, 108.10, 108.20, 108.30, 108.40, 108.50, 108.60, 108.70, 108.80, 108.90, 109.00, 109.10, 109.20, 109.30, 109.40, 109.50, 109.60, 109.70, 109.80, 109.90, 110.00, 110.10, 110.20, 110.30, 110.40, 110.50, 110.60, 110.70, 110.80, 110.90, 111.00, 111.10, 111.20, 111.30, 111.40, 111.50, 111.60, 111.70, 111.80, 111.90, 112.00, 112.10, 112.20, 112.30, 112.40, 112.50, 112.60, 112.70, 112.80, 112.90, 113.00, 113.10, 113.20, 113.30, 113.40, 113.50, 113.60, 113.70, 113.80, 113.90, 114.00, 114.10, 114.20, 114.30, 114.40, 114.50, 114.60, 114.70, 114.80, 114.90, 115.00, 115.10, 115.20, 115.30, 115.40, 115.50, 115.60, 115.70, 115.80, 115.90, 116.00, 116.10, 116.20, 116.30, 116.40, 116.50, 116.60, 116.70, 116.80, 116.90, 117.00, 117.10, 117.20, 117.30, 117.40, 117.50, 117.60, 117.70, 117.80, 117.90, 118.00, 118.10, 118.20, 118.30, 118.40, 118.50, 118.60, 118.70, 118.80, 118.90, 119.00, 119.10, 119.20, 119.30, 119.40, 119.50, 119.60, 119.70, 119.80, 119.90, 120.00, 120.10, 120.20, 120.30, 120.40, 120.50, 120.60, 120.70, 120.80, 120.90, 121.00, 121.10, 121.20, 121.30, 121.40, 121.50, 121.60, 121.70, 121.80, 121.90, 122.00, 122.10, 122.20, 122.30, 122.40, 122.50, 122.60, 122.70, 122.80, 122.90, 123.00, 123.10, 123.20, 123.30, 123.40, 123.50, 123.60, 123.70, 123.80, 123.90, 124.00, 124.10, 124.20, 124.30, 124.40, 124.50, 124.60, 124.70, 124.80, 124.90, 125.00, 125.10, 125.20, 125.30, 125.40, 125.50, 125.60, 125.70, 125.80, 125.90, 126.00, 126.10, 126.20, 126.30, 126.40, 126.50, 126.60, 126.70, 126.80, 126.90, 127.00, 127.10, 127.20, 127.30, 127.40, 127.50, 127.60, 127.70, 127.80, 127.90, 128.00, 128.10, 128.20, 128.30, 128.40, 128.50, 128.60, 128.70, 128.80, 128.90, 129.00, 129.10, 129.20, 129.30, 129.40, 129.50, 129.60, 129.70, 129.80, 129.90, 130.00, 130.10, 130.20, 130.30, 130.40, 130.50, 130.60, 130.70, 130.80, 130.90, 131.00, 131.10, 131.20, 131.30, 131.40, 131.50, 131.60, 131.70, 131.80, 131.90, 132.00, 132.10, 132.20, 132.30, 132.40, 132.50, 132.60, 132.70, 132.80, 132.90, 133.00, 133.10, 133.20, 133.30, 133.40, 133.50, 133.60, 133.70, 133.80, 133.90, 134.00, 134.10, 134.20, 134.30, 134.40, 134.50, 134.60, 134.70, 134.80, 134.90, 135.00, 135.10, 135.20, 135.30, 135.40, 135.50, 135.60, 135.70, 135.80, 135.90, 136.00, 136.10, 136.20, 136.30, 136.40, 136.50, 136.60, 136.70, 136.80, 136.90, 137.00, 137.10, 137.20, 137.30, 137.40, 137.50, 137.60, 137.70, 137.80, 137.90, 138.00, 138.10, 138.20, 138.30, 138.40, 138.50, 138.60, 138.70, 138.80, 138.90, 139.00, 139.10, 139.20, 139.30, 139.40, 139.50, 139.60, 139.70, 139.80, 139.90, 140.00, 140.10, 140.20, 140.30, 140.40, 140.50, 140.60, 140.70, 140.80, 140.90, 141.00, 141.10, 141.20, 141.30, 141.40, 141.50, 141.60, 141.70, 141.80, 141.90, 142.00, 142.10, 142.20, 142.30, 142.40, 142.50, 142.60, 142.70, 142.80, 142.90, 143.00, 143.10, 143.20, 143.30, 143.40, 143.50, 143.60, 143.70, 143.80, 143.90, 144.00, 144.10, 144.20, 144.30, 144.40, 144.50, 144.60, 144.70, 144.80, 144.90, 145.00, 145.10, 145.20, 145.30, 145.40, 145.50, 145.60, 145.70, 145.80, 145.90, 146.00, 146.10, 146.20, 146.30, 146.40, 146.50, 146.60, 146.70, 146.80, 146.90, 147.00, 147.10, 147.20, 147.30, 147.40, 147.50, 147.60, 147.70, 147.80, 147.90, 148.00, 148.10, 148.20, 148.30, 148.40, 148.50, 148.60, 148.70, 148.80, 148.90, 149.00, 149.10, 149.20, 149.30, 149.40, 149.50, 149.60, 149.70, 149.80, 149.90, 150.00, 150.10, 150.20, 150.30, 150.40, 150.50, 150.60, 150.70, 150.80, 150.90, 151.00, 151.10, 151.20, 151.30, 151.40, 151.50, 151.60, 151.70, 151.80, 151.90, 152.00, 152.10, 152.20, 152.30, 152.40, 152.50, 152.60, 152.70, 152.80, 152.90, 153.00, 153.10, 153.20, 153.30, 153.40, 153.50, 153.60, 153.70, 153.80, 153.90, 154.00, 154.10, 154.20, 154.30, 154.40, 154.50, 154.60, 154.70, 154.80, 154.90, 155.00, 155.10, 155.20, 155.30, 155.40, 155.50, 155.60, 155.70, 155.80, 155.90, 156.00, 156.10, 156.20, 156.30, 156.40, 156.50, 156.60, 156.70, 156.80, 156.90, 157.00, 157.10, 157.20, 157.30, 157.40, 157.50, 157.60, 157.70, 157.80, 157.90, 158.00, 158.10, 158.20, 158.30, 158.40, 158.50, 158.60, 158.70, 158.80, 158.90, 159.00, 159.10, 159.20, 159.30, 159.40, 159.50, 159.60, 159.70, 159.80, 159.90, 160.00, 160.10, 160.20, 160.30, 160.40, 160.50, 160.60, 160.70, 160.80, 160.90, 161.00, 161.10, 161.20, 161.30, 161.40, 161.50, 161.60, 161.70, 161.80, 161.90, 162.00, 162.10, 162.20, 162.30, 162.40, 162.50, 162.60, 162.70, 162.80, 162.90, 163.00, 163.10, 163.20, 163.30, 163.40, 163.50, 163.60, 163.70, 163.80, 163.90, 164.00, 164.10, 164.20, 164.30, 164.40, 164.50, 164.60, 164.70, 164.80, 164.90, 165.00, 165.10, 165.20, 165.30, 165.40, 165.50, 165.60, 165.70, 165.80, 165.90, 166.00, 166.10, 166.20, 166.30, 166.40, 166.50, 166.60, 166.70, 166.8		

Table 2 – Example of Exclusion Table for 4x4 Downlink MIMO Configurations

Table 2: Example 1 - 5G NR FR1 - 100 MHz Channel Configuration						Table 3: Example 2 - 5G NR FR1 - 100 MHz Channel Configuration														
Index	BCC	Supported Channel Bandwidth (MHz)		Restriction	Completely Covered by Measurement Superset	Index	BCC	Supported Channel Bandwidth (MHz)			Restriction	Completely Covered by Measurement Superset	Index	ACC	Supported Channel Bandwidth (MHz)				Restriction	Completely Covered by Measurement Superset
		CC1	CC2					CC1	CC2	CC3					CC1	CC2	CC3	CC4		
ACC #M1	CA [2C]	5, 10, 15, 20	5, 10, 15, 20		ACC #M6	ACC #M1	CA [2A]-2A-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M1	CA [2A]-5B-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	No		
ACC #M2	CA [2A]-2A	5, 10, 15, 20	5, 10, 15, 20		ACC #M7	ACC #M2	CA [2A]-2A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10	No	ACC #M2	CA 2A-5B-[66A]	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	No		
ACC #M3	CA [2A]-[2A]	5, 10, 15, 20	5, 10, 15, 20		ACC #M8	ACC #M3	CA [2A]-[2A]-2A	5, 10, 15, 20	5, 10, 15, 20	5, 10	No	ACC #M3	CA [2A]-5A-[66B]	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15	No		
ACC #M4	CA [2A]-[4A] (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M9	ACC #M4	CA [2A]-[2A]-[2A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M4	CA [2A]-5A-[66B]	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15	No		
ACC #M5	CA [2A]-[4A] (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M10	ACC #M5	CA [2A]-[2A]-3A	5, 10, 15, 20	5, 10, 15, 20	5, 10	No	ACC #M5	CA [2A]-5A-[66C]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M6	CA [2A]-[4A]	5, 10, 15, 20	5, 10		ACC #M11	ACC #M6	CA [2C]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M6	CA [2A]-5A-[66C]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M7	CA [2A]-[2A] (1)	5, 10, 15, 20	5, 10		ACC #M12	ACC #M7	CA [2C]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M7	CA [2A]-5A-[66C]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M8	CA [2A]-[3A]	5, 10, 15, 20	5, 10		ACC #M13	ACC #M8	CA [2C]-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M8	CA [2A]-5A-[66C]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M9	5, 10	5, 10	5, 10		ACC #M14	ACC #M9	CA [2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M9	CA [2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M10	CA [2A]-[2A] (2)	5, 10, 15, 20	5, 10	B29 SCC Only	ACC #M15	ACC #M10	CA [2A]-2A-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M10	CA [2A]-2A-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M11	CA [2A]-[2A] (2)	5, 10, 15, 20	5, 10		ACC #M16	ACC #M11	CA [2A]-[2A]-[2A]	5, 10, 15, 20	5, 10, 15, 20	5, 10	No	ACC #M11	CA [2A]-[2A]-[2A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10	No		
ACC #M12	CA [2A]-[66A] (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M17	ACC #M12	CA [2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10	B29 SCC Only	ACC #M12	CA [2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10	B29 SCC Only			
ACC #M13	CA [2A]-[66A] (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M18	ACC #M13	CA [2A]-4A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M13	CA [2A]-4A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M14	CA [2A]-[66A] (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M19	ACC #M14	CA [2A]-5B	5, 10, 15, 20	5, 10	5, 10	No	ACC #M14	CA [2A]-5B	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	No		
ACC #M15	CA [2A]-[71A]	5, 10, 15, 20	5, 10, 15, 20		ACC #M20	ACC #M15	CA [2A]-5A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	No	ACC #M15	CA [2A]-5A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M16	CA 5A-[66A]	5, 10	5, 10, 15, 20		ACC #M21	ACC #M16	CA 2A-5A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	No	ACC #M16	CA 2A-5A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M17	CA [2A]-[66A] (4)	5, 10	5, 10, 15, 20		ACC #M22	ACC #M17	CA [2A]-[2A]-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	No	ACC #M17	CA [2A]-[2A]-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M18	CA [2A]-[13A]-[66A]	5, 10, 15, 20	5, 10, 15, 20		ACC #M23	ACC #M18	CA [2A]-[13A]-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	No	ACC #M18	CA [2A]-[13A]-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M19	CA 5A-[66A]	5, 10	5, 10, 15, 20		ACC #M24	ACC #M19	CA [2A]-[13A]-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	No	ACC #M19	CA [2A]-[13A]-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M20	CA [66A]	5, 10, 15	5, 10, 15		ACC #M25	ACC #M20	CA 2A-30A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	No	ACC #M20	CA 2A-30A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
ACC #M21	CA [66C]	5, 10, 15, 20	5, 10, 15, 20		ACC #M26	ACC #M21	CA [2A]-[66B]	5, 10, 15, 20	5, 10, 15	5, 10, 15	No	ACC #M21	CA [2A]-[66B]	5, 10, 15, 20	5, 10, 15	5, 10, 15	5, 10, 15	No		
ACC #M22	CA [66A]-[66A]	5, 10, 15, 20	5, 10, 15, 20		ACC #M27	ACC #M22	CA [2A]-[2A]-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15	No	ACC #M22	CA [2A]-[2A]-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15	5, 10, 15	No		
ACC #M23	CA [66A]-[66A]	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M28	ACC #M23	CA [2A]-[66B]	5, 10, 15, 20	5, 10, 15	5, 10, 15	No	ACC #M23	CA [2A]-[66B]	5, 10, 15, 20	5, 10, 15	5, 10, 15	5, 10, 15	No		

Note: [CC] indicates component carrier with 4x4 DL MIMO antenna configuration

FCC ID: ZNFG710VM	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 02/28/18 – 03/19/18	DUT Type: Portable Handset	APPENDIX H: Page 1 of 14		

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 FCC Guidance, 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 measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the 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.

General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)ii) 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.
- When a device supports LTE capabilities with overlapping transmission frequency ranges, the standalone powers from the band with a larger transmission frequency range can be used to select measurement configurations for the band with the fully covered transmission frequency range.

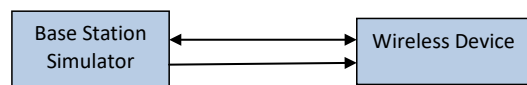


Figure 1
SISO CA Power Measurement Setup

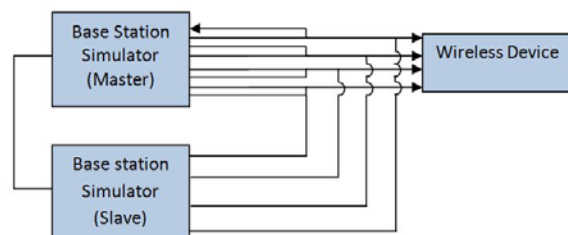


Figure 2
4x4 DL MIMO CA Power Measurement Setup

FCC ID: ZNFG710VM	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT	 LG	Reviewed by: Quality Manager
Test Dates: 02/28/18 – 03/19/18	DUT Type: Portable Handset			APPENDIX H: Page 2 of 14

1.3 SISO Downlink Carrier Aggregation RF Conducted Powers

1.3.1 LTE Band 12 as PCC

Table 1
Maximum Output Powers

Combination	PCC										SCC 1			SCC 2			SCC 3			Power			
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 12A-25A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B25	20	8365	1962.5	-	-	-	-	-	-	-	-	25.43	25.42
CA 4A-12A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	25.45	25.42
CA 4A-12A (2)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	25.45	25.42
CA 2A-12A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1560	-	-	-	-	-	-	-	-	25.46	25.42
CA 12A-66A-66A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B66	20	66786	2145	LTE B66	20	67236	2150	-	-	-	-	25.43	25.42
CA 2A-2A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1560	LTE B2	20	900	1560	-	-	-	-	25.42	25.42
CA 4A-12B	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B12	10	5107	736.7	LTE B4	20	2175	2132.5	-	-	-	-	25.44	25.42
CA 2A-4A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1560	LTE B4	20	2175	2132.5	-	-	-	-	25.43	25.42
CA 2A-2A-12B	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B12	5	5083	736.3	LTE B2	20	900	1560	LTE B2	20	700	1540	25.42	25.42

1.3.2 LTE Band 13 as PCC

Table 2
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 4A-4A-13A	LTE B13	10	21230	782	QPSK	1	0	5230	751	LTE B4	20	2175	2132.5	LTE B4	20	2150	2130	-	-	-	-	25.39	25.49	
CA 2A-4A-13A	LTE B13	10	21230	782	QPSK	1	0	5230	751	LTE B2	20	900	1560	LTE B4	20	2175	2132.5	-	-	-	-	25.47	25.49	
CA 2A-13A-66C	LTE B13	10	21230	782	QPSK	1	0	5230	751	LTE B2	20	900	1560	LTE B66	20	66786	2145	LTE B66	20	66884	2154.8	25.39	25.48	
CA 2A-13A-66A-66A	LTE B13	10	21230	782	QPSK	1	0	5230	751	LTE B2	20	900	1560	LTE B66	20	66786	2145	LTE B66	20	67236	2150	25.49	25.49	
CA 2A-13A-66B	LTE B13	10	21230	782	QPSK	1	0	5230	751	LTE B2	20	900	1560	LTE B66	15	66786	2145	LTE B66	15	66879	2154.3	25.39	25.49	
CA 2A-13A-66A	LTE B13	10	21230	782	QPSK	1	0	5230	751	LTE B2	20	900	1560	LTE B2	20	700	1540	LTE B66	20	66786	2145	25.47	25.49	

1.3.3 LTE Band 5 as PCC

Table 3
Maximum Output Powers

Combination	PCC										SCC 1			SCC 2			SCC 3			SCC 4			Power				
	PCC Band	PCC BW [MHz]	PCC (DL) Channel	PCC (UL) Freq. [MHz]	Modulation	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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 5A-25A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B25	20	8365	1962.5	-	-	-	-	-	-	-	-	-	-	-	-	25.39	25.39
CA 2A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1560	LTE B4	20	2175	2132.5	LTE B4	20	2150	2130	-	-	-	-	25.39	25.39
CA 5B-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	5	2453	874.3	LTE B66	20	66786	2145	LTE B66	20	67236	2150	-	-	-	-	25.39	25.39
CA 2A-2A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1560	LTE B2	20	700	1540	LTE B4	20	2175	2132.5	-	-	-	-	25.39	25.39
CA 2A-5A-66B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1560	LTE B2	20	700	1540	LTE B66	20	66786	2145	-	-	-	-	25.39	25.39
CA 2A-5A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1560	LTE B66	20	66786	2145	LTE B66	20	67236	2150	-	-	-	-	25.39	25.39
CA 4A-5A-13B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B4	20	2175	2132.5	LTE B4	10	2150	2130	-	-	-	-	25.39	25.39
CA 2A-5A-66B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1560	LTE B2	20	700	1540	LTE B66	5	66786	2145	-	-	-	-	25.39	25.39
CA 2A-5B-66C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1560	LTE B66	20	66786	2145	LTE B66	20	66884	2154.8	25.45	25.39
CA 2A-5A-66C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1560	LTE B2	20	700	1540	LTE B66	10	66786	2145	LTE B66	5	66879	2154.3	25.38	25.39
CA 2A-5A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1560	LTE B2	20	700	1540	LTE B66	20	66786	2145	-	-	-	-	25.39	25.39

1.3.4 LTE Band 26 as PCC

Table 4
Maximum Output Powers

Combination	PCC									SCC 1			SCC 2			Power			
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 26A-41A	LTE B26	5	27015	846.5	QPSK	1	0	9015	891.5	LTE B41	20	40620	2593	-	-	-	-	25.48	25.50
CA 25A-26A	LTE B26	5	27015	846.5	QPSK	1	0	9015	891.5	LTE B25	20	8365	1962.5	-	-	-	-	25.49	25.50
CA 26A-41C	LTE B26	5	27015	846.5	QPSK	1	0	9015	891.5	LTE B41	20	40620	2593	LTE B41	20	40422	2573.2	25.49	25.50

1.3.5 LTE Band 4 as PCC

Table 5
Maximum Output Powers

Combination	PCC										SCC1				SCC2				SCC3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	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]	LTE Tx Power with CA (Enab. Fdd)	LTE Single Carrier Power (Edm)	
CA 4A-12A (1)	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	25.19	25.20	
CA 4A-12A (2)	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	25.19	25.20	
CA 2A-4A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B2	20	900	1560	-	-	-	-	-	-	-	-	25.19	25.20	
CA 4A-12B	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B12	5	5095	737.5	LTE B12	5	5047	732.7	-	-	-	-	25.14	25.20	
CA 2A-4A-12A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B2	20	900	1560	LTE B12	10	5095	737.5	-	-	-	-	25.12	25.20	
CA 4A-4A-13A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B4	20	2100	2145	LTE B13	10	5230	751	-	-	-	-	25.17	25.20	
CA 2A-4A-13A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B2	20	900	1560	LTE B13	10	5230	751	-	-	-	-	25.11	25.20	
CA 2A-2A-4A-4A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B4	20	2100	2145	LTE B2	20	900	1560	LTE B2	20	700	1540	25.19	25.20	
CA 2A-4A-4A-5A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B4	20	2100	2145	LTE B2	20	900	1560	LTE B5	10	2525	881.5	24.69	25.20	
CA 2A-2A-4A-5A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B4	20	900	1560	LTE B2	20	700	1540	LTE B5	10	2525	881.5	24.67	25.20	
CA 2A-4A-5B	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B2	20	900	1560	LTE B5	10	2525	881.5	LTE B5	5	2453	874.3	24.62	25.20	
CA 4A-4A-5B	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B4	20	2100	2145	LTE B5	10	2525	881.5	LTE B5	5	2453	874.3	24.64	25.20	

FCC ID: ZNFG710VM		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 02/28/18 – 03/19/18	DUT Type: Portable Handset			APPENDIX H: Page 3 of 14

Table 6

[illegible]

1.3.6 LTE Band 66 as PCC

Table 7

[illegible]

Table 8

Radio Output Power																				Power				
Combination	PCC					SCC1					SCC2					SCC3					SCC4		LTE Tx Power with SC-FDMA (dBm)	LTE Single Carrier Tx Power (dBm)
	PCC Band	PCC BW [MHz]	PCC (DL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL RR Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	PCC SC BW [MHz]	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		
CA 24.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B32	20	9000	1560	-	-	-	-	-	-	-	-	-	-	
CA 12A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120	LTE B13	10	9000	717.5	-	-	-	-	-	-	
CA 4A0	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	66734	2120.8	LTE B36	20	66032	2120.8	-	-	-	-	-	-	
CA 46A.46A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B36	20	62736	2120.8	-	-	-	-	-	-	
CA 46A.46A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	67038	2120.7	LTE B36	20	67336	2120.6	-	-	-	-	-	-	
CA 24.13A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	66734	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 38A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B36	20	25.25	881.5	LTE B35	5	2463	874.5	-		
CA 2A.13A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.13A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	0	60511	2117.5	LTE B36	20	66604	2126.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.13A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B32	20	9000	1560	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	0	60511	2117.5	LTE B36	20	66604	2126.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	0	60511	2117.5	LTE B36	20	66604	2126.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000	1560	LTE B13	10	5230	751	-		
CA 2A.2A.66A.66A	LTE B36	20	12027.2	12027.2	QPSK	1	99	60536	2120	LTE B36	20	62736	2120.8	LTE B32	20	9000								

1.3.7 LTE Band 2 as PCC

Table 9

Combination	PCC										SCC1				SCC2				SCC3				SCC4				Power	
	LTE Band	PCC BW [MHz]	PCC (DL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL RB Offset	PCC (DL) Channel	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (UL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (UL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (UL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (UL) Freq. [MHz]	LTE Tx Power [dBm]	LTE Single Carrier Tx Power [dBm]			
CA_2A_46A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	23.20	23.40		
CA_2A_44A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	2135	213.5	-	-	-	-	-	-	-	-	-	-	-	23.20	23.40		
CA_2A_13A(1)	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B12	20	2005	211.5	-	-	-	-	-	-	-	-	-	-	-	23.20	23.40		
CA_2A_12A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B2	20	700	1990	LTE B12	10	5005	72.5	2	1915	-	-	-	-	-	23.20	23.40		
CA_2A_44A_12A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	2135	213.5	LTE B12	10	5005	72.5	-	-	-	-	-	-	-	23.20	23.40		
CA_2A_44A_13A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	2135	213.5	LTE B84	20	5230	73	-	-	-	-	-	-	-	23.20	23.40		
CA_2A_44A_46C	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	5230	73	LTE B66	20	66786	2145	LTE B66	20	66884	2146.8	-	-	-	23.20	23.40		
CA_2A_44A_46A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	5230	73	LTE B84	20	66786	2145	LTE B84	20	66884	2146.8	-	-	-	23.20	23.40		
CA_2A_44A_46A_66A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	700	1990	LTE B66	20	66786	2145	LTE B66	20	67316	2160	-	-	-	23.20	23.40		
CA_2A_44A_54A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B2	20	2135	213.5	LTE B66	20	67366	2146	LTE B66	20	7255	88.5	-	-	-	23.20	23.40		
CA_2A_13A_46A(1)	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B12	20	5230	73	LTE B84	20	67366	2146	LTE B84	20	7255	88.5	-	-	-	23.20	23.40		
CA_2A_12A_46A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B2	20	700	1990	LTE B12	5	5047	72.5	-	-	-	-	-	-	-	23.20	23.40		
CA_2A_44A_46A_54A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	5230	73	LTE B84	20	67366	2146	LTE B84	20	7255	88.5	-	-	-	23.20	23.40		
CA_2A_44A_58A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	2135	213.5	LTE B15	10	5245	89.5	LTE B15	5	2453	83.7	-	-	-	23.21	23.40		
CA_2A_44A_66A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	5230	73	LTE B66	20	66786	2145	LTE B66	20	67316	2160	-	-	-	23.21	23.40		
CA_2A_13A_46A_66A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B12	20	700	1990	LTE B13	10	5230	73	LTE B66	20	66786	2145	-	-	-	23.20	23.40		
CA_2A_13A_46A_66A_66A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B12	20	700	1990	LTE B13	10	5230	73	LTE B66	20	66786	2145	LTE B66	20	66878	2145.8	23.20	23.40	
CA_2A_12A_46A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B2	20	2135	213.5	LTE B15	10	2453	83.7	LTE B15	5	2453	83.7	-	-	-	23.20	23.40		
CA_2A_44A_58A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	2135	213.5	LTE B15	10	2453	83.7	LTE B15	5	2453	83.7	-	-	-	23.20	23.40		
CA_2A_44A_66A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	2135	213.5	LTE B15	10	2453	83.7	LTE B15	5	2453	83.7	-	-	-	23.20	23.40		
CA_2A_44A_66A_66A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	2135	213.5	LTE B15	10	2453	83.7	LTE B15	5	2453	83.7	-	-	-	23.20	23.40		
CA_2A_44A_66A_66A_66A	LTE B2	20	19150	1905	QPSK	1	25	1150	1985	LTE B84	20	2135	213.5	LTE B15	10	2453	83.7	LTE B15	5	2453	83.7	-	-	-	23.20	23.40		

ECC ID: ZNEG710VM



SAR EVALUATION REPORT

Reviewed by:
Quality Manager

Test Dates:
02/28/18 – 03/19/18

DUT Type:	Portable Handset
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APPENDIX H:
Page 4 of 14

Table 10
Reduced Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Channel	PCC [DL] Freq. [MHz]	Modulation	PCC UL RB Offset	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]		
CA 2A-66A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B8B	20	66786	2145	-	-	-	-	24.44	24.50
CA 2A-5A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B4	20	2175	2132.5	-	-	-	-	24.44	24.50
CA 2A-25A(1)	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	-	-	-	-	24.44	24.50
CA 2A-2A-12A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	-	-	-	-	24.44	24.50
CA 2A-4A-12A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B4	20	2175	2132.5	LTE B2	10	5095	737.5	24.44	24.50
CA 2A-4A-25A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B4	20	2175	2132.5	LTE B2	10	5095	737.5	24.44	24.50
CA 2A-15A-66A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	20	66786	2145	24.44	24.50
CA 2A-2A-4A-4A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B4	20	2175	2132.5	24.44	24.50
CA 2A-2A-66A-66A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	20	66786	2145	24.44	24.50
CA 2A-4A-4A-5A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B4	20	2175	2132.5	LTE B4	20	2175	2132.5	24.44	24.50
CA 2A-15A-66A-66A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	20	66786	2145	24.44	24.50
CA 2A-2A-12A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B2	10	5095	737.5	24.44	24.50
CA 2A-2A-4A-5A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B4	20	2175	2132.5	LTE B4	20	2175	2132.5	24.44	24.50
CA 2A-4A-5B	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B4	20	2175	2132.5	LTE B4	20	2175	2132.5	24.44	24.50
CA 2A-15A-66B	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	15	66786	2145	24.44	24.50
CA 2A-2A-15A-66A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	15	66786	2145	24.44	24.50
CA 2A-2A-5A-66A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	15	66786	2145	24.44	24.50
CA 2A-15A-66A-66A	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	15	66786	2145	24.44	24.50
CA 2A-2A-5A-66B	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	15	66786	2145	24.44	24.50
CA 2A-5B-66C	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	15	66786	2145	24.44	24.50
CA 2A-2A-5A-66C	LTE B2	10	9150	1905	QPSK	1	25	1150	1985	LTE B2	10	5095	737.5	LTE B8B	15	66786	2145	24.44	24.50

1.3.8 LTE Band 25 as PCC

Table 11
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Channel	PCC [UL] Freq. [MHz]	Modulation	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]	LTE Tx Power with DL CA Enabled (dbm)	LTE Single Carrier Tx Power (dbm)	
CA 12A-25A	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	-	25.48	25.49
CA 25A-43A	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B41	20	40620	2593	-	-	-	-	-	-	-	-	-	25.49	25.49
CA 25A-25A(1)	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B25	20	8140	1940	-	-	-	-	-	-	-	-	-	25.46	25.49
CA 25A-26A	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B26	15	8805	876.5	-	-	-	-	-	-	-	-	-	25.49	25.49
CA 5A-25A	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	-	25.48	25.49
CA 25A-41C	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B41	20	40620	2593	LTE B41	20	40422	2573.2	-	-	-	-	-	25.21	25.49
CA 25A-41D	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B41	20	40422	2573.2	LTE B41	20	40620	2593	LTE B41	20	40818	2612.8	25.49	25.49	

Table 12
Reduced Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Channel	PCC [UL] Freq. [MHz]	PCC				SCC Band	SCC BW [MHz]	SCC 1			SCC Band	SCC BW [MHz]	SCC 2			SCC Band	SCC BW [MHz]	SCC 3			LTE Tx Power with DL CA Enabled (dbm)	LTE Single Carrier Tx Power (dbm)	
					Modulation	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel			PCC [DL] Freq. [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]			SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC [DL] Channel			SCC [DL] Freq. [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]			
CA 12A-25A	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	-	-	-	24.45	24.50
CA 25A-41A	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B41	20	40620	2593	-	-	-	-	-	-	-	-	-	-	-	24.47	24.50
CA 25A-25A(1)	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B25	20	8140	1940	-	-	-	-	-	-	-	-	-	-	-	24.48	24.50
CA 25A-26A	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B26	15	8805	876.5	-	-	-	-	-	-	-	-	-	-	-	24.44	24.50
CA 5A-25A	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	-	-	-	24.48	24.50
CA 25A-41C	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B41	20	40620	2593	LTE B41	20	40422	2573.2	-	-	-	-	-	-	-	24.39	24.50
CA 25A-41D	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	LTE B41	20	40422	2573.2	LTE B41	20	40620	2593	LTE B41	20	40818	2612.8	-	-	-	24.49	24.50

1.3.9 LTE Band 41 PC3 as PCC

Table 13
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Channel	PCC [UL] Freq. [MHz]	Modulation	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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 41A-41A(1)	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41	20	41490	2680	-	-	-	-	-	-	-	-	-	25.18	25.18
CA 41C-41A	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41	20	40129	2563.9	LTE B41	20	41490	2680	-	-	-	-	-	25.15	25.18
CA 41A-41C	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41	20	41292	2660.2	LTE B41	20	41490	2680	-	-	-	-	-	25.17	25.18
CA 41A-41D	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41	20	41094	2640.4	LTE B41	20	41292	2660.2	LTE B41	20	41490	2680	-	25.19	25.18
CA 41D-41A	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41	20	40129	2563.9	LTE B41	20	40527	2583.7	LTE B41	20	41490	2680	-	25.16	25.18
CA 41C-41C	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	LTE B41	20	41292	2660.2	LTE B41	20	41490	2680	-	-	-	-	-	25.18	25.18

1.4 4x4 Downlink 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 DL MIMO 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]	Target Power [dBm]
4	20	20050	1720	QPSK	1	0	25.14	25.20	24.7
66	20	132072	1720	QPSK	1	0	25.14	25.20	24.7
2	10	19150	1905	QPSK	1	25	25.48	25.49	25.0
25	10	26640	1910	QPSK	1	25	25.48	25.49	25.0
41	10	40185	2549.5	QPSK	1	0	25.16	25.18	24.7
41 PC2	10	40185	2549.5	QPSK	1	0	27.70	27.70	27.2

Table 16
Reduced 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]	Target Power [dBm]
4	20	20050	1720	QPSK	1	99	24.18	24.20	23.7
66	20	132072	1720	QPSK	1	99	24.16	24.20	23.7
2	10	19150	1905	QPSK	1	25	24.46	24.50	24.0
25	10	26640	1910	QPSK	1	25	24.49	24.50	24.0

1.4.2 LTE Band 13 as PCC

Table 17
Maximum Output Powers

Combination	PCC										SCC 1										SCC 2										SCC 3										Power	
	PCC Band	PCC BW [MHz]	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	Mod.	PCC UL BW	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	UL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	UL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	UL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	UL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	UL Ant. Config.	LTE Tx Power With UL CA (dBm)	LTE Single Carrier Tx Power (dBm)										
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 4A-12A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 4A-12A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	24.7	24.7					
CA (CA 13A-66A)	13	20	20050	1720	QPSK	1	0	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20050	1720	2x2 MIMO	13	20	20														

1.4.3 LTE Band 5 as PCC

Table 18
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				Power			
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) 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.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 5A-160C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2 MIMO	LTE B66	20	66786	2145	4x4 MIMO	LTE B66	20	66984	2164.8	4x4 MIMO	25.32	25.35
CA 2A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B4	20	2175	2132.5	2x2 MIMO	25.30	25.35
CA 4A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2 MIMO	LTE B4	20	2175	2132.5	4x4 MIMO	LTE B4	20	2350	2150	2x2 MIMO	25.25	25.35
CA 2A-2A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B2	20	700	1940	2x2 MIMO	25.36	25.35
CA 2A-5A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B66	20	66786	2145	2x2 MIMO	25.34	25.35
CA 5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2 MIMO	LTE B66	20	66786	2145	4x4 MIMO	LTE B66	20	67236	2190	2x2 MIMO	25.31	25.35
CA 2A-5A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2 MIMO	LTE B2	20	900	1960	2x2 MIMO	LTE B66	20	66786	2145	4x4 MIMO	25.28	25.35
CA 5A-66B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2 MIMO	LTE B66	15	66786	2145	4x4 MIMO	LTE B66	5	66879	2154.3	4x4 MIMO	25.36	25.35

1.4.4 LTE Band 4 as PCC

Table 19
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				Power			
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) 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.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-4A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	-	-	-	-	-	25.15	25.20
CA 2A-4A-13A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B13	10	5230	751	2x2 MIMO	25.18	25.20
CA 4A-4A-13A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B4	20	2300	2145	2x2 MIMO	LTE B13	10	5230	751	2x2 MIMO	25.19	25.20
CA 2A-4A-5A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	25.19	25.20
CA 4A-4A-5A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B4	20	2300	2145	2x2 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	25.20	25.20
CA 4A-4A-5A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	2x2 MIMO	LTE B4	20	2300	2145	4x4 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	25.20	25.20
CA 4A-4A-13A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	2x2 MIMO	LTE B4	20	2300	2145	4x4 MIMO	LTE B13	10	5230	751	2x2 MIMO	25.19	25.20

Table 20
Reduced Output Powers

Combination	PCC										SCC 1				SCC 2				Power			
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) 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.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-4A	LTE B4	20	20050	1720	QPSK	1	99	2050	2120	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	-	-	-	-	-	24.18	24.20
CA 2A-4A-13A	LTE B4	20	20050	1720	QPSK	1	99	2050	2120	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.09	24.20
CA 4A-4A-13A	LTE B4	20	20050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B4	20	2300	2145	2x2 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.19	24.20
CA 2A-4A-5A	LTE B4	20	20050	1720	QPSK	1	99	2050	2120	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	24.19	24.20
CA 4A-4A-5A	LTE B4	20	20050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B4	20	2300	2145	2x2 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	24.13	24.20
CA 4A-4A-13A	LTE B4	20	20050	1720	QPSK	1	99	2050	2120	2x2 MIMO	LTE B4	20	2300	2145	4x4 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.16	24.20

1.4.5 LTE Band 66 as PCC

Table 21
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				Power					
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) 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.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 2A-160A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B2	20	900	1960	4x4 MIMO	-	-	-	-	-	-	-	-	-	-	25.17	25.20	
CA 66A-160C	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	67036	2130.2	4x4 MIMO	LTE B66	20	67236	2130	4x4 MIMO	-	-	-	-	-	-	25.15	25.20
CA 2A-13A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B2	20	900	1960	2x2 MIMO	LTE B13	10	5230	751	2x2 MIMO	-	-	-	-	-	-	25.15	25.20
CA 2A-66A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B66	20	67236	2130	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	-	-	-	-	-	-	25.20	25.20
CA 2A-13A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B13	10	5230	751	2x2 MIMO	-	-	-	-	-	-	25.13	25.20
CA 5A-66C	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	66734	2130.8	4x4 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	-	-	-	-	-	-	25.13	25.20
CA 66C-160A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	66734	2130.8	4x4 MIMO	LTE B66	20	67236	2130	4x4 MIMO	-	-	-	-	-	-	25.20	25.20
CA 13A-66A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B66	20	67236	2130	4x4 MIMO	LTE B13	10	5230	751	2x2 MIMO	-	-	-	-	-	-	25.13	25.20
CA 5A-66A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B66	20	67236	2130	4x4 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	-	-	-	-	-	-	25.15	25.20
CA 13A-66A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	67236	2130	2x2 MIMO	LTE B13	10	5230	751	2x2 MIMO	-	-	-	-	-	-	25.14	25.20
CA 2A-66B	LTE B66	10	115072	1715	QPSK	1	25	66486	2115	2x2 MIMO	LTE B66	10	66585	2124.9	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	-	-	-	-	-	-	25.16	25.20
CA 2A-2A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B2	20	900	1960	2x2 MIMO	LTE B2	20	700	1940	2x2 MIMO	-	-	-	-	-	-	25.15	25.20
CA 66A-66C	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	67036	2130.2	4x4 MIMO	LTE B66	20	67236	2130	2x2 MIMO	-	-	-	-	-	-	25.15	25.20
CA 13A-66B	LTE B66	10	115072	1715	QPSK	1	25	66486	2115	4x4 MIMO	LTE B66	10	66585	2124.9	4x4 MIMO	LTE B13	10	5230	751	2x2 MIMO	-	-	-	-	-	-	25.14	25.20
CA 2A-5A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	-	-	-	-	-	-	25.16	25.20
CA 2A-66C	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B66	20	66734	2130.8	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	-	-	-	-	-	-	25.15	25.20
CA 2A-66A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	67236	2130	2x2 MIMO	LTE B2	20	900	1960	2x2 MIMO	-	-	-	-	-	-	25.14	25.20
CA 5A-66B-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	67236	2130	2x2 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	-	-	-	-	-	-	25.15	25.20
CA 66A-160C	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B66	20	67036	2130.2	4x4 MIMO	LTE B66	20	67236	2130	4x4 MIMO	-	-	-	-	-	-	25.16	25.20
CA 2A-66A-160A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B66	20	67236	2130	4x4 MIMO	LTE B2	20	900	1960	2x2 MIMO	-	-	-	-	-	-	25.15	25.20
CA 2A-2A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	LTE B2	20	700	1940	2x2 MIMO	-	-	-	-	-	-	25.20	25.20
CA 2A-5A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B2	20	900	1960	2x2 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	-	-	-	-	-	-	25.15	25.20
CA 2A-160C	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	66734	2130.8	4x4 MIMO	LTE B66	20	67236	2130	4x4 MIMO	-	-	-	-	-	-	25.18	25.20
CA 5A-66B	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	4x4 MIMO	LTE B66	20	66734	2130.8	4x4 MIMO	LTE B5	10	2525	881.5	2x2 MIMO	-	-	-	-	-	-	25.13	25.20
CA 13A-66B	LTE B66	10	115072	1715	QPSK	1	25	66486	2115	4x4 MIMO	LTE B66	10	66585	2124.9	4x4 MIMO	LTE B13	10	5230	751	2x2 MIMO	-	-	-	-	-	-	25.13	25.20
CA 5A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B66	20	66734	2130.8	2x2 MIMO	LTE B2	20	900	1960	4x4 MIMO	-	-	-	-	-	-	25.15	25.20
CA 2A-13A-66A	LTE B66	20	115072	1720	QPSK	1	0	66536	2120	2x2 MIMO	LTE B2	20	900	1960	2x2 MIMO	LTE B13	10	5230	751	2x2 MIMO	-	-	-	-	-	-	25.13	25.20

Table 22

Combination	PCC Band	PCC BW [MHz]	PCC [Us] Ch.	PCC [DL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL BB	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Cont.	SCC Band	SCC BW [MHz]	SCC 1			SCC 2			SCC 3			LTE Power [dBm]	LTE Signal Carrier Power [dBm]
													SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Cont.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Cont.	SCC Band		
CA [2A] (66C)	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	2127.2	444 MIMO	LTE B66	20	67236	2120	444 MIMO	24.18	24.18	
CA [66A] (66C)	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6708	2127.2	444 MIMO	LTE B66	20	67236	2120	444 MIMO	24.18	24.18	
CA [2A] 1A-66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	2x2 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A] 1A-66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	2x2 MIMO	LTE B66	20	6726	2120	2x2 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-1A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [5A] (66C)	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	66734	21318	444 MIMO	LTE B 65	10	2525	881.1	2x2 MIMO	24.18	24.18	
CA [66C] (66C)	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	66734	21318	444 MIMO	LTE B 65	10	2525	881.1	2x2 MIMO	24.18	24.18	
CA [1A-66A] (66A)	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	2x2 MIMO	LTE B66	20	67236	2120	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [1A-66A] (66A)	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	2x2 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	10	2525	881.1	2x2 MIMO	24.18	24.18	
CA [1A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A] 66C	LTE B66	15	12047	1717.5	HQPSM	1	0	66511	2117.5	444 MIMO	LTE B66	5	66604	21218	2x2 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A] 66C	LTE B66	15	12047	1717.5	HQPSM	1	0	66511	2117.5	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [66A] (66C)	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	67038	2127.2	2x2 MIMO	LTE B66	20	67236	2120	2x2 MIMO	24.08	24.18	
CA [66C] (66C)	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B66	20	67236	2120	2x2 MIMO	24.18	24.18	
CA [1A] 66A	LTE B66	20	12072	1720	HQPSM	1	0	66511	2117.5	444 MIMO	LTE B66	5	66604	21218	2x2 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	2x2 MIMO	LTE B 2	20	6800	1980	444 MIMO	LTE B 65	10	2525	881.1	2x2 MIMO	24.18	24.18	
CA [2A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	67234	21318	444 MIMO	LTE B 65	10	2525	881.1	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B66	20	6726	2120	444 MIMO	LTE B 2	20	6800	1980	444 MIMO	24.18	24.18	
CA [2A-66A] 66A	LTE B66	20	12072	1720	QPSK	1	99	66536	2120	444 MIMO	LTE B 2	20	6708	1980	444 MIMO	LTE B13	10	5230	751	2x2 MIMO	24.18	24.18	

1.4.6 LTE Band 2 as PCC

Table 23

Combination	PCB Band	PC1					SEC 1					SEC 2					SEC 3					UL Tx Power with 0 dB CA Excluded [dBm]	Lvl Type Cat			
		PCB BW [MHz]	PC1 (UL) Ch.	PC1 (DL) Freq [MHz]	Mod.	PCB UL BW Offset	PC1 (UL) Ch.	PC1 (DL) Freq [MHz]	DL Ant. Config.	SEC Band	SEC BW [MHz]	SEC (DL) Ch.	SEC (DL) Freq [MHz]	DL Ant. Config.	SEC Band	SEC BW [MHz]	SEC (DL) Ch.	SEC (DL) Freq [MHz]	DL Ant. Config.	SEC Band	SEC BW [MHz]			SEC (DL) Ch.	SEC (DL) Freq [MHz]	DL Ant. Config.
CA 12A-4A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12B-6B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6B	20	66786	2145	444 MHz	10	66786	2145	444 MHz	10	66786	2145	444 MHz	10	24.43	24.43
CA 12A-13A-4A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B13	10	5230	5230.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-13A-6A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-13A-6A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B13	10	5230	5230.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-13A (6A)	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	242 MHz	LTE B13	10	5230	5230.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-13A-5A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B5	10	58876	2154.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-13A-5A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B5	10	58876	2154.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-16B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6B	20	66786	2145	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-16A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6B	20	66786	2145	444 MHz	10	66786	2145	444 MHz	10	66786	2145	444 MHz	10	24.43	24.43
CA 12A-13A-16A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-13A-16A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B13	10	5230	5230.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-13A-16A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B13	10	5230	5230.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-13A-16A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-16B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	242 MHz	LTE B13	10	5230	5230.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 12A-16A	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	242 MHz	LTE B13	10	5230	5230.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B5	10	58876	2154.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B5	10	58876	2154.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585	444 MHz	LTE B6	20	2137	2137.5	242 MHz	10	66786	2145	242 MHz	10	66786	2145	242 MHz	10	24.43	24.43
CA 2A-12A-15B	LTE B2	10	15150	1505	QPSK	1	25	1150	1585</																	

Table 24

[illegible]

1.4.7 LTE Band 25 as PCC

Table 25

Combination	PCC										SCC 1					Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (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 DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA [25A]-[25A] (1)	LTE B25	10	26640	1910	QPSK	1	25	8640	1990	4x4 MIMO	LTE B25	20	8140	1940	4x4 MIMO	25.47	25.49

FCC ID: ZNFG710VM



SAR EVALUATION REPORT



Reviewed by:

Quality Manager

Test Dates:

DUT Type:	
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Portable Handset

APPENDIX H

Page 8 of 14

Table 26
Reduced 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) Ch.	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC 1					Power	
											SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA [25A]-[25A] (1)	LTE B25	10	25640	1910	QPSK	1	25	8640	1990	4x4 MIMO	LTE B25	20	8140	1940	4x4 MIMO	24.45	24.50

1.4.8 LTE Band 41 PC3 as PCC

Table 27
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				Power				
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL# RB Offset	PCC (DL) 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.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA [41A]-[41A] (1)	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41	20	41490	2680	2x2 MIMO	-	-	-	-	-	-	25.19	25.18
CA [41A]-[41A] (1)	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	2x2 MIMO	LTE B41	20	41490	2680	4x4 MIMO	-	-	-	-	-	-	25.30	25.18
CA [41A]-[41A] (1)	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41	20	41490	2680	4x4 MIMO	-	-	-	-	-	-	25.18	25.18
CA [41A]-[41C]	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41	20	41292	2660.2	2x2 MIMO	LTE B41	20	41490	2680	2x2 MIMO	25.30	25.18	
CA [41C]-[41A]	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	2x2 MIMO	LTE B41	20	40329	2563.9	2x2 MIMO	LTE B41	20	41490	2680	4x4 MIMO	25.18	25.18	
CA [41A]-[41C]	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	2x2 MIMO	LTE B41	20	41292	2660.2	4x4 MIMO	LTE B41	20	41490	2680	4x4 MIMO	25.18	25.18	
CA [41D]	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41	20	40329	2563.9	4x4 MIMO	LTE B41	20	40527	2583.7	4x4 MIMO	25.19	25.18	
CA [41C]-[41A]	LTE B41	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41	20	40329	2563.9	4x4 MIMO	LTE B41	20	41490	2680	2x2 MIMO	25.30	25.18	

1.4.9 LTE Band 41 PC2 as PCC

Table 28
Maximum Output Powers

Combination	PCC										SCC 1					SCC 2					Power		
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL# RB Offset	PCC (DL) 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.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA [41A]-[41A] (1)	LTE B41 PC2	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41 PC2	20	41490	2680	2x2 MIMO	-	-	-	-	-	-	27.68	27.70
CA [41A]-[41A] (1)	LTE B41 PC2	10	40185	2549.5	QPSK	1	0	40185	2549.5	2x2 MIMO	LTE B41 PC2	20	41490	2680	4x4 MIMO	-	-	-	-	-	-	27.58	27.70
CA [41A]-[41A] (1)	LTE B41 PC2	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41 PC2	20	41490	2680	4x4 MIMO	-	-	-	-	-	-	27.54	27.70
CA [41A]-[41C]	LTE B41 PC2	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41 PC2	20	41292	2660.2	2x2 MIMO	LTE B41 PC2	20	41490	2680	2x2 MIMO	27.68	27.70	
CA [41A]-[41C]	LTE B41 PC2	10	40185	2549.5	QPSK	1	0	40185	2549.5	2x2 MIMO	LTE B41 PC2	20	41292	2660.2	4x4 MIMO	LTE B41 PC2	20	41490	2680	4x4 MIMO	27.70	27.70	
CA [41A]-[41C]	LTE B41 PC2	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41 PC2	20	40329	2563.9	4x4 MIMO	LTE B41 PC2	20	41490	2680	2x2 MIMO	27.70	27.70	
CA [41D]	LTE B41 PC2	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41 PC2	20	40329	2563.9	4x4 MIMO	LTE B41 PC2	20	40527	2583.7	4x4 MIMO	27.69	27.70	
CA [41C]-[41A]	LTE B41 PC2	10	40185	2549.5	QPSK	1	0	40185	2549.5	4x4 MIMO	LTE B41 PC2	20	40329	2563.9	4x4 MIMO	LTE B41 PC2	20	41490	2680	2x2 MIMO	27.70	27.70	

1.5 LAA Downlink Carrier Aggregation

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. Due to the wide downlink bandwidth, each Band 46 sub-band, represented by subscripts A, B, C, and D, was evaluated independently. The general test selection and setup procedures described in Section 1.2 were applied.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the 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.

FCC ID: ZNFG710VM	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT	 LG	Reviewed by: Quality Manager
Test Dates: 02/28/18 – 03/19/18	DUT Type: Portable Handset			APPENDIX H: Page 9 of 14

1.5.1 SISO LAA Downlink Carrier Aggregation RF Conducted Powers

1.5.1.1 LTE Band 13 as PCC

Table 29
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power		
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)		
CA_13A-46,A-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	47290	5200	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	25.37	25.49	
CA_13A-46,A-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	48290	5300	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	25.37	25.49	
CA_13A-46,A-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	51290	5600	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	25.36	25.49	
CA_13A-46,A-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	53140	5785	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	25.38	25.49	
CA_13A-46,C-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5219.8	LTE B66	20	66786	2145	-	-	-	-	-	-	25.40	25.49
CA_13A-46,C-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	48290	5300	LTE B46 ₁	20	48488	5319.8	LTE B66	20	66786	2145	-	-	-	-	-	-	25.38	25.49
CA_13A-46,C-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B66	20	66786	2145	-	-	-	-	-	-	25.34	25.49
CA_13A-46,C-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	53140	5785	LTE B46 ₁	20	53338	5804.8	LTE B66	20	66786	2145	-	-	-	-	-	-	25.34	25.49
CA_2A-13A-46,D	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5219.8	LTE B46 ₁	20	47092	5180.2	-	25.47	25.49	
CA_2A-13A-46,D	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B46 ₁	20	48290	5300	LTE B46 ₁	20	48488	5319.8	LTE B46 ₁	20	48092	5280.2	-	25.47	25.49	
CA_2A-13A-46,D	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	-	25.45	25.49	
CA_2A-13A-46,D	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B46 ₁	20	53140	5785	LTE B46 ₁	20	53338	5804.8	LTE B46 ₁	20	52942	5765.2	-	25.46	25.49	
CA_13A-46,D-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5219.8	LTE B46 ₁	20	47092	5180.2	LTE B66	20	66786	2145	-	25.48	25.49	
CA_13A-46,D-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	48290	5300	LTE B46 ₁	20	48488	5319.8	LTE B46 ₁	20	48092	5280.2	LTE B66	20	66786	2145	-	25.47	25.49	
CA_13A-46,D-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	LTE B66	20	66786	2145	-	25.46	25.49	
CA_13A-46,D-66A	LTE B13	10	23230	782	QPSK	1	0	5230	751	LTE B46 ₁	20	53140	5785	LTE B46 ₁	20	53338	5804.8	LTE B46 ₁	20	52942	5765.2	LTE B66	20	66786	2145	-	25.49	25.49	

1.5.1.2 LTE Band 5 as PCC

Table 30
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power		
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL# RB	PCC UL# RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)		
CA_5A-46A(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	47290	5200	-	-	-	-	-	-	-	-	-	-	-	-	-	25.32	25.35	
CA_5A-46A(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	48290	5300	-	-	-	-	-	-	-	-	-	-	-	-	-	25.25	25.35	
CA_5A-46A(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	51290	5600	-	-	-	-	-	-	-	-	-	-	-	-	-	25.26	25.35	
CA_5A-46A(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	53140	5785	-	-	-	-	-	-	-	-	-	-	-	-	-	25.30	25.35	
CA_5A-46C(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5219.8	-	-	-	-	-	-	-	-	-	-	25.31	25.35
CA_5A-46C(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	48290	5300	LTE B46 ₁	20	48488	5319.8	-	-	-	-	-	-	-	-	-	-	25.27	25.35
CA_5A-46C(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	-	-	-	-	-	-	-	-	-	-	25.25	25.35
CA_5A-46C(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	53140	5785	LTE B46 ₁	20	53338	5804.8	-	-	-	-	-	-	-	-	-	-	25.29	25.35
CA_5A-46D(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5219.8	LTE B46 ₁	20	47092	5180.2	-	-	-	-	-	-	25.30	25.35
CA_5A-46D(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	48290	5300	LTE B46 ₁	20	48488	5319.8	LTE B46 ₁	20	48092	5280.2	-	-	-	-	-	-	25.29	25.35
CA_5A-46D(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	-	-	-	-	-	-	25.24	25.35
CA_5A-46D(1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	53140	5785	LTE B46 ₁	20	53338	5804.8	LTE B46 ₁	20	52942	5765.2	-	-	-	-	-	-	25.28	25.35
CA_2A-5A-46,D	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2 ₁	20	900	1960	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5219.8	LTE B46 ₁	20	47092	5180.2	-	25.33	25.35	
CA_2A-5A-46,D	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2 ₁	20	900	1960	LTE B46 ₁	20	48290	5300	LTE B46 ₁	20	48488	5319.8	LTE B46 ₁	20	48092	5280.2	-	25.31	25.35	
CA_2A-5A-46,D	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2 ₁	20	900	1960	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	-	25.29	25.35	
CA_2A-5A-46,D	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2 ₁	20	900	1960	LTE B46 ₁	20	53140	5785	LTE B46 ₁	20	53338	5804.8	LTE B46 ₁	20	52942	5765.2	-	25.28	25.35	
CA_5A-46,D-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5219.8	LTE B46 ₁	20	47092	5180.2	LTE B66 ₁	20	66786	2145	-	25.28	25.35	
CA_5A-46,D-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	48290	5300	LTE B46 ₁	20	48488	5319.8	LTE B46 ₁	20	48092	5280.2	LTE B66 ₁	20	66786	2145	-	25.30	25.35	
CA_5A-46,D-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	LTE B66 ₁	20	66786	2145	-	25.28	25.35	
CA_5A-46,D-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46 ₁	20	53140	5785	LTE B46 ₁	20	53338	5804.8	LTE B46 ₁	20	52942	5765.2	LTE B66 ₁	20	66786	2145	-	25.29	25.35	

1.5.1.3 LTE Band 4 as PCC

Table 31
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA_4A-46,A-46,A	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B46 ₁	20	47090	5180	LTE B46 ₁	20	53540	5825	-	-	-	-	25.17	25.20	
CA_4A-46,A-46,C	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B46 ₁	20	47090	5180	LTE B46 ₁	20	53540	5825	LTE B46 ₁	20	53342	5805.2	25.15	25.20	
CA_4A-46,A-46,C	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B46 ₁	20	53340	5825	LTE B46 ₁	20	47090	5180	LTE B46 ₁	20	47298	5199.8	25.15	25.20	
CA_4A-46,D	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5210.8	LTE B46 ₁	20	47090	5180.2	25.17	25.20	
CA_4A-46,D	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B46 ₁	20	48290	5200	LTE B46 ₁	20	48488	5210.8	LTE B46 ₁	20	48090	5200.2	25.15	25.20	
CA_4A-46,D	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5610.8	LTE B46 ₁	20	51090	5580.2	25.18	25.20	
CA_4A-46,D	LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B46 ₁	20	51390	5785	LTE B46 ₁	20	53338	5619.8	LTE B46 ₁	20	52942	5765.2	25.12	25.20	

LTE Band 66 as PCC

Table 33

Maximum Output Powers

Combination	PCB Band	PCB BW [MHz]	PCC [UL] Ch. Freq. [MHz]	PCC		PCC [UL] RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [UL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	Power		
				Mod.	PCC [UL] RB																					LTE Tx Power with DR CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 2A-46A-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B2	20	900	1960	LTE B46	20	47290	5200	-	-	-	-	-	-	-	-	25.17	25.20	
CA 2A-46A-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B2	20	900	1960	LTE B46	20	48290	5300	-	-	-	-	-	-	-	-	25.19	25.20	
CA 2A-46A-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B2	20	900	1960	LTE B46	20	47290	5200	-	-	-	-	-	-	-	-	25.16	25.20	
CA 2A-46A-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B2	20	900	1960	LTE B46	20	53140	5785	-	-	-	-	-	-	-	-	25.16	25.20	
CA 13A-46A-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	47290	5200	-	-	-	-	-	-	-	-	25.20	25.20	
CA 13A-46A-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	48290	5300	-	-	-	-	-	-	-	-	25.19	25.20	
CA 13A-46A-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	51290	5600	-	-	-	-	-	-	-	-	25.20	25.20	
CA 13A-46A-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	53140	5785	-	-	-	-	-	-	-	-	25.20	25.20	
CA 46A-46A-66A	LTE B86	20	132072	1720	QPSK	0	0	66536	2120	LTE B46	20	47090	5180	LTE B46	20	53140	5825	-	-	-	-	-	-	-	-	25.20	25.20	
CA 13A-46C-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	47290	5200	LTE B46	20	47488	5219	-	-	-	-	-	25.18	25.20
CA 13A-46C-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	48290	5300	LTE B46	20	48488	5319	-	-	-	-	-	25.19	25.20
CA 13A-46C-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	51290	5600	LTE B46	20	51488	5619	-	-	-	-	-	25.20	25.20
CA 13A-46C-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	53140	5785	LTE B46	20	53138	5804	-	-	-	-	-	25.17	25.20
CA 46A-46C-66A	LTE B86	20	132072	1720	QPSK	0	0	66536	2120	LTE B46	20	47090	5180	LTE B46	20	53140	5825	LTE B46	20	53138	5804	-	-	-	-	-	25.20	25.20
CA 2A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B2	20	900	1960	LTE B46	20	47290	5200	LTE B46	20	47488	5219	LTE B46	20	47092	5180.2	25.12	25.20	
CA 2A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B2	20	900	1960	LTE B46	20	48290	5300	LTE B46	20	48488	5319	LTE B46	20	48092	5280.2	25.16	25.20	
CA 2A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B2	20	900	1960	LTE B46	20	51290	5600	LTE B46	20	51488	5619	LTE B46	20	51092	5580.2	25.18	25.20	
CA 2A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B2	20	900	1960	LTE B46	20	53140	5785	LTE B46	20	53138	5804	LTE B46	20	52942	5765.2	25.17	25.20	
CA 5A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B5	10	2525	881.5	LTE B46	20	47290	5200	LTE B46	20	47488	5219	LTE B46	20	47092	5180.2	25.12	25.20	
CA 5A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B5	10	2525	881.5	LTE B46	20	48290	5300	LTE B46	20	48488	5319	LTE B46	20	48092	5280.2	25.16	25.20	
CA 5A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B5	10	2525	881.5	LTE B46	20	51290	5600	LTE B46	20	51488	5619	LTE B46	20	51092	5580.2	25.18	25.20	
CA 5A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B5	10	2525	881.5	LTE B46	20	53140	5785	LTE B46	20	53138	5804	LTE B46	20	52942	5765.2	25.14	25.20	
CA 13A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	47290	5200	LTE B46	20	47488	5219	LTE B46	20	47092	5180.2	25.12	25.20	
CA 13A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	48290	5300	LTE B46	20	48488	5319	LTE B46	20	48092	5280.2	25.16	25.20	
CA 13A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	51290	5600	LTE B46	20	51488	5619	LTE B46	20	51092	5580.2	25.18	25.20	
CA 13A-46D-66A	LTE B86	20	132072	1720	QPSK	1	0	66536	2120	LTE B13	10	5230	751	LTE B46	20	53140	5785	LTE B46	20	53138	5804	LTE B46	20	52942	5765.2	25.17	25.20	

Table 34

Reduced Output Powers

Combination	PCB Band	PCB MHz	PCC				Mod.	PCC ULs			PCC (DL) Ch.	SCC 1				SCC 2				SCC 3				SCC 4				Power	
			PCC (UL) Freq. [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	PCC (UL) Ch.		RB Offset	PCC (DL) Freq. [MHz]	SCC Band		SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	LTE Tx Power with DR CA	LTE Single Carrier Tx Power (dBm)	
CA 24-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B2	20	900	1960	LTE B46	20	47920	5200	-	-	-	-	-	-	-	-	-	24.20	24.20	
CA 24-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B2	20	900	1960	LTE B46	20	48290	5300	-	-	-	-	-	-	-	-	-	24.16	24.20	
CA 24-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B2	20	900	1960	LTE B46	20	48290	5300	-	-	-	-	-	-	-	-	-	24.17	24.20	
CA 24-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B2	20	900	1960	LTE B46	20	51240	5785	-	-	-	-	-	-	-	-	-	24.19	24.20	
CA 13A-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	47920	5200	-	-	-	-	-	-	-	-	-	24.11	24.20	
CA 13A-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	48290	5300	-	-	-	-	-	-	-	-	-	24.07	24.20	
CA 13A-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	51290	5600	-	-	-	-	-	-	-	-	-	24.08	24.20	
CA 13A-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	51240	5785	-	-	-	-	-	-	-	-	-	24.05	24.20	
CA 13A-46-A-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B46	20	47900	5180	LTE B46	20	51540	5825	-	-	-	-	-	-	-	-	-	24.06	24.20	
CA 13A-46-C-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	47920	5200	LTE B46	20	47488	5219.8	-	-	-	-	-	24.20	24.20	
CA 13A-46-C-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	48290	5300	LTE B46	20	48488	5319.8	-	-	-	-	-	24.17	24.20	
CA 13A-46-C-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	51290	5600	LTE B46	20	51488	5619.8	-	-	-	-	-	24.15	24.20	
CA 13A-46-C-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	51240	5785	LTE B46	20	51338	5804.8	-	-	-	-	-	24.13	24.20	
CA 13A-46-C-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B46	20	47900	5180	LTE B46	20	51540	5825	LTE B46	20	51488	5819.8	-	-	-	-	-	24.16	24.20	
CA 46-A-46-C-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B46	20	47900	5180	LTE B46	20	51540	5825	LTE B46	20	47288	5199.8	-	-	-	-	-	24.15	24.20	
CA 24-46-D-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B2	20	900	1960	LTE B46	20	47920	5200	LTE B46	20	47488	5219.8	LTE B46	20	47092	5180.2	24.20	24.20		
CA 24-46-D-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B2	20	900	1960	LTE B46	20	48290	5300	LTE B46	20	48488	5319.8	LTE B46	20	48092	5280.2	24.19	24.20		
CA 24-46-D-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B2	20	900	1960	LTE B46	20	51290	5600	LTE B46	20	51488	5619.8	LTE B46	20	51098	5580.2	24.12	24.20		
CA 24-46-D-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B2	20	900	1960	LTE B46	20	51240	5785	LTE B46	20	51338	5804.8	LTE B46	20	52942	5765.2	24.13	24.20		
CA 5A-46-B-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B5	20	2525	881.5	LTE B46	20	47920	5200	LTE B46	20	47488	5219.8	LTE B46	20	47092	5180.2	24.18	24.20		
CA 5A-46-B-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B5	20	2525	881.5	LTE B46	20	48290	5300	LTE B46	20	48488	5319.8	LTE B46	20	48092	5280.2	24.19	24.20		
CA 5A-46-B-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B5	20	2525	881.5	LTE B46	20	51290	5600	LTE B46	20	51488	5619.8	LTE B46	20	51098	5580.2	24.17	24.20		
CA 5A-46-B-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B5	20	2525	881.5	LTE B46	20	51240	5785	LTE B46	20	51338	5804.8	LTE B46	20	52942	5765.2	24.19	24.20		
CA 13A-46-D-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	47920	5200	LTE B46	20	47488	5219.8	LTE B46	20	47092	5180.2	24.18	24.20		
CA 13A-46-D-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	48290	5300	LTE B46	20	48488	5319.8	LTE B46	20	48092	5280.2	24.17	24.20		
CA 13A-46-D-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	51290	5600	LTE B46	20	51488	5619.8	LTE B46	20	51098	5580.2	24.16	24.20		
CA 13A-46-D-66A	LTE B66	20	132072	1720	QPSK	1	99	66536	2120	LTE B13	20	5230	751	LTE B46	20	51240	5785	LTE B46	20	51338	5804.8	LTE B46	20	52942	5765.2	24.17	24.20		

LTE Band 2 as PCC

Table 35

Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC				SSC 1				SSC 2				SSC 3				SSC 4				Power				
				PCC [UL] Freq. [MHz]	Mod.	PCC UL# ID	PCC UL# Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC [DL] Ch.	SSC [DL] Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC [DL] Ch.	SSC [DL] Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC [DL] Ch.	SSC [DL] Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC [DL] Ch.	SSC [DL] Freq. [MHz]	LTE Tx Power with DR CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]	
CA_2A-46_A-46A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	47090	5180	LTE B46 ₁	20	53540	5825	-	-	-	-	-	-	-	-	25.49	25.49	
CA_2A-46_A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	47290	5200	LTE B66	20	61680	2145	-	-	-	-	-	-	-	-	25.49	25.49	
CA_2A-46_A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	48290	5300	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	25.50	25.49	
CA_2A-46_A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	51290	5600	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	25.50	25.49	
CA_2A-46_A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	53140	5785	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	25.49	25.49	
CA_2A-46_A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	47090	5180	LTE B46 ₁	20	53540	5825	LTE B46 ₁	20	53342	5805.2	-	-	-	-	-	25.49	25.49
CA_2A-5A-46_A-46A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	53540	5180	LTE B46 ₁	20	47090	5180	-	-	-	-	-	-	-	-	25.49	25.49	
CA_2A-5A-46_A-46A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	53540	5180	LTE B46 ₁	20	47090	5180	-	-	-	-	-	-	-	-	25.49	25.49	
CA_2A-5A-46_A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	53540	5180	LTE B46 ₁	20	47090	5180	-	-	-	-	-	-	-	-	25.49	25.49	
CA_2A-5A-46_A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	53540	5180	LTE B46 ₁	20	47090	5180	-	-	-	-	-	-	-	-	25.49	25.49	
CA_2A-5A-46_A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	53540	5180	LTE B46 ₁	20	47090	5180	-	-	-	-	-	-	-	-	25.49	25.49	
CA_2A-13A-46_A-46A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B13	10	53290	751	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	25.28	25.49	
CA_2A-13A-46_A-46A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B13	10	53290	751	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	25.28	25.49	
CA_2A-13A-46_A-46A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B13	10	53290	751	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	25.28	25.49	
CA_2A-13A-46_A-46A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B13	10	53290	751	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	51092	5580.2	25.28	25.49	
CA_2A-46_0-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	47290	5200	LTE B46 ₁	20	47488	5218.8	LTE B46 ₁	20	62786	2145	-	-	-	-	25.49	25.49	
CA_2A-46_0-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	62786	2145	-	-	-	-	25.49	25.49	
CA_2A-46_0-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	53140	5785	LTE B46 ₁	20	53338	5804.8	LTE B46 ₁	20	62786	2145	-	-	-	-	25.49	25.49	
CA_2A-46_0-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46 ₁	20	51290	5600	LTE B46 ₁	20	51488	5619.8	LTE B46 ₁	20	62786	2145	-	-	-	-	25.49	25.49	

FCC ID: ZNFG710VM	 PCTEST TECHNOLOGY CORPORATION, INC.	SAR EVALUATION REPORT	 LG	Reviewed by: Quality Manager
Test Dates: 02/28/18 – 03/19/18	DUT Type: Portable Handset	APPENDIX H: Page 11 of 14		

Table 36
Reduced Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC					SCC 1					SCC 2					SCC 3					SCC 4					Power	
				Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dbm)	LTE Single Carrier Tx Power (dbm)				
CA 2A-46A-46A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	47090	5180	LTE B46	20	53540	5825	-	-	-	-	-	-	-	-	24.41	24.50			
CA 2A-46A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	47290	5200	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	24.46	24.50			
CA 2A-46A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	48290	5300	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	24.49	24.50			
CA 2A-46A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	51290	5600	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	24.50	24.50			
CA 2A-46A-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	53140	5785	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	24.48	24.50			
CA 2A-46A-46C	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	47090	5180	LTE B46	20	53540	5825	LTE B46	20	53342	5805.2	-	-	-	-	-	24.49	24.50		
CA 2A-46A-46C	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	53540	5825	LTE B46	20	47090	5180	LTE B46	20	47288	5199.8	-	-	-	-	-	24.46	24.50		
CA 2A-5A-46D	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	2525	881.5	LTE B46	20	47290	5200	LTE B46	20	47488	5219.8	LTE B46	20	47092	5180.2	24.40	24.50			
CA 2A-5A-46D	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	2525	881.5	LTE B46	20	48290	5300	LTE B46	20	48488	5319.8	LTE B46	20	48092	5280.2	24.42	24.50			
CA 2A-5A-46D	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	2525	881.5	LTE B46	20	51290	5600	LTE B46	20	51488	5619.8	LTE B46	20	51092	5580.2	24.48	24.50			
CA 2A-5A-46D	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B5	10	2525	881.5	LTE B46	20	53140	5785	LTE B46	20	53338	5804.8	LTE B46	20	52942	5765.2	24.50	24.50			
CA 2A-13A-46D	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B13	10	5230	751	LTE B46	20	47290	5200	LTE B46	20	47488	5219.8	LTE B46	20	47092	5180.2	24.49	24.50			
CA 2A-13A-46D	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B13	10	5230	751	LTE B46	20	48290	5300	LTE B46	20	48488	5319.8	LTE B46	20	48092	5280.2	24.36	24.50			
CA 2A-13A-46D	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B13	10	5230	751	LTE B46	20	51290	5600	LTE B46	20	51488	5619.8	LTE B46	20	51092	5580.2	24.40	24.50			
CA 2A-13A-46D	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B13	10	5230	751	LTE B46	20	53140	5785	LTE B46	20	53338	5804.8	LTE B46	20	52942	5765.2	24.47	24.50			
CA 2A-46D-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	47290	5200	LTE B46	20	47488	5219.8	LTE B46	20	47092	5180.2	LTE B66	20	66786	2145	24.30	24.50			
CA 2A-46D-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	48290	5300	LTE B46	20	48488	5319.8	LTE B46	20	48092	5280.2	LTE B66	20	66786	2145	24.36	24.50			
CA 2A-46D-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	51290	5600	LTE B46	20	51488	5619.8	LTE B46	20	51092	5580.2	LTE B66	20	66786	2145	24.28	24.50			
CA 2A-46D-66A	LTE B2	10	19150	1905	QPSK	1	25	1150	1985	LTE B46	20	53140	5785	LTE B46	20	53338	5804.8	LTE B46	20	52942	5765.2	LTE B66	20	66786	2145	24.29	24.50			

1.5.2 4x4 DL MIMO LAA Downlink Carrier Aggregation RF Conducted Powers

1.5.2.1 LTE Band 4 as PCC

Table 37
Maximum Output Powers

Combination	PCC														SCC 1										SCC 2				SCC 3				LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (DL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) 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.									
CA [4A]-46A	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	47290	5200	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.15	25.20							
CA [4A]-46A	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	48290	5300	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.16	25.20							
CA [4A]-46A	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	51290	5600	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.14	25.20							
CA [4A]-46A	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.20	25.20							
CA [4A]-46C	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	47290	5200	2x2 MIMO	LTE B46	20	47488	5219.8	2x2 MIMO	-	-	-	-	-	25.14	25.20							
CA [4A]-46C	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	48290	5300	2x2 MIMO	LTE B46	20	48488	5319.8	2x2 MIMO	-	-	-	-	-	25.15	25.20							
CA [4A]-46C	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	51290	5600	2x2 MIMO	LTE B46	20	51488	5619.8	2x2 MIMO	-	-	-	-	-	25.16	25.20							
CA [4A]-46C	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	LTE B46	20	53338	5804.8	2x2 MIMO	-	-	-	-	-	25.18	25.20							
CA [4A]-46D	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	47290	5200	2x2 MIMO	LTE B46	20	47488	5219.8	2x2 MIMO	LTE B46	20	47092	5180.2	2x2 MIMO	25.13	25.20							
CA [4A]-46D	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	48290	5300	2x2 MIMO	LTE B46	20	48488	5319.8	2x2 MIMO	LTE B46	20	48092	5280.2	2x2 MIMO	25.14	25.20							
CA [4A]-46D	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	51290	5600	2x2 MIMO	LTE B46	20	51488	5619.8	2x2 MIMO	LTE B46	20	51092	5580.2	2x2 MIMO	25.17	25.20							
CA [4A]-46D	LTE B4	20	2050	1720	QPSK	1	0	2050	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	LTE B46	20	53338	5804.8	2x2 MIMO	LTE B46	20	52942	5765.2	2x2 MIMO	25.14	25.20							

Table 38
Reduced Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (DL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC 1				SCC Band	SCC BW [MHz]	SCC 2				SCC Band	SCC BW [MHz]	SCC 3				LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
											SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC (DL) Ch.			SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC (DL) Ch.	SCC (DL) Freq. [MHz]			DL Ant. Config.					
CA [4A]-46A	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	47290	5200	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	-	24.19	24.20
CA [4A]-46A	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	48290	5300	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	-	24.04	24.20
CA [4A]-46A	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	51290	5600	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	-	24.08	24.20
CA [4A]-46A	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	-	24.14	24.20
CA [4A]-46C	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	47290	5200	2x2 MIMO	LTE B46	20	47488	5219.8	2x2 MIMO	-	-	-	-	-	-	24.15	24.20
CA [4A]-46C	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	48290	5300	2x2 MIMO	LTE B46	20	48488	5319.8	2x2 MIMO	-	-	-	-	-	-	24.20	24.20
CA [4A]-46C	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	51290	5600	2x2 MIMO	LTE B46	20	51488	5619.8	2x2 MIMO	-	-	-	-	-	-	24.19	24.20
CA [4A]-46C	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	LTE B46	20	53338	5804.8	2x2 MIMO	-	-	-	-	-	-	24.15	24.20
CA [4A]-46D	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	47290	5200	2x2 MIMO	LTE B46	20	47488	5219.8	2x2 MIMO	LTE B46	20	47092	5180.2	2x2 MIMO	24.20	24.20	
CA [4A]-46D	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	48290	5300	2x2 MIMO	LTE B46	20	48488	5319.8	2x2 MIMO	LTE B46	20	48092	5280.2	2x2 MIMO	24.17	24.20	
CA [4A]-46D	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	51290	5600	2x2 MIMO	LTE B46	20	51488	5619.8	2x2 MIMO	LTE B46	20	51092	5580.2	2x2 MIMO	24.18	24.20	
CA [4A]-46D	LTE B4	20	2050	1720	QPSK	1	99	2050	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	LTE B46	20	53338	5804.8	2x2 MIMO	LTE B46	20	52942	5765.2	2x2 MIMO	24.19	24.20	

1.5.2.2 LTE Band 66 as PCC

Table 39
Maximum Output Powers

Combination	PCC										SCC 1										SCC 2										SCC 3										Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	PCC Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) 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.	LTE Tx Power with CA Enabled (dBm)	DL Single Carrier Tx Power (dBm)															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	472920	5200	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.19	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	482920	5300	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.20	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	522920	5400	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.20	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.20	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	472920	5200	2x2 MIMO	LTE B46	20	47488	5219.8	2x2 MIMO	-	-	-	-	-	25.20	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	482920	5300	2x2 MIMO	LTE B46	20	48488	5319.8	2x2 MIMO	-	-	-	-	-	25.19	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	522920	5400	2x2 MIMO	LTE B46	20	52488	5619.8	2x2 MIMO	-	-	-	-	-	25.20	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	LTE B46	20	53338	5804.8	2x2 MIMO	-	-	-	-	-	25.20	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	472920	5200	2x2 MIMO	LTE B46	20	47488	5219.8	2x2 MIMO	LTE B46	20	47692	5180.2	2x2 MIMO	25.18	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	482920	5300	2x2 MIMO	LTE B46	20	48488	5319.8	2x2 MIMO	LTE B46	20	48692	5280.2	2x2 MIMO	25.20	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	522920	5400	2x2 MIMO	LTE B46	20	52488	5619.8	2x2 MIMO	LTE B46	20	52692	5580.2	2x2 MIMO	25.20	25.20															
CA_A64-A66	LTE B66	20	130720	1720	QPSK	1	0	66336	2120	4x4 MIMO	LTE B46	20	53140	5785	2x2 MIMO	LTE B46	20	53338	5804.8	2x2 MIMO	LTE B46	20	53542	5765.2	2x2 MIMO	25.20	25.20															

Table 40
Reduced Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL				PCC [DL] 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.	LTE Tx Power with DC CA Enabled (dbm)	LTE Single Carrier Tx Power (dbm)	
						PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]																					
CA 46A+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	-	-	24.14	24.20	
CA 46A+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	-	-	24.35	24.20	
CA 46A+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	-	-	24.20	24.20	
CA 46A+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	-	-	24.37	24.20	
CA 46C+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	LTE 846L	20	47488	5219.8	2x2 MIMO	-	-	-	-	-	-	-	-	24.18	24.20
CA 46C+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	LTE 846L	20	48488	5319.8	2x2 MIMO	-	-	-	-	-	-	-	-	24.20	24.20
CA 46C+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	LTE 846L	20	51488	5619.8	2x2 MIMO	-	-	-	-	-	-	-	-	24.36	24.20
CA 46C+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	LTE 846L	20	53338	5804.8	2x2 MIMO	-	-	-	-	-	-	-	-	24.17	24.20
CA 46D+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	LTE 846L	20	47488	5219.8	2x2 MIMO	LTE 846L	20	47092	5180.2	2x2 MIMO	23.99	24.20			
CA 46D+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	LTE 846L	20	48488	5319.8	2x2 MIMO	LTE 846L	20	48092	5280.2	2x2 MIMO	24.11	24.20			
CA 46D+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	LTE 846L	20	51488	5619.8	2x2 MIMO	LTE 846L	20	51092	5580.2	2x2 MIMO	24.16	24.20			
CA 46D+(66A)	LTE 866	20	132072	1720	QPSK	1	99	66536	2120	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	LTE 846L	20	53338	5804.8	2x2 MIMO	LTE 846L	20	52942	5765.2	2x2 MIMO	24.20	24.20			

1.5.2.3 LTE Band 2 as PCC

Table 41
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				Power					
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] 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.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA [2A]-46A	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.37	25.49	
CA [2A]-46A	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.41	25.49	
CA [2A]-46A	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.35	25.49	
CA [2A]-46A	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	-	-	-	-	-	-	-	-	-	-	25.45	25.49	
CA [2A]-46C	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	LTE 846L	20	47488	5219.8	2x2 MIMO	-	-	-	-	-	-	25.41	25.49
CA [2A]-46C	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	LTE 846L	20	48488	5319.8	2x2 MIMO	-	-	-	-	-	-	25.46	25.49
CA [2A]-46C	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	LTE 846L	20	51488	5619.8	2x2 MIMO	-	-	-	-	-	-	25.43	25.49
CA [2A]-46C	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	LTE 846L	20	53338	5804.8	2x2 MIMO	-	-	-	-	-	-	25.42	25.49
CA [2A]-46D	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	LTE 846L	20	47488	5219.8	2x2 MIMO	LTE 846L	20	47092	5180.2	2x2 MIMO	25.47	25.49	
CA [2A]-46D	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	LTE 846L	20	48488	5319.8	2x2 MIMO	LTE 846L	20	48092	5280.2	2x2 MIMO	25.48	25.49	
CA [2A]-46D	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	LTE 846L	20	51488	5619.8	2x2 MIMO	LTE 846L	20	51092	5580.2	2x2 MIMO	25.46	25.49	
CA [2A]-46D	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	LTE 846L	20	53338	5804.8	2x2 MIMO	LTE 846L	20	52942	5765.2	2x2 MIMO	25.49	25.49	

Table 42
Reduced Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	PCC				DL Ant. Config.	SCC 1				DL Ant. Config.	SCC 2				DL Ant. Config.	SCC 3				LTE Tx Power with DC CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)		
					Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.		PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.		SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.		SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.			SCC [DL] Freq. [MHz]	
CA [2A]-46A	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	-	-	-	-	-	-	-	-	-	24.45	24.50	
CA [2A]-46A	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	-	-	-	-	-	-	-	-	-	24.44	24.50	
CA [2A]-46A	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	-	-	-	-	-	-	-	-	-	24.47	24.50	
CA [2A]-46A	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	-	-	-	-	-	-	-	-	-	24.44	24.50	
CA [2A]-46C	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	LTE 846L	20	47488	5219.8	2x2 MIMO	-	-	-	-	-	24.48	24.50
CA [2A]-46C	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	LTE 846L	20	48488	5319.8	2x2 MIMO	-	-	-	-	-	24.46	24.50
CA [2A]-46C	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	LTE 846L	20	51488	5619.8	2x2 MIMO	-	-	-	-	-	24.42	24.50
CA [2A]-46C	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	LTE 846L	20	53338	5804.8	2x2 MIMO	-	-	-	-	-	24.36	24.50
CA [2A]-46D	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	47290	5200	2x2 MIMO	LTE 846L	20	47488	5219.8	2x2 MIMO	LTE 846L	20	47092	5180.2	2x2 MIMO	24.48	24.50
CA [2A]-46D	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	48290	5300	2x2 MIMO	LTE 846L	20	48488	5319.8	2x2 MIMO	LTE 846L	20	48092	5280.2	2x2 MIMO	24.46	24.50
CA [2A]-46D	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	51290	5600	2x2 MIMO	LTE 846L	20	51488	5619.8	2x2 MIMO	LTE 846L	20	51092	5580.2	2x2 MIMO	24.47	24.50
CA [2A]-46D	LTE 82	10	19150	1905	QPSK	1	25	1150	1985	4x4 MIMO	LTE 846L	20	53140	5785	2x2 MIMO	LTE 846L	20	53338	5804.8	2x2 MIMO	LTE 846L	20	52942	5765.2	2x2 MIMO	24.43	24.50

1.6 Downlink Carrier Aggregation with CA_41C Uplink Carrier Aggregation enabled

This device supports uplink carrier aggregation (ULCA) for CA_41C with additional component carrier configurations active in the downlink. Power measurements were performed with ULCA CA_41C active and additional CA configurations active in the downlink for the configuration required for ULCA CA_41C 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 ULCA with only CA_41C active.

1.6.1 SISO Carrier Aggregation RF Conducted Powers

Table 43
Maximum Output Powers

	PCC						SCC1						SCC2				Power			
Combination	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 DL Channel	SCC DL Frequency [MHz]	CA_41C ULCA Tx. Power with DLCA enabled (dBm)	CA_41C ULCA Tx. Power (dBm)
CA_41D	LTE B41	20	40620	2593.0	QPSK	1	99	LTE B41	20	40818	2612.8	QPSK	1	0	LTE B41	20	40422	2573.2	25.13	25.20

FCC ID: ZNFG710VM		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 02/28/18 – 03/19/18	DUT Type: Portable Handset	APPENDIX H: Page 13 of 14		

1.6.2 4x4 DL MIMO Carrier Aggregation 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 CA_41C.

Table 44
Maximum Output Powers

Combination	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	DL Ant. Config.	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL RB	SCC UL RB Offset	DL Ant. Config.	SCC Band	SCC Bandwidth [MHz]	SCC DL Channel	SCC DL Frequency [MHz]	DL Ant. Config.	CA_41C ULCA Tx. Power with DLCA Enabled (dBm)	CA_41C ULCA Tx. Power (dBm)
CA_41C	LTE B41	20	40620	2593.0	QPSK	1	99	4x4 MIMO	LTE B41	20	40818	2612.8	QPSK	1	0	4x4 MIMO	-	-	-	-	-	25.20	25.20
CA_41D	LTE B41	20	40620	2593.0	QPSK	1	99	4x4 MIMO	LTE B41	20	40818	2612.8	QPSK	1	0	4x4 MIMO	LTE B41	20	40422	2573.2	4x4 MIMO	25.16	25.20

FCC ID: ZNFG710VM	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT	 LG	Reviewed by: Quality Manager
Test Dates: 02/28/18 – 03/19/18	DUT Type: Portable Handset			APPENDIX H: Page 14 of 14