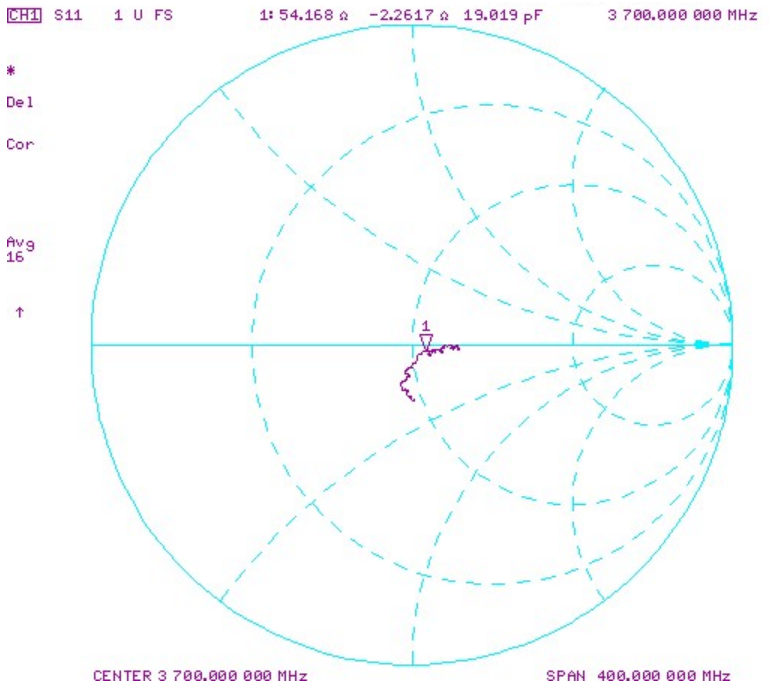
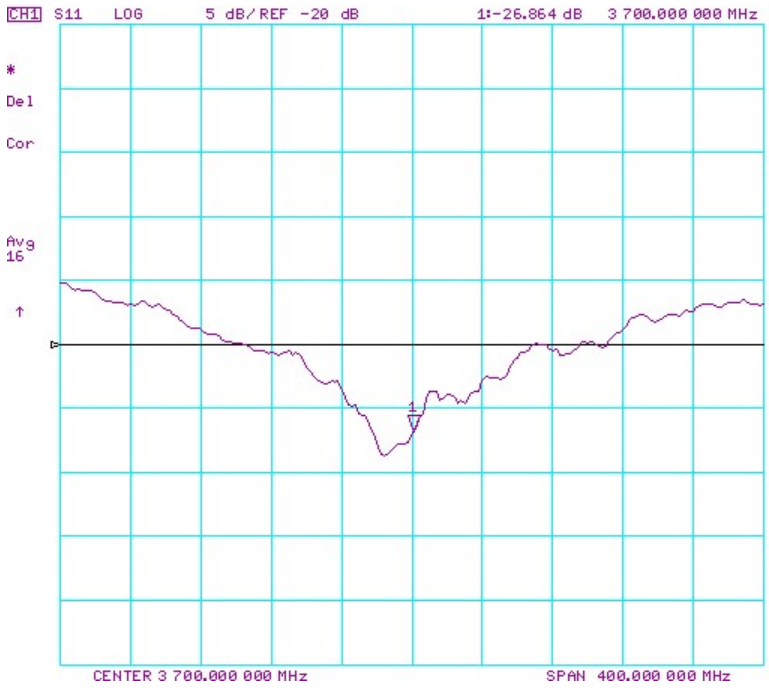
Impedance & Return-Loss Measurement Plot for Body TSL





Calibration Laboratory of
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Accreditation No.: SCS 0108

Client PC Test

Certificate No: EX3-7417_Feb19

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:7417

Calibration procedure(s): QA CAL-01.v9, QA CAL-23.v5, QA CAL-25.v7
Calibration procedure for dosimetric E-field probes

BN 02-26-2019

Calibration date: February 19, 2019

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 20, 2019

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7417

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.54	0.43	0.53	± 10.1 %
DCP (mV)[B]	98.7	97.4	100.4	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max dev.	Max Unc[E] (k=2)
0	CW	X	0.00	0.00	1.00	0.00	144.6	± 3.3 %	± 4.7 %
		Y	0.00	0.00	1.00		149.7		
		Z	0.00	0.00	1.00		143.1		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	15.00	88.38	19.65	10.00	60.0	± 3.3 %	± 9.6 %
		Y	4.33	71.38	13.30		60.0		
		Z	7.40	77.44	14.95		60.0		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	15.00	92.19	20.43	6.99	80.0	± 2.2 %	± 9.6 %
		Y	5.53	76.01	13.64		80.0		
		Z	15.00	85.74	16.43		80.0		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	15.00	107.68	26.54	3.98	95.0	± 1.3 %	± 9.6 %
		Y	9.05	79.53	12.66		95.0		
		Z	15.00	90.71	17.41		95.0		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	15.00	127.17	33.83	2.22	120.0	± 1.2 %	± 9.6 %
		Y	0.26	60.00	4.45		120.0		
		Z	15.00	99.84	20.30		120.0		
10387-AAA	QPSK Waveform, 1 MHz	X	0.56	60.62	7.74	0.00	150.0	± 3.6 %	± 9.6 %
		Y	0.42	60.00	4.69		150.0		
		Z	0.44	60.00	5.48		150.0		
10388-AAA	QPSK Waveform, 10 MHz	X	2.27	69.09	16.46	0.00	150.0	± 1.3 %	± 9.6 %
		Y	1.94	67.43	15.43		150.0		
		Z	2.06	68.27	16.05		150.0		
10396-AAA	64-QAM Waveform, 100 kHz	X	3.15	72.71	19.95	3.01	150.0	± 2.5 %	± 9.6 %
		Y	2.04	67.08	18.19		150.0		
		Z	2.07	66.03	16.88		150.0		
10399-AAA	64-QAM Waveform, 40 MHz	X	3.52	67.53	16.10	0.00	150.0	± 2.4 %	± 9.6 %
		Y	3.32	66.83	15.68		150.0		
		Z	3.38	67.15	15.89		150.0		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	4.80	65.90	15.74	0.00	150.0	± 4.4 %	± 9.6 %
		Y	4.58	65.58	15.59		150.0		
		Z	4.60	65.76	15.65		150.0		

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7417

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	37.6	279.10	35.33	9.45	0.00	5.09	1.69	0.14	1.01
Y	29.6	227.60	37.50	5.19	0.43	5.04	0.00	0.16	1.01
Z	28.8	214.34	35.37	6.91	0.00	5.04	0.00	0.24	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	120.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7417

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	10.36	10.36	10.36	0.54	0.99	± 12.0 %
835	41.5	0.90	10.07	10.07	10.07	0.48	0.84	± 12.0 %
1750	40.1	1.37	8.39	8.39	8.39	0.38	0.85	± 12.0 %
1900	40.0	1.40	8.11	8.11	8.11	0.39	0.84	± 12.0 %
2300	39.5	1.67	7.73	7.73	7.73	0.30	0.93	± 12.0 %
2450	39.2	1.80	7.46	7.46	7.46	0.39	0.95	± 12.0 %
2600	39.0	1.96	7.17	7.17	7.17	0.31	1.05	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

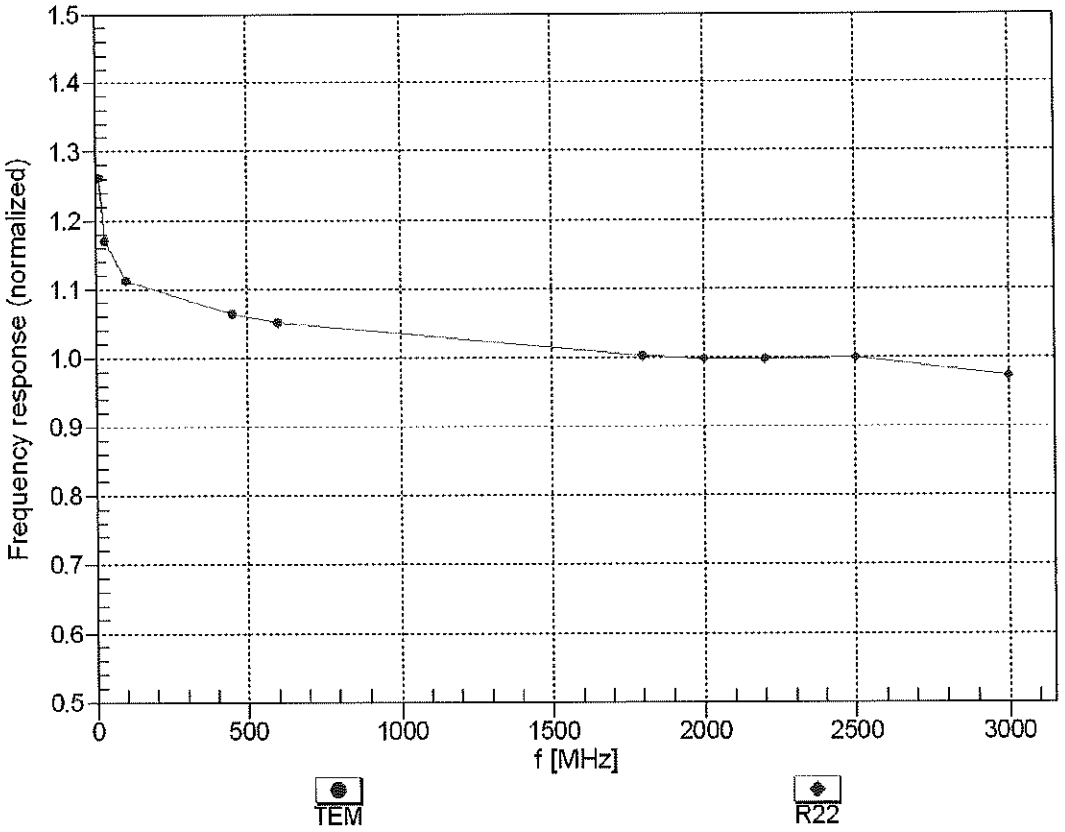
DASY/EASY - Parameters of Probe: EX3DV4 - SN:7417

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	10.35	10.35	10.35	0.63	0.84	± 12.0 %
835	55.2	0.97	10.11	10.11	10.11	0.43	0.84	± 12.0 %
1750	53.4	1.49	8.21	8.21	8.21	0.43	0.88	± 12.0 %
1900	53.3	1.52	7.86	7.86	7.86	0.43	0.87	± 12.0 %
2300	52.9	1.81	7.64	7.64	7.64	0.41	0.93	± 12.0 %
2450	52.7	1.95	7.51	7.51	7.51	0.40	0.95	± 12.0 %
2600	52.5	2.16	7.37	7.37	7.37	0.33	1.05	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

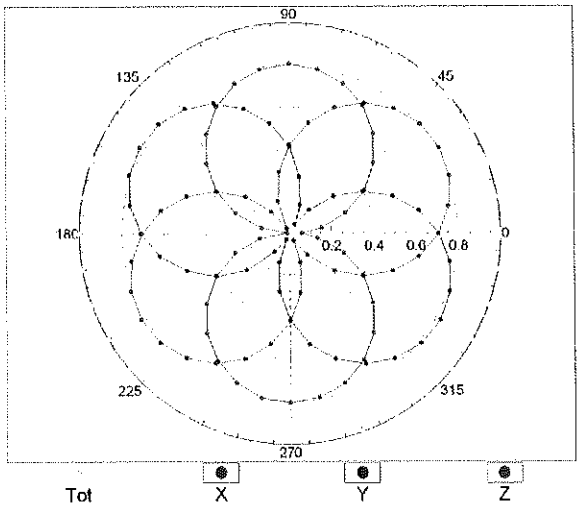
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



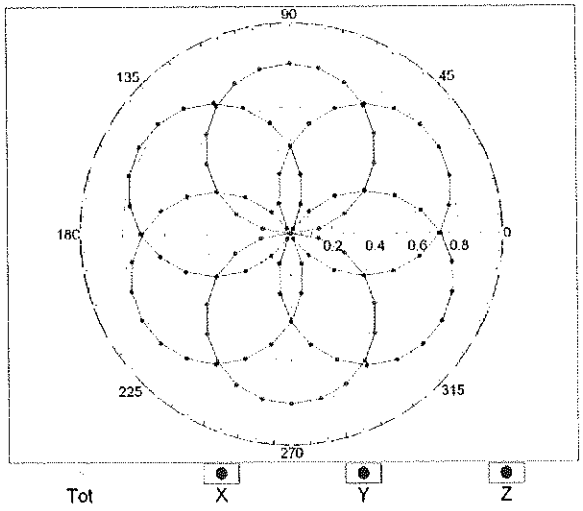
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

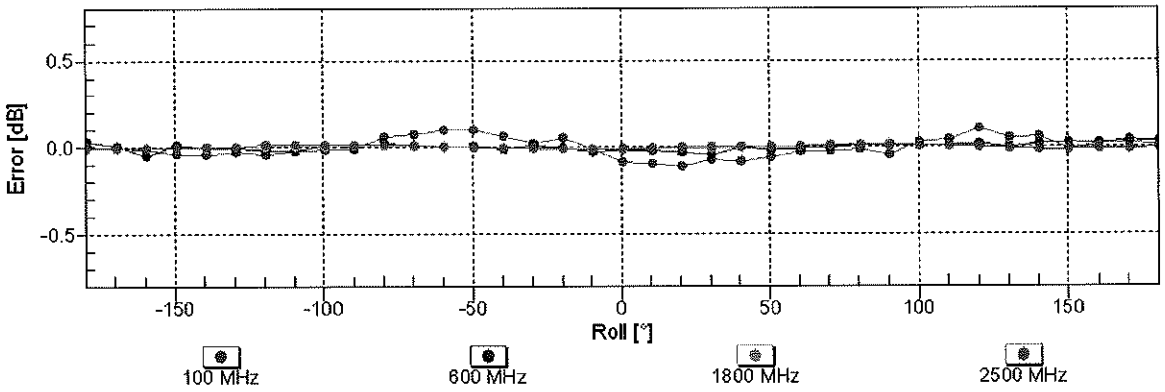
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22

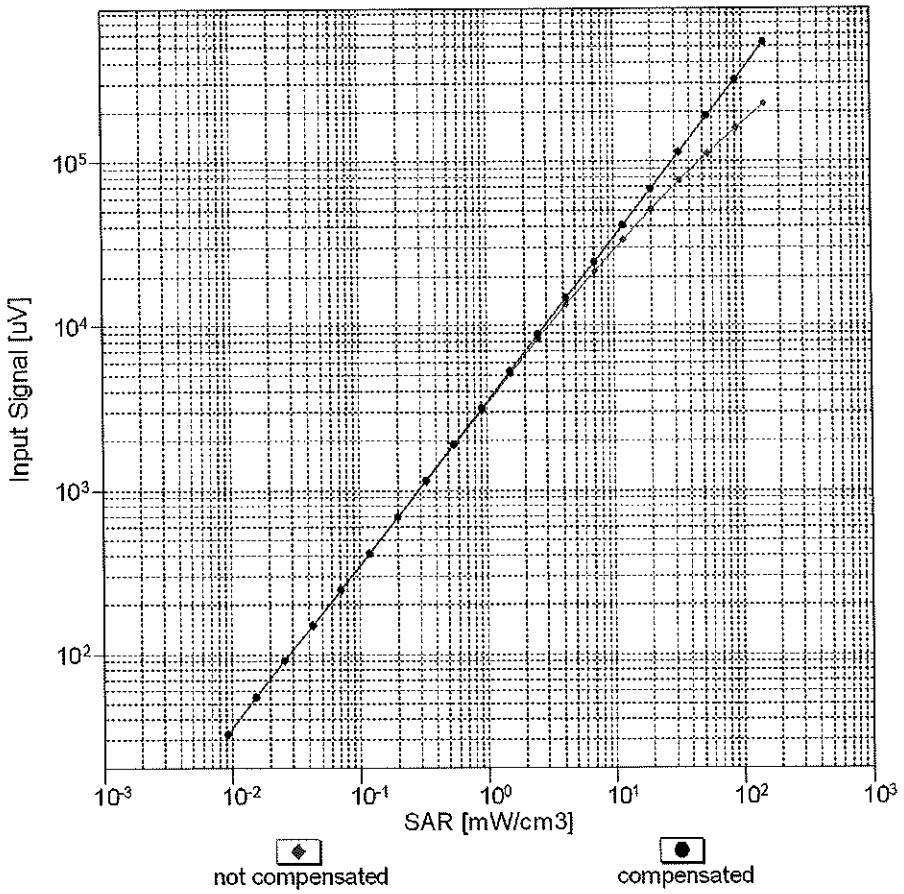


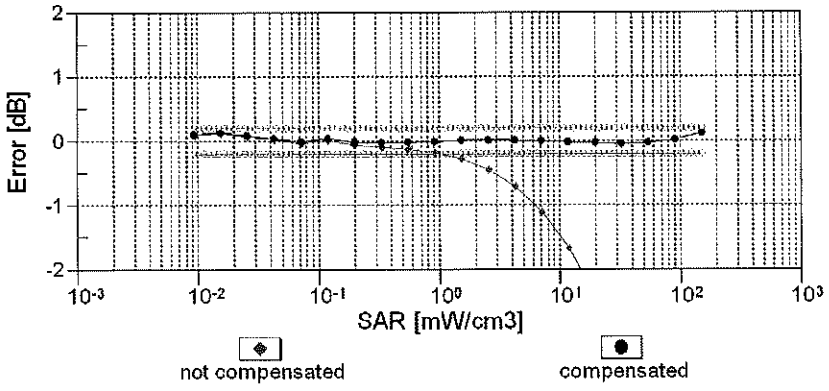


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR$_{head}$)

(TEM cell , f_{eval}= 1900 MHz)

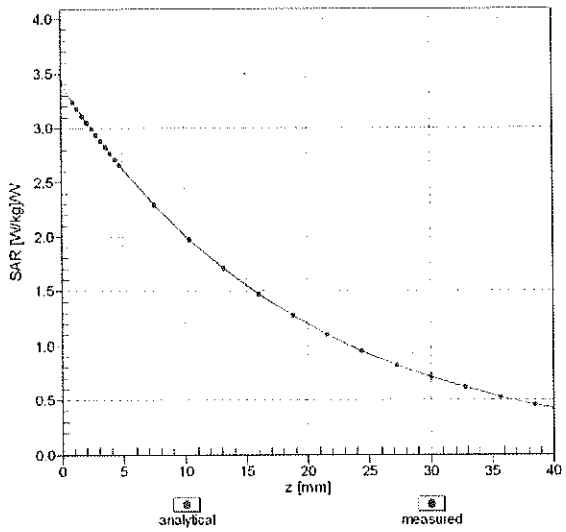




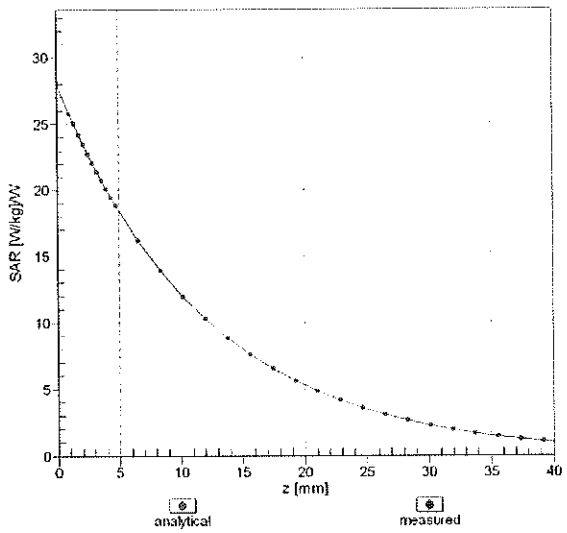
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

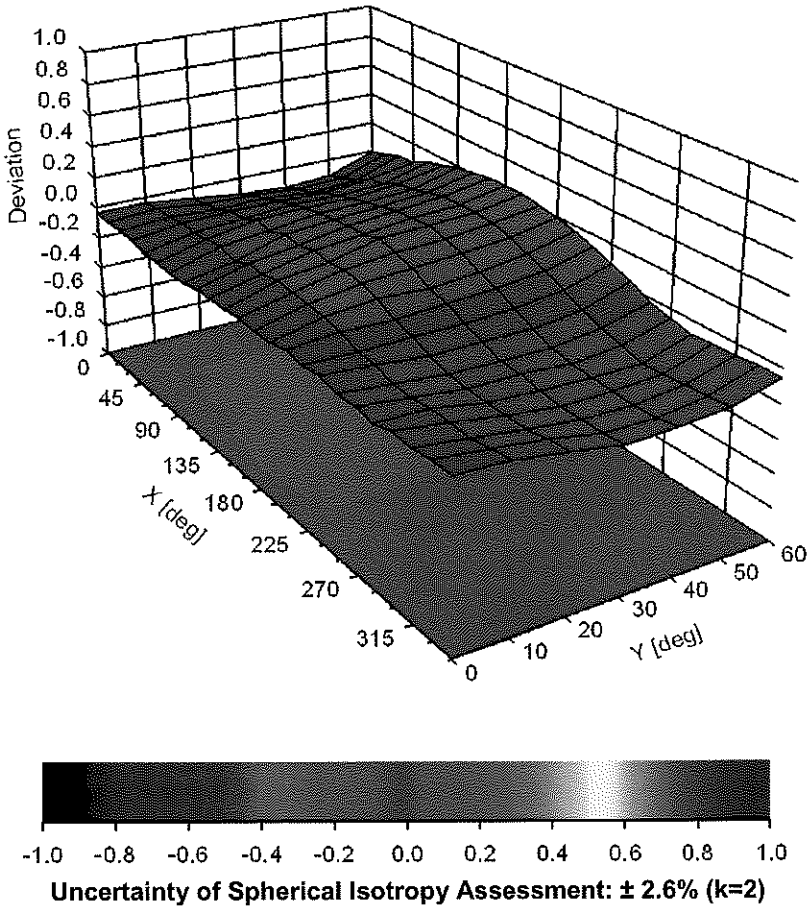


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc[E] (k=2)
0		CW	CW	0.00	± 4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	± 9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	± 9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10108	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %

10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194	CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10196	CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %

10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 %
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10241	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10243	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10245	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 %
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	± 9.6 %
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	± 9.6 %
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	± 9.6 %
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	± 9.6 %
10295	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %

10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WiMAX	12.03	± 9.6 %
10302	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WiMAX	12.57	± 9.6 %
10303	AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	WiMAX	15.24	± 9.6 %
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	WiMAX	14.67	± 9.6 %
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	WiMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WiMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	WiMAX	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WiMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	iDEN 1:3	iDEN	10.51	± 9.6 %
10314	AAA	iDEN 1:6	iDEN	13.48	± 9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	± 9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	± 9.6 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	± 9.6 %
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10465	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	± 9.6 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10482	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	± 9.6 %
10483	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	± 9.6 %
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	± 9.6 %
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	± 9.6 %
10486	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	± 9.6 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	± 9.6 %
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	± 9.6 %
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %

10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	± 9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	± 9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10497	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	± 9.6 %
10498	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.40	± 9.6 %
10499	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.68	± 9.6 %
10500	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	± 9.6 %
10501	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.44	± 9.6 %
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.52	± 9.6 %
10503	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	± 9.6 %
10504	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10505	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10506	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10507	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.36	± 9.6 %
10508	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	± 9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	± 9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	± 9.6 %
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10527	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	WLAN	8.21	± 9.6 %
10528	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10533	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	WLAN	8.45	± 9.6 %

10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	± 9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	± 9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	± 9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.13	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	WLAN	8.00	± 9.6 %
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.10	± 9.6 %
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.30	± 9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	± 9.6 %
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	± 9.6 %
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10586	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	± 9.6 %
10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	± 9.6 %

10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	± 9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	± 9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	± 9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	9.11	± 9.6 %
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	± 9.6 %

10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %

[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

APPENDIX D: SAR TISSUE SPECIFICATIONS

Measurement Procedure for Tissue verification:

1) The network analyzer and probe system was configured and calibrated.
2) The probe was immersed in the tissue. The tissue was placed in a nonmetallic container. Trapped air bubbles beneath the flange were minimized by placing the probe at a slight angle.
3) The complex admittance with respect to the probe aperture was measured
4) The complex relative permittivity ε' can be calculated from the below equation (Pournaropoulos and Misra):

$$Y = \frac{j2\omega\varepsilon_r\varepsilon_0}{\left[\ln(b/a)\right]^2}\int_a^b\int_a^b\int_0^\pi \cos\phi' \frac{\exp\left[-j\omega r(\mu_0\varepsilon_r'\varepsilon_0)^{1/2}\right]}{r} d\phi' d\rho' d\rho$$

where *Y* is the admittance of the probe in contact with the sample, the primed and unprimed coordinates refer to source and observation points, respectively, $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$, ω is the angular frequency, and $j = \sqrt{-1}$.

3 Composition / Information on ingredients

3.2 Mixtures
Description: Aqueous solution with surfactants and inhibitors
Declarable, or hazardous components:

CAS: 107-21-1 EINECS: 203-473-3 Reg.nr.: 01-2119456816-28-0000	**Ethanediol** STOT RE 2, H373; Acute Tox. 4, H302	>1.0-4.9%
CAS: 68608-26-4 EINECS: 271-781-5 Reg.nr.: 01-2119527859-22-0000	**Sodium petroleum sulfonate** Eye Irrit. 2, H319	< 2.9%
CAS: 107-41-5 EINECS: 203-489-0 Reg.nr.: 01-2119539582-35-0000	**Hexylene Glycol / 2-Methyl-pentane-2,4-diol** Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 2.9%
CAS: 68920-66-1 NLP: 500-236-9 Reg.nr.: 01-2119489407-26-0000	**Alkoxylated alcohol, > C_{16}** Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 2.0%

Additional information:
For the wording of the listed risk phrases refer to section 16.
Not mentioned CAS-, EINECS- or registration numbers are to be regarded as Proprietary/Confidential.
The specific chemical identity and/or exact percentage concentration of proprietary components is withheld as a trade secret.

Figure D-I

Note: 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.

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Measurement Certificate / Material Test

Item Name	**Body Tissue Simulating Liquid (MBBL600-6000V6)**
Product No.	SL AAM U16 BC (Batch: 181029-1)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Target Parameters

Target parameters as defined in the KDB 865664 compliance standard.

Test Condition

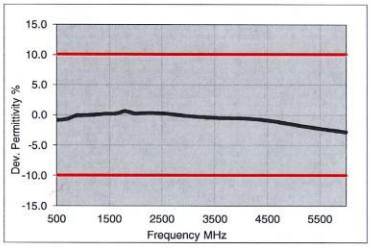
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	30-Oct-18
Operator	CL

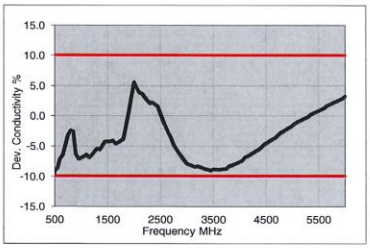
Additional Information

TSL Density
TSL Heat-capacity

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
800	55.1	21.3	0.95	55.3	0.97	-0.4	-2.1
825	55.1	20.8	0.96	55.2	0.98	-0.3	-2.0
835	55.1	20.6	0.96	55.1	0.99	0.0	-2.5
850	55.1	20.4	0.96	55.2	0.99	-0.1	-3.0
900	55.0	19.7	0.98	55.0	1.05	0.0	-6.7
1400	54.2	15.6	1.22	54.1	1.28	0.2	-4.7
1450	54.1	15.4	1.24	54.0	1.30	0.2	-4.6
1500	54.1	15.3	1.27	53.9	1.33	0.3	-4.5
1550	54.0	15.1	1.30	53.9	1.36	0.2	-4.4
1600	53.9	15.0	1.33	53.8	1.39	0.2	-4.3
1625	53.9	14.9	1.35	53.8	1.41	0.3	-4.3
1640	53.9	14.9	1.36	53.7	1.42	0.3	-4.2
1650	53.8	14.9	1.36	53.7	1.43	0.2	-4.9
1700	53.8	14.8	1.40	53.6	1.46	0.4	-4.1
1750	53.7	14.7	1.43	53.4	1.49	0.5	-4.0
1800	53.7	14.6	1.46	53.3	1.52	0.8	-3.9
1810	53.7	14.6	1.47	53.3	1.52	0.8	-3.3
1825	53.7	14.6	1.48	53.3	1.52	0.8	-2.6
1850	53.6	14.5	1.50	53.3	1.52	0.6	-1.3
1900	53.5	14.5	1.53	53.3	1.52	0.4	0.7
1950	53.5	14.5	1.57	53.3	1.52	0.4	3.3
2000	53.4	14.4	1.60	53.3	1.52	0.2	5.3
2050	53.4	14.4	1.64	53.2	1.57	0.3	4.5
2100	53.3	14.4	1.68	53.2	1.62	0.2	3.7
2150	53.3	14.4	1.72	53.1	1.66	0.4	3.6
2200	53.2	14.4	1.76	53.0	1.71	0.3	2.9
2250	53.1	14.4	1.81	53.0	1.76	0.2	2.8
2300	53.1	14.4	1.85	52.9	1.81	0.4	2.2
2350	53.0	14.5	1.89	52.8	1.85	0.3	2.2
2400	52.9	14.5	1.94	52.8	1.90	0.2	2.1
2450	52.9	14.5	1.98	52.7	1.95	0.4	1.5
2500	52.8	14.6	2.03	52.6	2.02	0.3	0.5
2550	52.7	14.6	2.07	52.6	2.09	0.2	-1.0
2600	52.6	14.7	2.12	52.5	2.16	0.2	-1.9





3500	51.1	15.5	3.02	51.3	3.31	-0.4	-8.8
3700	50.8	15.7	3.24	51.1	3.55	-0.5	-8.8
5200	48.1	18.2	5.27	49.0	5.30	-1.8	-0.6
5250	48.0	18.3	5.34	49.0	5.36	-1.9	-0.4
5300	47.9	18.4	5.41	48.9	5.42	-2.0	-0.2
5500	47.5	18.6	5.70	48.6	5.65	-2.2	0.8
5600	47.3	18.8	5.84	48.5	5.77	-2.3	1.3
5700	47.1	18.9	5.99	48.3	5.88	-2.5	1.8
5800	47.0	19.0	6.14	48.2	6.00	-2.6	2.3

Figure D-1
750 – 5800 MHz Body Tissue Equivalent Matter

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s p e a g

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Measurement Certificate / Material Test

Item Name	**Head Tissue Simulating Liquid (HBBL600-10000V6)**
Product No.	SL AAH U16 BC (Batch: 181031-2)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Target Parameters

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

Test Condition

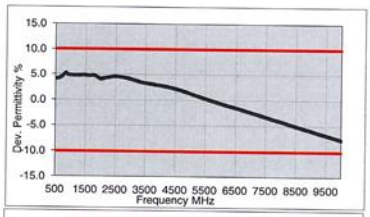
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	31-Oct-18
Operator	CL

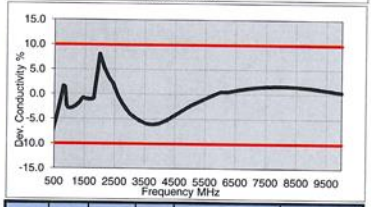
Additional Information

TSL Density
TSL Heat-capacity

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
800	43.8	20.5	0.91	41.7	0.90	5.1	1.4
825	43.8	20.1	0.92	41.6	0.91	5.3	1.5
835	43.8	19.9	0.93	41.5	0.91	5.4	2.0
850	43.7	19.7	0.93	41.5	0.92	5.3	1.5
900	43.5	18.9	0.95	41.5	0.97	4.8	-2.1
1400	42.5	15.0	1.17	40.6	1.18	4.7	-0.8
1450	42.5	14.8	1.19	40.5	1.20	4.9	-0.8
1600	42.2	14.3	1.27	40.3	1.28	4.7	-1.1
1625	42.2	14.2	1.29	40.3	1.30	4.8	-0.7
1640	42.2	14.2	1.30	40.3	1.31	4.8	-0.5
1650	42.1	14.2	1.30	40.2	1.31	4.6	-1.0
1700	42.1	14.0	1.33	40.2	1.34	4.8	-0.9
1750	42.0	13.9	1.36	40.1	1.37	4.8	-0.8
1800	41.9	13.9	1.39	40.0	1.40	4.7	-0.7
1810	41.9	13.8	1.40	40.0	1.40	4.7	0.0
1825	41.9	13.8	1.41	40.0	1.40	4.7	0.7
1850	41.8	13.8	1.42	40.0	1.40	4.5	1.4
1900	41.8	13.7	1.45	40.0	1.40	4.5	3.6
1950	41.7	13.7	1.48	40.0	1.40	4.3	5.7
2000	41.6	13.6	1.51	40.0	1.40	4.0	7.9
2050	41.6	13.6	1.55	39.9	1.44	4.2	7.3
2100	41.5	13.5	1.58	39.8	1.49	4.2	6.1
2150	41.4	13.5	1.62	39.7	1.53	4.2	5.7
2200	41.4	13.5	1.65	39.6	1.58	4.4	4.6
2250	41.3	13.5	1.69	39.6	1.62	4.4	4.2
2300	41.2	13.5	1.72	39.5	1.67	4.4	3.2
2350	41.1	13.5	1.76	39.4	1.71	4.4	2.9
2400	41.1	13.5	1.80	39.3	1.76	4.6	2.5
2450	41.0	13.5	1.84	39.2	1.80	4.6	2.2
2500	40.9	13.5	1.88	39.1	1.85	4.5	1.4
2550	40.8	13.5	1.92	39.1	1.91	4.4	0.6
2600	40.8	13.6	1.96	39.0	1.96	4.6	-0.2
3500	39.2	14.1	2.74	37.9	2.91	3.3	-5.8
3700	38.9	14.2	2.93	37.7	3.12	3.1	-6.1





5200	36.3	15.8	4.57	36.0	4.66	0.9	-1.7
5250	36.2	15.9	4.63	35.9	4.71	0.8	-1.6
5300	36.1	15.9	4.69	35.9	4.76	0.7	-1.4
5500	35.8	16.1	4.92	35.6	4.96	0.3	-0.9
5600	35.6	16.2	5.04	35.5	5.07	0.1	-0.6
5700	35.4	16.2	5.15	35.4	5.17	0.0	-0.3
5800	35.2	16.3	5.27	35.3	5.27	-0.2	0.0
6000	34.9	16.5	5.50	35.1	5.48	-0.6	0.5
6500	34.0	16.9	6.12	34.5	6.07	-1.4	0.9
7000	33.1	17.3	6.74	33.9	6.65	-2.3	1.3
7500	32.2	17.6	7.36	33.3	7.24	-3.2	1.6
8000	31.4	17.9	7.97	32.7	7.84	-4.1	1.7
8500	30.5	18.2	8.59	32.1	8.45	-5.0	1.6
9000	29.7	18.4	9.20	31.5	9.08	-5.9	1.3
9500	28.9	18.5	9.80	31.0	9.71	-6.8	0.9
10000	28.1	18.7	10.40	30.4	10.36	-7.6	0.4

Figure D-2
750 – 5800 MHz Head Tissue Equivalent Matter

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APPENDIX E: SAR SYSTEM VALIDATION

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

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

Table E-1
SAR System Validation Summary – 1g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (εr)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
E	750	2/6/2019	3589	750	Head	0.891	43.677	PASS	PASS	PASS	N/A	N/A	N/A
D	750	4/12/2019	3914	750	Head	0.903	42.785	PASS	PASS	PASS	N/A	N/A	N/A
E	835	2/6/2019	3589	835	Head	0.922	43.47	PASS	PASS	PASS	GMSK	PASS	N/A
D	835	4/12/2019	3914	835	Head	0.935	42.549	PASS	PASS	PASS	GMSK	PASS	N/A
E	835	8/15/2019	7547	835	Head	0.927	41.61	PASS	PASS	PASS	GMSK	PASS	N/A
O	1750	8/7/2019	7538	1750	Head	1.37	40.428	PASS	PASS	PASS	N/A	N/A	N/A
H	1900	7/16/2019	7406	1900	Head	1.437	38.944	PASS	PASS	PASS	GMSK	PASS	N/A
D	1900	5/20/2019	3914	1900	Head	1.454	40.608	PASS	PASS	PASS	GMSK	PASS	N/A
E	2300	8/12/2019	7547	2300	Head	1.708	38.875	PASS	PASS	PASS	N/A	N/A	N/A
E	2450	8/8/2019	7547	2450	Head	1.802	37.944	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
E	2600	8/8/2019	7547	2600	Head	1.925	37.709	PASS	PASS	PASS	TDD	PASS	N/A
E	3500	6/13/2019	3589	3500	Head	2.781	39.174	PASS	PASS	PASS	TDD	PASS	N/A
E	3700	6/13/2019	3589	3700	Head	2.976	38.844	PASS	PASS	PASS	TDD	PASS	N/A
H	5250	6/10/2019	7406	5250	Head	4.59	36.819	PASS	PASS	PASS	OFDM	N/A	PASS
H	5600	6/10/2019	7406	5600	Head	4.978	34.167	PASS	PASS	PASS	OFDM	N/A	PASS
H	5750	6/10/2019	7406	5750	Head	5.15	33.901	PASS	PASS	PASS	OFDM	N/A	PASS
G	750	7/23/2019	7409	750	Body	0.941	56.074	PASS	PASS	PASS	N/A	N/A	N/A
O	835	7/3/2019	7538	835	Body	0.972	55.349	PASS	PASS	PASS	GMSK	PASS	N/A
H	835	7/11/2019	7406	835	Body	0.978	54.026	PASS	PASS	PASS	GMSK	PASS	N/A
I	1750	5/21/2019	7357	1750	Body	1.442	55.384	PASS	PASS	PASS	N/A	N/A	N/A
G	1750	7/11/2019	7409	1750	Body	1.445	53.92	PASS	PASS	PASS	N/A	N/A	N/A
J	1900	2/8/2019	7488	1900	Body	1.571	52.538	PASS	PASS	PASS	GMSK	PASS	N/A
K	2300	3/6/2019	7417	2300	Body	1.86	51.114	PASS	PASS	PASS	N/A	N/A	N/A
K	2450	3/6/2019	7417	2450	Body	2.039	50.67	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
I	2450	5/16/2019	7357	2450	Body	2.014	53.91	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2600	3/6/2019	7417	2600	Body	2.224	50.17	PASS	PASS	PASS	TDD	PASS	N/A
I	2600	5/15/2019	7357	2600	Body	2.162	53.62	PASS	PASS	PASS	TDD	PASS	N/A
M	3500	11/9/2018	3949	3500	Body	3.324	51.143	PASS	PASS	PASS	TDD	PASS	N/A
M	3700	11/9/2018	3949	3700	Body	3.543	50.813	PASS	PASS	PASS	TDD	PASS	N/A
L	5250	7/31/2019	7410	5250	Body	5.165	47.068	PASS	PASS	PASS	OFDM	N/A	PASS
L	5600	7/31/2019	7410	5600	Body	5.629	46.485	PASS	PASS	PASS	OFDM	N/A	PASS
L	5750	7/31/2019	7410	5750	Body	5.842	46.222	PASS	PASS	PASS	OFDM	N/A	PASS

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Table E-2
SAR System Validation Summary – 10g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (εr)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
G	1750	7/11/2019	7409	1750	Body	1.445	53.92	PASS	PASS	PASS	N/A	N/A	N/A
J	1900	2/8/2019	7488	1900	Body	1.571	52.538	PASS	PASS	PASS	GMSK	PASS	N/A
L	5250	7/31/2019	7410	5250	Body	5.165	47.068	PASS	PASS	PASS	OFDM	N/A	PASS
L	5600	7/31/2019	7410	5600	Body	5.629	46.485	PASS	PASS	PASS	OFDM	N/A	PASS
L	5750	7/31/2019	7410	5750	Body	5.842	46.222	PASS	PASS	PASS	OFDM	N/A	PASS

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

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APPENDIX G POWER REDUCTION VERIFICATION

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

G.1 Power Verification Procedure

The power verification was performed according to the following procedure:

1. A base station simulator was used to establish a conducted RF connection and the output power was monitored. The power measurements were confirmed to be within expected tolerances for all states before and after a power reduction mechanism was triggered.

2. Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.

3. Steps 1 and 2 were repeated for all individual power reduction mechanisms and combinations thereof. For the combination cases, one mechanism was switched to a 'triggered' state at a time; powers were confirmed to be within tolerances after each additional mechanism was activated.

G.2 Distance Verification Procedure

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

1. A base station simulator was used to establish an RF connection and to monitor the power levels. The device being tested was placed below the relevant section of the phantom with the relevant side or edge of the device facing toward the phantom.

2. The device was moved toward and away from the phantom to determine the distance at which the mechanism triggers and the output power is reduced, per KDB Publication 616217 D04v01r02 and FCC Guidance. Each applicable test position was evaluated. The distances were confirmed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.

3. Steps 1 and 2 were repeated for low, mid, and high bands, as appropriate (see note below Table G-2 for more details).

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

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G.3 Main Antenna Verification Summary

Table G-1
Power Measurement Verification for Main Antenna

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
1st		Un-triggered (Max)	Mechanism #1 (Reduced)
Grip	PCS CDMA	24.96	22.34
Grip	UMTS 1750	25.00	22.47
Grip	UMTS 1900	24.99	22.42
Grip	LTE FDD Band 66	25.00	22.33
Grip	LTE FDD Band 4	24.89	22.41
Grip	LTE FDD Band 25	24.98	22.26
Grip	LTE FDD Band 2	24.96	22.39

Table G-2
Distance Measurement Verification for Main Antenna

Mechanism(s)	Test Condition	Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Grip	Phablet - Back Side	Mid	3	5	2
Grip	Phablet - Front Side	Mid	1	3	1
Grip	Phablet - Bottom Edge	Mid	4	6	4

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

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G.4 WIFI Verification Summary

Table G-3
Power Measurement Verification WIFI – Antenna 1

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
1st		Un-triggered (Max)	Mechanism #1 (Reduced)
Held-to-Ear	802.11b	19.80	17.37
Held-to-Ear	802.11g	18.26	16.23
Held-to-Ear	802.11n (2.4GHz)	17.17	15.62
Held-to-Ear	802.11a	19.57	15.73
Held-to-Ear	802.11n (5GHz, 20MHz BW)	19.47	15.79
Held-to-Ear	802.11ac (20MHz BW)	19.62	15.76

*Note: 802.11ac 2.4 GHz and MIMO WIFI modes were not evaluated due to equipment limitations.

Table G-4
Power Measurement Verification WIFI – Antenna 2

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
1st		Un-triggered (Max)	Mechanism #1 (Reduced)
Held-to-Ear	802.11b	19.82	17.13
Held-to-Ear	802.11g	19.28	17.15
Held-to-Ear	802.11n (2.4GHz)	18.17	17.12
Held-to-Ear	802.11a	19.84	15.75
Held-to-Ear	802.11n (5GHz, 20MHz BW)	19.71	15.79
Held-to-Ear	802.11ac (20MHz BW)	19.70	15.63

*Note: 802.11ac 2.4 GHz and MIMO WIFI modes were not evaluated due to equipment limitations.

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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 April 2018 TCBC Workshop Notes, 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

Index	2CC	Supported Channel Bandwidth [MHz]		Restriction	Completely Covered by Measurement Superset
		CC1	CC2		
2CC #1	CA_2C	5, 10, 15, 20	5, 10, 15, 20		3CC #4
2CC #2	CA_2A-5A	5, 10, 15, 20	5, 10		4CC #1
2CC #3	CA_2A-12A	5, 10, 15, 20	5, 10		3CC #3
2CC #4	CA_2A-13A	5, 10, 15, 20	10		3CC #9
2CC #5	CA_2A-17A	5, 10	5, 10		No
2CC #6	CA_2A-30A	5, 10, 15, 20	5, 10		3CC #14
2CC #8	CA_2A-66A (2)	5, 10, 15, 20	5, 10, 15, 20		3CC #1
2CC #9	CA_2A-71A	5, 10, 15, 20	5, 10, 15, 20		3CC #10
2CC #10	CA_4A-4A	5, 10, 15, 20	5, 10, 15, 20		3CC #6
2CC #11	CA_4A-5A (1)	5, 10, 15, 20	5, 10		4CC #1
2CC #12	CA_4A-12A (4)	5, 10, 15, 20	5, 10		3CC #8
2CC #13	CA_4A-13A	5, 10, 15, 20	10		3CC #9
2CC #14	CA_4A-17A	5, 10	5, 10	B17 SCC Only	No
2CC #15	CA_5B	5, 10	5, 10		3CC #1
2CC #16	CA_5A-25A	5, 10	5, 10, 15, 20		No
2CC #17	CA_7C	15, 20	15, 20		No
2CC #18	CA_7A-7A (1)	5, 10, 15, 20	5, 10, 15, 20		No
2CC #19	CA_7A-12A	5, 10, 15, 20	5, 10		3CC #12
2CC #20	CA_12B	5	5, 10		3CC #13
2CC #21	CA_12A-25A	5, 10	5, 10, 15, 20		No
2CC #22	CA_12A-30A	5, 10	5, 10		3CC #16
2CC #23	CA_41A-41A (1)	5, 10, 15, 20	5, 10, 15, 20		No

Index	3CC	Supported Channel Bandwidth [MHz]			Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3		
3CC #1	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		4CC #1
3CC #2	CA_2A-2A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10		4CC #1
3CC #3	CA_2A-2A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #4	CA_2C-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #5	CA_2A-2A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #6	CA_2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #7	CA_2A-66-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10		4CC #1
3CC #8	CA_2A-4A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #9	CA_2A-4A-13A	5, 10, 15, 20	5, 10, 15, 20	10		No
3CC #10	CA_2A-4A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #11	CA_2A-5B	5, 10, 15, 20	5, 10	5, 10		4CC #2
3CC #12	CA_2A-7A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #13	CA_2A-12B	5, 10, 15, 20	5	5, 10		No
3CC #14	CA_2A-12A-30A	5, 10, 15, 20	5, 10	5, 10		No
3CC #15	CA_4A-4A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #16	CA_5B-30A	5, 10	5, 10	5, 10		3CC #1
3CC #17	CA_5B-66A	5, 10	5, 10	5, 10, 15, 20		3CC #1
3CC #18	CA_5A-30A-66A	5, 10	5, 10	5, 10, 15, 20		4CC #2
3CC #19	CA_12A-66C	5, 10	5, 10, 15, 20	5, 10, 15, 20		No
3CC #20	CA_30A-66A-66A	5, 10	5, 10, 15, 20	5, 10, 15, 20		3CC #9
3CC #21	CA_41D	10, 15, 20	10, 15, 20	10, 15, 20		No
3CC #22	CA_41A-41C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #23	CA_66B	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #24	CA_66A-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No

Index	4CC	Supported Channel Bandwidth [MHz]				Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4		
4CC #1	CA_2A-4A-5A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		No
4CC #2	CA_2A-4A-12A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10	B12 SCC Only	No
4CC #3	CA_2A-5A-30A	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10		No
4CC #4	CA_2A-2A-5A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
4CC #5	CA_2A-5B-30A	5, 10, 15, 20	5, 10	5, 10	5, 10		3CC #1
4CC #6	CA_2A-5B-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		3CC #1
4CC #7	CA_5B-30A-66A	5, 10	5, 10	5, 10	5, 10		3CC #1
4CC #8	CA_5B-66A-66A	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20		3CC #2
4CC #9	CA_5A-30A-66A-66A	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20		No
4CC #10	CA_41E	15, 20	15, 20	15, 20	20		No

Index	SCC	Supported Channel Bandwidth [MHz]				Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4		
SCC #1	CA_1A-5B-30A-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		No
SCC #2	CA_1A-5B-66A-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		No

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

Index	2CC	Supported Channel Bandwidth [MHz]		Restriction	Completely Covered by Measurement Superset
		CC1	CC2		
2CC #M1	CA_[2C]	5, 10, 15, 20	5, 10, 15, 20		3CC #M6
2CC #M2	CA_[2A]-2A	5, 10, 15, 20	5, 10, 15, 20		3CC #M1
2CC #M3	CA_[2A]-[2A]	5, 10, 15, 20	5, 10, 15, 20		No
2CC #M4	CA_[2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20		3CC #M1
2CC #M5	CA_[2A]-[4A] (2)	5, 10, 15, 20	5, 10, 15, 20		No
2CC #M6	CA_[2A]-5A	5, 10, 15, 20	5, 10		4CC #M3
2CC #M7	CA_[2A]-12A (1)	5, 10, 15, 20	3, 5, 10		No
2CC #M8	CA_[2A]-13A	5, 10, 15, 20	10		3CC #M4
2CC #M9	CA_[2A]-17A	5, 10	5, 10		No
2CC #M10	CA_[2A]-29A (2)	5, 10, 15, 20	5, 10	B29 SCC Only	3CC #M12
2CC #M11	CA_[2A]-30A	5, 10, 15, 20	5, 10		3CC #M5
2CC #M12	CA_[2A]-66A (2)	5, 10, 15, 20	5, 10, 15, 20		4CC #M1
2CC #M13	CA_[2A-66A] (2)	5, 10, 15, 20	5, 10, 15, 20		4CC #M2
2CC #M14	CA_[2A]-[66A] (2)	5, 10, 15, 20	5, 10, 15, 20		No
2CC #M15	CA_[2A]-71A	5, 10, 15, 20	5, 10, 15, 20		3CC #M11
2CC #M16	CA_5A- [66A]	5, 10	5, 10, 15, 20		3CC #M16
2CC #M17	CA_12A-[66A] (4)	5, 10	5, 10, 15, 20		3CC #M17
2CC #M18	CA_13A-[66A]	5, 10	5, 10, 15, 20		3CC #M19
2CC #M19	CA_30A-[66A]	5, 10	5, 10, 15, 20		3CC #M20
2CC #M20	CA_[66B]	5, 10, 15	5, 10, 15		4CC #M4
2CC #M21	CA_[66C]	5, 10, 15, 20	5, 10, 15, 20		4CC #M6
2CC #M22	CA_[66A]-66A	5, 10, 15, 20	5, 10, 15, 20		3CC #M28
2CC #M23	CA_[66A]-[66A]	5, 10, 15, 20	5, 10, 15, 20		No

Index	3CC	Supported Channel Bandwidth [MHz]			Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3		
3CC #M1	CA_[2A]-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M2	CA_[2A]-2A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #M3	CA_[2A]-2A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #M4	CA_[2A]-2A-13A	5, 10, 15, 20	5, 10, 15, 20	10		No
3CC #M5	CA_[2A]-2A-30A	5, 10, 15, 20	5, 10, 15, 20	5, 10		No
3CC #M6	CA_[2C]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M7	CA_2C-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M8	CA_[2C]-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M9	CA_[2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M10	CA_2A-2A-[66A]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M11	CA_[2A]-2A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M12	CA_[2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10	B29 SCC Only	No
3CC #M13	CA_[2A]-4A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M14	CA_[2A]-5B	5, 10, 15, 20	5, 10	5, 10		4CC #M1
3CC #M15	CA_[2A]-5A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M16	CA_2A-5A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M17	CA_2A-12A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M18	CA_[2A]-13A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M19	CA_2A-13A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M20	CA_2A-30A-[66A]	5, 10, 15, 20	5, 10	5, 10, 15, 20		No
3CC #M21	CA_[2A]-66B	5, 10, 15, 20	5, 10, 15	5, 10, 15		4CC #M3
3CC #M22	CA_2A-[66B]	5, 10, 15, 20	5, 10, 15	5, 10, 15		4CC #M4
3CC #M23	CA_[2A]-[66B]	5, 10, 15, 20	5, 10, 15	5, 10, 15		No
3CC #M24	CA_[2A]-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		4CC #M5
3CC #M25	CA_2A-[66C]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		4CC #M6
3CC #M26	CA_[2A]-[66C]	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M27	CA_[2A]-66A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M28	CA_2A-[66A]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No
3CC #M29	CA_[2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No

Index	4CC	Supported Channel Bandwidth [MHz]				Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4		
4CC #M1	CA_[2A]-5B-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		No
4CC #M2	CA_2A-5B-[66A]	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20		No
4CC #M3	CA_[2A]-5A-66B	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15		No
4CC #M4	CA_2A-5A-[66B]	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15		No
4CC #M5	CA_[2A]-5A-66C	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20		No
4CC #M6	CA_2A-5A-[66C]	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20		No

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

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1.2 LTE Downlink Only Carrier Aggregation Test Selection and Setup

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

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

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

General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)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.

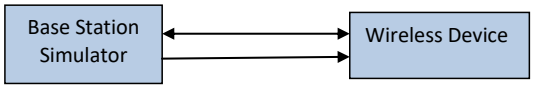

Figure 1
DL CA Power Measurement Setup

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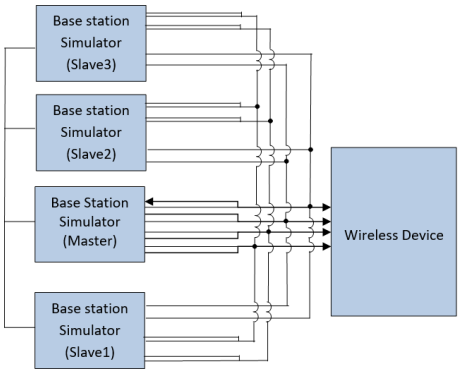

Figure 2
DL CA with DL 4x4 MIMO Power Measurement Setup

1.3 Downlink Carrier Aggregation RF Conducted Powers

1.3.1 LTE Band 71 as PCC

Table 1
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-4A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	25.48	25.50
CA_4A-4A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	25.47	25.50
CA_2A-2A-66A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	25.47	25.50
CA_2A-66A-66A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.49	25.50
CA_2A-66C-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	25.50	25.50

1.3.2 LTE Band 12 as PCC

Table 2
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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_12A-25A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B25	20	8365	1962.5	-	-	-	-	-	-	-	-	-	-	-	-	25.50	25.50
CA_12A-66A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	25.48	25.50
CA_12A-66A (2)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	25.48	25.50
CA_2A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	-	-	25.50	25.50
CA_4A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	25.49	25.50
CA_4A-12A (2)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	25.49	25.50
CA_4A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	-	-	-	-	25.46	25.50
CA_2A-12A-66C	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	25.50	25.50
CA_2A-2A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	25.50	25.50
CA_2A-4A-12A-30A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	-	-	-	-	25.50	25.50
CA_2A-4A-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	25.47	25.50
CA_2A-4A-7A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B7	20	3100	2655	-	-	-	-	25.25	25.50
CA_4A-4A-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B4	20	2625	2132.5	LTE B4	10	2350	2150	-	-	-	-	25.28	25.50
CA_12B-66A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	25.40	25.50
CA_2A-12A-30A-66A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.49	25.50
CA_2A-2A-12A-30A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	9820	2355	LTE B66	20	66786	2145	25.23	25.50
CA_2A-2A-12A-66A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.50	25.50
CA_2A-2A-12B-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	25.31	25.50
CA_2A-2A-7A-12A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B7	20	3100	2655	LTE B66	20	66786	2145	25.14	25.50
CA_2A-7A-12B-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B7	20	3100	2655	LTE B66	20	66786	2145	25.30	25.50

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1.3.3 LTE Band 13 as PCC

Table 3
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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_13A-46A-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B46	20	50665	5537.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	25.45	25.50
CA_2A-13A-46A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	25.49	25.50
CA_2A-4A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	25.46	25.50
CA_4A-4A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	-	-	-	-	25.48	25.50
CA_2A-13A-46C	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	-	-	-	-	25.50	25.50
CA_2A-13A-66C	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	25.36	25.50
CA_13A-46C-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B66	20	66786	2145	-	-	-	-	25.47	25.50
CA_13A-48A-66B	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B48	20	55990	3625	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3	-	-	-	-	25.48	25.50
CA_13A-48A-66C	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B48	20	55990	3625	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	25.49	25.50
CA_2A-13A-48D	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B48	20	50863	5557.3	25.42	25.50
CA_2A-13A-48A-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B48	20	55990	3625	LTE B48	20	56640	3690	LTE B66	20	66786	2145	25.49	25.50
CA_2A-13A-48A-48C	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B48	20	55990	3625	LTE B48	20	56640	3690	LTE B48	20	56442	3670.2	25.44	25.50
CA_2A-13A-48C-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B66	20	66536	2120	25.47	25.50
CA_2A-13A-48D	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6	25.48	25.50
CA_2A-13A-66A-66B	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	5	67168	2183.2	LTE B66	15	67261	2192.5	25.50	25.50
CA_2A-2A-13A-66A-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.49	25.50
CA_13A-46D-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	LTE B66	20	66786	2145	25.44	25.50
CA_13A-46E	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	LTE B48	20	51061	5577.1	25.50	25.50
CA_13A-48A-48C-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B48	20	55990	3625	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	LTE B66	20	66786	2145	25.47	25.50
CA_13A-48A-48D	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B48	20	55990	3625	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	LTE B48	20	55736	3599.6	25.46	25.50
CA_13A-48C-48C	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	25.48	25.50
CA_13A-48D-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6	LTE B66	20	66786	2145	25.49	25.50
CA_13A-48E	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6	LTE B48	20	56584	3684.4	25.44	25.50

1.3.4 LTE Band 14 as PCC

Table 4
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-14A-30A-66A-66A	LTE B14	10	23330	793	QPSK	1	0	5330	763	LTE B2	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.44	25.47
CA_2A-14A-66A-66A-66A	LTE B14	10	23330	793	QPSK	1	0	5330	763	LTE B2	20	900	1960	LTE B66	20	66536	2120	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.42	25.47
CA_2A-2A-14A-30A-66A	LTE B14	10	23330	793	QPSK	1	0	5330	763	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	9820	2355	LTE B66	20	66786	2145	25.41	25.47
CA_2A-2A-14A-66A-66A	LTE B14	10	23330	793	QPSK	1	0	5330	763	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.36	25.47

1.3.5 LTE Band 5 as PCC

Table 5
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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	-	-	-	-	-	-	-	-	-	-	-	-	25.47	25.46
CA_5A-41A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B41	20	40620	2593	-	-	-	-	-	-	-	-	-	-	-	-	25.46	25.46
CA_5A-46A (1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	-	-	-	-	25.50	25.46
CA_5A-5A (1)	LTE B5	3	20525	836.5	QPSK	1	14	2525	881.5	LTE B5	5	2625	891.5	-	-	-	-	-	-	-	-	-	-	-	-	25.49	25.44
CA_5A-7A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B7	20	3100	2655	-	-	-	-	-	-	-	-	-	-	-	-	25.50	25.46
CA_2A-5A-46A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	25.49	25.46
CA_5A-46A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46	20	50665	5537.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	25.43	25.46
CA_5A-46C (1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	-	-	-	-	-	-	-	-	25.45	25.46
CA_5A-48A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B48	20	55990	3625	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	25.38	25.46
CA_5A-48C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	-	-	-	-	-	-	-	-	25.41	25.46
CA_5A-7A-7A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B7	20	3100	2655	LTE B7	20	2850	2630	-	-	-	-	-	-	-	-	25.46	25.46
CA_5A-7C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	-	-	-	-	-	-	-	-	25.47	25.46
CA_5B-46A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	25.41	25.46
CA_2A-2A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	25.45	25.46
CA_2A-2A-5B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B2	20	700	1940	-	-	-	-	25.33	25.46
CA_2A-4A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	25.47	25.46
CA_2A-4A-5A-30A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	-	-	-	-	25.34	25.46
CA_2A-4A-5B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	25.44	25.46
CA_2A-5A-46C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	-	-	-	-	25.33	25.46
CA_4A-4A-5B	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	2350	2150	-	-	-	-	25.41	25.46
CA_5A-46C-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B66	20	66786	2145	-	-	-	-	25.37	25.46
CA_5A-46D (1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	-	-	-	-	25.38	25.46
CA_5A-48D	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6	-	-	-	-	25.49	25.46
CA_5A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2425	871.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	25.43	25.46
CA_5A-5A-66B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2425	871.5	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3	-	-	-	-	25.40	25.46
CA_5A-5A-66C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2425	871.5	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	25.45	25.46
CA_5B-46C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	-	-	-	-	25.45	25.46
CA_2A-2A-5A-30A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	9820	2355	LTE B66	20	66786	2145	25.31	25.46
CA_2A-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.48	25.46
CA_2A-2A-5A-66B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3	25.50	25.46
CA_2A-2A-5A-66C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	25.46	25.46
CA_2A-5A-30A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.29	25.46
CA_2A-5A-46D	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	25.28	25.46
CA_2A-5B-30A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	25.27	25.46
CA_2A-5B-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.33	25.46
CA_2A-5B-66B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1960	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3	25.47	25.46
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	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	25.49	25.46
CA_5A-46D-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	LTE B66	20	66786	2145	25.39	25.46
CA_5A-46E (1)	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	LTE B48	20	51061	5577.1	25.36	25.46
CA_5B-30A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B30	10	9820	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.33	25.46
CA_5B-46D	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B5	5	2453	874.3	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	25.43	25.46

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1.3.6 LTE Band 26 as PCC

Table 6
Maximum Output Powers

	PCC									SCC 1				SCC 2				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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_25A-26A	LTE B26	15	26865	831.5	QPSK	1	74	8865	876.5	LTE B25	20	8365	1962.5	-	-	-	-	25.39	25.50
CA_26A-41A	LTE B26	15	26865	831.5	QPSK	1	74	8865	876.5	LTE B41	20	40620	2593	-	-	-	-	25.49	25.50
CA_25A-25A-26A	LTE B26	5	26715	816.5	QPSK	1	12	8715	861.5	LTE B25	20	8365	1962.5	LTE B25	20	8590	1985	25.29	25.31
CA_26A-41C	LTE B26	15	26865	831.5	QPSK	1	74	8865	876.5	LTE B41	20	40620	2593	LTE B41	20	40422	2573.2	25.50	25.50

1.3.7 LTE Band 66 as PCC

Table 7
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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-66A (1)	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	24.78	24.94
CA_12A-66A (2)	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	24.78	24.94
CA_2A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	24.99	24.94
CA_13A-46A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B46	20	50665	5537.5	LTE B13	10	5230	751	-	-	-	-	24.98	24.94
CA_46A-46A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B46	20	50665	5537.5	LTE B46	20	47090	5180	-	-	-	-	24.96	24.94
CA_46A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B46	20	50665	5537.5	-	-	-	-	24.88	24.94
CA_46A-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B46	20	50665	5537.5	-	-	-	-	24.87	24.94
CA_5A-46A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B5	10	2525	881.5	LTE B46	20	50665	5537.5	-	-	-	-	24.99	24.94
CA_5A-48A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B5	10	2525	881.5	LTE B48	20	55990	3625	-	-	-	-	24.91	24.94
CA_66A-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66734	2139.8	LTE B66	20	66536	2120	-	-	-	-	24.98	24.94
CA_66C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B66	20	66536	2120	-	-	-	-	24.96	24.94
CA_66D	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B66	20	66640	2130.4	-	-	-	-	24.90	24.94
CA_7A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B7	20	3100	2655	-	-	-	-	24.95	24.94
CA_2A-12A-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B2	20	900	1960	LTE B12	10	5095	737.5	25.00	24.94
CA_2A-13A-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B2	20	900	1960	LTE B13	10	5230	751	24.99	24.94
CA_2A-29A-30A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	24.95	24.94
CA_2A-2A-66A-71A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B71	20	68761	634.5	25.00	24.94
CA_2A-46A-46A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	47090	5180	24.96	24.94
CA_2A-66A-66A-71A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B71	20	68761	634.5	24.98	24.94
CA_2A-66C-71A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B2	20	900	1960	LTE B71	20	68761	634.5	24.99	24.94
CA_2C-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B2	20	702	1940.2	24.96	24.94
CA_5A-48C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B5	10	2525	881.5	LTE B48	20	50665	5537.5	LTE B46	20	50467	5517.7	24.93	24.94
CA_5A-5A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B5	10	2525	881.5	LTE B5	5	2425	871.5	24.96	24.94
CA_5A-5A-66B	LTE B66	15	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66693	2135.7	LTE B5	10	2525	881.5	LTE B5	5	2425	871.5	24.99	24.89
CA_5A-5A-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B5	10	2525	881.5	LTE B5	5	2425	871.5	24.93	24.94
CA_7C-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	24.98	24.94
CA_12B-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B12	5	5095	737.5	LTE B12	5	5047	732.7	24.91	24.94
CA_13A-46C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B13	10	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	24.89	24.94
CA_13A-48A-66B	LTE B66	15	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66693	2135.7	LTE B13	10	5230	751	LTE B48	20	55990	3625	25.00	24.89
CA_13A-48A-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B13	10	5230	751	LTE B48	20	55990	3625	24.98	24.94
CA_29A-30A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	24.99	24.94
CA_46C-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	24.88	24.94
CA_48A-48A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B48	20	55990	3625	LTE B48	20	55340	3560	24.92	24.94
CA_48A-48A-66B	LTE B66	15	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66693	2135.7	LTE B48	20	55990	3625	LTE B48	20	55340	3560	24.97	24.89
CA_48A-48A-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B48	20	55990	3625	LTE B48	20	55340	3560	24.88	24.94
CA_48C-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	24.90	24.94
CA_2A-12A-30A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.99	24.94
CA_2A-13A-48A-46A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B13	10	5230	751	LTE B48	20	55990	3625	25.00	24.94
CA_2A-13A-48C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B13	10	5230	751	LTE B48	20	55990	3625	24.98	24.94
CA_2A-13A-66A-66B	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	5	66604	2126.8	LTE B66	15	66511	2117.5	LTE B2	20	900	1960	25.00	24.94
CA_2A-13A-66B-66A	LTE B66	15	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66693	2135.7	LTE B66	20	66536	2120	LTE B2	20	900	1960	24.94	24.89
CA_2A-14A-30A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B14	10	5330	763	24.90	24.94
CA_2A-14A-66A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B66	20	66786	2145	LTE B2	20	900	1960	24.98	24.94
CA_2A-2A-12A-30A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B12	10	5095	737.5	25.00	24.94
CA_2A-2A-12A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B2	20	700	1940	24.95	24.94
CA_2A-2A-12B-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B12	5	5095	737.5	24.99	24.94
CA_2A-2A-13A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B2	20	700	1940	24.99	24.94
CA_2A-2A-14A-30A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B14	10	5330	763	24.97	24.94
CA_2A-2A-14A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B2	20	700	1940	24.98	24.94
CA_2A-2A-5A-30A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B5	10	2525	881.5	24.99	24.94
CA_2A-2A-5A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B2	20	700	1940	24.96	24.94
CA_2A-2A-5A-66B	LTE B66	15	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66693	2135.7	LTE B2	20	900	1960	LTE B2	20	700	1940	24.98	24.89
CA_2A-2A-5A-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B2	20	900	1960	LTE B2	20	700	1940	24.99	24.94
CA_2A-2A-7A-12A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B7	20	3100	2655	24.96	24.94
CA_2A-46A-46C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	25.00	24.94
CA_2A-48A-48C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B48	20	55990	3625	LTE B48	20	56640	3690	24.99	24.94
CA_2A-5A-30A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.96	24.94
CA_2A-5B-30A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B5	5	2453	874.3	25.00	24.94
CA_2A-5B-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.94	24.94
CA_2A-5B-66B	LTE B66	15	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66693	2135.7	LTE B2	20	900	1960	LTE B5	10	2525	881.5	25.00	24.89
CA_2A-5B-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.99	24.94
CA_2A-7A-12B-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B7	20	3100	2655	LTE B12	5	5095	737.5	24.96	24.94
CA_5A-46D-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B5	10	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	24.88	24.94
CA_5B-30A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B5	10	2525	881.5	LTE B5	5	2453	874.3	24.99	24.94
CA_13A-46D-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B13	10	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	24.91	24.94
CA_13A-48A-48C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B13	10	5230	751	LTE B48	20	55990	3625	LTE B48	20	55640	3690	24.98	24.94
CA_13A-48D-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B13	10	5230	751	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	24.91	24.94
CA_46A-46D-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B46	20	50665	5537.5	LTE B46	20	53540	5825	LTE B46	20	53342	5805.2	24.94	24.94
CA_46D-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66536	2120	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	24.87	24.94
CA_48A-48C-66B	LTE B66	15	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66693	2135.7	LTE B48	20	55990	3625	LTE B48	20	55340	3560	24.88	24.89
CA_48A-48C-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B48	20	55990	3625	LTE B48	20	55340	3560	24.96	24.94
CA_48A-48D-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B48	20	55990	3625	LTE B48	20	56640	3690	LTE B48	20	56442	3670.2	24.85	24.94
CA_48C-48C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B48	20	55340	3560	24.90	24.94

Combination	PCC									SCC 1				SCC 2				SCC 3				SCC 4				SCC 5				SCC 6			Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-46A-48D-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6	-	-	-	-	25.00	24.94
CA_2A-46C-48C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B48	20	50467	5517.7	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	-	-	-	-	24.92	24.94
CA_2A-46D-48A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B48	20	50863	5557.3	LTE B48	20	55990	3625	LTE B48	20	55990	3625	-	-	-	-	24.89	24.94
CA_2A-46E-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	LTE B48	20	56269	5497.9	-	-	-	-	24.92	24.94
CA_2A-46C-48E-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6	25.00	24.94
CA_2A-46D-48E-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B48	20	56269	5497.9	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	24.99	24.94
CA_48C-48E-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B48	20	50467	5517.7	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6	LTE B48	20	55792	3605.2	24.89	24.94
CA_48E-48E-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B46	20	50665	5537.5	LTE B48	20	50467	5517.7	LTE B48	20	50863	5557.3	LTE B46	20	56269	5497.9	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	24.88	24.94

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1.3.8 LTE Band 25 as PCC

Table 8
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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	20	26140	1860	QPSK	1	0	8140	1940	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	24.79	24.77
CA_25A-26A	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B26	15	8865	876.5	-	-	-	-	-	-	-	-	24.74	24.77
CA_25A-41A	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B41	20	40620	2593	-	-	-	-	-	-	-	-	24.73	24.77
CA_25A-46A	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	24.80	24.77
CA_5A-25A	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	24.73	24.77
CA_25A-25A-26A	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B25	20	8590	1985	LTE B26	5	8865	876.5	-	-	-	-	24.88	24.77
CA_25A-41C	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B41	20	40620	2593	LTE B41	20	40422	2573.2	-	-	-	-	24.80	24.77
CA_25A-46C	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	-	-	-	-	24.85	24.77
CA_25A-41D	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B41	20	40422	2573.2	LTE B41	20	40620	2593	LTE B41	20	40818	2612.8	24.79	24.77
CA_25A-46D	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	24.77	24.77

1.3.9 LTE Band 30 as PCC

Table 9
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-29A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B29	10	9715	722.5	LTE B66	20	66786	2145	-	-	-	-	24.97	25.07
CA_2A-2A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B29	10	9715	722.5	-	-	-	-	24.93	25.07
CA_2A-4A-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	-	-	-	-	25.07	25.07
CA_2A-4A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	-	-	-	-	24.99	25.07
CA_2A-4A-5A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	-	-	-	-	25.01	25.07
CA_29A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B29	10	9715	722.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	24.99	25.07
CA_2A-12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.19	25.07
CA_2A-14A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B14	10	5330	763	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.01	25.07
CA_2A-2A-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	25.00	25.07
CA_2A-2A-14A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B14	10	5330	763	LTE B66	20	66786	2145	25.01	25.07
CA_2A-2A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	24.98	25.07
CA_2A-5A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	24.99	25.07
CA_2A-5B-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B5	5	2453	874.3	LTE B66	20	66786	2145	25.04	25.07
CA_5B-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B5	10	2525	881.5	LTE B5	5	2453	874.3	LTE B66	20	66786	2145	LTE B66	20	67236	2190	24.97	25.07

1.3.10 LTE Band 7 as PCC

Table 10
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				SCC 5				SCC 6				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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]	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-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.66	23.70
CA_7A-46A (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.69	23.70
CA_7B	LTE B7	15	20825	2507.5	QPSK	1	74	2825	2627.5	LTE B7	5	2918	2636.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.82	23.64
CA_46-4A-7A (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B4	20	2175	2132.5	LTE B4	10	2350	2130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.62	23.70
CA_5A-7A-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3350	2660	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.67	23.70
CA_5A-7C	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3048	2649.8	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.65	23.70
CA_7A-46C (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_7A-66A-66A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.62	23.70
CA_7A-7A-46A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3350	2660	LTE B46	10	49095	5537.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_2A-4A-7A-12A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.60	23.70
CA_30-4A-7A-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3350	2660	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.66	23.70
CA_2A-4A-7C	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3048	2649.8	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.64	23.70
CA_7A-46D (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.68	23.70
CA_7A-7A-46C	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3350	2660	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.62	23.70
CA_7C-46C	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3048	2649.8	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.62	23.70
CA_7C-66A-66A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3048	2649.8	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.67	23.70
CA_2A-2A-7A-12A-66A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	23.66	23.70
CA_2A-7A-12B-66A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B2	20	900	1960	LTE B12	5	5095	737.5	LTE B12	5	5047	732.7	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	23.62	23.70
CA_7A-46E	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	LTE B46	20	51061	5577.1	-	-	-	-	-	-	-	-	-	-	23.68	23.70
CA_7C-46D	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B7	20	3048	2649.8	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B46	20	50863	5557.3	-	-	-	-	-	-	-	-	-	-	23.65	23.70

1.3.11 LTE Band 48 as PCC

Table 11
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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_48A-48A	LTE B48	20	55773	3603.3	QPSK	1	99	55773	3603.3	LTE B48	20	56640	3690	-	-	-	-	-	-	-	-	-	-	-	-	24.05	24.20
CA_48E	LTE B48	20	55773	3603.3	QPSK	1	99	55773	3603.3	LTE B48	20	55971	3623.1	LTE B48	20	56169	3642.9	LTE B48	20	56367	3662.7	-	-	-	-	23.97	24.20
CA_48C-48D	LTE B48	20	55773	3603.3	QPSK	1	99	55773	3603.3	LTE B48	20	55971	3623.1	LTE B48	20	56640	3690	LTE B48	20	56442	3670.2	LTE B48	20	56244	3650.4	24.00	24.20
CA_48D-48C	LTE B48	20	55773	3603.3	QPSK	1	99	55773	3603.3	LTE B48	20	55971	3623.1	LTE B48	20	56169	3642.9	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	24.02	24.20

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1.3.12 LTE Band 41 PC3 as PCC

Table 12
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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_41A-41A (1)	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	-	-	-	-	25.11	25.08
CA_41A-41C	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	25.03	25.08
CA_41C-41A	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	25.00	25.08
CA_41A-41D	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	40146	2545.6	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	-	-	-	-	25.17	25.08
CA_41D-41A	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	41094	2640.4	LTE B41	20	39750	2506	-	-	-	-	25.14	25.08
CA_41C-41C	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	-	-	-	-	25.10	25.08
CA_41E	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	41094	2640.4	LTE B41	20	40896	2620.6	-	-	-	-	25.11	25.08
CA_41C-41D	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	40146	2545.6	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	25.08	25.08
CA_41D-41C	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	41094	2640.4	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	25.13	25.08

1.3.13 LTE Band 41 PC2 as PCC

Table 13
Maximum Output Powers

	PCC									SCC 1				SCC 2				SCC 3				SCC 4				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 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_41A-41A (1)	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	39750	2506	-	-	-	-	-	-	-	-	-	-	-	-	27.69	27.66
CA_41A-41C	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	41292	2660.2	LTE B41 PC2	20	41490	2680	-	-	-	-	-	-	-	-	27.60	27.66
CA_41C-41A	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	40791	2610.1	LTE B41 PC2	20	39750	2506	-	-	-	-	-	-	-	-	27.61	27.66
CA_41A-41D	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	41094	2640.4	LTE B41 PC2	20	41292	2660.2	LTE B41 PC2	20	41490	2680	-	-	-	-	27.62	27.66
CA_41D-41A	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	40449	2575.9	LTE B41 PC2	20	40791	2610.1	LTE B41 PC2	20	41490	2680	-	-	-	-	27.64	27.66
CA_41C-41C	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	40449	2575.9	LTE B41 PC2	20	41292	2660.2	LTE B41 PC2	20	41490	2680	-	-	-	-	27.61	27.66
CA_41E	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	40449	2575.9	LTE B41 PC2	20	40791	2610.1	LTE B41 PC2	20	40989	2629.9	-	-	-	-	27.69	27.66
CA_41C-41D	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	40449	2575.9	LTE B41 PC2	20	41094	2640.4	LTE B41 PC2	20	41292	2660.2	LTE B41 PC2	20	41490	2680	27.58	27.66
CA_41D-41C	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	LTE B41 PC2	20	40449	2575.9	LTE B41 PC2	20	40791	2610.1	LTE B41 PC2	20	41292	2660.2	LTE B41 PC2	20	41490	2680	27.55	27.66

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1.4 DL CA with DL 4x4 MIMO RF Conduction Powers

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

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

1.4.1 LTE 4x4 MIMO DL Standalone Powers

Table 14
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]
66	20	132572	1770	QPSK	1	0	24.98	24.94	24.5
25	20	26140	1860	QPSK	1	0	24.75	24.77	24.5
7	20	20850	2510	QPSK	1	0	23.67	23.70	23.2
41	20	41490	2680	QPSK	1	0	25.03	25.08	24.7
41 PC2	15	40620	2593	QPSK	1	36	27.63	27.66	27.2

1.4.2 LTE Band 71 as PCC

Table 15
Maximum Output Powers

	PCC										SCC 1					SCC 2					SCC 3					Power	
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 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-[4A]-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	25.49	25.50
CA_2A-[66A]-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.48	25.50
CA_[2A]-[4A]-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	25.50	25.50
CA_[4A]-[4A]-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	25.49	25.50
CA_[2A]-[2A]-[66A]-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	25.50	25.50
CA_[2A]-[66A]-[66A]-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	25.49	25.50
CA_[2A]-[66C]-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	25.50	25.50

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1.4.3 LTE Band 12 as PCC

Table 16
Maximum Output Powers

	PCC										SCC 1					SCC 2					SCC 3					SCC 4					Power	
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 Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A]-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.47	25.50
CA_4A]-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.50	25.50
CA_4A]-12A (2)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.50	25.50
CA_12A-66A] (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.49	25.50
CA_12A-66A] (2)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.49	25.50
CA_2A-4A]-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	25.49	25.50
CA_2A]-4A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	-	-	-	-	25.47	25.50
CA_4A]-4A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	2x2	-	-	-	-	-	-	-	-	-	-	25.50	25.50
CA_4A-7A]-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B4	20	2175	2132.5	2x2	LTE B7	20	3100	2655	4x4	-	-	-	-	-	-	-	-	-	-	25.37	25.50
CA_4A]-12A-30A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B30	10	9820	2355	2x2	-	-	-	-	-	-	-	-	-	-	25.41	25.50
CA_4A]-4A]-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	-	-	-	-	25.44	25.50
CA_4A]-7A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B7	20	3100	2655	2x2	-	-	-	-	-	-	-	-	-	-	25.42	25.50
CA_12A-66A]-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	2x2	-	-	-	-	-	-	-	-	-	-	25.45	25.50
CA_2A]-12A-66A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	67236	2190	2x2	-	-	-	-	-	25.44	25.50
CA_2A]-12A-[66A]-[66A]	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	25.41	25.50
CA_2A]-12A-[66C]	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	-	-	-	-	-	25.45	25.50
CA_2A]-2A-12A-66A-[66A]	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	25.41	25.50
CA_2A]-2A-12A-66A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	25.42	25.50
CA_2A]-4A]-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	25.44	25.50
CA_2A]-4A]-[7A]-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	LTE B7	20	3100	2655	4x4	-	-	-	-	-	25.45	25.50
CA_2A]-[7A]-12A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B66	20	66786	2145	2x2	-	-	-	-	-	25.40	25.50
CA_2A]-[7A]-12A-[66A]	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.50	25.50
CA_[7A]-12B-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B7	20	3100	2655	4x4	LTE B66	20	66786	2145	2x2	-	-	-	-	-	25.46	25.50
CA_[2A]-2A-12A-30A-[66A]	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B30	10	9820	2355	2x2	LTE B66	20	66786	2145	4x4	25.47	25.50
CA_[2A]-[2A]-12A-30A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B30	10	9820	2355	2x2	LTE B66	20	66786	2145	2x2	25.45	25.50
CA_[2A]-[7A]-12B-[66A]	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B66	20	66786	2145	4x4	25.44	25.50

1.4.4 LTE Band 13 as PCC

Table 17
Maximum Output Powers

	PCC										SCC 1					SCC 2					SCC 3					SCC 4					Power	
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 Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-13A-[66A]	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	25.49	25.50
CA_[2A]-13A-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	-	-	-	-	-	-	-	-	-	-	25.48	25.50
CA_[2A]-2A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	-	-	-	-	-	-	-	-	-	-	25.50	25.50
CA_[2A]-4A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	-	-	-	-	25.49	25.50
CA_[2A]-[4A]-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	25.47	25.50
CA_[4A]-4A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	2x2	-	-	-	-	-	-	-	-	-	-	25.50	25.50
CA_13A-[66A]-66A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	2x2	-	-	-	-	-	-	-	-	-	-	25.47	25.50
CA_[2A]-13A-[66A]-[66A]	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	25.49	25.50
CA_[2A]-13A-[66C]	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	-	-	-	-	-	25.50	25.50
CA_[2A]-[2A]-13A-[66A]	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.48	25.50
CA_[2A]-13A-[66A]-[66B]	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	5	67168	2183.2	4x4	LTE B66	15	67261	2192.5	4x4	25.47	25.50

1.4.5 LTE Band 5 as PCC

Table 18
Maximum Output Powers

	PCC										SCC 1					SCC 2					SCC 3					SCC 4					Power	
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 Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-[4A]-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	25.42	25.46
CA_[2A]-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	-	-	-	-	25.47	25.46
CA_[2A]-5A-30A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	2x2	-	-	-	-	-	-	-	-	-	-	25.46	25.46
CA_[4A]-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	2x2	-	-	-	-	-	-	-	-	-	-	25.43	25.46
CA_[4A]-5A-30A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B30	10	9820	2355	2x2	-	-	-	-	-	-	-	-	-	-	25.44	25.46
CA_5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B30	10	9820	2355	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	25.43	25.46
CA_5A-[7A]-7A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	2x2	-	-	-	-	-	-	-	-	-	-	25.49	25.46
CA_5A-[7A]-[7A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	4x4	-	-	-	-	-	-	-	-	-	-	25.48	25.46
CA_5A-[7C]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2902	2635.2	4x4	-	-	-	-	-	-	-	-	-	-	25.47	25.46
CA_[2A]-[2A]-[4A]-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	25.40	25.46
CA_[2A]-[2A]-5A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.44	25.46
CA_[2A]-[4A]-[4A]-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	25.46	25.46
CA_[2A]-[4A]-5B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	25.43	25.46
CA_[2A]-5A-[66A]-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	25.43	25.46
CA_[2A]-5B-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.42	25.46
CA_[4A]-[4A]-5B	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	4x4	LTE B5	5	2453	874.3	4x4	LTE B4	20	2175	2132.5	2x2	LTE B4	10	2350	2150	2x2	-	-	-	-	-	25.46	25.46
CA_5A-5A-[66A]-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B5	5	2425	871.5	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	25.41	25.46
CA_5A-5A-[66B]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B5	5	2425	871.5	2x2	LTE B66	15	66786	2145	4x4	LTE B66	5	66879	2154.3	4x4	-	-	-	-	-	25.45	25.46
CA_5A-5A-[66C]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B5	5	2425	871.5	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	-	-	-	-	-	25.46	25.46
CA_5B-[66A]-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	25.45	25.46
CA_[2A]-2A-5A-[66A]-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	2x2	25.50	25.46
CA_[2A]-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	67236	2190	2x2	25.47	25.46
CA_[2A]-[2A]-5A-[66B]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	15	66786	2145	4x4	LTE B66	5	66879	2154.3	4x4	25.50	25.46
CA_[2A]-[2A]-5A-[66C]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	25.48	25.46
CA_[2A]-5B-[66B]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B66	15	66786	2145	4x4	LTE B66	5	66879	2154.3	4x4	25.49	25.46
CA_[2A]-5B-[66C]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	25.47	25.46

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1.4.6 LTE Band 66 as PCC

Table 19
Maximum Output Powers

	PCC									SCC 1					SCC 2					SCC 3					SCC 4					SCC 5					Power	
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 Band	SCC BW [MHz]	SCC [DL] Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	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]-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.93	24.94
CA_[2A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.96	24.94
CA_12A-[66A] (1)	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.92	24.94
CA_12A-[66A] (2)	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.92	24.94
CA_29A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B29	10	9715	722.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.90	24.94
CA_2A-13A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	2x2	LTE B13	10	5230	751	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.96	24.94
CA_2A-2A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	2x2	LTE B2	20	700	1940	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.94	24.94
CA_2A-[66A]-71A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	2x2	LTE B71	20	68761	634.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.98	24.94
CA_2A-[66B]	LTE B66	15	132322	1745	QPSK	1	0	66788	2145	4x4	LTE B66	5	66693	2135.7	4x4	LTE B2	20	900	1960	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.00	24.89
CA_2A-[66C]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66838	2150.2	4x4	LTE B2	20	900	1960	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.97	24.94
CA_[2A]-13A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B2	20	900	1960	4x4	LTE B13	10	5230	751	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.94	24.94
CA_[2A]-66B	LTE B66	15	132322	1745	QPSK	1	0	66788	2145	2x2	LTE B66	5	66693	2135.7	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.95	24.89
CA_[2A]-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66838	2150.2	4x4	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.96	24.94
CA_5A-30A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B5	10	2525	881.5	2x2	LTE B30	10	9820	2355	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.90	24.94
CA_[7A]-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66536	2120	2x2	LTE B7	20	3100	2655	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.89	24.94
CA_[7A]-[66A]-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B7	20	3100	2655	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.92	24.94
CA_12A-[66A]-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.89	24.94
CA_12A-66A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B13	10	5230	751	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.81	24.94
CA_66A-[66C]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66734	2139.8	4x4	LTE B66	20	66536	2120	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.83	24.94
CA_[66C]-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66838	2150.2	2x2	LTE B66	20	66536	2120	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.88	24.94
CA_[66A]-66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66734	2139.8	2x2	LTE B66	20	66536	2120	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.84	24.94
CA_66C-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66838	2150.2	2x2	LTE B66	20	66536	2120	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.84	24.94
CA_[66A]-[66C]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66734	2139.8	4x4	LTE B66	20	66536	2120	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.88	24.94
CA_[66C]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66838	2150.2	4x4	LTE B66	20	66536	2120	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.89	24.94
CA_[2A]-12A-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66536	2120	2x2	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.83	24.94
CA_[2A]-[12A-[66A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.93	24.94
CA_[2A]-12A-13A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66536	2120	2x2	LTE B2	20	900	1960	4x4	LTE B13	10	5230	751	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.93	24.94
CA_[2A]-12A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.95	24.94
CA_[2A]-13A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B13	10	5230	751	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.93	24.94
CA_[2A]-2A-5A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.92	24.94
CA_[2A]-[2A]-66A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66536	2120	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	-	-	-	-	-	-	-	-	-	-	-	-	24.98	24.94
CA_[2A]-[2A]-66A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66536	2120	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	-	-	-	-	-	-	-	-	-	-	-	-	25.00	24.94
CA_[2A]-[2A]-[66A]-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	-	-	-	-	-	-	-	-	-	-	-	-	24.98	24.94
CA_[2A]-[2A]-[66A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	-	-	-	-	-	-	-	-	-	-	-	-	25.00	24.94
CA_[2A]-66A-[66A]-71A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B71	20	68761	634.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.93	24.94
CA_[2A]-46A-66A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	47090	5180	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.96	24.94
CA_[2A]-46C-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.97	24.94
CA_[2A]-5A-[66A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.83	24.94
CA_[2A]-5B-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.99	24.94
CA_[2A]-[66A]-[66A]-71A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B71	20	68761	634.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.86	24.94
CA_[2A]-[66C]-71A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66838	2150.2	4x4	LTE B2	20	900	1960	4x4	LTE B71	20	68761	634.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.93	24.94
CA_[2A]-[7A]-12A-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.90	24.94
CA_[2A]-[7A]-12A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.97	24.94
CA_[2C]-[66A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	702	1940.2	4x4	-	-	-	-	-	-	-	-	-	-	-	-	24.90	24.94
CA_5A-5A-[66A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B5	10	2525	881.5	2x2	LTE B5	5	2425	871.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.98	24.94
CA_5A-5A-[66B]	LTE B66	15	132322	1745	QPSK	1	0	66788	2145	4x4	LTE B66	5	66693	2135.7	4x4	LTE B5	10	2525	881.5	2x2	LTE B5	5	2425	871.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.84	24.89
CA_5A-5A-[66C]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66838	2150.2	4x4	LTE B5	10	2525	881.5	2x2	LTE B5	5	2425	871.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.88	24.94
CA_5B-[66A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B5	10	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.84	24.94
CA_[7A]-12B-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B7	20	3100	2655	4x4	LTE B12	5	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	-	-	-	-	-	-	-	-	-	-	-	-	24.93	24.94
CA_[7C]-[66A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B7	20	3100	2655	4x4	LTE B7	20	2902	2625.2	4x4	-	-	-	-	-	-	-	-	-	-	-	-	24.98	24.94
CA_[2A]-2A-5A-66A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B66	20	66536	2120	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	24.93	24.94
CA_[2A]-2A-5A-66A-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	24.89	24.94
CA_[2A]-4A-46C-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	53540	5825	2x2	-	-	-	-	-	-	-	24.97	24.94
CA_[2A]-46D-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B2	20	900	1960	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	-	-	-	-	-	-	-	25.00	24.94
CA_2A-5B-[66B]	LTE B66	15	132322	1745	QPSK	1	0	66788	2145	4x4	LTE B66	5	66693	2135.7	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	-	-	-	-	-	-	-	24.98	24.89
CA_[2A]-5B-[66C]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66838	2150.2	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	LTE B5	5	2453	874.3	2x2	-	-	-	-	-	-	-	24.95	24.94
CA_[7A]-12B-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B12	5	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	-	-	-	-	-	-	-	24.97	24.94
CA_46A-46D-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	53540	5825	2x2	LTE B46	20	53142	5805.2	2x2	LTE B46	20	53144	5785.4	2x2	-	-	-	-	-	-	-	24.94	24.94
CA_[2A]-46D-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	-	-	-	-	-	-	-	24.98	24.94
CA_46D-[66A]-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	66536	2120	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	-	-	-	-	-	-	-	24.86	24.94
CA_2A-46E-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	2x2	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	LTE B46	20	50269	5497.9	2x2	25.00	24.94
CA_[2A]-46E-66A	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	2x2	LTE B2	20	900	1960	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	LTE B46	20	50269	5497.9	2x2	24.99	24.94
CA_[2A]-46E-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	LTE B46	20	50269	5497.9	2x2	24.98	24.94
CA_[2A]-46E-[66A]	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B2	20	900	1960	4x4	LTE B46	20	55990	3625	2x2	LTE B48	20	56188	3644.8	2x2	LTE B48	20	56386	3664.6	2x2	LTE B48	20	55792	3605.2	2x2	24.96	24.94

1.4.7 LTE Band 25 as PCC

Table 20
Maximum Output Powers

	PCC									SCC 1					SCC 2					SCC 3					Power	
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 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_[25A]-[25A] (1)	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	4x4	LTE B25	20	8590	1985	4x4	-	-	-	-	-	-	-	-	-	-	24.69	24.77
CA_[25A]-46A	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	4x4	LTE B46	20	50665	5537.5	2x2	-	-	-	-	-	-	-	-	-	-	24.74	24.77
CA_[25A]-46C	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	-	-	-	-	-	24.74	24.77
CA_[25A]-46D	LTE B25	20	26140	1860	QPSK	1	0	8140	1940	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	24.77	24.77

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1.4.8 LTE Band 30 as PCC

Table 21
Maximum Output Powers

	PCC										SCC 1					SCC 2					SCC 3					SCC 4					Power	
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 Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-[4A]-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	25.06	25.07
CA_[2A]-4A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	-	-	-	-	-	25.03	25.07
CA_[2A]-5A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	25.02	25.07
CA_[4A]-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B4	20	2175	2132.5	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	25.01	25.07
CA_[4A]-5A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B4	20	2175	2132.5	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	25.03	25.07
CA_5A-30A-[66A]	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	25.01	25.07
CA_[2A]-[4A]-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	LTE B29	10	9715	722.5	2x2	-	-	-	-	-	-	25.06	25.07
CA_[2A]-2A-12A-30A-[66A]	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	4x4	25.12	25.07
CA_[2A]-[2A]-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	25.10	25.07

1.4.9 LTE Band 7 as PCC

Table 22
Maximum Output Powers

	PCC										SCC 1					SCC 2					SCC 3					SCC 4					Power	
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 Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_[7A]-46A (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B46	20	50665	5537.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.69	23.70
CA_2A-4A-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_2A-[4A]-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	23.67	23.70
CA_2A-[4A]-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.68	23.70
CA_[2A]-[2A]-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_[2A]-4A-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_4A-[7A]-12A (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B4	20	2175	2132.5	2x2	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.69	23.70
CA_4A-[7A]-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3350	2680	2x2	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.69	23.70
CA_4A-7A-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B7	20	3350	2680	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_[4A]-4A-[7A] (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	2x2	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_[4A]-[4A]-[7A] (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_[4A]-7A-12A (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B4	20	2175	2132.5	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_[4A]-7A-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B7	20	3350	2680	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_[4A]-[7A]-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3350	2680	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	23.68	23.70
CA_5A-[7A]-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B7	20	3350	2680	2x2	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.69	23.70
CA_5A-7A-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B7	20	3350	2680	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_5A-[7A]-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3350	2680	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.68	23.70
CA_5A-[7C]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3048	2649.8	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_[7A]-46C (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_[7A]-66A-66A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	67236	2190	2x2	-	-	-	-	-	-	-	-	-	-	-	23.69	23.70
CA_[7A]-[66A]-[66A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_7A-[7A]-46A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B7	20	3350	2680	4x4	LTE B46	20	50665	5537.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.68	23.70
CA_[7A]-7A-46A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3350	2680	2x2	LTE B46	20	50665	5537.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.68	23.70
CA_[7A]-[7A]-46A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3350	2680	4x4	LTE B46	20	50665	5537.5	2x2	-	-	-	-	-	-	-	-	-	-	-	23.70	23.70
CA_2A-4A-[7C]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3048	2649.8	4x4	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	23.63	23.70
CA_[2A]-2A-[7A]-66A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B66	20	66786	2145	2x2	-	-	-	-	-	23.50	23.70
CA_[2A]-2A-[7A]-[66A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	23.52	23.70
CA_[2A]-4A-[7A]-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3350	2680	4x4	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	23.70	23.70
CA_[2A]-4A-7C	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B7	20	3048	2649.8	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	23.58	23.70
CA_[2A]-[4A]-[7A]-12A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	23.66	23.70
CA_[2A]-[4A]-7A-[7A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	2x2	LTE B7	20	3350	2680	4x4	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	23.53	23.70
CA_[2A]-[4A]-[7A]-7A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3350	2680	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	23.67	23.70
CA_[2A]-[4A]-[7C]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3048	2649.8	4x4	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	23.69	23.70
CA_[2A]-[7A]-12A-66A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	-	-	-	-	-	23.70	23.70
CA_[2A]-[7A]-12A-[66A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	23.64	23.70
CA_[7A]-12B-66A	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B12	5	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B66	20	66786	2145	2x2	-	-	-	-	-	23.70	23.70
CA_[7A]-46D (1)	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	-	-	-	-	-	23.67	23.70
CA_[7A]-[7A]-46C	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3350	2680	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	-	-	-	-	-	23.70	23.70
CA_[7C]-46C	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3048	2649.8	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	-	-	-	-	-	23.66	23.70
CA_[7C]-[66A]-[66A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3048	2649.8	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	23.53	23.70
CA_[2A]-[7A]-12B-[66A]	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B2	20	900	1960	4x4	LTE B12	5	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B66	20	66786	2145	4x4	23.69	23.70
CA_[7A]-46E	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	LTE B46	20	51061	5577.1	2x2	23.67	23.70
CA_[7C]-46D	LTE B7	20	20850	2510	QPSK	1	0	2850	2630	4x4	LTE B7	20	3048	2649.8	4x4	LTE B46	20	50665	5537.5	2x2	LTE B46	20	50467	5517.7	2x2	LTE B46	20	50863	5557.3	2x2	23.70	23.70

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1.4.10 LTE Band 41 PC3 as PCC

Table 23
Maximum Output Powers

	PCC										SCC 1					SCC 2					SCC 3					Power	
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 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_[41A]-41A (1)	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	39750	2506	2x2	-	-	-	-	-	-	-	-	-	-	24.85	25.08
CA_41A-[41A] (1)	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	2x2	LTE B41	20	39750	2506	4x4	-	-	-	-	-	-	-	-	-	-	24.86	25.08
CA_[41A]-[41A] (1)	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	39750	2506	4x4	-	-	-	-	-	-	-	-	-	-	24.87	25.08
CA_41A-[41C]	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	2x2	LTE B41	20	39948	2525.8	4x4	LTE B41	20	39750	2506	4x4	-	-	-	-	-	24.90	25.08
CA_[41C]-41A	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	41292	2660.2	4x4	LTE B41	20	39750	2506	2x2	-	-	-	-	-	24.87	25.08
CA_[41A]-41C	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	39948	2525.8	2x2	LTE B41	20	39750	2506	2x2	-	-	-	-	-	24.85	25.08
CA_41C-[41A]	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	2x2	LTE B41	20	41292	2660.2	2x2	LTE B41	20	39750	2506	4x4	-	-	-	-	-	24.95	25.08
CA_[41A]-[41D]	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	40146	2545.6	4x4	LTE B41	20	39948	2525.8	4x4	LTE B41	20	39750	2506	4x4	24.72	25.08
CA_[41D]-[41A]	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	41292	2660.2	4x4	LTE B41	20	41094	2640.4	4x4	LTE B41	20	39750	2506	4x4	24.78	25.08
CA_[41C]-[41C]	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	41292	2660.2	4x4	LTE B41	20	39948	2525.8	4x4	LTE B41	20	39750	2506	4x4	24.77	25.08
CA_[41E]	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	41292	2660.2	4x4	LTE B41	20	41094	2640.4	4x4	LTE B41	20	40896	2620.6	4x4	24.76	25.08

1.4.11 LTE Band 41 PC2 as PCC

Table 24
Maximum Output Powers

	PCC										SCC 1					SCC 2					SCC 3					Power	
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 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_[41A]-41A (1)	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	4x4	LTE B41 PC2	20	39750	2506	2x2	-	-	-	-	-	-	-	-	-	-	27.42	27.66
CA_41A-[41A] (1)	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	2x2	LTE B41 PC2	20	39750	2506	4x4	-	-	-	-	-	-	-	-	-	-	27.56	27.66
CA_[41A]-[41A] (1)	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	4x4	LTE B41 PC2	20	39750	2506	4x4	-	-	-	-	-	-	-	-	-	-	27.67	27.66
CA_41A-[41C]	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	2x2	LTE B41 PC2	20	41292	2660.2	4x4	LTE B41 PC2	20	41490	2680	4x4	-	-	-	-	-	27.63	27.66
CA_[41C]-41A	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	4x4	LTE B41 PC2	20	40791	2610.1	4x4	LTE B41 PC2	20	39750	2506	2x2	-	-	-	-	-	27.65	27.66
CA_[41A]-41C	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	4x4	LTE B41 PC2	20	41292	2660.2	2x2	LTE B41 PC2	20	41490	2680	2x2	-	-	-	-	-	27.68	27.66
CA_41C-[41A]	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	2x2	LTE B41 PC2	20	40791	2610.1	2x2	LTE B41 PC2	20	39750	2506	4x4	-	-	-	-	-	27.65	27.66
CA_[41A]-[41D]	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	4x4	LTE B41 PC2	20	41094	2640.4	4x4	LTE B41 PC2	20	41292	2660.2	4x4	LTE B41 PC2	20	41490	2680	4x4	27.70	27.66
CA_[41D]-[41A]	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	4x4	LTE B41 PC2	20	40449	2575.9	4x4	LTE B41 PC2	20	40791	2610.1	4x4	LTE B41 PC2	20	41490	2680	4x4	27.68	27.66
CA_[41C]-[41C]	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	4x4	LTE B41 PC2	20	40449	2575.9	4x4	LTE B41 PC2	20	41292	2660.2	4x4	LTE B41 PC2	20	41490	2680	4x4	27.67	27.66
CA_[41E]	LTE B41 PC2	15	40620	2593	QPSK	1	36	40620	2593	4x4	LTE B41 PC2	20	40449	2575.9	4x4	LTE B41 PC2	20	40791	2610.1	4x4	LTE B41 PC2	20	40989	2629.9	4x4	27.70	27.66

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1.5 Downlink Carrier Aggregation with Uplink Carrier Aggregation enabled

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

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

1.5.1 DL Carrier Aggregation RF Conducted Powers

Table 25
Maximum Output Powers

	PCC									SCC 1							SCC 2				SCC 3				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	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 (UL/DL) Channel	SCC (UL/DL) Freq. [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	ULCA Tx.Power with add'l CA config. Active on DL (dBm)	ULCA Tx Power (dBm)
CA_41D	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	QPSK	1	99	LTE B41	20	41094	2640.4	-	-	-	-	25.15	25.05
CA_41E	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	QPSK	1	99	LTE B41	20	41094	2640.4	LTE B41	20	40896	2620.6	25.16	25.05
	PCC									SCC 1							SCC 2				SCC 3				Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	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 (UL/DL) Channel	SCC (UL/DL) Freq. [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	ULCA Tx.Power with add'l CA config. Active on DL (dBm)	ULCA Tx Power (dBm)
CA_41D	LTE B41 PC2	20	41490	2680	QPSK	1	0	41490	2680	LTE B41 PC2	20	41292	2660.2	QPSK	1	99	LTE B41 PC2	20	41094	2640.4	-	-	-	-	27.15	27.20
CA_41E	LTE B41 PC2	20	41490	2680	QPSK	1	0	41490	2680	LTE B41 PC2	20	41292	2660.2	QPSK	1	99	LTE B41 PC2	20	41094	2640.4	LTE B41 PC2	20	40896	2620.6	27.18	27.20

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

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

Table 26
Maximum Output Powers

	PCC										SCC 1								SCC 2					SCC 3					Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (UL/DL) Ch.	SCC (UL/DL) Freq. [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	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.	ULCA Tx.Power with add'l CA config. Active on DL (dBm)	ULCA Tx Power (dBm)
CA_41C	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	41292	2660.2	QPSK	1	99	4x4	-	-	-	-	-	-	-	-	-	-	25.18	25.05
CA_41D	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	41292	2660.2	QPSK	1	99	4x4	LTE B41	20	41094	2640.4	4x4	-	-	-	-	-	25.19	25.05
CA_41E	LTE B41	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41	20	41292	2660.2	QPSK	1	99	4x4	LTE B41	20	41094	2640.4	4x4	LTE B41	20	40896	2620.6	4x4	25.20	25.05
	PCC										SCC 1								SCC 2					SCC 3					Power	
Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (UL/DL) Ch.	SCC (UL/DL) Freq. [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	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.	ULCA Tx.Power with add'l CA config. Active on DL (dBm)	ULCA Tx Power (dBm)
CA_41C	LTE B41 PC2	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41 PC2	20	41292	2660.2	QPSK	1	99	4x4	-	-	-	-	-	-	-	-	-	-	27.11	27.20
CA_41D	LTE B41 PC2	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41 PC2	20	41292	2660.2	QPSK	1	99	4x4	LTE B41 PC2	20	41094	2640.4	4x4	-	-	-	-	-	27.18	27.20
CA_41E	LTE B41 PC2	20	41490	2680	QPSK	1	0	41490	2680	4x4	LTE B41 PC2	20	41292	2660.2	QPSK	1	99	4x4	LTE B41 PC2	20	41094	2640.4	4x4	LTE B41 PC2	20	40896	2620.6	4x4	27.15	27.20

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